Sustainable Biomass Program (SBP)

Regional Risk Assessment for US National Forests

Contents

Annexes

Abbreviations

ACHP	Advisory Council on Historic Preservation
AIRFA	American Indian Religious Freedom Act
ALP	Automated Lands Program
APE	Area of Potential Effects
APHIS	Animal and Plant Health Inspection Service
APPRIL	EPA Active Pesticide Product Registrational Informational Listing
ASQ	Annual Sale Quantity
ARPA	Archaeological Resources Protection Act
BA	Biological Assessment
BAER	Burned Area Emergency Response
BE	Biological Evaluation
BLM	USDI Bureau of Land Management
BMP	Best Management Practice
BO	Biological Opinion
BP	Biomass Producer
CAA	Clean Air Act
CALFIRE	CA State Forestry Department
CALVEG	Classification and Assessment with Landsat of Visible Ecological Groupings
CALVEG	California
CDW	USFS Central Data Warehouse
CE	Categorical Exclusion
CEQ	Council on Environmental Quality
CFLRP	Collaborative Forest Landscape Restoration Program
CFR	Code of Federal Regulations
CHCA	Cultural Heritage Cooperation Authority
CITES	Convention on International Trade in Endangered Species
CNNF	Chequamegon-Nicolet National Forest
CO	Contracting Officer
CO2e	Carbon dioxide equivalent
CONUS	Contiguous United States, i.e., lower 48 states
CWA	Clean Water Act
CWD	Coarse Woody Debris
DFPZ	Defensible Fuel Profile Zone
EA	Environmental Assessment
ECOS	Environmental Conservation Online System
EEOC	US Equal Employment Opportunity Commission
EIS	Environmental Impact Statement
EO	Presidential Executive Order
EPA	US Environmental Protection Agency
ESA	Endangered Species Act
ETG	USFS Engineering, Technology, & Geospatial Services
FIA	USDA Forest Service Forest Inventory and Analysis Program
FACTS	Forest Activity Tracking System

FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FMNF	Francis Marion National Forest
FONSI	Finding of No Significant Impact
FPIC	Free, Prior, and Informed Consent
FPO	Forest Protection Officer
FSC	Forest Stewardship Council
FSH	Forest Service Handbook
FSM	Forest Service Manual
FSVeg	Field Sampled Vegetation database
FTCA	Federal Tort Claims Act
GA	Georgia
GAP	USGS Gap Analysis Project
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GIS	Geographic Information System
GLIFWC	Great Lakes Indian Fish and Wildlife Commission
GMR	General Management Review
GMUG	Grand Mesa, Uncompahgre, and Gunnison National Forest
HCS	High Carbon Stock
HCV	High Conservation Value
HHERA	Human Health and Ecological Risk Assessment
IDF	Integrated Design Features
IDT	Interdisciplinary Team
IFL	Intact Forest Landscape
IMPLAN	Impact analysis and Planning software
IPaC	Information for Planning and Consultation
IPM	Integrated Pest Management
IRSC	Integrated Resource Service Contract
IRTC	Integrated Resource Timber Contract
LA	Louisiana
LCMS	Landscape Change Monitoring System
LCO	Lac Courte Oreilles Band of Lake Superior Ojibwe
LEI	Law Enforcement Investigation
LEIMARS	Law Enforcement Management Attainment Reporting System
LEIRS	Law Enforcement Investigations Reporting System
LEO	Law Enforcement Officer
LRMP	Land and Resource Management Plan
LSR	Late-Successional Reserve
LULUCF	Land Use, Land-Use Change, and Forestry
MMT	Million Metric Tons
MOBI	Map of Biodiversity Importance (NatureServe)
MOU	Memorandum of Understanding
MS	Mississippi
MUSYA	Multiple-Use Sustained Yield Ac
NAAQS	National Ambient Air Quality Standards
NACUA	Native American Contemporary Use Area
NAGPRA	Native American Graves Protection and Repatriation Act

NC	North Carolina
NEPA	National Environmental Policy Act
NF	National Forest
NFMA	National Forest Management Act
NFS	National Forest System
NHPA	National Historic Preservation Act
NOAA	National Oceanic and Atmospheric Administration
NPA	National Programmatic Agreement for Phasing NHPA Section 106
NRCS	Natural Resource Conservation Service
NRM	Natural Resource Manager database
NWFP	Northwest Forest Plan
OCWP	Office of Compensation Workers Programs
OGC	US Office of General Counsel
OPMP	USDA Office of Pest Management Policy
OR	Oregon
OSHA	Occupational, Safety and Health Administration
PAD	Protected Areas Database
PALS	Project Activity Level System
PHA	Priority Heritage Asset
PILT	Payments in Lieu of Taxes
PPLS	EPA Pesticide Product Labeling System
PTSAR	USFS Periodic Timber Sale Accomplishment Reporting database
PUP	Pesticide Use Proposals
Q&A	Question and Answer
RAC	Resource Advisory Committee
RCA	Riparian Conservation Area
RCRA	Resource Conservation and Recovery Act
RCW	Red-cockaded Woodpecker
REPLANT	Repairing Existing Public Land by Adding Necessary Trees Act
RMZ	Riparian Management Zone
RNA	Research Natural Area
RO	Regional Office
ROD	Record of Decision
RPA	Forest and Rangeland Renewable Resource Planning Act
RRA	Regional Risk Assessment
RTE	Rate, Threatened or Endangered
SBP	Sustainable Biomass Program
SCA	McNamara-O'Hara Service Contract Act
SCC	Species of Conservation Concern
SEIS	Supplemental Environmental Impact Statement
SHPO	State Historic Preservation Officer
SIA	Special Interest Area
SIP	State Implementation Plan
SMP	Smoke Management Program
SO	National Forest Supervisors Office
SOPA	Schedule of Proposed Actions
SUDS	Special Uses Data System

SYL	Sustained Yield Limit
TCEMS	Title Claims and Encroachments Management System
TEUI	Terrestrial Ecological Unit Inventory
TFPA	Tribal Forest Protection Act
Tg	Teragram
THP	Timber Harvest Plan
THPO	Tribal Historic Preservation Office
TIM	USFS Timber Information Management database
TREAT	Treatment for Restoration Analysis Tool
TSC	Timber Sale Contract
UN	United Nations
UNDRIP	UN Declaration on the Rights of Indigenous Peoples
US	United States of America
US FWS	US Fish and Wildlife Service
USC	United States Code
USDA	United States Department of Agriculture
USDI	United States Department of the Interior
USFS	US Forest Service
USGS	US Geological Survey
WA	Washington
WCATT	Watershed Classification and Assessment Tracking Tool
WCF	Watershed Condition Framework
WHR	Wildlife Habitat Relationships
WI	Wisconsin
WIZ	Water Influence Zone
WO	Washington Office
WPS	Worker Protection Standard
WRAP	Watershed Restoration Action Plan

Foreword

Regional Risk Assessments (RRAs) are a key part of SBP's focus on identifying and managing risks associated with sustainably sourcing feedstock for biomass production. With an RRA covering an entire geographic region, and determining the risks associated with sourcing feedstock from that region, the need for individual Biomass Producers (BPs) to conduct risk assessments is avoided, leading to an efficient and consistent risk assessment process. RRAs also ensure active engagement with a diverse range of stakeholders in the region.

SBP-endorsed RRAs remain valid for a period of five (5) years from their publication date. The SBP Regional Risk Assessment Procedure allows for the development of new RRAs, and the review and revision of existing SBP-endorsed RRAs. The need for review and revision may be triggered by new or updated information, changes in legislation, stakeholder feedback, revision of SBP Standards 1 and 2, or expiry of the validity of the SBP-endorsed RRA.

1 Introduction

In accordance with the SBP normative framework and associated RRA Procedure, the objective of this RRA is to apply a comprehensive, structured, and data-driven methodology to identify and assess potential social, environmental, and economic risks associated with biomass feedstock sourced from National Forests administered by the USDA Forest Service in the contiguous United States (CONUS). Results of the RRA will indicate the potential for US Biomass Producer's (BP's) to source feedstock from national forests that meets international standards for sustainability, and thereby enhance access to expanding global markets for alternative energy sources. Access to markets for low-value biomass feedstock can facilitate forest ecosystem restoration projects, including fire resiliency treatments, as well as contribute to the socio-economic vitality of rural, forest-dependent communities. Pending review and approval by the SBP, an SBP-endorsed RRA will be publicly available to all BP's in the US, ultimately supporting their efforts to source feedstock from national forests that meets international sustainability criteria.

The Sustainable Biomass Program (SBP) is an international, independent biomass certification system designed for woody biomass, mostly in the form of wood pellets and woodchips, used in industrial, large-scale energy production. SBP aims to ensure that raw materials are obtained in a legal and sustainable manner. SBP is a procurement and traceability standard that assures biomass is sourced from legal and sustainable sources. SBP certification applies to biomass producers (BP's) such as pellet mills and other downstream supply chain actors. SBP is not a forest level certification scheme and is not applicable to land managers or forests. Hence, there is no potential scenario within the SBP normative framework in which the National Forest System (NFS), any NF's or USFS-managed forests could become SBP-certified as a result of an RRA process.

SBP provides a sustainability assurance framework for assessing risk within defined sourcing areas relative to four principal areas of potential impact: legality, environment, carbon stocks, people & communities. SBP-approved Regional Risk Assessments (RRAs) are a key component of the SBP framework. RRA's identify risks associated with the sustainable sourcing of raw materials for the production of biomass pellets and wood chips. Proposed mitigation measures are prescribed for identified risks and can be implemented by BPs to reduce specified risks to low risk. Within the SBP framework, BP's are responsible for demonstrating that biomass material entering the SBP certification system is conformant with applicable SBP standards.

Biomass producers sourcing feedstock from National Forests who are interested in demonstrating conformance with SBP standards are responsible for demonstrating conformance to SBP requirements. This RRA is available to biomass producers and may serve as the basis for evaluating risks associated with their procurement activities. The USFS has no obligation, and no responsibilities, imposed or inferred by a biomass producer's use of an RRA within its procurement systems.

RRA's are applied to forest areas determined to be reasonably homogeneous in terms of management criteria such that risk can be identified and addressed consistently throughout the designated region. The SBP RRA process allows for the region under assessment to be divided into smaller sub-regions if variability in operating conditions and associated risk prohibit homogeneous risk designation, and if any prescribed mitigation measures could not be effectively implemented consistently within the entire region under evaluation. Refer to Section 2.2 for further information on the scope of the RRA.

The RRA process relies on the SBP normative framework of standards and procedures. SBP Framework Standard 1: Feedstock (Raw Material) Compliance V2.0, May 2023 sets out requirements to be met by

Biomass Producers (BP's) as part of a Regional Risk Assessment (RRA). The RRA evaluates conformance with sustainability criteria and indicators of SBP 1 and is evaluated according to SBP 2 – Feedstock (Raw Material) Verification, V2.0, May 2023. Additionally, the RRA evaluates conformance with harvest sustainability criteria defined by *the European Community Directive on the promotion of the use of energy from renewable sources* (EUDR).

The United States (US) Endowment for Forests and Communities (the Endowment) is serving as the Sponsoring Body. As Sponsoring Body, the Endowment assumes oversight responsibility for development and financing of the RRA, including the appointment of a Working Body to conduct the RRA. INCOS Stratégies and Cambium Consulting, LLC are serving as the main coordinators of the Working Body, and Dovetail Partners is also serving as a core member of the working body.

Various experts supported the risk analysis work throughout the process to ensure relevant knowledge of the USDA Forest Service's forestry practices, laws, regulations, and applicable administrative directives. This RRA is carried out in accordance with the SBP Regional Risk Analysis Procedure, Version 1.2, May 2021, which specifies the process to be followed in the development of an SBP-endorsed RRA. This document responds to the 30-day public consultation period required by the RRA procedure. SBP retains all intellectual and property rights associated with an SBP-endorsed RRA.

2 Regional background and statement of scope

2.1 Regional background

The US NFS includes a wide range of ecosystems, habitats, forest types, physiographic environments, socio-economic conditions, and legal jurisdictions. Management and oversight of the NFS is assigned to a single organization; the US Forest Service (USFS), which is a federal agency located within the US Department of Agriculture (USDA). The USFS is a large bureaucracy, and operates within an integrated framework of laws, directives, policies and procedures that create both the structure needed to ensure consistency, and the flexibility required to adapt to variability in operating environments.

The USFS is one of five agencies that collectively administer 99.5% of public forest lands under the ownership of the U.S. federal government in the contiguous US. The other four agencies, listed in decreasing area of forest ownership are the Bureau of Land Management (BLM), the National Park Service (NPS), the Department of Defense (DoD), and the U.S. Fish and Wildlife Service (USFWS). The BLM, NPS, and USFWS are all part of the U.S. Department of the Interior (USDI).

Most of the forest land and timber harvest volume in the US is under private ownership. Throughout the contiguous US, 62% of all forests are privately owned, while about 29% are under federal ownership, and the remaining 9% are held by state and local (e.g., municipal and county) governments. National Forests represent 21% of the total forest area, and 18.5% of the annual national timber harvest in the Contiguous US (Table 1).

Table 1: Forest land area and average annual harvest removals in the Contiguous US

Ownership	Forest land		Annual Harvest Removal	
	Acres	% Total Area	Cubic Feet	% Total Harvest
National Forest	135,832,423	21%	91,334,121	18.5%
Other federal	51,201,857	8%	10,986,722	2.2%
State and local	61,550,087	9%	43,820,146	8.9%
Private	408,192,250	62%	348,868,761	70.5%
Total - All Ownerships	656,776,618	100%	495,009,750	100.0%

Source: USDA Forest Service, Forest Inventory Analysis (FIA), 2024.

Largely as a result of early settlement patterns of non-Native American foreign immigrants, forest ownership patterns by landowner class vary considerable from east to west in the contiguous US. National Forests (NFs) and other federally owned forest lands are present in significantly greater proportions throughout the western states than in the eastern states. Fully 81% of NFs are located in the western US. Conversely, the proportion of privately owned forest lands in the eastern states (84%) is significantly greater than in the west (Oswalt et al, 2019).

Table 2: Regional Forest Ownership Patterns by Ownership Type in the Contiguous US

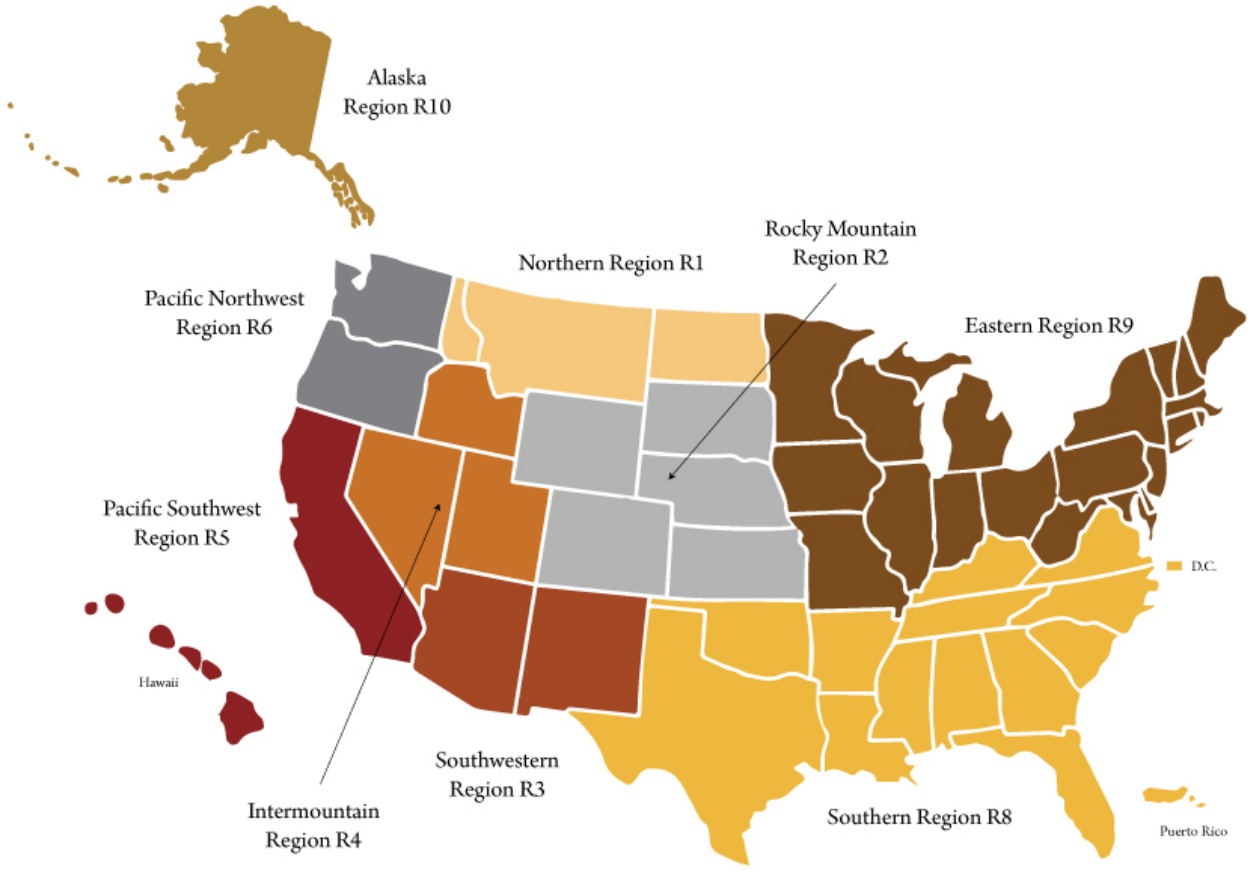
Ownership Type	% Eastern	% Western
National Forest	19%	81%
Other Federal Agencies	28%	72%
State and Local Gov't	80%	20%
Private Ownership	84%	16%
All Ownerships Combined	**66%**	**34%**

Source: USDA Forest Service, Forest Resources of the United States, 2017.

Administrative Context

The USFS is a large federal agency of nearly 30,000 employees led by a central office in Washington DC (WO), with authority flowing to Regional Offices (RO's), then to National Forests (NF's) and finally to Ranger Districts. Within the contiguous US, the NFS includes 8 designated administrative Regions, and 154 National Forests (NF's). Each National Forest is represented by a Supervisor's Office (SO) which oversees the activities of individual Ranger Districts.

Figure 1. Map of US National Forest System Regions



Source: USDA Forest Service.

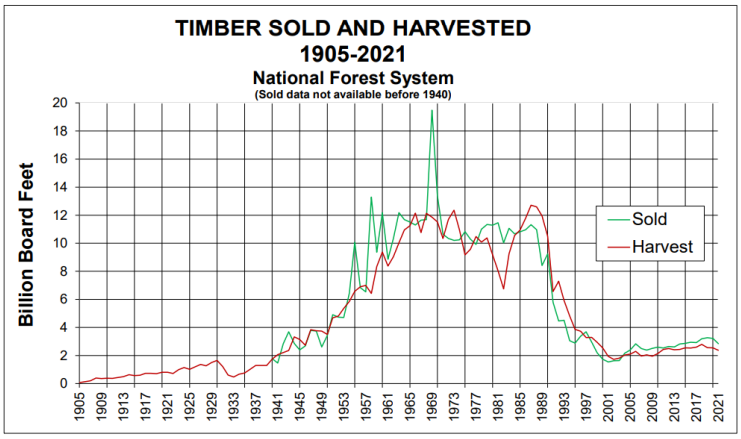
The USFS has been in existence since 1905. The mission of the USFS is: "To sustain the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of present and future generations" (This is Who We Are, USDA Forest Service, January 2019). The National Forest System dates back to 1891 with the passage of the Forest Reserve Act, empowering the President of the United States to designate federal lands as "public reservations" for the purpose of protecting America's forests from damaging exploitative practices. Since that time, the NFS has grown to include 154 National Forests and 20 national grasslands administered by the US Department of Agriculture. Nationwide (including Alaska and Hawaii), national forests are found in 40 states, and the Forest Service manages 193 million acres representing approximately 30% of federal lands.

The USFS management framework is robust and comprehensive in both the range of content and administrative structure. Roles, responsibilities, and lines of authority are clearly outlined, and procedural directives provide appropriate structure for all levels of activity. The USFS policies and procedures are outlined in a comprehensive series of manuals and handbooks referred to as Forest Service Directives. Forest Service Manuals (FSM) are principally directed at policies and standards, while Handbooks (FSH) provide detailed operational instructions for implementing USFS responsibilities. This national framework is augmented by field issuances applicable at the region or forest level. Both FSMs and FSHs are referenced consistently throughout the RRA and can be found at the link provided above. Additionally, the USFS employs numerous agency-wide electronic data management systems that are used for tracking, managing, and reporting activity level information. The USFS also employs standardized templates for contracts, permits, reports and other core functions. This structured management framework with well-established levels of authority enable the USFS to ensure compliance within their considerable legal mandates throughout the agency, and to operate with consistency in alignment with agency standards and policies.

Each National Forest administrative unit is required to prepare a Land and Resource Management Plan (LRMP) in accordance with the 2012 USFS Land Management Planning Rule (36 CFR, Part 219). The LRMP must contain a designated allowable sale quantity that does not compromise future yield or the health and viability of native ecosystems and habitats. Forest level planning occurs under the authority of the Forest Supervisor, and most field-level activities take place under the responsibility of a District Ranger. By law, all forest level activities must align with approved forest management plans. The USFS 2012 Planning Rule explicitly states that all USFS plans are required to comply with all applicable laws and regulations.

All management decisions proposed by the U.S. Forest Service with the potential to impact the surrounding environment are subject to the National Environmental Policy Act (NEPA). NEPA requires identification and evaluation of potential impacts to the affected environment, and development of alternative actions to address those impacts. All proposed forest management activities, including those that include timber harvest, must undergo NEPA analysis.

Figure 2. Timber Sold and Harvested on US National Forests



Source: USDA Forest Service, Forest Products Cut and Sold from the NFS

Public engagement and consultation are fundamental requirements of the 2012 Planning Rule. NEPA processes also require public participation. The USFS is further directed to cooperate with state and local governments in the management of national forests, effectively ensuring that local communities have a voice in national forest management. All plans and NEPA documents are subject to formal public review and typically receive considerable input from interested parties. Local and national advocacy groups commonly conduct thorough reviews of proposed plans and NEPA documents. The public review process periodically results in formal legal challenges to proposed decisions that are heard in the US court system. This high degree of transparency and associated scrutiny provide added assurances that USFS forest management plans and associated activities comply with applicable laws and agency policies.

The USFS conducts timber sales and other management interventions to achieve the social and ecological objectives in the forest plan. In this context, timber is a by-product of ecosystem management. The amount of timber harvested from the NFS, and its relative proportion of total US timber supply, has fluctuated over time. Timber harvest on USFS lands has declined dramatically since the late 1980's.

USFS staff retain responsibility for land management, engineering and law enforcement on NFs. The USFS also contracts for many services including precommercial thinning, timber inventory, tree planting, fuels reduction, habitat improvement, etc. Within the USFS lexicon, a "project" is a "defined set of activities proposed to achieve specific management objectives within a particular area of a National Forest." Timber harvests, fuel reduction thinnings, habitat restoration, trail construction, prescribed burns, and watershed improvements are all examples of management activities commonly included in projects. Prescribed fire is a key management tool frequently used by the USFS to reduce wildfire risk, improve forest resiliency, and maintain wildlife habitat. Timber harvests employ a wide range of even-aged and uneven-aged silvicultural systems including intermediate thinning, seed tree, shelterwood, clearcut, single-tree selection, group selection, variable retention, sanitation and salvage, and other hybrid approaches. Forest canopy opening size resulting from timber harvest is generally limited to 40 acres by the 2012 Forest Service Planning Rule, although exceptions are allowable to achieve desired ecological conditions. Harvest openings are associated with all types of timber harvests, although the upper size limits are primarily intended to limit the size of clearcuts. Timber harvesting is conducted with a wide range of logging systems including mechanized and non-mechanized ground-based skidding and yarding systems, highlead and other cable yarding systems, and helicopter yarding.

Commercial timber harvesting operations on NFs are conducted by independent professional logging entities. The USFS does not maintain internal employees to conduct logging operations, or issue long term leases or concessions for timber harvesting. Commercial timber sales greater than $10,000 in value are advertised on the open market and subject to competitive bidding. All commercial timber harvesting on NFs is transacted through legally enforceable contracts. Timber sale contracts are the most common mechanism for authorizing timber harvesting activities. Forest Product Removal Permits are used for small

commercial and personal timber cutting with limited resource impacts. Stewardship contracts are used for long term projects that involve both provision of services (e.g., fuels reduction, habitat improvement, etc.) and commercial timber harvesting. Integrated Resource Timber Contracts (IRTC) are used when the value of timber harvested exceeds the cost of services bundled in a stewardship contract. Conversely, when the cumulative cost of services exceeds the timber value in a stewardship project, Integrated Resource Service Contracts (IRSC) are used. Timber sale contracts include both standard provisions that apply to all timber sales, and special provisions that may apply to specific conditions present on each harvest unit. Integrated design features developed by USFS interdisciplinary management teams to protect site-specific resources are also incorporated in timber sale contracts.

Legal Context

Within the United States, federal law is created at the national level and applies throughout the country. States are the primary jurisdictional subdivisions within the US. State governments have authority to regulate local issues.

The US Constitution is the supreme law of the land throughout the country on all ownerships and jurisdictions. Federal statutes are documented in the US Code (USC). Federal laws are also expressed through regulations issued by federal administrative agencies to implement and enforce federal statutes. Regulations have the same force and effect as any law passed by the legislature. Federal regulations specific to the organization and function of the USFS are found in the US Code of Federal Regulations (CFR) Title 36, Chapter II. The US government (and most state governments) operate under the common law system, therefore decisions made within the federal court system to interpret federal laws also have the full effect of law. When a state law is in direct conflict with federal law, the federal law prevails.

The USFS is subject to dozens of federal statutes, which have been transferred to the Code of Federal Regulations (CFR). As an example, the Long Term Management Plan for the Chequamegon-Nicolet National Forest in Wisconsin lists 104 Acts of Congress, and 28 references to Parts of the CFR as applicable to the management and administration of the forest. Applicable laws, regulations, policies and objectives are translated into USFS manuals and handbooks that serve as procedural guidance and instruction to USFS employees throughout the organization. As a rule, unless specific authorities are otherwise designated by the federal government, the USFS is not obligated to recognize state laws and regulations. Notable exceptions include state regulations enacted to enforce the federal Clean Water Act, and Clean Air Act.

Key federal laws that collectively establish the core of the USFS management framework include the National Forest Management Act (NFMA), Multiple-Use Sustained Yield Act (MYSYA), Endangered Species Act (ESA), National Environmental Policy Act (NEPA), Clean Water Act (CWA), Clean Air Act (CAA), and the 2012 Forest Service Planning Rule. Every commercial timber sale is subject to a project specific NEPA process that requires an assessment of potential socio-economic and environmental impacts resulting from the timber harvest and related activities. NEPA assessments include Environmental Impact Statements (EIS) for management activities with the expectation of significant impacts, and Environmental Assessments (EA) when the severity of expected impacts is unclear. Categorical Exclusions (CE) apply when proposed actions are expected to have minimal impacts and must adhere to stipulations detailed in the Code of Federal Regulations Title 36, Section 220.6.

Forestry Best Management Practices (BMPs) for protection of water quality have been developed for each state as part of the states' compliance with the federal Clean Water Act. The National Association of State Foresters (NASF) maintains an interactive map on their website with links to the forestry BMPs developed

for each individual U.S. state. Although state BMPs have many similarities, they vary considerably in the details due to differences in local and regional conditions and operating environments. For example, Riparian Management Zone (RMZ) buffer widths and operational limitations differ from one state to another. Forestry BMPs are considered regulatory (legally required) in 13 states, while 21 states have developed non-regulatory (voluntary) BMPs. Eleven states have quasi-regulatory BMPs where state law has established water quality requirements for silvicultural operations but has not prescribed specific practices to meet legal standards. Five states do not have state-wide regulatory BMPS but allow local jurisdictions to impose legal requirements for protection of water quality in forestry operations (National Association of State Foresters, 2019). The USFS has developed a set of national core BMPs to provide a consistent framework for protection of water quality on NFs (USDA Forest Service, FS-990a, April 2022). The USFS complies with regulatory state and local BMPs as applicable. The USFS National Core BMPs apply on all timber sales on NFs. The USFS is legally required to comply with the US Clean Water Act.

Ecological Context

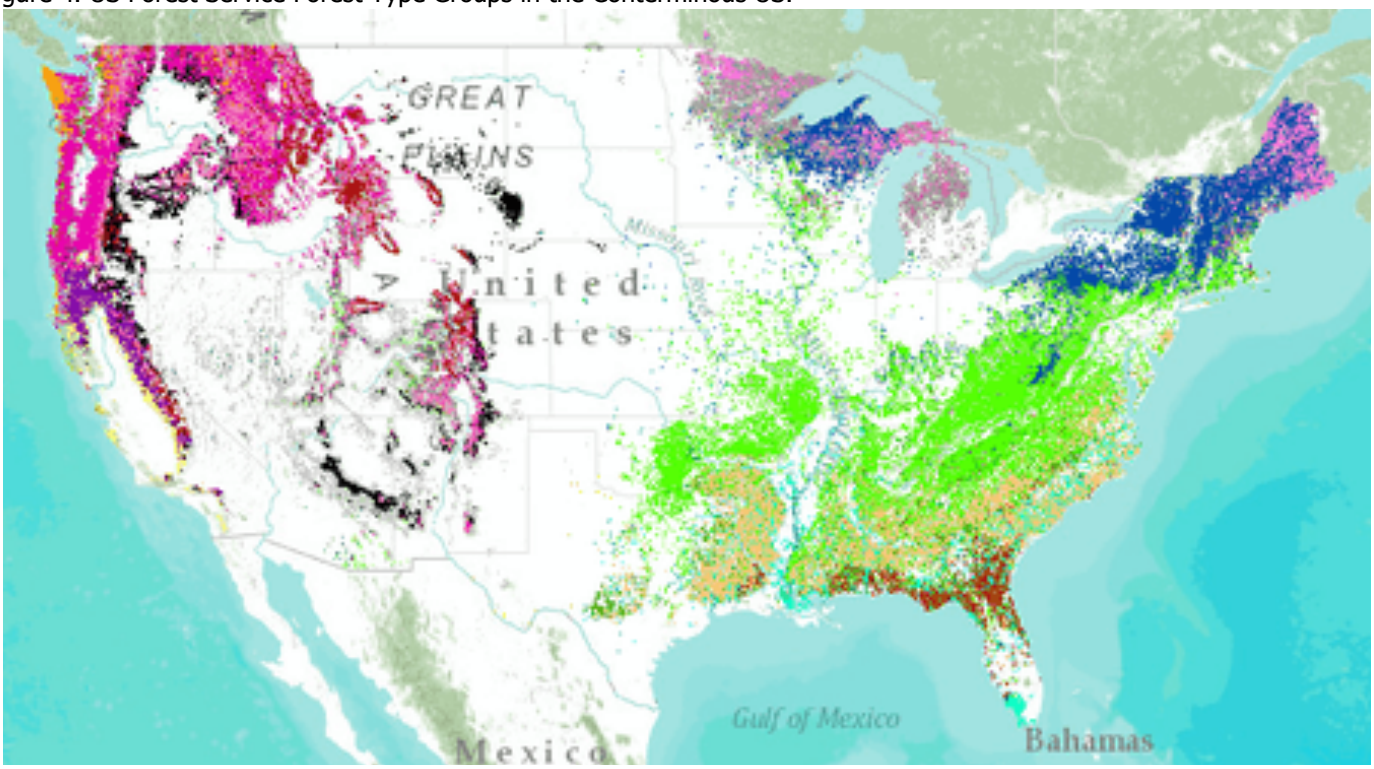
Due largely to its size and wide range of ecosystems, the United States is among the most biodiverse countries in the world, ranking #10 globally (Butler, Rhett A, 2016, updated 2023). The US is one of 17 countries designated as a megadiverse country by Conservation International (Wikipedia, Megadiverse Countries). Collectively, these countries contain about 70% of the worlds biodiversity. The US ranks 16th globally in terms of endemic non-fish vertebrate species (World Economic Forum, June 2024).

The US is also among the most geographically diverse countries in the world, with widely varying topography and geographic features including eight mountain ranges in the conterminous US. The Rocky Mountains in the western US and the Appalachian Mountains in the east serve as bookends to the continental landscapes between the ranges and shape the geographies toward the Atlantic and Pacific oceans. The Great Plains form an expansive and distinguishing landscape in the center of the country. Elevations range from 14,505 feet (4.421 meters) at Mount Whitney to 282 feet below sea level at Badwater Basin in Death Valley. Both of these extremes occur in California, separated by just 85 miles. The southwestern part of the conterminous US is defined by arid landscapes and deserts, while the southeast region includes tropical ecosystems. The northern central portion of the lower 48 states, referred to as the Lake States region is defined by comparatively low elevations and prominent lakes. The northern limits of the Lake States as well as the northeast US border with Canada extend into the boreal zone of North America. The Mississippi River system drains the central region of the US and ranks as the fourth longest in the world. The US Geological Service has defined major physiographic regions in the conterminous US.

Figure 3. CONUS physiographic divisions.

Source: US Geological Survey

Figure 4. US Forest Service Forest Type Groups in the Conterminous US.



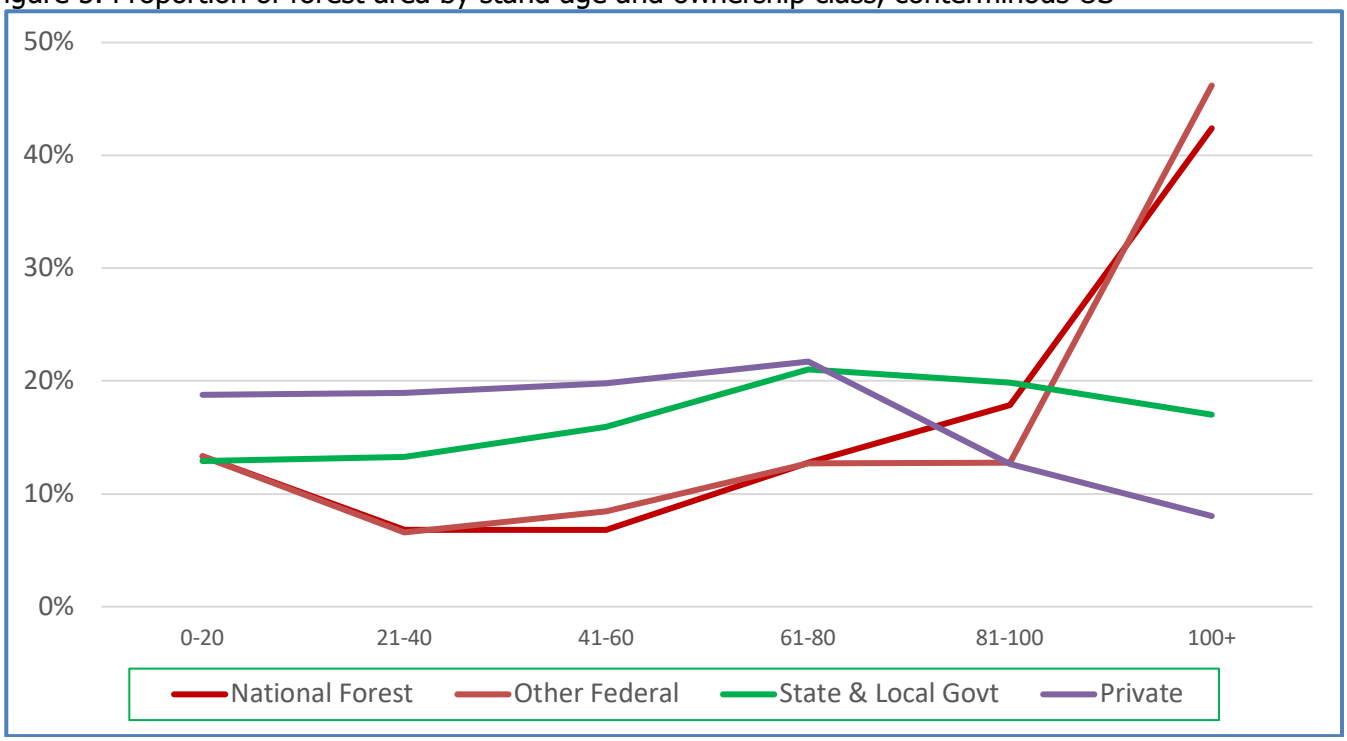
	Forest Type Groups		
	Eastern Groups	**Eastern / Western Groups**	**Western Groups**
Hardwoods	Oak - Pine Group Oak - Hickory Group Oak - Gum - Cypress Group Elm - Ash - Cottonwood Group Maple - Beech - Birch Group Tropical Hardwoods Group	Aspen - Birch Group Exotic Hardwoods Group	Alder - Maple Group Western Oak Group Tanoak - Laurel Group Other Western Hardwoods Group
Softwoods	White - Red - Jack Pine Group Spruce - Fir Group Longleaf - Slash Pine Group Loblolly - Shortleaf Pine Group Exotic Softwoods Group	Douglas-fir Group Ponderosa Pine Group	Pinyon - Juniper Group Western White Pine Group Fir - Spruce - Mountain Hemlock Group Lodgepole Pine Group Hemlock - Sitka Spruce Group Western Larch Group Redwood Group Other Western Softwoods Group California Mixed Conifer Group

Sources: Data Basin and USDA Forest Service

The USDA Forest Service FIA program has identified 28 major forest type groups in the contiguous US. These forest groups are aggregations of 140 discreet forest types and are defined by broad patterns and characteristics of forest ecosystems. Forest types represent a wide range of including rich hardwood forests in the East and Midwest, mesic cove hardwoods in the Appalachian region, temperate pine/fir/hemlock forests in the west, pinyon juniper forests in the southwest alpine and sub-alpine forests in western mountain ranges, boreal forests along portions of the shared border with Canada, prairie-oak savannahs, bottomland hardwoods, and pine forests along the coastal plains of the southeast.

National forests, and federal forest lands in general, are typically managed with less emphasis on generating revenue through timber production than privately owned forests and state and local government forests. Federal lands also include a greater proportion of legally protected areas as a result of federal designations such as wilderness areas, inventoried roadless areas on NFs, wild and scenic river corridors, national parks and other formal designations that exclude or significantly limit timber harvesting. These differences in management objectives are reflected in the age class distribution of forests managed under various ownership classes. The majority of older forests are found on federal lands. Nearly half (45.6%) of all forests aged 100 years and older in the contiguous US are found on NFs. Fully 42% of all NFs are at least 100 years old, compared to 8% for private forests, and 17% for state and local forests (USDA Forest Service, Forest Inventory Analysis (FIA), 2024).

Figure 5. Proportion of forest area by stand age and ownership class, conterminous US

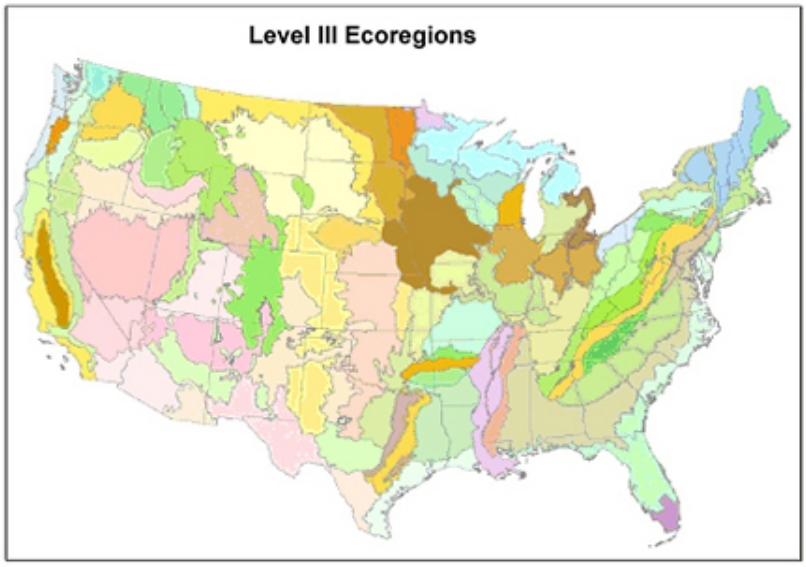


Source: USDA Forest Service, Forest Inventory Analysis (FIA), 2024.

According to the US Environmental Protection Agency, there are 105 distinct Level III Ecoregions identified in the conterminous US (US Environmental Protection Agency, 2024). Commonly referred to as Omernik Ecoregions, these ecological units are defined by a combination of biotic and abiotic characteristics including geology, landforms, soils, vegetation, climate, land use, wildlife, and hydrology. The wide range of ecoregions throughout the lower 48 states is indicative of a highly diverse region.

Similarly, the USDA Forest Service (USFS) has developed a hierarchical system for identifying and defining ecological regions (Cleland, D.T. et al., 2007). Within the USFS system, there are 36 ecological provinces, and 191 ecological sections occurring within the conterminous US. According to the USFS Forest Inventory and Analysis (FIA) Program, at least 13 ecological sections occur on NFs in the lower 48 states.

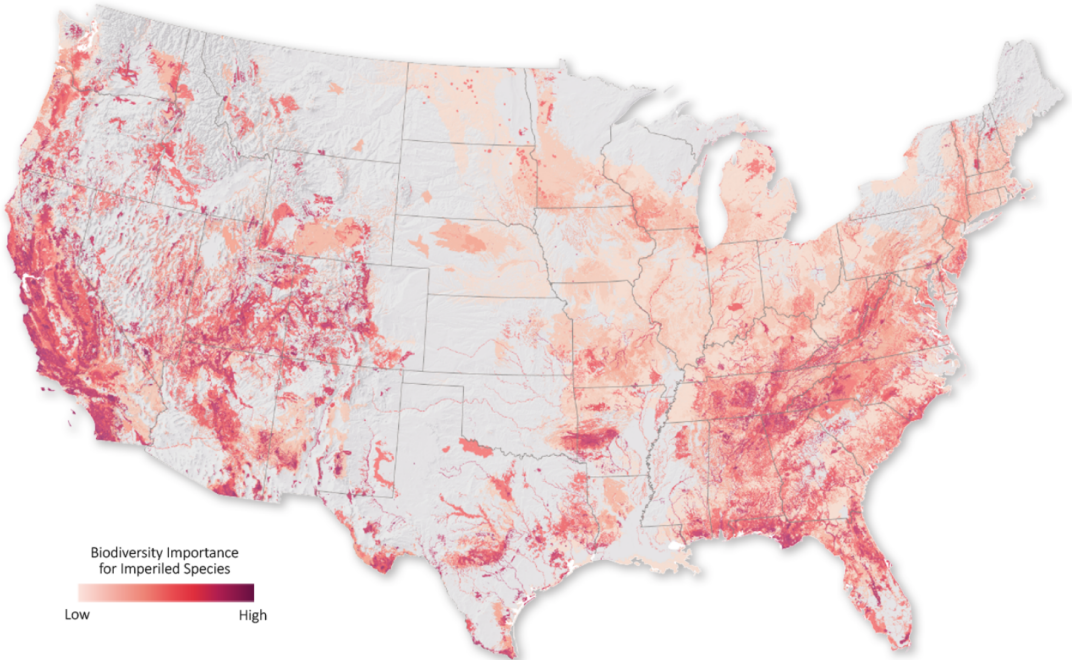
Figure 6. CONUS Level III Ecoregions



Source: US Environmental Protection Agency

NatureServe has developed the Map of Biodiversity Importance (MOBI) to "identify places most important for conserving at-risk species." The map combines modeled habitat data with protected areas to identify specific locations of greatest importance for intervention to prevent further declines of biodiversity. The study found that the USFS has administrative management responsibility for lands that support a total of 418 imperiled species, including 38 species listed as under the Endangered Species Act (ESA). As such, 51% of all at-risk species occurring on federal lands in the US are found in habitats under the stewardship of the USFS. National forests serve an important role in conservation of biodiversity. (Healy et al, 2022)

Figure 7. NatureServe Map of Biodiversity Importance



Source: https://www.natureserve.org/map-biodiversity-importance

The US Geological Survey (USGS) Gap Analysis Project (GAP) published a report in 2019 introducing species richness maps for terrestrial vertebrate species in the conterminous US. Four separate maps produced for

amphibians, reptiles, birds and mammals display concentrations of species throughout the lower 48 states. Greatest species concentrations are generally found in the southeast and western regions of the US (Gergely et al, 2019). These areas of species richness and biodiversity importance largely overlap with the administrative boundaries of USDA Forest Service regions 2, 3, 4, 5 and 8.

The USGS, a federal agency within the USDI, administers the Protected Areas Database of the United States (PAD-US). PAD-US is the official inventory of marine and terrestrial protected areas on both public and private lands. PAD-US is managed by the USGS Gap Analysis Project (GAP) to support preservation of biological diversity and other conservation uses. GAP Status 1 & 2 are permanently protected from conversion of natural land cover and are required to have a management plan that maintains lands in a natural or primarily natural condition. Lands designated as GAP status 3 are also under permanent protection from conversion but are subject to low intensity or localized extractive uses like logging. Gap Status 4 indicates there are no legal restrictions to prevent conversion to unnatural land cover types. As indicated below in Table 3, legally protected natural areas in the conterminous US are disproportionately located on USDA Forest Service lands. One-third of all GAP 1 - GAP 3 lands and 42% of GAP 1 – GAP 3 lands under federal ownership in the lower 48 states are under the jurisdiction of the USDA Forst Service (USGS PAD-US GAP Statistics Dashboard).

Table 3. Protected areas (acres) by land manager and protection status, conterminous US.

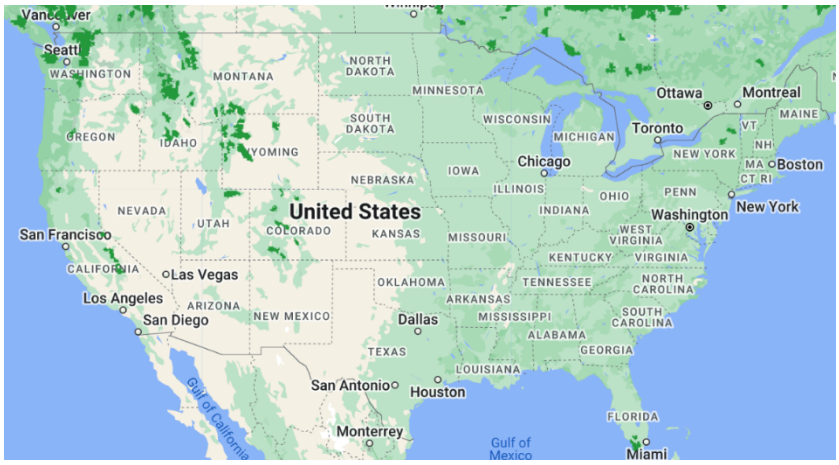
Land Manager Class	GAP 1	GAP 2	GAP 3	GAP 4	Total
Federal	65,135,29	58,069,280	283,257,20	27,932,168	434,393,954
State & Local Government	4,680,038	22,900,211	42,929,579	34,445,397	104,955,224
American Indian Lands	0	7,957	9,710	97,077,115	97,094,782
Private	1,942,129	5,710,178	4,992,029	7,067,554	19,711,891
Joint Ownership	20,747	220,048	177,640	426,114	844,549
Unknown	791,090	2,295,984	7,892,636	1,332,715,22	1,343,694,93
Total All Ownership	72,569,30	89,203,657	339,258,80	1,499,663,57	2,000,695,33
USDA Forest Service	31,106,44	5,288,972	133,508,44	8,940	169,912,791
Forest Service - % Federal Lands	47.8%	9.1%	47.1%	0.0%	39.1%
Forest Service - % All Ownerships	42.9%	5.9%	39.4%	0.0%	8.5%

Source: USGS Protected Areas Database (PAD-US) Statistics Dashboard, 2024

Intact Forest Landscapes (IFL) are defined as forest areas with minimal influence from human economic activity that are large enough to maintain all native biological diversity, including viable populations of wide-ranging species. IFLs are at least 50,000 hectares in size, and at least 10 kilometers wide. Nearly all IFLs in the CONUS are located is the western states (see figure 8).

The USFS has not adopted the term "Intact Forest Landscapes," however the IFL concept overlaps with the USFS approach for identifying and protecting large, native forest ecosystems with minimal human (economic) disturbance. Wilderness Areas are formally designated by the US Congress under the Wilderness Act, are generally at least 5,000 acres in size, are primarily affected by natural dynamics, and are legally protected from development and permanent improvements. The National Wilderness Preservation System includes nearly 112 million acres in over 800 designated Wilderness Areas located throughout the US (44 states). Wilderness Areas are located on federal lands managed by managed by four federal agencies: BLM, NPS, USFWS, and USFS. There are 448 designated Wilderness Areas with a total cumulative area of over 36 million acres located within NFs (Wilderness Connect). Wild and Scenic Rivers are also formally designated by the US Congress to protect rivers with outstanding natural, cultural, and recreational values in a free-flowing condition. The USFS manages over 5,000 miles of Wild and Scenic River corridors. Inventoried Roadless Areas are formally designated under the 2001 Roadless Area Conservation Rule to protect and conserve ecological and social values within inventoried roadless areas on NFs. Roadbuilding and timber harvesting are generally prohibited in Inventoried Roadless Areas. Roadless Areas cover 58.2 million acres of NFs in 38 states within CONUS. Late Successional Reserves, established as part of the 1994 Northwest Forest Plan, are established to protect critical habitat of Rare, Threatened and Endangered (RTE) species (e.g., northern spotted owl, marbled murrelet), and to protect and restore late-successional and old-growth (LSOG) ecosystems. There are over 7 million acres of LSRs on NFs in California, (CA), Oregon (OR) and Washington (WA).

Figure 8. Intact Forest Landscapes, CONUS



Source: Intact Forest Landscapes, www.i www.intactforests.org.
Note: IFLs are illustrated with a dark green color in the map.

The Forest Stewardship Council (FSC) has adopted a framework for identification and protection of areas supporting critical ecosystem services and biodiversity developed by the High Conservation Value (HCV) Network. The HCV Approach includes six categories of HCVs, including HCV2 which addresses large landscape level ecosystems and IFLs. The FSC US Controlled Wood National Risk Assessment (NRA) found that IFLs "largely occur" within areas with permanent legal protection from timber harvest, such as designated Wilderness Areas or National Parks. National Parks are designated by the US Congress and are protected areas of natural, historical, or cultural significance managed by the USDI National Park Service. Almost all IFLs existing outside areas with permanent legal protect are found in Inventoried Roadless Areas on NFs, which are administratively protected from timber harvest, with narrowly defined exceptions.

Socio-economic Context

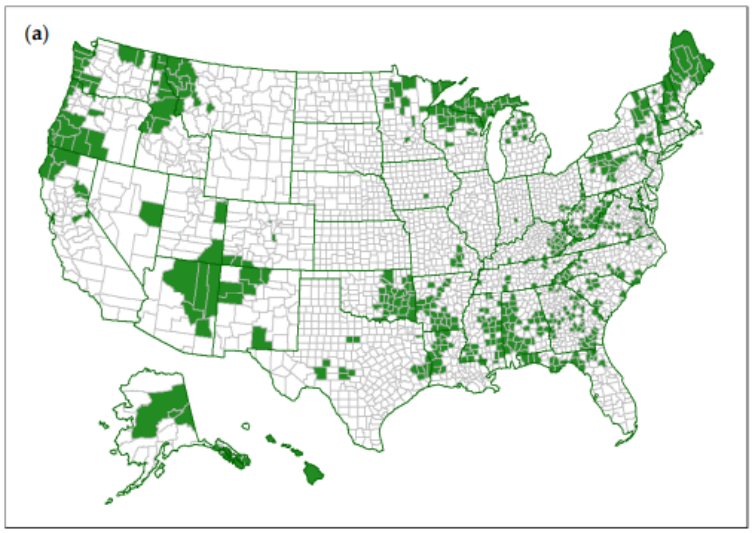
The United States is the global leader in both production and consumption of wood products. According to the Food and Agriculture Organization of the United Nations (FAO), the US is the largest producer of industrial roundwood, wood pellets, and pulp for paper, and is the second leading producer of sawn wood, wood-based panels, recovered paper, and paper and paperboard (Alderman, D., Brandeis, C., 2022).

The forest products industry is a contributor to the US economy generating over $353 billion in annual output, representing 5% of the national manufacturing gross domestic product (GDP). The forest products industry is also a major employer, listed as a top 10 manufacturing employers in 43 states providing over 925,000 jobs and over $64 billion in wages (American Forest and Paper Association, December 2022).

Outdoor recreation is an important and growing use on national forests. According to the 2022 U.S. Forest Service National Visitor Use Monitoring Survey Results National Summary Report, from 2018 to 2022 the USFS estimated 159 million visits to national forests by recreational users. These recreation visitors spent about $11 billion in FY2021 in local communities. Inclusive of indirect economic impacts, recreation on the National Forests System contributed approximately $13.7 billion to the US gross domestic product and supports roughly 161,000 jobs. The US forest products industry also contributes significant social and economic value for rural communities. The majority of forest products primary manufacturing jobs and facilities are located in rural areas. When considering indirect and induced effects, the forestry and forest products sector supports 2.9 million jobs and over $128 billion in wages (Forest2Market, 2019).

There are 524 counties representing nearly 17% of all counties in the US that are identified as home to one or more forest dependent communities. Forest dependence is measured using three criteria: 1) reliance on ecosystem services provided by a forest for basic community functions; 2) reliance on forests to support livelihoods and subsistence; 3) population of Native Americans as a proxy for social and cultural dependence on forests. Forest dependent communities are located in most states throughout the US and are most heavily concentrated in the Pacific Northwest and Southeast regions (Frey, G.E. et all, 2022). Although national forests produce a relatively small proportion of the national timber harvest volume, there is a strong relationship between the location of national forests and forest dependent communities.

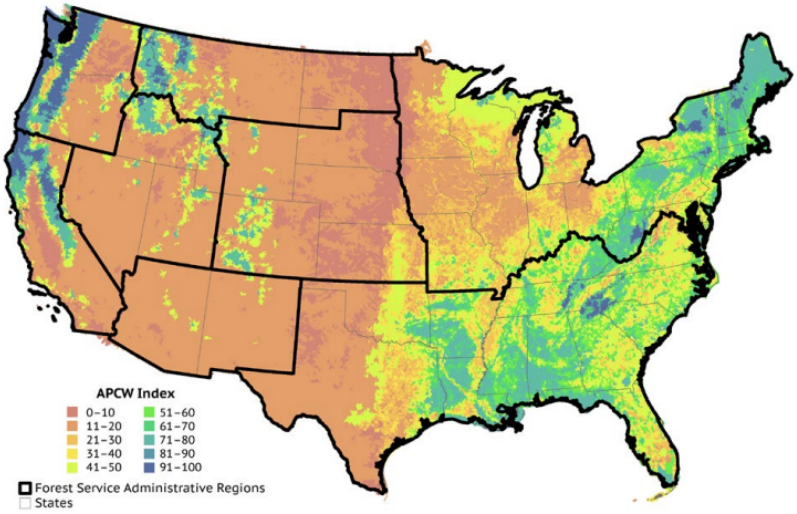
Figure 9. Forest Dependent Communities in the United States



Source: Defining and Measuring Forest De 1 Dependence in the United States: Operationalization and Sensitivity Analysis.

Forests are also an important source of drinking water for over 150 million people in the US, providing over half the water sourced from lands in the contiguous US. The 2022 Forests to Faucets 2.0 report produced by the USFS identified the ability to produce clean water for over 83,000 watershed in the conterminous US (Mack et al, 2022). The study identifies watersheds with the greatest importance to surface drinking water and the greatest potential to produce clean water. Higher scores indicate greater value to clean water. The location of watersheds with the highest importance and greatest potential to produce clean drinking water align closely with the location of national forests throughout the country, indicating the importance of the NFS in providing critical ecosystem services to nearby as well as distant communities.

Figure 10. Ability to Produce Clean Water (APCW) Index Map, CONUS.



Source: USDA Forest Service, Forests to Faucets 2.0, February 2022.

The majority of public land in the lower 48 states has been acquired by the US government through treaties signed with Native American Indian tribes. There are 574 federally recognized tribes in US. In total, 359 of these tribal entities are located in the lower 48 states (US General Services Administration). Between 1722 and 1868, 374 treaties with Indian tribes were ratified by the US Congress (US National Archives and Records Administration). Roughly 60 tribes have retained usufruct rights to lands and resources located outside the reservation boundaries established by treaties. Off-reservation treaty rights include livestock grazing, hunting, fishing, gathering, and water usage rights.

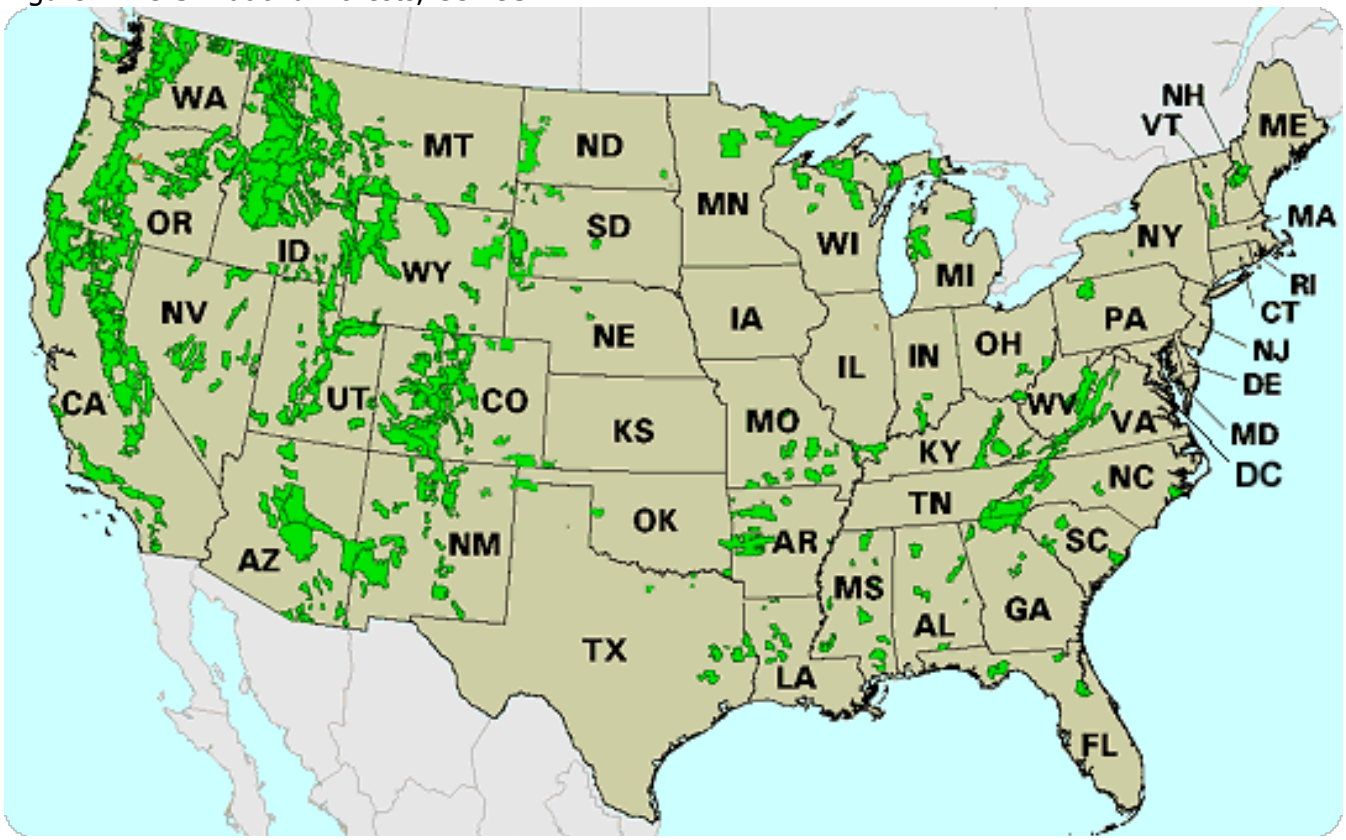
Treaties signed by tribes and the US government are equivalent to federal law and are binding on both parties. As such, the US government, including federal agencies, are legally required to protect treaty rights both on- and off-reservation lands. The United States has a duty to protect these treaty rights, as these rights are agreed upon by government-to-government agreement, or as defined by statute or court decision. The US Forest Service is bound to consult with tribes and ensure tribal rights are not infringed upon as a result of management activities on national forests (Forest Service Manual 1500, Chapter 1563). There are approximately 4,000 miles of shared boundaries between tribal lands and lands administered by the USFS. Advancement of formal agreements for co-stewardship of national forests with American Indian tribes is explicitly identified as a priority in a 2021 Joint Secretarial Order (Order No. 3403) issued by the Secretary of Interior and the Secretary of Agriculture. In the two years following the issuance of Joint Secretarial Order 3403 the USFS has executed more than 180 co-stewardship agreements with tribes (USDA Forest Service, 2023 Annual Report on Tribal Co-stewardship).

2.2 Statement of scope and sub-scopes

The area covered by this RRA includes all US National Forests in the lower (contiguous) 48 states. The contiguous US does not include Alaska or Hawaii. The contiguous US is bordered by Canada to the North and Mexico to the south, extending from the Pacific Ocean at its western extent, to the Atlantic Ocean on

the east, and the Gulf of Mexico to the southeast. The NFS in the contiguous U.S. spans 38 of the 48 states and covers over 164 million acres (66 million ha) of forests. National forests, and federal lands in general, are more heavily concentrated in the western states.

Figure 11. U.S. National Forests, CONUS.



Source: USDA Forest Service Schedule of Proposed Actions

The NFMA requires the USFS to determine the suitability of national forest system lands for timber production (NFMA, Section 6). Each LRMP is required to identify all lands that are both suited and not suited for timber production, using criteria specified in the NFMA (FSH 1909.12.61) and the 2012 Forest Service Planning Rule (36 CFR 219.11). Timber production is defined as "the purposeful growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use" (36 CFR 219.19). The USFS also uses timber harvesting to achieve objectives other than timber production such as habitat improvement, restoration, and fuel reduction. Timber harvesting is defined as "the removal of trees for wood fiber use and other multiple-use purposes" (36 CFR 219.19). Timber harvesting on any NFS lands is subject to certain limitations and is prohibited if the harvesting results in irreversible damage to soils and other watershed conditions. Plan components must be developed to address harvest for purposes of timber production and for purposes other than timber production (FSH 1909.12.61). The scope of the RRA includes all NFS forest lands that are legally and administratively determined to be subject to commercial timber harvesting, which includes both lands determined to be suitable and unsuitable for timber production, with limitations described above. The majority of annual timber harvests occur on lands designated as suitable for timber production (Table 4).

Table 4. Area of timber sales sold by land suitability designation on all CONUS NFS lands in 2023.

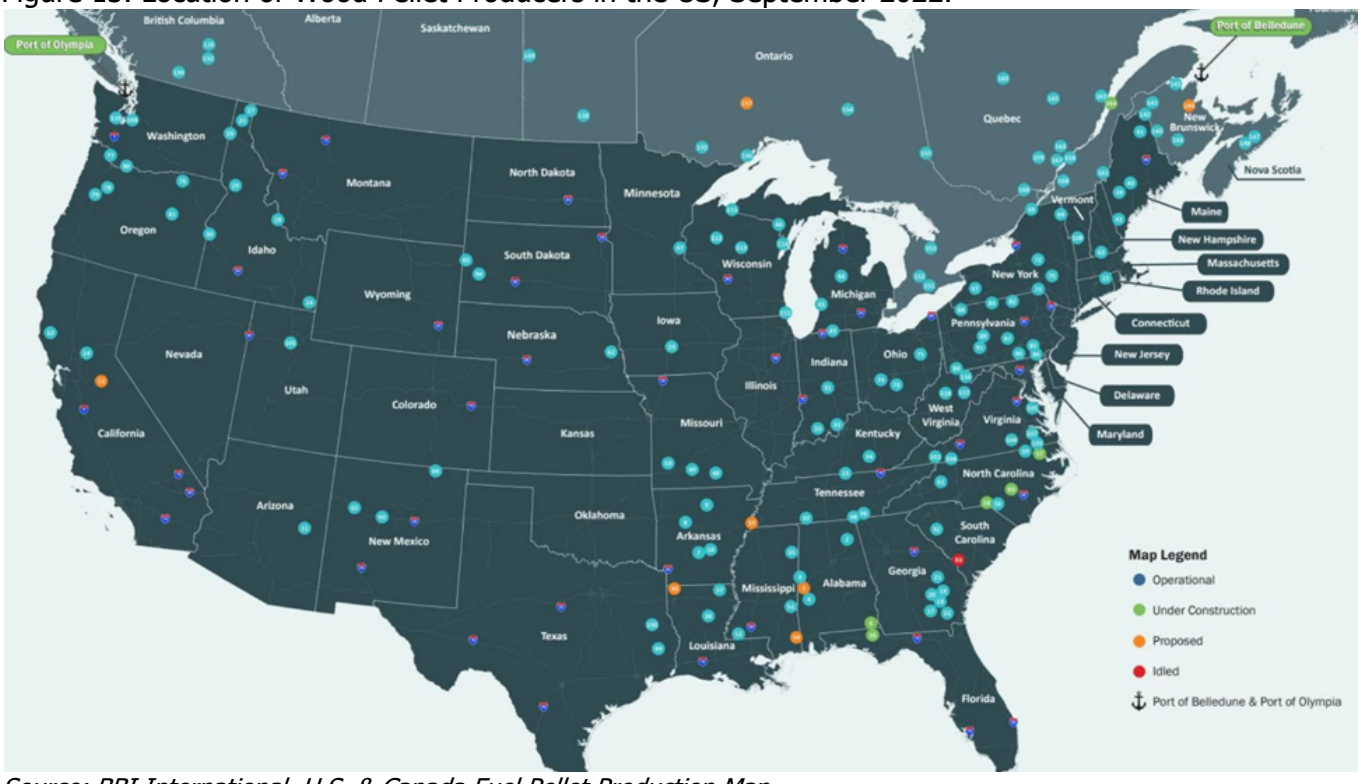
Land Suitability Designation	Acres	%
Suitable for timber production	312,426	98%
Not suitable for timber production	5,500	2%
Total Area	317,926	100%

Source: USDA Forest Service.

2.3 Overview of the local biomass sector

As of September 2022, there were 118 operating pellet mills in the US with a cumulative production capacity of 13,902,300 metric tons (MT). An additional 2,710,000 MT in capacity was either proposed or under development via new mill construction or expansion of existing mills (BBI International, 2023). The domestic wood pellet market is driven mostly by residential heating and to a much lesser extent, by commercial use including industrial processes, heat for commercial buildings, and district CHP facilities. The majority of wood pellet plants in the US are located in the Southeast, Northeast, and Northwest regions. North Carolina (NC), Georgia (GA), Mississippi (MS) and Louisiana (LA) were the top pellet producing states in 2023.

Figure 13. Location of Wood Pellet Producers in the US, September 2022.

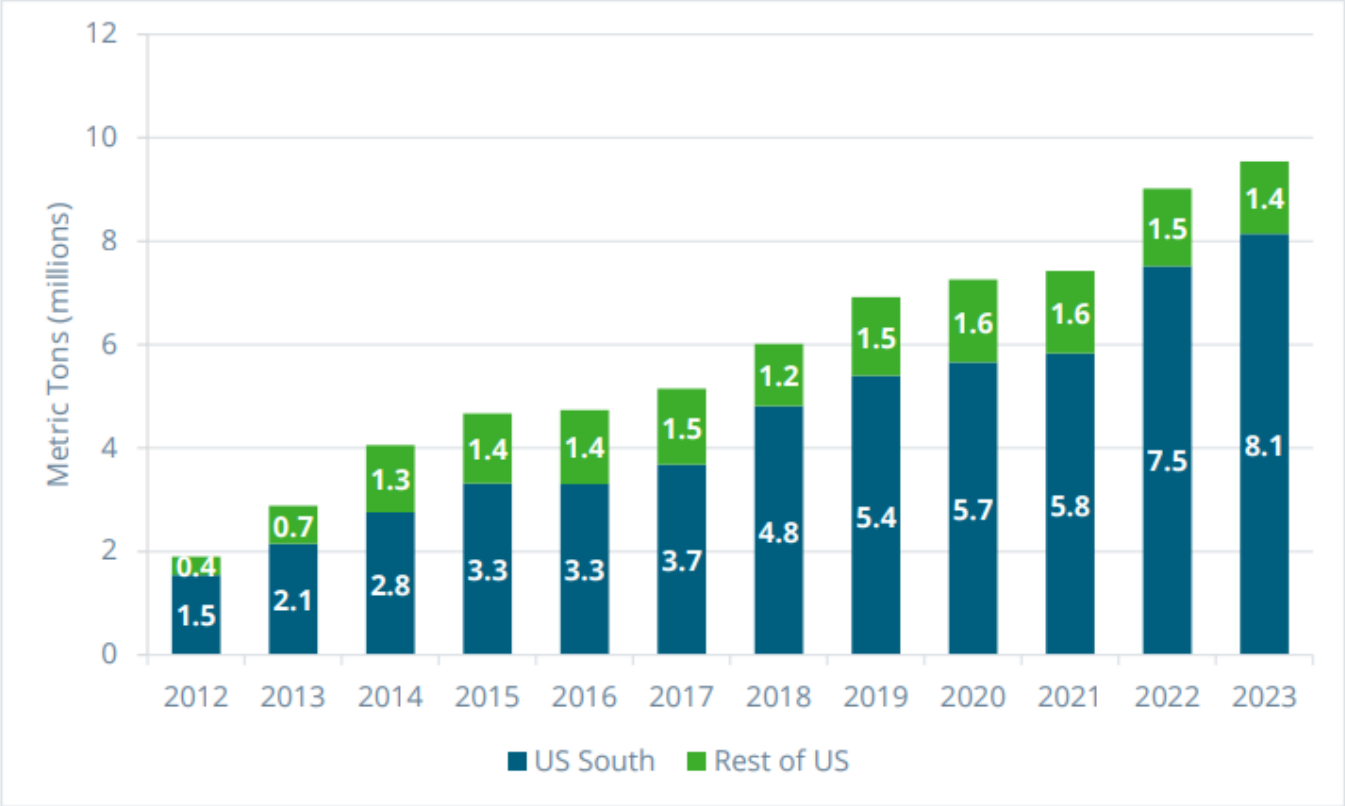


Source: BBI International, U.S. & Canada Fuel Pellet Production Map

The wood pellet market has seen significant continuous growth since at least 2012, driven largely by European demand for renewable energy sources. During this time the industry evolved from small-scale plants supplying the domestic heating market to larger export-oriented facilities. In 2015, approximately 63% of US wood pellet production was sold into export markets. The US Industrial Pellet Association (USIPA) is the primary trade association representing the US wood energy sector.

The growth of the wood pellet market in the US has coincided with a decline in domestic pulp and paper production. Among industries consuming pulpwood and wood fiber residuals, the pellet industry represented 6.1% of market share in 2023 (ResourceWise, 2024). The US is the world's largest exporter of industrial wood pellets with 9.5 million metric tons valued at $1.75 billion exported in 2023. The Southeast Region serves as the heart of the export market, producing 85% of the total national industrial pellet volume in 2023.

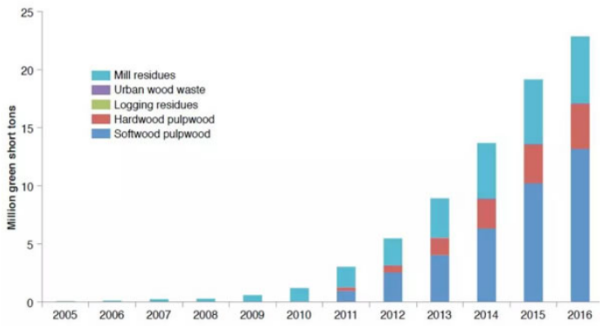
Figure 14. US Production of Industrial Wood Pellets



Source: ResourceWise, August 2024.

The US woody biomass market is supplied mainly by primary feedstock (roundwood) produced during intermediate thinning in even-aged softwood stands, or as a secondary low value by-product of sawlog timber harvests. Biomass producers may compete with pulp mills where their wood sourcing areas overlap. Sawmill residuals are a significant source of raw material, particularly for some mills that are supplied primarily by mill residuals. In-woods chipping operations are also an important resource for pellet mills, although their relative importance may vary depending on the location of the pellet mill and the availability of other raw material sources in the area. Logging residues such as limbs and tops can be fed

Figure 15. Raw material consumption for US wood pellet production, 2005 - 2016

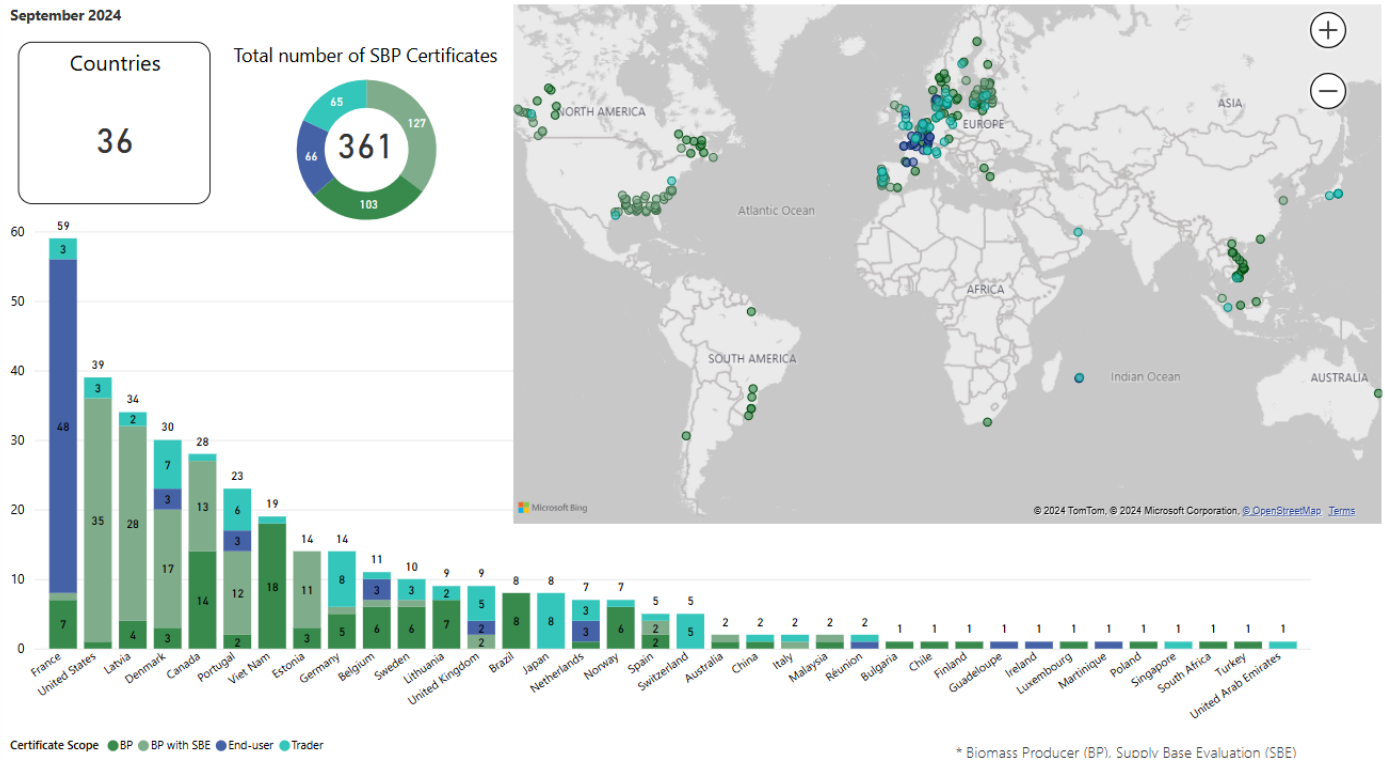


Source: Gemco Energy

into chipping operations, but are not by themselves a significant source of feedstock for US pellet mills.

The US serves as a producer country for industrial wood pellets, providing feedstock for large scale industrial power generating facilities located primarily in western Europe and to a lesser extent, southeast Asia. By the end of 2023, nearly 50% of the global supply of SBP certified material originated in the US.

Figure 16. Global distribution of SBP certificates, September 2024.



Source: Sustainable Biomass Program

3 Methodology

The US NFS RRA has been conducted in accordance with all applicable components of the SBP normative framework including SBP Framework Standard 1 V2.0, Framework Standard 2 V2.0, and the SBP RRA Procedure V1.2. Recommended control measures are provided as applicable to mitigate elevated (i.e., "specified") risks identified in the risk assessment.

Framework Standard 1: Feedstock Compliance is organized into Principles, Criteria, and Indicators. In all, there are 4 Principles that address core issues of legality of biomass, environmental impacts, effects on carbon stocks and benefits to people and communities. These four Principles are further expressed through a total of 7 Criteria. The Criteria are in turn articulated in greater detail through a total of 42 Indicators. In the SBP framework, conformance is evaluated at the Indicator level.

The size and geographic scope of the NFS, in combination with the systematic implementation of a national management framework, indicate a sampling methodology is both necessary and appropriate to effectively evaluate risks on NFs throughout the US. Recognizing the homogeneity within the NFS management framework, a sampling methodology informed by both the uniformity of management systems, and variability in operating conditions, is most appropriate for ensuring reliable and effective assessment of risks across a representative range of variables.

The sampling strategy used for the US NFS RRA is applied at two USFS administrative levels: Region and National Forest. The rationale for this approach is based on overlapping objectives of evaluating consistency in the implementation and administration of the USFS national management framework, and effectiveness in adapting to local conditions and local community values. This approach also facilitates evaluation of the homogeneity of risk at two scales that combine both geographic and functional elements of the NFS framework. Because NFs are sometimes consolidated into a single administrative unit, LRMP's function as a proxy for NFs. These plans serve as the fundamental instrument guiding management activities within each forest. As such, LRMP's also define the most granular scale of homogeneity within the NFS. There are a total of 8 Regions and 122 approved LRMP's within the NFS in the contiguous US.

Table 5. Total timberland area, live tree volume, and states within the contiguous US

Region	Timberland (acres)	Live Tree Volume (cubic feet)	Number of States
All Lands & Ownerships	495,009,750	210,836,955,837	48
US National Forests	91,334,121	52,593,308,929	38
Northern Region (R1)	17,001,210	8,041,848,965	1.5
Rocky Mountain Region (R2)	10,240,013	3,379,588,036	4
Southwestern Region (R3)	4,701,620	2,402,035,340	2
Intermountain Region (R4)	11,761,460	3,892,329,211	2.5
Pacific Southwest Region (R5)	8,580,875	8,194,402,656	1
Pacific Northwest Region (R6)	16,765,292	16,226,586,693	2
Southern Region (R8)	12,283,259	6,834,775,558	13
Eastern Region (R9)	10,002,882	3,621,742,470	12

Source: USDA Forest Service, Forest Inventory and Analysis (FIA), EVALIDator tool

The RRA process will focus on a sample set of three Regions and nine National Forests. To ensure our sampling is representative of the NFS, Regions and LRMP's were selected based on several administrative, environmental, social, and economic factors (Table 6).

Regions to be sampled include Region 2 (Rocky Mountain), Region 5 (Pacific Southwest), and Region 8 (Southeastern). These three regions include 18 (47%) of the lower 38 states that contain at least one NF and represent 32% of NF timberland as well as 29% of live tree volume on NF timberland (Table 5). Timberland is defined as being capable of producing at least 20 cubic feet per acre per year of tree volume, and able to be legally harvested at the culmination of mean annual increment.

National Forests/LRMPs to be sampled include Grand Mesa, Uncompahgre, and Gunnison National Forests (R2); Shoshone National Forest (R2); Six Rivers National Forest (R5); Lassen National Forest (R5); Modoc National Forest (R5); Nantahala & Pisgah National Forests (R8); National Forests in Mississippi (R8); Francis Marion National Forest (R8); and Chequamegon-Nicolet National Forest (R9). Collectively, these NFs contain 12 of 36 ecological provinces identified in the contiguous 48 states (Cleland et al, 2007), and represent 8% of the NF lands in the contiguous 48 states.

Table 6. National Forests sampled during the RRA, and relative proportion of the total cumulative area in all National Forests in the Conterminous US.

National Forest	Region Name	Region No.	Area (ac.)	% Total Area
All NFs in Contiguous US	N/A	N/A	164,025,333	100%
All Sampled NFs	N/A	N/A	13,141,203	8.0%
Grand Mesa-Uncompahgre-Gunnison (GMUG) NFs	*Rocky Mountain*	*4*	2,964,220	1.8%
Shoshone NF	*Rocky Mountain*	*4*	2,439,093	1.5%
Lassen NF	*Pacific Southwest*	*5*	1,066,027	0.6%
Modoc NF	*Pacific Southwest*	*5*	1,680,405	1.0%
Six Rivers NF	*Pacific Southwest*	*5*	977,090	0.6%
Nantahala-Pisgah NFs	*Southern*	*8*	1,041,583	0.6%
NFs in Mississippi NF	*Southern*	*8*	1,190,408	0.7%
Francis Marion NF	*Southern*	*8*	258,673	0.2%
Chequamegon-Nicolet NF	*Eastern*	*9*	1,523,704	0.9%

Source: USDA Forest Service.

Information and evidence was sought from each of three sample regions for all SBP Standard 1 indicators. Individual indicators were assigned to each of nine NFs such that roughly one-third of all Standard 1 indicators were allocated to each NF. Questionnaires were provided to each of three USFS regions nine NFs selected for the sample group. Regional and forest staff appointed to participate in the assessment process were asked to provide written responses to questions and provide recent examples of relevant evidence to support their responses. Virtual assessments were held via video conference at regional and forest levels to further investigate, supplement, and clarify written responses. Additional information and evidence was provided through an iterative process following a review of information initially provided during the virtual assessments.

Several informative presentations, orientation webinars and interactive Q&A sessions were held with USFS staff to facilitate understanding of the SBP RRA process, and to assist USFS in preparing for subsequent assessment interviews.

A project management team of USFS national staff served as liaisons in coordinating communication, organizing meetings and interviews with regional and forest-level staff, collecting and providing relevant evidence, identifying additional contacts and sources of information, and providing a factual review of the draft RRA report. Bi-monthly meetings and regular check-ins were conducted with members of the USFS project team throughout the RRA assessment process. Similarly, periodic meetings with SBP staff were held throughout the RRA process.

Additionally, two members of the Working Body participated in the development of a separate US RRA for all forest ownership in several eastern US states that was conducted in parallel with the US NFS RRA. Although the methodology and administration of the two RRAs are unique to the circumstances and scope of each project, this sharing of resources facilitated cooperation and an appropriate level of alignment between the two processes.

An initial pre-consultation draft of the RRA report was provided to the USFS for factual review and comment. The pre-consultation draft was also provided to SBP for review and comment.

3.1 Data collection

Building on the findings generated in earlier gap analyses, the Working Body collected relevant evidence and information through research of public sources, direct interviews with USFS staff, documents and records provided by USFS staff, and consultation with experts and stakeholders.

Questionnaires were developed and provided to each of the nine NFs sampled during the RRA process. Within each questionnaire, a series of related questions were assigned to each SBP Standard 1 Indicator. USFS staff representing each NF and Region assigned to participate in the RRA were instructed to provide written responses to the questions describing how they address the SBP requirements in their daily work responsibilities, and to provide recent examples of reports, documents or other documentation to substantiate their responses. Video conferences were conducted by Working Body members involving USFS staff from all NFs and Regions to allow for follow up questions and discussion. Additional questions and requests for supporting evidence were presented to USFS staff in an iterative manner as necessary to fully address the Indicators. Additional information regarding the FIA Program, as well as access to all tools, reports, and other resources can be found here.

Numerous laws and regulations have been referenced throughout the RRA process. Laws are typically formal Acts of the US congress enacted by the Legislative Branch of the US federal government. Original text for Acts of Congress can easily be located by name with internet search engines. All permanent federal statutes, including the US Constitution and Acts of Congress, are compiled in the United States Code (USC). The USC is The Code is maintained by the Office of the Law Revision Counsel of the U.S. House of Representatives. There are 54 titles in the USC organized by broad subject areas. Federal regulations are codified in the Code of Federal Regulations (CFR), and are organized by Title, Chapter and section. Many regulations relating to the USDA Forest Service can be found udder CFR Title 36. Specific references are cited throughout the report.

The USDA Forest Service Forest Inventory and Analysis (FIA) Program served as a significant source of forest data throughout the RRA process and is referenced consistently within the RRA report. In particular, the FIA EVALIDator Tool has been used extensively. The FIA is a comprehensive national forest monitoring system for all forest lands across the United States, including both public and private lands. While the FIA Program is administered by the USDA Forest Service, data collection and management is a collaborative effort involving federal, state and private entities. There are approximately 355,000 permanent inventory plots located across the country, with approximately 10% of plats remeasured on an ongoing annual basis.

Public engagement and collaboration with other agencies is a fundamental legal requirement throughout the NFS management system, resulting in a comparatively high degree of documentation, transparency and accessibility. As a result, there was no need for field verification and all evidence was gathered remotely.

3.2 Selection of indicators to be updated

As this is the first version of the USNF RRA, this section is not applicable.

3.3 Risk classification

Risk designations are provided for each indicator in SBP 1 – Feedstock (Raw Materials) Compliance, v2.0, May 2023 and as described in the Directive on the promotion of the use of energy from renewable sources. In the event that available evidence of conformance is insufficient to support a clear and defensible determination of low risk, as a precautionary measure, specified would be assigned to the indicator. For any indicators designated with "specified" risk, control measures shall be proposed as appropriate to reduce the risk to low.

A detailed description of the evidence, findings, and assessment results are provided in Annex 1 of this RRA report. Risk determinations are based on assessments of the cumulative body of evidence associated with each indicator and are applicable to the entire NFS unless otherwise noted.

Mitigation of specified risks is the sole responsibility of biomass producers that wish to incorporate feedstock sourced from national forests in the conterminous US into their SBP-certified supply base. The USDA Forest Service is not responsible for addressing or mitigating any risks identified in this RRA. However, when practical and in alignment with forest plans, the USFS may work with the BP to do so, for example by providing relevant data, reports, or other information.

4 Stakeholder Consultation

A 30-day public consultation was implemented beginning on November 11, 2024, and ending on December 11, 2024. The purpose of this consultation is to gather input from interested parties regarding conformance of feedstock source from US national forests with applicable SBP Standard 1 indicators. The public consultation process followed the SBP RRA Procedure as described in Section 5: Working Body Stakeholder Consultation on the Draft RRA Report. Targeted stakeholder consultation was conducted as necessary during the information gathering and drafting of the RRA and constitutes an important source of information.

The distribution of requests for comments by organizations and individuals included a representative cross-section of stakeholder groups and included more than 250 contacts. Stakeholders invited to participate in the public consultation were comprised of representatives from the following groups:

- forestry and forest products industry representatives
- forestry consultants
- forest contractors
- state and national professional associations
- academia and research organizations ▪ environmental conservation organizations
- advocacy organizations
- federally recognized tribes
- worker associations
- local community representatives
- certification programs
- other self-identifying individuals and organizations.

The composition of the stakeholder list was further informed by the characterizations (i.e., economic, social, environmental, etc.) provided in SBP Regional Risk Assessment Procedure, Annex 1. The list of potential stakeholders was reviewed by the project partners prior to the consultation. A notice to all interested parties will also be posted online during the entire consultation period.

Feedback from stakeholders and experts was gathered primarily through a secure on-line survey. Stakeholders were also invited to provide feedback using other methods of communication. Participating stakeholders were given the option to participate anonymously.

All the information gathered during the consultation was analyzed by the working group and documented in a separate stakeholder consultation report. Modifications to the draft RRA report will be completed as appropriate in response to relevant stakeholder feedback. A revised draft RRA report will then be submitted to the SBP in December 2024 for review and comment by the SBP Secretariat, external expert, and SBP Technical Committee. SBP and the Working Body will work together until the end of the process, with the aim of approving the updated RRA in the first quarter of 2025.

A complaints procedure and statement of confidentiality for anonymous participation in the public consultation are available upon request.

5 Conclusions

Based on the analysis carried out and the findings related to the indicators presented in Annex 1, it can be concluded feedstock sourcing for biomass production from US National Forests is low risk.

All of the 42 indicators are assessed to be in a low-risk class. Table 7 lists the risk classifications proposed in this draft RRA report.

Table 7. US NFS RRA Summary of Indicator Risk Designations.

Indicator	Risk Designation
1.1.1	Low risk
1.1.2	Low risk
1.1.3	Low risk
1.1.4	Low risk
1.1.5	Low risk
2.1.1	Low risk
2.1.2	Low risk
2.1.3	Low risk
2.2.1	Low risk
2.2.2	Low risk
2.2.3	Low risk
2.2.4	Low risk
2.2.5	Low risk
2.2.6	Low risk
2.2.7	Low risk
2.2.8	Low risk
2.2.9	Low risk
2.2.10	Low risk
2.2.11	Low risk
2.2.12	Low risk
3.1.1	Low risk
3.2.1	Low risk
3.2.2	Low risk
3.2.3	Low risk
3.3.1	Low risk
4.1.1	Low risk
4.1.2	Low risk
4.1.3	Low risk
4.1.4	Low risk
4.1.5	Low risk
4.1.6	Low risk
4.1.7	Low risk
4.1.8	Low risk
4.1.9	Low risk
4.1.10	Low risk
4.2.1	Low risk
4.2.2	Low risk
4.2.3	Low risk
4.2.4	Low risk
4.2.5	Low risk
4.2.6	Low risk
4.2.7	Low risk

Principle 1 – Feedstock is legally sourced	
Criterion 1.1 – **Operators and operations are legal.**	
1.1.1	Operations related to feedstock sourcing and biomass production shall comply with all existing applicable laws and regulations.
Findings	**Scale of assessment** All US National Forests in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 2, Region 5, Region 8, Nantahala-Pisgah NF, Six Rivers NF, Grand Mesa Uncompahgre and Gunnison (GMUG). The USFS Chief has overall responsibility for national strategic planning including commercial timber sales, stewardship projects, and projects implemented using the good neighbor authority. The Forest Service Handbook FSH - 1909.12 Chapter 20 Land Management Plan describes the planning requirements of 36 CFR 219 - 2012 Planning Rule. Wood harvests are prescribed in compliance with the Land Management Plan of the NF. The Plan components are based on integrated resource requirements (i.e.., Ecological Sustainability and Diversity of Plant and Animal Communities (i.e., biodiversity conservation values, environmental impacts), Social and Economic Sustainability and Multiple Use (i.e., user and tenure rights)). They must include Proposed and Possible Actions which include planned timber sale program and timber harvesting levels. Forest Supervisors have authority for development and approval of forest plans, and District Rangers are responsible for ensuring adherence to all applicable laws and regulations in the planning, assessment and implementation of forest management activities within their assigned districts (see FSM 2400 Timber Management Chapter Zero for detailed staff responsibilities). According to FSM 1000, Section 1011 (Effective May 17, 1991), Forest Service supervisors are required to make sure "employees are aware of the provisions of law applicable to their responsibilities and that Forest Service programs and operations are administered in compliance with applicable laws." Further, the USFS Director of Legislative Affairs is responsible for ensuring operational units within the Forest Service are informed of the relevant content of major laws relating to Forest Service activities, including notification of newly approved statutes. All position descriptions include a section on laws, regulations and policies. The removal of wood products from Forest Service land requires a contract. Under 36 CFR §261.6 the following are prohibited: (a) Cutting or otherwise damaging any timber, tree, or other forest product, except as authorized by a special-use authorization, timber sale contract, or Federal law or regulation. (b) Cutting any standing tree, under permit or timber sale contract, before a Forest Officer has marked it or has otherwise designated it for cutting.

(c) Removing any timber or other forest product cut under permit or timber sale contract, except to a place designated for scaling, or removing it from that place before it is scaled, measured, counted, or otherwise accounted for by a forest officer.

(d) Stamping, marking with paint, or otherwise identifying any tree or other forest product in a manner similar to that employed by forest officers to mark or designate a tree or any other forest product for cutting or removal.

(e) Loading, removing or hauling timber or other forest product acquired under any permit or timber sale contract unless such product is identified as required in such permit or contract.

(f) Selling or exchanging any timber or other forest product obtained under free use pursuant to §§ 223.5 through 223.11.

(g) Violating any timber export or substitution restriction in §§ 223.160 through 223.164.

(h) Removing any timber, tree or other forest product, except as authorized by a special-use authorization, timber sale contract, or Federal law or regulation.

(i) Violating the Forest Resources Conservation and Shortage Relief Act of 1990 (16 U.S.C. 620, et seq.), or its implementing regulations at 36 CFR 223.185-223.203.

The USFS is responsible for ensuring requirements are met as defined by CFR, FSM, FSH and via formal Timber Sales Contracts with purchasers. The primary federal statutes guiding sale of timber from Forest Service lands are listed in FSM 2400, section 2401.
All forest products harvested and removed from National Forests must be authorized via approved contracts or Agreements. These formal agreements are legally binding and stipulate terms and conditions associated with harvesting and extraction activities. Contracts include provisions on health and safety, performance, equal employment opportunity. They also include specific requirements in terms of forest operations which include the following divisions:

- Contract area (BT1.0)
- Timber specifications (BT2.0)
  - type of harvests
  - damages to residual trees
  - road and skid trails
  - Under and overstorey removals
- Operations (BT6.0)
  - Performance and corrective actions

  - Protection and conservation
  - Control of operations
  - Conduct of logging
  - Residual trees
  - Erosion prevention and control
- Fire protections and control (BT7.0)

The Forest Service is subject to the laws and regulations administered by the Occupational Safety and Health Administration (OSHA). OSHA Standard 1910.266 Logging Operations establishes safety practices, means and operations methods for all types of logging regardless of the end use of the wood (see indicator 4.1.10 for more information on Health and Safety).

Enforcement, monitoring and outcomes
FSM 1400 - Controls, Chapter Zero primary components are the Directive System which sets the USFS policies and standards. The second component is the Management Review System which measures the agency's performance against those standards and provides for adjustment of the standards or the performance where needed. Forest Management Integrated Program Reviews are to address specific National Forest activities such as sale administration, sale preparation including NEPA, and timber theft issues of importance. Other topics can be included in the reviews such as management of trust funds and infrastructure projects. Management reviews assess how National Forests are implementing their own procedures and if activities are implemented accordingly. As an example, the 2015 program review of the Ouachita National Forest concluded the absence of individual stand silvicultural prescriptions for timber harvests or other silvicultural activities, which was followed up with an action plan to correct the deficiency that was approved by the Regional Forester

It is the District Ranger's responsibility to monitor and evaluate prescriptions to measure compliance with plan components, determine effects, and adjust subsequent management actions when needed. Forests conduct monitoring of Forest Plan Criteria. Input from the public is a prerequisite to the development of the plan monitoring program coordinated by the Regional Forester. The monitoring program is made available on the National Forest website as well as bi-annual monitoring reports. In addition, Line Officers visit Timber Sales, Regions conduct management reviews - announced and unannounced and Alburquerque Service Center (ASC) Budget and Finance Incident Finance Branch conducts financial audits.

The contract (IRTC, IRSC or TSC) as well as Stewardship Agreements and Good Neighbor Authority Agreements defines every aspect of the legal removal of timber. The contract is enforced by the Contracting Officer (CO) in conjunction with the Contract Administration Team consisting of named individuals who are delegated specific authorities by the CO as specified in FSH 2409.15.04.2. Forest Service Law Enforcement works closely with the Contract Administration Team and investigates any timber security issues, wildfires, willful or excessive timber damage, or any unlawful behavior of timber purchasers or contractors. The contract is enforced by the Contract Administration Team using a variety of fiscal and administrative tools including but not limited to work stoppage, withholding of payment, issuing penalties, termination of the contract, or requesting law enforcement support if actions are thought be in violation of applicable laws and

	regulations. The Timber Sale Prospectus lists several legal requirements including EEOC, CFR requirements for contractor qualifications, False Statements Act, Debarment and Suspension regulations (CFR), OSHA regulations. Modifications to the terms of the agreement or contract is done by mutual agreement. The Sale's Contract is divided in three divisions. The first are contract provisions which are specific to the sale such as price and product specifications. The second are standard provisions such as BMPs. The final section are special provisions with more specific guidance and direction such as site specific protection measures (e.g. Fandango Fire Salvage Prospectus, Modoc NF). The CO affirms the determination of the purchaser's responsibility according to 36 CFR 223.101 ensuring the purchaser has a satisfactory performance record, qualified and eligible to receive an award under applicable laws and regulations (e.g. Bear Skyline Timber Sale, Nantahala Pisgah NF). Inspections are undertaken during and after completion of operations to verify implementation of the contract provisions. Law Enforcement and Investigation (LEI) Sale Inspection Reports are used to evaluate overall operations of Commercial Timber Sales in terms of tenure and site boundaries, environmental and sanitation compliance, tree marking, timber security, willful or excess timber damage, operation fires, etc. Weekly LEI reports are shared within the Forest Service to communicate on the LEI activities and program. Timber Sale Inspection Reports and Timber Sale and Stewardship IRTC Inspection Reports are more detailed evaluations covering Timber Specifications, Transportation Facilities, Operations, Conduct of Logging, Scaling and Log Accountability, Fire Precautions and Control and General requirements. Timber Sale Administration Report examples provided by the Six Rivers NF, Timber Sale Inspection Reports from Shoshone NF show implementation of inspection and monitoring procedures. All incidents and violations are recorded in LEIMARS system from discovery through case closure. Depending on the non-conformities or violations of contract provisions, the USFS manuals FSH 5300 - Law Enforcement describe how violations shall be reported to the Forest Service law enforcement personnel. All cases are assessed to determine appropriate line of action. Penalties may include fines, mitigation measures implementation on the harvest area, or administrative remedies such as debarment and cancellation of contracts. **Risk conclusion and justification** Findings show the USFS possess a well-defined framework that ensures laws and regulations cover socio economic and environmental forest management requirements beyond those defined by SBP standards, are monitored and enforced on National Forests. Incidents and violations are recorded. There is a low risk feedstock sourcing on NFs is not in compliance with all existing and applicable laws and regulations.
Supply Base Verifiers	▪ Inspection and Administration Reports ▪ Law Enforcement Investigations - Weekly Reports ▪ Timber Sale Contracts
Evidence reviewed	▪ Multiple-Use Sustained Yield Act of 1960 ▪ National Environmental Policy Act (NEPA) of 1969 ▪ Clean Water Act of 1972 ▪ Forest and Rangeland Renewable Resources Planning Act of 1974

- 2012 USFS Planning Rule (36 CFR Part 219, section 219.11)
- National Forest Management Act (NFMA) of 1976
- Federal Land Policy and Management Act of 1976
- Code of Federal Regulations Title 36, Part 220 - National Environmental Policy Act Compliance
- Code of Federal Regulations Title 36, Section 223.30 - Consistency with plans, environmental standards, and other management requirements
- Code of Federal Regulations Title 40, Parts 1500 – 1508
- FSM 1000, Zero Code 1010 Laws, Regulations and Orders
- FSM 1900, Chapter 1950, Environmental Policy, and Procedures
- FSM 2430 - Commercial Timber Sales
- FSM 2410 - Timber Resource Management Planning
- FSM 2420 - Timber Appraisal
- FSM 2430 - Commercial Timber Sales
- FSM 2440 - Designating, Cruising, Scaling and Accountability
- FSM 2450 - Timber Contract Administration
- FSM 2460 - Uses of Timber Other than Commercial Timber Sales
- FSM 2470 - Silvicultural Practices
- FSM 2490 - Timber Management Information System
- FSH 1909.12 Land Management Planning Handbook
- FSH 1909.14 Resource Inventory Handbook
- FSH 1909.15 National Environmental Policy Act Handbook
- FSH 2409.15 Timber Sale Administration Handbook
- FSH 2409.18 Timber sale preparation gate system
- Central Valley Regional Water Quality Control Board Inspection Report - Diamond Oro Oski Timber Sale Project-LNF SEPT2023
- Position descriptions
- Fandango Fire Salvage Prospectus, Modoc NF
- 2015 program review of the Ouachita National Forest
- FS-2400-1 Forest Product Removal Permit
- FS-2400-2 Decked Sales
- FS-2400-3 Timber Sale Contracts
- FS-2400-4 Simple Timber Sale Contracts
- FS-2400-6 Timber Sale Contracts
- FS-2400-13 Integrated Resource Timber Contracts
- FS-2400-33 Integrated Resource Service Contracts
- FS-2400-90 Timber Information Management System

	▪ FS-2400-1449 Integrated Resource Service Contracts ▪ Procurement and Property Service Contracts ▪ Agreements – Good Neighbor and Stewardship ▪ Timber Sale Inspection Reports ▪ Law Enforcement Investigations - USFS Weekly Reports ▪ Appendix 5 - Relevant Federal Statutes, Regulations, Policies and Agreements, Forest Management Plans
Risk rating	Low risk

Principle 1 – Feedstock is legally sourced

Criterion 1.1 – **Operators and operations are legal.**

1.1.2 Legal ownership of land and resource use rights shall be respected

Findings

Scale of assessment

All US National Forests in the lower (contiguous) 48 states.

Analysis of the legal requirements and best practices

Sampling for this indicator included Region 2, Region 5, Region 8, Nantahala-Pisgah NF, Six Rivers NF, Grand Mesa Uncompahgre and Gunnison (GMUG).

The 2012 Planning Rule requires that the scope of forest management plans are within the authority of the Forest Service (36 CFR, Section 219.1 (g)). Further, Section 219.6 (b) (14) requires the assessment associated with development or revision of forest management plans to consider land status and ownership, as well as existing uses and access patterns. All forest plans are subject to an extensive process that includes an assessment of past, current and future conditions which requires continual public participation. Participating stakeholders are provided with an opportunity to file formal objections to the plan.

Land ownership is identified and verified by three different sources: GIS information, local and national records and databases and land surveys. GIS databases are maintained nationally for real-estate and USFS ownership info. Local records and national databases are used when the USFS need to confirm private ownership status and boundaries when adding lands to the National Forest System or in cases of disputes with adjoining private landowners. The Forest Service Land Status Records System (LSRS) is an internal database used by USFS staff to manage and access property records. The LSRS includes the Automated Lands Program (ALP) map viewer and associated Land Status Records which evidence land ownership status showing the condition of Federal land ownership interests. Land surveys can be completed to confirm boundaries between private and NF lands if there are known concerns or when formal survey monuments are not found. Timber crews locate boundaries on the ground during sale preparation activities at the time of project design. The USFS also issues special use authorizations for lawful occupation of National Forest lands for private property access, outdoor recreational opportunities involving lodges, resorts, outfitter camps, and educational/youth camps, utility ROW's, communication sites, ski areas, above ground mineral rights, water rights, etc..

FSM 2403.1 specifically states that "the line officer initiating an action or project must determine the status and ownership of the lands involved, including the timber thereon" to avoid "unauthorized disposal of timber." This includes review of any titles held by the United States, encumbrances on those titles, use restrictions imposed by the Forest Service or other agencies of Government, and restrictions imposed by laws, Executive Orders, or other legal instruments transferring lands to the stewardship of the Forest Service".

During the initial planning of a timber sale (Gate 1) (see FSH 2409.18), timber sale planners are directed to "review all available relevant information to arrive at an initial estimate of the feasibility of the proposed project," including information regarding rights of ways, land surveys and property status (FSH 2409.18, Chapter 20, Section 21.2). Legal descriptions of proposed project areas are included in the initial NEPA scoping documents. Maps are produced displaying key features including project boundaries and ownership boundaries if applicable. Any existing use rights that could potentially be affected by proposed activities are identified and evaluated as part of the NEPA process. Maps are attached to NEPA documents, project documents and contracts. Tribes, state and local governments, and other federal entities are consulted during the NEPA process and described in corresponding Records of Decision documents. A proposed project can only progress as far as Gate 5 (Bid Opening) with a designation of "NEPA Pending" but Gate 5 cannot be locked and Gate 6 begun without a valid NEPA Decision selected from the PALs database The gate system ensures timber harvests comply with regulations and that they are in accordance with the project's objectives.

Enforcement, monitoring and outcomes

All forest management plans must be developed and approved in accordance with applicable USFS manuals and handbooks. According to FSM 1000, Section 1011 (Effective May 17, 1991), Forest Service supervisors are required to make sure "employees are aware of the provisions of law applicable to their responsibilities and that Forest Service programs and operations are administered in compliance with applicable laws." Further, the USFS Director of Legislative Affairs is responsible for ensuring operational units within the Forest Service are informed of the relevant content of major laws relating to Forest Service activities, including notification of newly approved statutes.

Ownership and resource user rights are validated prior to Plans and project approval. Consultations during the Timber Sale Gate system and the NEPA process provide opportunities to owners and to resource users to manifest their rights. These rights are also validated during project design phases.

All line officers (i.e.., Regional Forester, Forest Supervisors and District Rangers) are responsible for ensuring that all activities occurring within National Forests are assessed, planned and implemented in accordance with applicable laws and U.S. Forest Service policies and procedures. National Forests are divided into discrete Districts led by District Rangers who direct staff to implement activities within their assigned geography. District Rangers are responsible to Forest Supervisors. The USFS directive is to buffer unconfirmed lines by a quarter mile. Projects are not to be implemented within 1/4 mile of an undocumented boundary (Forest Service Handbook 5609.11 – Boundary Management Handbook, Chapter 60 - Boundary Line Marking and Maintenance, Amendment: 5609.11-2020-1, Effective date: August 25, 2020).

	Risk conclusion and justification There is a low risk legal that ownership and resource use rights are not respected. The Forest Service has adequate systems and resources in place to ensure the identification of ownership, boundaries and resource use rights. Ownership and resource use rights are confirmed during the project design phases prior to the award of timber sale contracts.
Supply Base Verifiers	▪ Land Status Records System ▪ NEPA related documentation ▪ USFS timber sale preparation "gate system" ▪ Timber Sale Contracts and Agreements ▪ Timber Sale Administration Inspections ▪ Automated Lands Program (ALP)
Evidence reviewed	▪ 36 CFR, Part 219, 2012 USFS Land Management Planning Rule ▪ FSM 1000, Section 1011 (Effective May 17, 1991) ▪ FSM 2400 Timber Management ▪ FSHM2403.1 ▪ FSH 2409.18, Chapter 50, Sections 53 and 54, Timber Sale Preparation Handbook
Risk rating	Low risk

Principle 1 – Feedstock is legally sourced

Criterion 1.1 – **Operators and operations are legal.**

1.1.3	Feedstock shall be legally harvested, supplied and produced, including in compliance with CITES and EUTR or other applicable legal trade requirements.
Findings	**Scale of assessment** All US National Forests in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 2, Region 5, Region 8, Mississippi NF, MODOC NF, Chequamegon-Nicolet NF. As a signatory to CITES, the US is legally obligated to comply with CITES requirements. The US Fish and Wildlife Service (USFWS) is the designated as the CITES management authority for the US and maintains responsibility for issuing all CITES permits in the US. Additionally, the USDA Animal and Plant Health Inspection Service (APHIS) is responsible for enforcing regulations regarding the import and export of plants covered by CITES and the Endangered Species Act (ESA). Export of any species regulated by CITES or the ESA requires a valid Protected Plant Permit issued by APHIS.

Contracts issued and administered by the US Forest Service establish provisions to ensure that logging is conducted in compliance with applicable laws and USFS policies. The US Forest Service is obligated as a federal agency to comply with all applicable laws, including the Lacey Act. The Forest Service prepares the Timber Sale Contract and includes Standard and Specific Contract provisions which specify what timber is included and designated for cutting (Timber Sale Contract Provision B(T)2.1 Included Timber and B(T)2.3 Timber Designation) and restrictions for export of unprocessed logs (C(T)8.66# - Use of Timber applies West of 100th Meridian – Regions 1 - 6). Both parties bear responsibility to assure only Included Timber is legally harvested.

The Lacey Act, amended in 2008, prohibits trade (import, export, transport, sale, purchase) of any plant material across state or national borders in violation of domestic or international laws. There do not appear to be any commercially traded tree species native to the US listed in the CITES appendices.

Act 16 USC 620d, US Code, Title 16, Chapter 4 - (1) each person who acquires, either directly or indirectly, unprocessed timber originating from Federal lands west of the 100th meridian in the 48 contiguous States shall report the receipt and disposition of such timber to the Secretary concerned.

Refer to the findings associated with Indicator 1.1.1 for further evaluation of compliance with applicable laws and regulations.

Enforcement, monitoring and outcomes

All forest management plans must be developed and approved in accordance with applicable USFS manuals and handbooks. According to FSM 1000, Section 1011 (Effective May 17, 1991), Forest Service supervisors are required to make sure "employees are aware of the provisions of law applicable to their responsibilities and that Forest Service programs and operations are administered in compliance with applicable laws." Further, the USFS Director of Legislative Affairs is responsible for ensuring operational units within the Forest Service are informed of the relevant content of major laws relating to Forest Service activities, including notification of newly approved statutes.

The Lacey Act is enforced by USDA APHIS, the US Customs and Border Patrol (CBP) and other federal agencies. Violation of the Lacey Act is a federal crime, punishable by civil and criminal penalties up to $500,000 (for corporations) and 5 years in prison.

Domestic processing requirements documented in timber sale contract documents:

a. Bid Form 24. Certification of Compliance with Export Restrictions
b. Timber Sale Prospectus 13. Log Export and Substitution Restrictions
c. Timber Sale Contract B6.842 Product Identification
d. Timber Sale Contract C8.66# Use of Timber

	Forest level timber contract officers are responsible for ensuring forest products are legally harvested and traded (see example Fandango Fire Salvage Prospectus, Bid Form, Contract). USFS conducts surveillance of log export yards. Logs and loads are required to be identified by USFS (i.e., branded/painted (required by CFR). Log trucks and landings are inspected during timber sale inspections. Citations, fines, imprisonment, forfeiture of assets, contract suspension or revocation are among the enforcement actions available to the Forest Service for ensuring the implementation of applicable laws and regulations. Monitoring of timber harvested or otherwise damaged is a fundamental components of the timber sale administration process. Timber sale inspection reports document contract compliance (or non-compliance) of all contract provisions. Issues of non-compliance, including non-payment, are documented in inspection reports and addressed by contracting officers and other USFS officials, including law enforcement personnel. Purchasers found in violation of payment terms can be suspended or "debarred" as outlined in FSH 2409.18a. **Risk conclusion and justification** There is a low risk payments related to timber and forest biomass sales are incomplete and not up to date. The Forest Service has adequate systems and resources in place to ensure payments associated with timber sold from National Forests are received in accordance with contract requirements.
Supply Base Verifiers	▪ Timber Sale Contracts (FS-2400 series) ▪ Timber Sale Administration Inspections ▪ Bid Form 24 - Certification of Compliance with Export Restrictions
Evidence reviewed	▪ CFR Title 36, Chapter 2 Part 261.6 ▪ CFR Title 36, Chapter II, Part 223 ▪ CFR Title 7, Subtitle B, Chapter 3, Part 355 ▪ The Lacey Act, 16 USC Sections 3371 – 3378 ▪ FSM 2400, Timber Management ▪ Fandango Fire Salvage Prospectus, Bid Form, Contract ▪ Timber Sale Contracts and Agreements ▪ Timber Sale Administration Inspections ▪ NEPA process ▪ USFS Gate System
Risk rating	Low risk

Principle 1 – Feedstock is legally sourced	
Criterion 1.1 – **Operators and operations are legal.**	
1.1.4	Payments for harvest rights and feedstocks, including duties, relevant royalties and taxes related to timber harvesting shall be complete and up to date.
Findings	**Scale of assessment** All US National Forests in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 2, Region 5, Region 8, Nantahala-Pisgah NF, Six Rivers NF, Grand Mesa Uncompahgre and Gunnison (GMUG). Under 16 U.S. Code 472a - Timber Sales on National Forests Lands, the Secretary of Agriculture is authorized to sell trees, portions of trees or forest products from National Forests. Article (e) of the regulation describes the bidding and auction process. Monetary deposits may be prescribed by the Secretary to purchasers (Article (h)). The Forest Service has a robust system for setting forth contract provisions for payment of timber sold and/or designated for harvest. Consistent with 36 CFR 223.34 and 223.35, timber sale purchasers are generally required to pay for timber in advance of cutting and provide a performance bond to ensure contract terms are satisfactorily fulfilled. Some Timber Sale payments are guaranteed by bond. For every timber sale, the US Forest Service completes a series of activities in keeping with the gate system to ensure a logical progression leading to the issuance of a timber sale contract to a successful bidder. One of the steps in preparing a timber sale is appraisal of the transaction value of timber to be sold. Timber appraisals follow a structured process and are documented as part of the Timber Sale Appraisal Report, which is reviewed by an approving officer prior to advertisement. Appraised timber values typically establish the minimum value for acceptable bids. Timber sale contracting and administration procedures are outlined in numerous US Forest service manuals and handbooks including FSH 2409.15 and FSM 2400. Requirements for timing and method of payment for timber are detailed in section B4 of the timber sale contract standard provisions. **Enforcement, monitoring and outcomes** All forest management plans must be developed and approved in accordance with applicable USFS manuals and handbooks. According to FSM 1000, Section 1011 (Effective May 17, 1991), Forest Service supervisors are required to make sure "employees are aware of the provisions of law applicable to their responsibilities and that Forest Service programs and operations are administered in compliance with applicable laws." Further, the USFS Director of Legislative Affairs is responsible for ensuring operational units within the Forest Service are informed of the relevant content of major laws relating to Forest Service activities, including notification of newly approved statutes.

	The USFS lists all Advertised Timber Sales on their website (https://www.fs.usda.gov/managing-land/forest-management/products/timber-sales) and can be searched by criteria such as Region, National Forest and product type. The USFS publishes Periodic Timber Sale Accomplishment Reports (PTSAR) summarizing timber sale accomplishments by Regions and by individual National Forest. These reports include funded programs with appropriations, the Salvage Sale Fund, personal use permits and small commercial sales. Once a Timber Sale Contract is awarded, adherence to contract requirements is monitored by appointed US Forest Service staff who retain responsibility for contract administration. Page 1 of the standard US Forest Service timber sale contract (FS-2400-3S/3T/3P) stipulates estimated volumes and values for all products permitted to be harvested in the contract. Periodic inspections are conducted to ensure contract provisions are met, including payment for timber. Methodologies for identifying, measuring and properly accounting for timber included in timber sale contracts are described in detail in FSH 2409.15 Chapter 20. Receipts for payments are recorded in the Forest Products Financial System (FPFS) maintained by the USFS. FSH 2409.15 Chapter 40 provides direction to timber sale administrators for use of the ATSA system. Monitoring of receipt of payments, as well as monitoring of timber harvested or otherwise damaged are fundamental components of the timber sale administration process. Timber sale inspection reports document contract compliance (or non-compliance) of all contract provisions. Issues of non-compliance, including non-payment, are documented in inspection reports and addressed by contracting officers and other USFS officials, including law enforcement personnel. Purchasers found in violation of payment terms can be suspended or "debarred" as outlined in FSH 2409.18a. (See USFS Timber Sale, Stewardship, and Forest Products Contracts and Permits). **Risk conclusion and justification** There is a low risk payments related to timber and forest biomass sales are incomplete and not up to date. The Forest Service has adequate systems and resources in place to ensure payments associated with timber sales from National Forests are received in accordance with contract requirements.
Supply Base Verifiers	▪ Timber Sale Contracts (FS-2400 series) ▪ Timber Sale Administration Inspections ▪
Evidence reviewed	▪ 36 CFR Chapter II, Part 223 Sale and Disposal of National Forest System Timber ▪ FSH 2409.15 Timber Sale Administration ▪ FSM 2420, Chapter 2420 Timber Appraisal ▪ FSM 2400, Section 2430 Commercial Timber Sales ▪ FSM 2400, Chapter 2450 Timber Sale Contract Administration ▪ 26 US Code Section 116 ▪ FSH 2409.15, Chapter 40 Payments ▪ FSH 2409.18a, Timber Sale Debarment And Suspension ▪ USFS Gate System

	▪ Timber Activity Control System (TRACS or its successor) ▪ Sales Tracking and Reporting Systems (STARS or its successor) ▪ Forest Products Financial System (FPFS) ▪ FSH 2409. - Timber Sale Preparation handbook ▪ Timber Sale Contracts (FS-2400 series) ▪ Timber Sale Administration Inspections
Risk rating	Low risk

Principle 1 – Feedstock is legally sourced	
Criterion 1.1 – **Operators and operations are legal.**	
1.1.5	There shall be adequate protection of the supply base from unauthorized and illegal activities, such as illegal logging, mining, and encroachment.
Findings	**Scale of assessment** All US National Forests in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 2, Region 5, Region 8, Mississippi NF, Modoc NF, Chequamegon-Nicolet NF. 36 CFR Chapter II Part 261 - Prohibitions define the acts and omissions that affect, threaten or endanger property of the United States managed by the USFS or occurs within the designated boundaries of a component of the National Wild and Scenic River System (e.g., unauthorized occupancy, timber theft, livestock, motor vehicle). FSM 2400 Timber Management policies and procedures to administer contracts are intended to minimize the risk of theft and trespass and to maximize early detection when theft and trespass do occur. The Timber and Forest Products Trespassing/Theft Procedures Handbook FSH 2409.12b define prevention measures to be implemented at different stages of the Timber Sale Gate System. Timber theft or trespass can also occur by adjacent landowners or by timber poaching. USFS may discover illegal activities in various circumstances such as those listed below: 1. Surveys of National Forest boundaries; 2. Inspection or surveillance of timber sale units; 3. Reports from private timber companies or landowners; 4. Law enforcement patrols; 5. Reports from visitors or employees; 6. Intelligence obtained from law enforcement informants or confidential information sources; or 7. Timber sale contract administration.

	" The statute of limitations for initiating criminal charges against an entity for theft of or damage to United States government property, including timber (under 18 USC 641 and 18 USC 1361), is 5 years from the date of the theft or damage." **Enforcement, monitoring and outcomes** All forest management plans must be developed and approved in accordance with applicable USFS manuals and handbooks. According to FSM 1000, Section 1011 (Effective May 17, 1991), Forest Service supervisors are required to make sure "employees are aware of the provisions of law applicable to their responsibilities and that Forest Service programs and operations are administered in compliance with applicable laws." Further, the USFS Director of Legislative Affairs is responsible for ensuring operational units within the Forest Service are informed of the relevant content of major laws relating to Forest Service activities, including notification of newly approved statutes. Law enforcement and protection from illegal activities is the primary responsibility of the USFS Law Enforcement and Investigations (LEI) organization, which is fully integrated into resource management programs within the National Forest System. The Forest Service has formal agreements or MOUs with several agencies to ensure compliance with the many laws that apply to the NFS, and to protect people, property and natural resources from potentially harmful effects of unauthorized activities. Sale Administrators and Harvest Inspectors are required to follow the Forest Protection Officer training. This training provides the basics of law enforcement and investigation. Certified FPO have the authority to issue warnings and citations for specific infractions, misdemeanors, of federal law. Forest Service employees in general are considered Forest Officers and are responsible for keeping a watchful eye for any potential threats to forest resources while conducting their normal duties and "ensuring that violations of law are reported to law enforcement personnel in a timely manner". All incidents and violations are recorded in LEIMARS system from discovery through case closure. Depending on the non-conformities or violations of contract provisions, the USFS manuals FSH 5300 - Law Enforcement describe how violations shall be reported to the Forest Service law enforcement personnel. All cases are assessed to determine appropriate line of action. Penalties may include fines, mitigation measures implementation on the harvest area, or administrative remedies such as debarment and cancellation of contracts. **Risk conclusion and justification** There is a low risk of timber theft or trespass on NFs. The USFS provides adequate protections against illegal activities, and enforcement of applicable laws and regulations on National Forests. The Forest Service implements a structured and integrated approach to forest protection from illegal activities that includes specialized law enforcement personnel from the USFS, cooperation with law enforcement functions at other agencies, and utilizes the eyes and ears of all Forest Service field staff.
Supply Base Verifiers	▪ Inspection Reports ▪ Law Enforcement Investigations - Weekly Reports ▪ Load tickets and Sale Administration Protocols ▪ LEIMARS ▪ Law Enforcement Incident Report (Form FS-5300-1)

	▪ Law Enforcement Violation Notice (form FS-5300-4) ▪ Suspensions and debarments ▪ Timber Theft Prevention Plan ▪ USDA Hotline Report fraud, waste and abuse https://usdaoig.oversight.gov/hotline ▪ Spot Check Inspection Reports
Evidence reviewed	▪ 36 CFR, Chapter II, Part 262 Law Enforcement Support Activities ▪ FSH 5309.11 - Law Enforcement Handbook ▪ FSM 5300 – Law Enforcement Manual ▪ FSH 2409.12b - Timber and Forest Products Trespassing/Theft Procedures Handbook
Risk rating	Low risk

Principle 2 – Biomass sourcing does not harm the environment	
Criterion 2.1 – **Biodiversity is maintained or enhanced**	
2.1.1	Key species, habitats, ecosystems and areas of high conservation value (HCV) pertaining to biodiversity in the supply base shall be identified
Findings	**Scale of assessment** All US National Forests located in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 2, Region 5, Region 8, Nantahala-Pisgah NF, Shoshone NF, and Six Rivers NF. The Forest Service is required to conduct a comprehensive assessment as a fundamental step in the land management planning process in advance of implementing specific management activities as stipulated in the USFS 2012 Planning Rule (36 CFR 219.6). The Planning Rule further requires that each project and activity occurring on National Forests are consistent with corresponding land management plans (36 CFR 219.15). It requires identification of existing information regarding 15 resource management topics to be evaluated in the planning process including ecosystems, water resources, species of concern, ecosystem services, and cultural resources. The USFS conducts assessments to identify key ecological resources at numerous scales and planning stages including at the level of the National Forest (NF) Land and Resource Management Plan (LRMP) and at the project level. Land management planning is guided by Forest Service Manual (FSM) 1900, and more specifically Chapter 1920 – Land Management Planning, as well as Forest Service Handbook (FSH) 1909.12 – Land Management Planning Handbook. Key resources are identified during the assessment process (FSH 1909.12, Chapter 10 – Assessments).

The Endangered Species Act (ESA) requires that all federal agencies, including the USFS, conserve threatened and endangered species and the habitats critical to their ongoing viability. The US FWS and the National Oceanic and Atmospheric Administration (NOAA) maintain current lists of threatened and endangered species that must be protected under federal law. Terrestrial species lists are maintained by the US FWS and are documented in the Code of Federal Regulations (50 CFR 17.11 and 50 CFR 17.12). NOAA maintains the list of threatened and endangered marine species. The Environmental Conservation Online System (ECOS) can be used to search for threatened and endangered plant and animal species.

As a federal agency, the USFS is mandated to comply with the National Environmental Policy Act (NEPA). NEPA requires a multidisciplinary environmental assessment to identify key resources and values when developing plans and prior to implementing specific decisions and activities. Subject matter experts (e.g., wildlife biologist, ecologists, foresters, etc.) serve on interdisciplinary teams to identify the presence (or likelihood of presence) for key species, habitats, ecosystems and biodiversity HCVs present within a planning or project area. NEPA also requires public engagement throughout all phases of planning, as does the 2012 Planning Rule and the National Forest Management Act (NFMA). NEPA processes are guided by FSH 1909.15 – National Environmental Policy Act Handbook.

During the NF planning process, ecosystems are identified as an initial coarse level assessment of existing natural resources on the NF. Defining characteristics and associated species are described for these endemic ecosystems, with desired future conditions as well as standards and guidelines for management are defined for maintaining and restoring native ecosystems. At a finer scale, key species, species groups, habitats, and biodiversity HCVs are identified using a suite of tools and sources. Rare, threatened and endangered (RTE) species listed at the federal level under the Endanger Species Act are identified through the Federal Register, resources provided by the US FWS including the IPaC (Information for Planning and Consultation) tool, Level 1 ESA consultations with the USFWS, consultation with State agencies, and field surveys. State-listed RTE species are not required to be considered by NFs but may be at the discretion of the NF. Rare plant communities are also identified. Special Interest Areas (SIAs) are identified in NF LRMPs and represent "the most exceptional ecological communities" on NFs. SIAs function as core areas for conservation of rare features and biodiversity. As an example, on the Nantahala-Pisgah NF in North Carolina, there are 24 federally listed species, 21 rare plant communities, and 91 SIAs comprising over 106,000 acres on the NF. This information is found in the LRMP for the Nantahala-Pisgah NF.

A common example of USFS collaboration with state agencies are Natural Heritage Programs (NHP). Each state operates an NHP and maintains a database of rare, sensitive and unique ecological species, and natural areas containing ecologically important species, communities and features. NFs regularly consult NHPs as a standard component of planning at the NF and project level. The Six Rivers NF uses the CALVEG (Classification and Assessment with Landsat of Visible Ecological Groupings) mapping system as well as data from the California Wildlife Habitat Relationships (WHR) classification system as part of a comprehensive GIS database for identifying key communities, ecosystems and ecological HCVs. CALVEG is maintained by the USFS Region 5 Ecology Group. Timber Harvest Plans (THPs), which are required on non-federal lands in the State of California, are posted online by the CA State Forestry Department (CALFIRE) and provide another example of the USFS utilizing resources made available by state agencies for identification of key ecological resources and

values. The Six Rivers NF incorporates THPs for neighboring properties in project analysis to take into consideration key ecosystem features for landscapes that extend beyond USFS lands.

In addition to federally listed species, each Regional Forester develops and maintains a list of Species of Conservation Concern (SCC). These SCCs are known to exist on NFs within the Region and are considered to be at an elevated level of risk for long term viability. Protections for SCCs and their associated habitats are employed at the NF regional level. As an example, there are 339 SCCs either known to occur or with potential habitat identified on the Nantahala-Pisgah NF. The SCC list for Region 5 has not been updated since 2013.

Additional measures have been implemented at sub-national scales that identify key habitats, and also impose additional management designations for their protection. For example, the Northwest Forest Plan (NWFP) is a collection of federal policies initially adopted in 1994 to protect at-risk species and to sustain social and economic viability. The NWFP significantly changed the management direction on 17 NFs in CA, OR and WA by establishing reserves for protection of riparian areas and late-successional habitat and subsequently reducing overall timber harvest volumes. The Northwest Forest Plan effectively functions as an amendment that applies on a regional scale to all national forests within the Northwest Forest Plan area. USFS regional guides are also amended by the NWFP. The LRMPs for all 17 NFs are formally tiered to the NWFP, resulting in de facto adoption of designated protected areas and associated conservation measures. The NWMP stipulates that a management assessment must be completed for each designated Late-Successional Reserves (LSRs) prior to implementation of management activities in those areas. As an example, the Six Rivers NF conducted a forest-wide assessment of Late-Successional Reserves (LSRs) in 1999 to inform management decisions in support of achieving objectives for LSRs. The NWFP is currently undergoing an amendment process to address changes that have occurred throughout the landscape since it was first adopted including climate change, fire resiliency, and protection of mature and old-growth ecosystems.

Responsibilities and procedures for conducting inventories, identifying and assessing the presence of ecosystems, species of concern, habitats and HCVs are detailed in several Forest Service manuals and handbooks including FSM 1900, FSH 1909.12, FSH 1909.14 and FSH 1909.15.

Although the USFS does not use the term "High Conservation Value (HCV)" in their programmatic lexicon, all six types of HCV's identified by the HCV Network are addressed in USFS planning processes. In addition to protections for key species and biodiversity as described above, forest management plans are also required to address identification and conservation of large intact ecosystems (e.g., formal wilderness areas, wild and scenic rivers, roadless areas), critical ecosystem services, community needs, and cultural and historic resources.

The Forest Service Resource Inventory Handbook (FSH 1909.14) lists several objectives for conducting integrated resource inventories including:

- Identifying and describing attributes of key ecosystem components or processes

- Describing baseline conditions for current physical and biological resources
- Provision of ecological information as a basis for resource management decisions
- associate all inventory information with specific units of land.

Forest Service staff are directed to use the best available scientific information in consideration of its accuracy, reliability and relevance. The Forest Service is further required to utilize the best available scientific information (BASI) when conducting assessments. These assessments must include identification and evaluation of all relevant resources occurring within the plan or project area.
The USFS also utilizes several administrative management designations that impose protections for areas supporting ecologically important attributes or values such as Research Natural Areas and Roadless Areas. In addition to NF level processes for identifying key habitats, ecosystems and areas of biodiversity HCVs, forest areas are formally designated for conservation and protection by acts of the US Congress, including Wilderness Areas, and Wild and Scenic River corridors.

Enforcement, monitoring and outcomes
Forest Plans, NEPA documents (e.g., environmental impact statements, environmental assessments), project level planning and assessment documents (e.g., LSR assessment, biological assessments), and readily available tools and resources (e.g., IPaC, ECOS, State Heritage Programs) provide evidence that laws, regulations and best practices for identifying key species, habitats, ecosystems and biological HCVs are consistently implemented. Biological Assessments (BAs) provide detailed analysis of potential impacts on any federally listed species that may be affected by any project. Similarly, Biological Evaluations (BEs) are developed for SCCs identified by the Region Forester.

In addition to the Planning Rule, several other federal laws including the Forest and Range Resource Planning Act, the Federal Land Policy and Management Act, the National Forest Management Act, the Endangered Species Act and others direct the Forest Service to conduct periodic quantitative inventories sufficient to identify and assess existing and potential resources on National Forests.

All timber sales are listed as projects in a Schedule of Proposed Actions (SOPA) maintained on the website for each National Forest under the heading "Managing the Land." NEPA documents associated with each project are publicly available and typically posted in the SOPA., SOPA's includes proposed actions at various stages of analysis, as well as an archive of a selection of completed projects. Detailed biodiversity and HCV descriptions, as well as potential impacts, are found in specialists' reports according to topic such as soils, aquatic resources, watershed, rare plants, potential wilderness areas, recreation, wildlife, roadless areas and heritage. Once identified, an Environmental Impact Statement (EIS) or Environmental Assessment (EA) describes how the proposal and action alternatives can impact biodiversity.

Processes for formal objections and appeals are readily available and well-known to interested members of the general public and advocacy organizations. There are ample examples of appeals and lawsuits having been filed in opposition to USFS proposed plans and

	activities. These processes serve as additional mechanisms for ensuring USFS forest management activities maintain and enhance biodiversity. **Risk conclusion and justification.** The Forest Service has robust systems and capabilities for conducting integrated and cooperative inventories for identifying, quantifying and characterizing current conditions and projected trends for all key species, habitats, ecosystems and biological HCVs. Several laws and regulations including the 2012 Planning Rule, NEPA, NFMA, and ESA require the USFS to identify and conserve at-risk species and habitats, and to engage the public in developing plans prior to implementing activities that may impact those species and habitats. USFS employees are further guided by agency directives in the form of manuals and handbooks that provide detailed work instructions for protection of these resources and complying with applicable laws and regulations. Coordination and consultation with other agencies and organizations is fundamental to USFS efforts to identify these resources. Public consultation, including consultation with tribes, during all stages of planning provides additional opportunities for identification of important and sensitive biodiversity resources. USFS staff interviewed during the assessment process described means of implementation and provided documented examples of management plans, environmental assessments, reports, and correspondence with the US FWS that demonstrate identification of key species, habitats, ecosystems and biological HCVs. Although some NF LRMPs have not been revised in over 10-years, consistent implementation of comprehensive, multi-disciplinary planning and environmental assessment at the project level provides reasonable assurance that key species, habitats, ecosystems and biological HCVs are identified in advance of implementing any management activities that could affect those species and communities. Responsibilities and lines of authority are clearly established, ensuring that appropriate review and approval occurs before project implementation. Well established processes for public notification and appeal provide added measures of assurance that laws, regulations and best practices are employed.
Supply Base Verifiers	▪ NF Forest Plans ▪ NEPA documents associated with NF LRMPs ▪ NF timber suitability analysis ▪ Current list of state and federal rare, threatened and endangered species. ▪ Current lists of USFS Region Species of Conservation Concern ▪ Project-level NEPA documents
Evidence reviewed	▪ National Environmental Policy Act (NEPA) of 1969 ▪ Endangered Species Act (ESA) of 1973 ▪ Clean Water Act of 1972 33 ▪ National Forest Management Act (NFMA) of 1976 ▪ Fish and Wildlife Coordination Act of 1934 ▪ Forest and Rangeland Renewable Resources Planning Act of 1974 ▪ Federal Land Policy and Management Act of 1976 ▪ Code of Federal Regulations Title 36, Part 220 - National Environmental Policy Act Compliance

	▪ Code of Federal Regulations Title 36, Section 220.6 - Categorical exclusions ▪ Code of Federal Regulations Title 40, Parts 1500 – 1508 ▪ 2012 USFS Planning Rule (36 CFR Part 219, section 219.11) ▪ FSM 1900, Chapter 1950, Environmental Policy, and Procedures ▪ FSM 2600, Chapter 2670 - Threatened, Endangered and Sensitive Plants and Animals ▪ FSH 1909.12 Land Management Planning Handbook ▪ FSH 1909.14 Resource Inventory Handbook ▪ FSH 2090.11 Ecological Classification And Inventory Handbook ▪ FSH 1909.15 National Environmental Policy Act Handbook ▪ Code of Federal Regulations (50 CFR 17.11 and 50 CFR 17.12) ▪ Environmental Assessment Nantahala Mountains Project, Nantahala Ranger District, Nantahala National Forest, Macon County, North Carolina, January 2024 ▪ Biological Assessment, Nantahala Mountains Project, Nantahala Ranger District, Nantahala National Forest, Macon County, North Carolina, November 16, 2023 (Revised December 7, 2023) ▪ Nantahala and Pisgah National Forests Final Land Management Plan, January 2023 ▪ Land and Resource Management Plan, Six Rivers National Forest, 1995 ▪ Land Management Plan, 2015 Revision, Shoshone National Forest, May 2015. ▪ Amendment 2008-01, Land and Resource Management Plan, Six Rivers National Forest, April 2008 ▪ Forest-wide LSR Assessment, Version 1.0, Six Rivers National Forest, USFS Pacific Southwest Region, April 1999 ▪ Cerveny, L.K., Blahna, D.J., Stern, M.J., Mortimer, M.J., Freeman, J.W. June 2011. Forest Service Interdisciplinary Teams: Size, Composition, and Leader Characteristics. Journal of Forestry. ▪ Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl, Volume I. February 1994 ▪ Information Planning and Consultation (IPaC), US Fish and Wildlife Service, https://ipac.ecosphere.fws.gov/ ▪ Biological Assessment for Threatened and Proposed Threatened Species and their Critical Habitat. East Winds Project, Wind River Ranger District, Shoshone National Forest, Freemont and Teton Counties, Wyoming. September 18, 2021 ▪ 2021 East Winds Forest Health Project, Categorical Exclusion Review ▪ Documentation of the Biological Evaluation Process For R-2 Designated Sensitive Species related to Homestead Park II Fuels Reduction, Washakie Ranger District, Shoshone National Forest, Freemont County, Wyoming. August 2004 ▪ Memo from the US Fish and Wildlife Service to Greybull, Clarks Fork, and Wapiti Ranger Districts, Shoshone National Forest re: proposed Fuels Reduction and Aspen Enhancement Projects. April 3, 2020 ▪ Biological Opinion, US Fish and Wildlife Service, Canada Lynx. October 25, 2000.
Risk rating	Low risk

Principle 2 – Biomass sourcing does not harm the environment

Criterion 2.1 – **Biodiversity is maintained or enhanced**	
2.1.2	**Threats to and impacts on the identified key species, habitats, ecosystems, and areas of high conservation value (HCV) pertaining to biodiversity in the Supply Base shall be identified and evaluated.**
Findings	**Scale of assessment** All US National Forests located in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 2, Region 5, Region 8, Francis Marion NF, Shoshone NF, and Lassen NF. NEPA and the consultation processes mandated by Section 7 of the Endangered Species Act (ESA) are the primary mechanisms used to identify threats to key species, habitats, ecosystems, and areas with HCV of biodiversity. NEPA requires the Forest Service to identify and evaluate potential environmental, and related social and economic impacts early in the planning and decision-making processes for proposed management activities. Unless projects are found as Categorical Exclusions, Environmental Assessments (EA) are the primary analysis used for timber sales projects. Categorical Exclusion (CE) is a class of actions that a federal agency has determined, after review by the US Council on Environmental Quality (CEQ), do not individually or cumulatively have a significant effect on the human environment and for which, therefore, neither an environmental assessment nor an environmental impact statement is normally required. The ESA requires that the USFS conserve threatened and endangered species, including habitats critical to their ongoing viability. Under section 7(a)(2) of the ESA and FSM 2670.31, NFs are legally mandated to consult with the US Fish and Wildlife Service to ensure their actions do not jeopardize threatened and endangered species or their critical habitat. If it appears that the agency's action may affect a listed species, that agency may then prepare a Biological Assessment (BA) to assist in its determination of the project's effect on a species. The USFS conducts assessments to identify key ecological resources at numerous scales and planning stages including at the level of the NF LRMP and at the project level. The Forest Service is required to conduct a comprehensive assessment as a fundamental step in the land management planning process in advance of implementing specific management activities as stipulated in the USFS 2012 Planning Rule (36 CFR 219.6). It requires identification of existing information regarding 15 resource management topics to be evaluated in the planning process including ecosystems, water resources, species of concern, ecosystem services, and cultural resources. At the programmatic level, the LRMP revision process identifies and documents potential threats to key resources and establishes direction for all activities on the NF. Additionally, NEPA processes associated with individual proposed projects also identify and evaluate potential threats and impacts to resources within the area affected by the project. In addition to the Planning Rule, several other federal laws including the Forest and Rangeland Renewable Resource Planning Act, the Federal Land Policy and Management Act, the National Forest Management Act, the Endangered Species Act and others direct the Forest Service to conduct periodic quantitative inventories sufficient to identify and assess existing and potential resources on National Forests.

Land management planning is guided by FSM 1900, and more specifically Chapter 1920 – Land Management Planning, as well as FSH 1909.12 – Land Management Planning Handbook. Key resources are identified during the assessment process (FSH 1909.12, Chapter 10 – Assessments). Responsibilities and procedures for assessing potential impacts from proposed management activities on ecosystems, species of concern, habitats and HCVs are detailed in several Forest Service manuals and handbooks including FSM 1900, FSH 1909.12, FSH 1909.14 and FSH 1909.15.

Consistent with NEPA, under FSM 1900, the Forest Service is required to use a "systematic, interdisciplinary approach to fully consider the impacts of Forest Service proposed actions." Therefore, multidisciplinary environmental assessments to identify and assess potential impacts to key resources and values are required for developing both programmatic and project specific plans and must be completed prior to implementing specific decisions and activities.

An Interdisciplinary Team (IDT) comprised of specialists with expertise in a range of resources are convened to identify potential impacts of proposed management activities to key species, habitats, ecosystems and biodiversity HCVs established as being present within a planning or project area. Individuals assigned to IDTs are specialists and program managers for specific resources, e.g., wildlife, fisheries, botany, soils, water, etc. These individuals are responsible for representing the best interests of resources within their respective disciplines. This process is compromised when key representation is not on the project's IDT. NEPA also requires public engagement throughout all phases of planning, as does the 2012 Planning Rule and the National Forest Management Act (NFMA). NEPA processes are guided by FSH 1909.15 – National Environmental Policy Act Handbook.

Environmental evaluations must include potential direct and indirect impacts of the proposed action(s) as well as the potential cumulative impact of the proposed action in combination with any past, present, or reasonably foreseeable future action. The 2012 Forest Service Planning Rule requires the Forest Service to identify and evaluate the existing (baseline) information for 15 subject areas covering the physical, biological, social, cultural and historic resources in the planning area (§219.6) when developing or revising a forest plan. These subject areas include terrestrial, aquatic, floral and faunal species and composition, biological processes, as well as historic, cultural, and socio-economic resources and values.

Potential threats and impacts, along with any applicable mitigation measures are documented within the NEPA process including during initial scoping, in responses to public comments or concerns, Biological Assessments (for consultation with other agencies), and Biological Evaluations (internal USFS document) within the EA. As stipulated in FSM 2670, a formal biological evaluation is conducted to ensure actions taken by the Forest Service don't negatively impact the viability of native species. Potential direct, indirect and cumulative effects of proposed management activities are evaluated to identify opportunities for enhancement and to reduce negative impacts on each identified species and habitat. These documents are provided to the responsible USFS staff and included in a project record that is accessible to the public.

At the NF and project level, the USFS uses a suite of tools and resources to identify and evaluate potential threats to key resources including: programmatic and project level field surveys conducted by specialists, aerial photography and remote sensing imagery and data, staff experience and knowledge of the area, maps of existing resources and habitats, State Natural Heritage programs, publicly available resources (e.g., iNaturalist, CalFlora), USFWS iPac list (required for each project), Natural Resource Conservation Service (NRCS) national soil survey information, USGS LandFire, USGS watersheds, specialist reports, Biological Assessments (for consultation with other agencies), and Biological Evaluations (internal USFS document).

All management activities are legally required to conform with the standards and objectives contained in the LRMP. Protections and mitigation measures identified in project level NEPA processes conducted for timber sales including BAs and BEs must also be adopted in project plans such as silvicultural prescriptions, timber sale design, and associated contracts. These considerations are referred to as integrated design features, and are formally incorporated into the special provisions appended to the timber sale contract. Compliance with contract terms is regularly monitored throughout the life of the timber sale and prior to closure.

Enforcement, monitoring and outcomes

For forest or project level decisions, NEPA is enforced through a variety of checks and balances beginning with the agency-designated Responsible Official (decision-maker). Also important are the consultation requirements with other agencies including FWS, State Historic Preservation Office (SHPO), affected Tribes, and state agencies who are charged with enforcing the Clean Air Act (CAA) and Clean Water Act (CWA). Other federal, state, and local governments may be engaged regarding any project specific area of impact. The public, which includes a variety of special interest and advocacy groups (e.g., non-governmental organizations) as well as individuals have a role in the enforcement of NEPA.

Primary responsibility for implementing NEPA is vested in the Council on Environmental Quality (CEQ), established by Congress in the NEPA. Congress placed CEQ in the Executive Office of the President and gave it many responsibilities, including the responsibility to ensure that federal agencies meet their NEPA obligations.

The Environmental Protection Agency's (EPA) Office of Federal Activities is required to review Environmental Impact Statements and provide comments on the adequacy of the analysis and the impact to the environment. If EPA determines that the action is environmentally unsatisfactory, it is required by law to refer the matter to CEQ.

Forest Plans, NEPA documents (e.g., environmental impact statements, environmental assessments), project level planning and assessment documents (e.g., LSR assessment, biological assessments), timber sale prospectus, timber sale contracts, and monitoring reports provide evidence that laws, regulations and best practices for identifying and evaluating potential impacts to key species, habitats, ecosystems and biological HCVs are consistently implemented. As an example, the NEPA process completed for the proposed Ebey Eastside Pine Restoration Project on the Lassen NF included numerous specialist reports evaluating potential impacts to specific resources present within the project area. These reports addressed a range of resources including migratory birds, management indicator species,

hydrology, cultural sites, aquatic sites, watershed conditions, soils, fire and fuels, low sage plant communities, and range resources. An environmental assessment (EA) was completed, resulting in a Finding of No Significant Impact (FONSI). Specific protection measures, referred to as integrated design features, were identified in the EA as a result of input provided in specialists reports. These design features were then included in the timber sale prospectus distributed to potential purchases and incorporated as special provisions into the contract for the Arsenic MP SBA timber sale. Examples of timber sale inspection reports indicate regular monitoring of operations and contract requirements.

Similarly, the NEPA process for the Indian Creek First Thin Project on the Sumter NF, which is administratively combined with Francis Marion NF, included completion of an EA and FONSI. The project IDT consisted of 10 members including a soil scientist, wildlife biologist, archaeologist, fisheries biologist, silviculturist, civil engineer and NEPA coordinator. A Biological Assessment was completed to identify and evaluate potential impacts on endangered, threatened or sensitive species. Specific protection measures are identified as design criteria in the EA and Decision Notice. Analogous NEPA documents were reviewed for the Sunlight Vegetation Management Project on the Shoshone NF.

All projects are documented and publicly available on a Schedule of Proposed Actions (SOPA) maintained for each National Forest. This includes the environmental assessment and related documents. For example, the SOPA for the Francis Marion NF can be found here, for the Shoshone NF here, and for the Lassen NF here. Detailed biodiversity and HCV descriptions and potential impacts are found in specialists reports.

USFS staff interviewed during the assessment process described means of implementation and provided documented examples of management plans, environmental assessments, reports, and correspondence with the US FWS that demonstrate identification of key species, habitats, ecosystems and biological HCVs. Although some NF LRMPs have not been revised in over 10-years as a result of administrative, budgetary or resource constraints, consistent implementation of comprehensive, multi-disciplinary planning and environmental assessment at the project level provides reasonable assurance that key species, habitats, ecosystems and biological HCVs are identified in advance of implementing any management activities that could affect those species and communities. Responsibilities and lines of authority are clearly established, ensuring that appropriate review and approval occurs before project implementation. Well established processes for public notification and appeal provide added measures of assurance that laws, regulations and best practices are employed.

Sample NEPA documents such as EAs and specialist reports provided for the Lassen, Shoshone and Sumter NFs demonstrated threats to and impacts on the identified key species, habitats, ecosystems, and biodiversity HCVs are identified and evaluated, with protection measures prescribed as needed.

Risk conclusion and justification.
The Forest Service has a robust suite of complimentary and overlapping processes for identifying and evaluating potential impacts to key

	species, habitats, ecosystems and HCVs. There is a low risk threats to and impacts to the environment would not be identified and evaluated. Several laws and regulations including the 2012 Planning Rule, NEPA, NFMA, and ESA require the USFS to identify and conserve at-risk species and habitats, and to engage the public in developing plans prior to implementing activities that may impact those species and habitats. USFS employees are further guided by agency directives in the form of manuals and handbooks that provide detailed work instructions for protection of these resources and complying with applicable laws and regulations. Coordination and consultation with other agencies and organizations is fundamental to USFS efforts to identify these resources. Public consultation, including consultation with tribes, during all stages of planning provides additional opportunities for identification of important and sensitive biodiversity resources.
Supply Base Verifiers	▪ Environmental Assessment ▪ Cultural Resources Specialists Report ▪ Biological Opinion ▪ Forest Management Plan ▪ Project Plan ▪ Maps
Evidence reviewed	▪ National Environmental Policy Act (NEPA) of 1969 ▪ Endangered Species Act (ESA) of 1973 ▪ Clean Water Act of 1972 33 ▪ National Forest Management Act (NFMA) of 1976 ▪ Fish and Wildlife Coordination Act of 1934 ▪ Forest and Rangeland Renewable Resources Planning Act of 1974 ▪ Code of Federal Regulations Title 36, Part 220 - National Environmental Policy Act Compliance ▪ Code of Federal Regulations Title 40, Parts 1500 – 1508 ▪ 2012 USFS Planning Rule (36 CFR Part 219, section 219.11) ▪ FSM 1900, Chapter 1950, Environmental Policy, and Procedures ▪ FSM 2400 – Timber Management ▪ FSM 2600, Chapter 2670 - Threatened, Endangered and Sensitive Plants and Animals ▪ FSH 1909.12 Land Management Planning Handbook ▪ FSH 1909.15 National Environmental Policy Act Handbook ▪ FSH 2409.18 - Timber Sale Preparation Handbook ▪ Biennial Monitoring Evaluation Report, Francis Marion National Forest, Reporting Years 2019 and 2020 ▪ Land Management Plan, 2015 Revision, Shoshone National Forest, May 2015. ▪ McClellanville Powerline Draft Supplemental EIS - August 2019

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- Information Planning and Consultation (IPaC), US Fish and Wildlife Service, https://ipac.ecosphere.fws.gov/
- Biological Assessment for Threatened and Proposed Threatened Species and their Critical Habitat. East Winds Project, Wind River Ranger District, Shoshone National Forest, Freemont and Teton Counties, Wyoming. September 18, 2021
- 2021 East Winds Forest Health Project, Categorical Exclusion Review
- Documentation of the Biological Evaluation Process For R-2 Designated Sensitive Species related to Homestead Park II Fuels Reduction, Washakie Ranger District, Shoshone National Forest, Freemont County, Wyoming. August 2004
- Memo from the US Fish and Wildlife Service to Greybull, Clarks Fork, and Wapiti Ranger Districts, Shoshone National Forest re: proposed Fuels Reduction and Aspen Enhancement Projects. April 3, 2020
- Biological Opinion, US Fish and Wildlife Service, Canada Lynx. October 25, 2000.
- Biological Evaluation and Assessment for Region 5 Forest Service Sensitive and Federally Listed Plant Species, Campbell DFPZ Project, Eagle Lake Ranger District, Lassen National Forest. June 13, 2012.
- Campbell DFPZ Project, Report for Fire and Fuels. May 31, 2012.
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Risk rating	Low risk

Principle 2 – Biomass sourcing does not harm the environment	
Criterion 2.1 – **Biodiversity is maintained or enhanced**	
2.1.3	Key species, habitats, ecosystems, and other areas of high conservation value pertaining to biodiversity in the supply base shall be maintained or enhanced.
Findings	**Scale of assessment** All US National Forests located in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 2, Region 5, Region 8, NFs of Mississippi, Shoshone NF, and Modoc NF. The Endangered Species Act (ESA) requires that all federal agencies including the USFS conserve threatened and endangered species and the habitats critical to their ongoing viability. Under section 7(a)(2) of the ESA and FSM 2670.31, the USFS is required to initiate consultation or conference with the USFWS when they determine that proposed activities may affect federally listed threatened, endangered, proposed and candidate species. As stipulated in FSM 2670, a formal Biological Assessment (BA) is conducted to ensure actions taken by the Forest Service don't negatively impact the viability of native species. As a result of these consultations, which are formally documented, the USFWS and the USFS may agree on a set of reasonably prudent measures to reduce any harm, and most importantly, agree that the action overall will serve to protect the viability of the species. These measures are then implemented by the USFS, monitored for effectiveness, and reported back to the USFWS. According to the Center for Biological Diversity and other sources, the ESA is the "strongest law for protecting biodiversity passed by any nation" with a success rate of preventing the loss of over 99% of species listed as threatened or endangered (Suckling, K., et al., 2016). In addition to federally listed species, each Regional Forester

develops and maintains a list of Species of Conservation Concern (SCC). Protections for SCCs and their associated habitats are employed at the NF and Region level. NFs typically utilize NatureServe, State Natural Heritage databases, field surveys, and other resources such as the IPaC online tool maintained by the USFWS to identify key species and their habitats, and for developing strategies to sustain viable populations of those species and their associated habitats.

Forest plans must address maintenance and restoration of native species and ecosystems in keeping with the natural range of variation. The Healthy Forests Restoration Act (HFRA) was enacted in part to "protect, restore, and enhance forest ecosystem components" including protection of threatened and endangered species and enhancement of biological diversity.

As a federal agency, the USFS is mandated to comply with the National Environmental Policy Act (NEPA). NEPA requires the USFS to conduct a comprehensive assessment as a fundamental step in the land management planning process in advance of implementing specific management activities as stipulated in the 2012 Planning Rule (36 CFR 219.6). In addition to protections for key species and habitats, forest management plans are also required to address identification and conservation of large intact ecosystems. The USFS conducts assessments to identify key ecological resources at numerous scales and planning stages including at the level of the NF LRMP and at the project level. Mandatory NEPA processes (i.e., Environmental Impact Statements (EIS), Environmental Assessments (EA), Categorical Exclusions (CE)) are implemented to identify potentially affected resources, potential impacts, and mitigation actions resulting from proposed actions and alternative actions, including a 'status quo' alternative. NEPA requires a multidisciplinary environmental evaluation to identify key resources and values when developing plans and prior to implementing specific decisions and activities. Subject matter experts (e.g., wildlife biologist, ecologists, foresters, etc.) serve on interdisciplinary teams to identify the presence (or likelihood of presence) for key species, habitats, ecosystems and biodiversity HCVs present within a planning or project area. BAs for federally listed species and Biological Evaluations (BEs) for Regional Sensitive Species, as well as specialist reports are conducted as appropriate during the NEPA process. Biological Opinions (BOs) issued by the USFWS as part of formal consultations for federally listed species inform project design and subsequent monitoring and reporting by NFs. in the environmental documents prepared under NEPA and incorporates the recommendations from the USFWS into the final decision document. NEPA also requires public engagement throughout all phases of planning, as does the 2012 Planning Rule and the National Forest Management Act (NFMA). NEPA processes are guided by FSH 1909.15 – National Environmental Policy Act Handbook.

The National Forest Management Act (NFMA), and the 2012 Forest Service Planning Rule (36 CFR 219) both require the USFS to identify "lands not suited for timber production" as a fundamental step in management planning. The purpose of these statutes is to ensure that NFS forest lands are managed sustainably. NEPA processes identify and assess potential impacts of proposed activities on ecological and environmental attributes. Individual project designs adopt any protective measures identified during the NEPA process and documented in corresponding EAs and EIS's. LRMP objectives for protection, maintenance, restoration of species, habitats and ecosystems must also be incorporated as applicable to project level activities.

Section 219.11 of the Planning rule stipulates six conditions that require this designation, including when timber production is not compatible with established management objectives, when harvesting timber would result in irreversible harm to the environment, and when there is no reasonable assurance the lands would regenerate within five years. The USFS has established a system for land classification that includes whether the land is suitable for timber production. These codes are described in user guides (e.g., FSVeg Common Stand Exam USER Guide, Region 8 Appendix H), and used to identify stands with proposed treatments in all silvicultural prescriptions. Consistent with the Multiple-Use Sustained Yield Act (MUSYA), the NFMA, and the 2012 Planning Rule Section 219.11, timber harvesting can be used as a tool to achieve conservation and restoration objectives. However, timber harvest for any purpose can only occur when measures are in place to protect soil, watershed, fish, and wildlife.

Timber production is typically a secondary outcome of restoration and conservation oriented management objectives. USFS staff interviewed during the assessment consistently stated that overall agency-wide management objectives and project goals are focused on maintenance and restoration of natural, endemic ecosystems and improvement of wildlife habitats.

Several other federal laws including the Forest and Range Resource Planning Act, the Federal Land Policy and Management Act, the Wilderness Act, the Wild and Scenic Rivers Act and others direct the Forest Service to identify and protect critical habitats and ecosystems, and to conduct periodic quantitative inventories sufficient to identify and assess existing and potential resources on National Forests. The US Forest Service adopted the Roadless Area Conservation Rule in 2001. The Roadless rule prohibits road construction, road reconstruction and timber harvesting on roughly 58.5 million acres of intact forests inventoried at the time of the rule. Roadless Areas represent roughly 1/3 of all lands in the National Forest System. Designated Roadless Areas also address HCV 1 – HCV 4.

Providing for ecological sustainability is a core responsibility for the Forest Service in maintaining the long-term health and productivity of National Forests. The 2012 Forest Service Planning Rule specifically states that National Forest System lands will "consist of ecosystems and watersheds with ecological integrity and diverse plant and animal communities." (36 CFR 219.1(c)) and further requires the maintenance and restoration of ecosystem "structure, function, composition, and connectivity," including conservation of diversity of habitats, rare communities, and species at risk.

The 2012 Planning Rule further imposes a two-stage approach for identifying and managing ecological values. In the first stage, plans are developed to maintain or restore the ecological integrity and diversity of key ecosystems with the goal of meeting the habitat needs of species occurring in National Forests. In the second stage, the Forest Service develops additional plans for at-risk species whose habitat needs are not fully met by the ecosystem level assessment in stage 1. This process promotes biodiversity, protects rare and imperiled species, and maintains important habitats. These processes clearly address HCV 1 Species Diversity, HCV 2 Landscape Level Ecosystems and HCV 3 Ecosystems and Habitats as identified by the HCV Network. The Planning Rule requires that each project and activity occurring on National Forests are consistent with corresponding land management plans (36 CFR 219.15).

Land management planning is guided by FSM 1900, and more specifically Chapter 1920 – Land Management Planning, as well as FSH 1909.12 – Land Management Planning Handbook. Key resources are identified during the assessment process (FSH 1909.12, Chapter 10 – Assessments). Responsibilities and procedures for conducting inventories, identifying and assessing the presence of ecosystems, species of concern, habitats and HCVs are detailed in several Forest Service manuals and handbooks including FSM 1900, FSH 1909.12, FSH 1909.14 and FSH 1909.15. The Forest Service is directed by FSM 2000 to emphasize ecosystem restoration throughout the National Forest System.

Additional measures have been implemented at sub-national scales that impose additional management designations for protection of key habitats. For example, the Northwest Forest Plan (NWFP) established reserves for protection of riparian areas and late-successional habitat on 17 NFs in WA, OR, and northern CA. The LRMPs for all are formally tiered to the NWFP, resulting in de facto adoption of designated protected areas and associated conservation measures. The NWFP stipulates that a management assessment must be completed for each designated Late-Successional Reserve (LSR) prior to implementation of management activities in those areas. USFS regional guides are also amended by the NWFP. Another example of a regional initiative is the Sierra Nevada Forest Plan Amendment, also referred as the Sierra Nevada Framework), which was adopted by 11 NFs in California and resulted in enhanced protection measures for key ecosystems, wildlife habitat and watersheds.

The USFS also utilizes several administrative management designations that impose protections for areas supporting ecologically important attributes or values such as Research Natural Areas and Roadless Areas. In addition to NF level processes for identifying key habitats, ecosystems and areas of biodiversity HCVs, forest areas are formally designated for conservation and protection by acts of the US Congress, including Wilderness Areas, and Wild and Scenic River corridors.

Section 219.12 of the 2012 Planning Rule mandates the development and implementation of a monitoring plan to evaluate effectiveness in achieving management objectives. The monitoring plan must address, among other issues, ecological condition of ecosystems and the status of key species and their critical habitats. The Forest Management Plan defines goals by resource activity and projected outputs. Monitoring of LRMP objectives occurs on five or ten-year frequencies. National Forests conduct biennial monitoring and evaluation activities to identify and assess effects of management activities over time and make adaptations to management strategies as appropriate. Monitoring plans are incorporated into NF LRMPs and investigate specific questions and associated indicators that are relevant to achieving the objectives of the management plan and all management activities on the forest. Topics typically included in monitoring include water resources, terrestrial and aquatic ecosystems, key focal species and their habitats, federally listed species, and species of conservation concern (SCC).

In response to Presidential Executive Order 14072, and in collaboration with the USDI BLM, the USFS has completed an inventory of mature and old-growth forests on lands administered by the two agencies. The results of the inventory are included in an April 2024 report, and indicate that out of a total forest area (excluding AK) of 144,328,194 acres (17.1%) of forest land in the NFS, 24,738,364 acres are old-growth forest, and 68,136,957 acres (47.2) are mature forests (USDA Forest Service and USDI Bureau of Land Management.

April 2024). These two agencies have also completed a threat analysis of mature and old-growth forests (USDA Forest Service and USDI Bureau of Land Management. June 2024). A Draft Environmental Impact Statement (DEIS) to amend all NF LRMPs for conservation and stewardship of old-growth forest conditions is currently being finalized following a 90-day public comment period, and is expected to be completed in January 2025. The proposed USFS Old-Growth Amendment would effectively prohibit cutting old-growth trees primarily for economic purposes, but does allow vegetation management for ecological purposes (e.g., resilience and climate adaptation), and provides exceptions for hazardous fuel reduction, public safety, and culturally significant practices. The proposed Amendment has drawn significant interest from across the spectrum of stakeholders, as evidenced by numerous media reports. Stakeholder perspectives submitted during the public comment period will be reviewed by the USFS and considered during the finalization of the Old-Growth Amendment EIS.

Enforcement, monitoring and outcomes

Stand biodiversity characteristics are restored, maintained, improved via silvicultural prescriptions, following BMPs, and implementation of specific conservation measures outlined in the Forest plan and identified at the project level through NEPA processes. Prescribed fire, commercial timber harvesting, and precommercial thinning are typical management actions taken on many NFs to maintain or enhance key biodiversity attributes and resources such as longleaf pine ecosystems and habitat for red-cockaded woodpeckers (RCW), gopher tortoises and dusky gopher frogs in Mississippi, or for restoring forest resiliency on the Shoshone and Modoc NFs. Protection of critical habitats and ecosystems is also a central management strategy on NFS lands, such as late-successional reserves and riparian reserves on the Modoc NF.

Forest Plans, NEPA documents (e.g., environmental impact statements, environmental assessments), project level planning and assessment documents (e.g., LSR assessment, biological assessments), and readily available tools and resources (e.g., IPaC, ECOS, State Heritage Programs) provide evidence that laws, regulations and best practices for identifying key species, habitats, ecosystems and biological HCVs are consistently implemented. Several examples were reviewed during the assessment as descried below.

The USFS has not adopted the term "Intact Forest Landscapes," however the IFL concept overlaps with the USFS approach for identifying and protecting large, native forest ecosystems with minimal human (economic) disturbance. The NFS is inclusive of a significant representation of congressionally and administratively designated protected areas including Wilderness Areas, Inventoried Roadless Areas, Late Successional Reserves (LSRs) and other land use designations that prioritize maintenance of HCVs such as IFLs, Old-Growth, and critical habitat. There are 447 designated Wilderness Areas with a total cumulative area of over 36 million acres located within NFs. The USFS manages over 5,000 miles of Wild and Scenic River corridors. Inventoried Roadless Areas cover 58.2 million acres of NFs in 38 states within CONUS. LSRs are established to protect critical habitat of Rare, Threatened and Endangered (RTE) species (e.g., northern spotted owl, marbled murrelet), and to protect and restore late-successional and old-growth (LSOG) ecosystems. There are over 7 million acres of LSRs on NFs in California, (CA), Oregon (OR) and Washington (WA).

The Forest Stewardship Council (FSC) has adopted a framework for identification and protection of areas supporting critical ecosystem services and biodiversity developed by the High Conservation Value (HCV) Network. The HCV Approach includes six categories of HCVs, including HCV2 which addresses large landscape level ecosystems and IFLs. The FSC US Controlled Wood National Risk Assessment (NRA) found that IFLs "largely occur" within areas with permanent legal protection from timber harvest, such as designated Wilderness Areas or National Parks. Almost all IFLs existing outside areas with permanent legal protect are found in Inventoried Roadless Areas on NFs, which are administratively protected from timber harvest, with narrowly defined exceptions. The Shoshone NF completed a Biological Assessment (BA) in 2021 for threatened and proposed threatened species occurring or potentially occurring within the East Winds Project area. The BA found the project may affect/is likely to adversely affect Canada lynx and its critical habitat, and may, but is not likely to significantly affect grizzly bears or whitebark pines. As noted in the corresponding Decision Memo issued by the Wind River District Ranger, the project is in alignment with the Forest Plan because the amount lynx habitat affected "will not exceed acreage limits established for exempted fuel reduction treatments within the Wildland Urban Interface." The Modoc NF recently completed NEPA processes as part of the planning for the Fandango Forest Health Project, which would include timber harvesting operations within the 2,800 acre project area. The Decision Memo for the Fandango project summarizes proposed activities as well as design features to protect sensitive species and habitats such as Riparian Conservation Areas, Critical Aquatic Refuges, and wildlife species including golden eagles and goshawks. A BA found no federally listed species within the project area, and a Biological Evaluation (BE) found the project would have no significant impact on Region 5 Sensitive Species found within the project area. Modoc conducted BA in 2017 for federally listed and proposed botanical species potentially occurring within the Josheph Creek Forest Health Project in the Warner Mountain Ranger District. The BA found no potential habitat for two plant species within the project area and determined no risk as a result of project activities. The Modoc NF also conducted a Biological Evaluation for 29 plant species designated as Region 5 Sensitive Species. The BE concluded that the project would have no impact on 19 plant species and may impact individual plants for the remaining 10 species but not likely to cause trend toward decreased viability of the species. For the Lava Fuels Reduction Project on the Modoc NF, separate specialists reports were conducted for wildlife, sensitive plant species, late-successional areas, silvicultural outcomes and other relevant topics.

All timber sales on lands administered by the USDA Forest Service are transacted through formal contracts. These timber sale contracts are comprehensive documents that address a wide range of issues, including protection of special management sites, residual vegetation, meadows, wetlands, stream courses, and resources outside the designated harvest area. As an example, the Sample Timber Sale Contract for the Fandango Fire Salvage includes provisions for protection of wildlife habitat features (C2.35, C6.24) and riparian areas (C6.5). Conducting regular site inspections of timber sale operations is standard operating procedure for all timber sales occurring on NFs. These inspections review and evaluate all aspects of the logging operations. Inspections are conducted "as often as is necessary" to ensure compliance with timber sale contract provisions. Timber sale inspections are documented and incorporated into the contract file. Timber Sale Inspection Reports for the Fandango project demonstrate active enforcement of contract to protect wildlife and habitat.

When developing a monitoring strategy, the regional forester is required to coordinate with the relevant responsible officials, Forest Service State, Private and Tribal Forestry and Research and Development, partners, and the public. Each NF develops a monitoring and

evaluation strategy as part of the Forest Plan. Monitoring objectives and techniques are spelled out in the Modoc LRMP Appendix E for Threatened and Endangered species, Sensitive Species, and other species of interest. The Lava Hazardous Fuels Reduction project was referenced by Modoc NF staff as an example of conducting pre- and post-harvest monitoring in relation to the spotted owl, a federally listed species. The NFs n Mississippi address monitoring in Section 5 of the LRMP with specific questions and performance measures associated with retention and restoration of key species (e.g., management indicator species), habitats and ecosystems. Most performance measures are measured and evaluated at 5 year intervals. Although not among the NFs sampled for Indicator 2.1.3, the 2019-20 Biennial Monitoring report for Francis Marion NF indicates stable or increasing populations for nearly all federally listed species and recommends actions to be taken when results indicate opportunities for improvement. Red-cockaded Woodpecker (RCW) and longleaf pine are examples of two focal species that have increased either directly or indirectly as a result of FMNF management activities. The most recent monitoring reports found for Shoshone NF, Forests of Mississippi NF and Modoc NF are dated 2006, indicating that monitoring on those forests has not been conducted in almost 20 years.

The 2020 Bioregional Assessment of Northwest Forests and the 2021 Supplemental Report to the Bioregional Assessment together provide summary data to demonstrate that conservation measures implemented by the USFS in response to the NWFP have resulted in maintaining or improving conditions for old growth forest habitat, late successional forests, aquatic habitat and wildlife habitat, including habitats critical to federally listed species. The Bioregional Assessment also identifies recommended changes for adaptive management to improve ecological integrity and resilience. Within the 17 NFs included in the NWFP area, 28% of the NFS is reserved through congressional action, 22% is in late successional reserves that provide critical habitat for federally listed species, 19% is in riparian reserves prioritizing conservation of aquatic and riparian dependent species, 6% has been administratively withdrawn where management objectives preclude timber harvesting. Timber harvesting and other silvicultural activities are concentrated on 20% of the NFS land base.

The Forest Service uses special land designations to ensure key species, habitats, ecosystems, and other areas of high conservation value pertaining to biodiversity are protected in perpetuity. Currently more than 400 distinct Wilderness Areas representing nearly 32 million acres have been formally designated on National Forests by acts of the US Congress. Similarly, the Wild and Scenic Rivers Act of 1968 provides protection for water quality, habitat, and recreation on nearly 5,000 river miles on National Forests. Formal designation as a Wilderness Area or a Wild and Scenic River segment clearly addresses HCV 1 Species Diversity, HCV 2 Landscape Level Ecosystems, HCV 3 Ecosystems and Habitats and HCV 4 Ecosystem Services.

All USFS projects are documented and publicly available on a Schedule of Proposed Actions (SOPA) maintained online for each National Forest. Several key project NEPA documents are typically available along with brief project summaries. The SOPA for the NFs in Mississippi listed 81 projects, with 45 projects listed as being on hold or cancelled. Of the remaining 36 projects, two include timber harvesting activities to achieve management objectives including forest health, longleaf pine restoration, and habitat management for federally listed species (gopher tortoise, dusky gopher frog).

Detailed biodiversity and HCV descriptions are found in specialists reports divided by topic such as aquatic resources, watershed, rare plants, potential wilderness areas, recreation, wildlife, roadless areas and heritage. Once identified, an Environmental Impact Statement (EIS) or Environmental Assessment (EA) describes how the proposal and action alternatives can impact biodiversity.

The majority of lands administered by the three NFs sampled for this indicator (Shoshone, Modoc, Mississippi) have been designated as not suited for timber production, either having been formally withdrawn as a result of congressional or administrative decree (e.g. Wilderness Area, Roadless Area, etc.), or as a result of NF-level analysis. These designations are documented in the LRMPs for each NF. When combined, the three NFs have designated 70% of the NFS land base as unsuitable for timber production, ranging from 95% unsuitable for the Shoshone NF, to 19% unsuitable for NFs in Mississippi (Table 8). The designations for these three NFs indicate both the regional variability in the characteristics of National Forest lands, as well as the application of a consistent methodology for protecting lands that support sensitive resources or otherwise are dedicated to management objectives that could be threatened by commercial timber production.

Table 8: Lands Designated Suitable for Timber Production: NFs in MS, Shoshone NF, Modoc NF.

	NFS Lands	Not Forested	Formally Withdrawn	Potential Irreversible Damage	Regen. Not Assured	Incompatible Management	Other	Suitable for Timber Production
NFs in Mississippi	1,172,524	18,826	14,426	0	0	185,017	0	954,255
Shoshone NF	2,438,000	50,700	1,429,600	274,500	13,900	220,900	321,400	127,000
Modoc NF	1,663,320	505,024	28,604	0	17,840	92,416	500,456	518,980
Total – All Three NFs	5,273,844	574,550	1,472,630	274,500	31,740	498,333	821,856	1,600,235

Source: NF LRMPs for NFs, in Mississippi. Shoshone NF, Modoc NF.

National Forests conduct biennial monitoring and evaluation activities to identify and assess effects of management activities over time and make adaptations to management strategies as appropriate. Monitoring plans are incorporated into NF LRMPs and investigate specific questions and associated indicators that are relevant to achieving the objectives of the management plan and all management activities on the forest. Topics typically included in monitoring include water resources, terrestrial and aquatic ecosystems, key focal species and their habitats, federally listed species, and SCCs. The Sierra Nevada Forest Plan Monitoring Accomplishment Report and the Southern Sierra Nevada Fisher Conservation Strategy are two examples of monitoring and subsequent adaptive management taking place at a regional scale on NF lands, as well as lands managed by other agencies and organizations.

Although not specifically sampled for this indicator, the 2019-20 Biennial Monitoring report for Francis Marion NF indicates stable or increasing populations for nearly all federally listed species and recommends actions to be taken when results indicate opportunities for

improvement. Red-cockaded Woodpecker (RCW) and longleaf pine are examples of two focal species that have increased either directly or indirectly as a result of FMNF management activities.

Processes for formal objections and appeals are readily available and well-known to interested member of the general public and advocacy organizations. There are ample examples of appeals and lawsuits having been filed in opposition to USFS proposed plans and activities. These processes serve as additional mechanisms for ensuring USFS forest management activities maintain and enhance biodiversity.

Risk conclusion and justification.
The Forest Service has robust systems for identifying, protecting or restoring ecologically important attributes, including at-risk and sensitive species, critical habitats, and key ecosystems. Several laws and regulations including the 2012 Planning Rule, NEPA, NFMA, and ESA require the USFS to identify and conserve at-risk species and habitats, and to engage the public in developing plans prior to implementing activities that may impact those species and habitats. USFS employees are further guided by agency directives in the form of manuals and handbooks that provide detailed work instructions for protection of these resources and complying with applicable laws and regulations. Coordination and consultation with other agencies and organizations is fundamental to USFS efforts to identify these resources.

The Forest Service uses special land designations to ensure key species, habitats, ecosystems, and other areas of high conservation value pertaining to biodiversity are protected in perpetuity. As an example, a combined 70% of the land base in the three NFs sampled for this indicator (Shoshone, Modoc, Mississippi) have designated as unsuitable for timber production, including 28% having been formally withdrawn and protected from timber harvest as a result of congressional or administrative decree (e.g. Wilderness Area, Roadless Area, etc.). The FSC US NRA found that almost all IFLs existing outside areas with permanent legal protect are found in Inventoried Roadless Areas on NFs. Inventoried Roadless Areas are administratively protected from timber harvest, with narrowly defined exceptions. Consequently, the FSC US NRA concluded there is a low risk of sourcing timber from forests where HCV2 are threatened by management activities.

The proposed USFS Old-Growth Amendment would revise all NF LRMPs where old-growth exists for the purposes of conserving existing old-growth, as well as recruitment and stewardship of new old-growth forests in the NFS. The proposed Amendment represents a cohesive national approach to prioritizing the conservation and stewardship of old-growth forests nationwide, while allowing for adaptive management in response to climate change and other environmental pressures.

Management objectives and goals included in LRMPs and NEPA documents demonstrate that timber harvesting is not the primary management objective on NFs. A significant portion of the NFS is dedicated primarily to conservation of key species, habitats and ecosystems. By law, all activities taking place on NFs must be aligned with approved LRMPs. Protective measures, referred to as integrated design features, are informed by specialists' reports and NEPA processes for protection of key species, habitats, ecosystems, and areas supporting high conservation values for biodiversity. Each NF develops a monitoring and evaluation strategy as part of the

	Forest Plan to ensure plan objectives are met and remain relevant and appropriate for achieving the agency mission. Several examples of site level, forest level and regional level monitoring reports were provided by USFS staff. All timber sales on lands administered by the USDA Forest Service are transacted through formal contracts with specific provisions for protection of sensitive areas and special management sites. Timber sale site inspections are regularly conducted by USFS staff to monitor and enforce compliance with contract terms and provisions, including design features and protective measures for maintaining or enhancing key biodiversity values are appropriately implemented. Responsibilities and lines of authority are clearly established, ensuring appropriate project implementation. Well established processes for public notification and appeal provide added measures of assurance that laws, regulations and best practices are employed.
Supply Base Verifiers	▪ NF Forest Management Plans ▪ NEPA documents associated with NF Forest Management Plans ▪ Project-level NEPA Documents ▪ Timber sale prospectus' ▪ Timber sale contract provisions ▪ NF monitoring reports
Evidence reviewed	▪ Multiple-Use Sustained Yield Act of 1960 (16 U.S.C. 528-531) ▪ National Environmental Policy Act (NEPA) of 1969 ▪ Endangered Species Act (ESA) of 1973 16 U.S.C. § 1531 et seq. ▪ Forest and Rangeland Renewable Resources Planning Act of 1974 ▪ Federal Land Policy and Management Act of 1976 ▪ The National Forest Management Act (NFMA) of 1976 (P.L. 94-588) ▪ The Wilderness Act of 1964 (Pub. L. 88-577) ▪ The Wild and Scenic Rivers Act of 1968 (16 U.S.C. 1271-1287) ▪ Healthy Forests Restoration Act (HFRA) of 2003 (16 U.S.C. 6501-6591) ▪ Roadless Area Conservation Rule of 2001 ▪ Code of Federal Regulations Title 40, Parts 1500 – 1508 ▪ 2012 Forest Service Planning Rule (36 CFR Part 219 Planning) ▪ Code of Federal Regulations Title 36, Part 220 - National Environmental Policy Act Compliance ▪ 2012 USFS Planning Rule (36 CFR Part 219, section 219.11) ▪ Forest Service Manual 1900, Chapter 1950, Environmental Policy, and Procedures ▪ Forest Service Manual 2000, Chapter 2020 Ecosystem Restoration ▪ Forest Service Manual 2600, Chapter 2670 - Threatened, Endangered and Sensitive Plants and Animals ▪ Forest Service Handbook 1509.12 Appeals Handbook ▪ Forest Service Handbook 1909.12 Chapter 30 Monitoring

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Risk rating	Low risk

Principle 2 – Biomass sourcing does not harm the environment	
Criterion 2.2 – **Ecosystem, their productivity, functions, and services are maintained or enhanced**	
2.2.1	Feedstock shall not be sourced from land that had one of the following statuses in January 2008 and no longer has that status due to land conversion: a. Forests b. Wetlands c. Peatlands

	d. Highly biodiverse grasslands.
Findings	**Scale of assessment** All US National Forests located in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 2, Region 5, Region 8, Nantahala-Pisgah NF, Chequamegon-Nicolet NF, and Modoc NF. Consistent with the NUSYA, there are no laws, regulations, or policies that explicitly prohibit the conversion of forests to other uses on NFs. However, there are numerous examples of federal laws and agency directives that require analysis of impacts and may limit, restrict or prevent forest conversion depending on circumstances. The USFS is mandated by these laws to manage the NFS "to sustain the multiple use of its renewable resources in perpetuity while maintaining the long-term health and productivity of the land" (36 CFR 219.1(b) & (c)). The NFMA, NEPA, CWA, and the 2012 Planning Rule all include requirements that effectively limit conversion of forests, wetlands, and native grasslands to other uses. The Organic Act of 1897 effectively established the national forest system and directed that these public forest reserves be administered to improve and protect the forests, watersheds, and provide a continuous supply of timber. Forest reserves were not intended to include areas considered more valuable for the production of minerals and agricultural use. The Multiple-Use Sustained Yield Act of 1960 requires that all renewable surface resources on NFs be managed for outdoor recreation, range, timber, watersheds, wildlife and fish "in the combination that will best meet the needs of the American people." Presidential Executive Order 11990 was issued in 1977 directing all federal agencies to "… take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities". As required by the NFMA, a fundamental requirement in the development of a NF LRMP (forest management plan) is determination of areas that are/are not appropriate for timber production. As stipulated in in the 2012 Planning Rule (36 CFR Chapter II Part 219.11), lands must be designated as not suitable for timber management if they are not forest land, not compatible with management objectives and desired future conditions for that area, if timber harvesting would result in irreversible damage to soils or watershed characteristics, or if they are unlikely to be regenerated to forest conditions in a reasonable time (5 years). Also stipulated in the 2012 Planning Rule is identification and assessment of information relating to a wide range of values and resources, including terrestrial and aquatic ecosystems and water resources. Plans must include standards for the protection of wetlands, and to maintain or restore the ecological integrity of terrestrial and aquatic ecosystems. Legal requirements for environmental review and consultation including the requirements under various acts, are integrated into the environmental review, documentation, and decision-making completed under the National Environmental Policy Act (NEPA). Where waterways or wetlands may be directly affected or modified, the Forest Service is legally required under section 404 of the Clean Water Act to consult with the US Army Corps of Engineers; permitting may be required.

In 1977, President Jimmy Carter issued Executive Order 11990 in furtherance of the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 et seq.) directing all federal agencies to "… take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities" including, "…conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities."

All activities taking place on NFs must align with the forest plan and are required to undergo the NEPA process and associated consultations. NEPA requires the completion of a comprehensive environmental analysis prior to approval and implementation of plans and activities on National Forests. Forest Service compliance with NEPA is spelled out in 36 CFR Part 220, and further addressed in FSM 1950 Environmental Policies and Procedures, and FSH 1909.15 NEPA Handbook. NEPA specifically requires the use of an interdisciplinary approach to evaluate potential direct and cumulative impacts on ecosystems and associated resources.

The Forest Service also implements several national initiatives that contribute to the protection and restoration of wetlands and aquatic habitats including the Watershed Condition Framework (WCF) and the National Fish and Aquatic Strategy. The WCF provides the USFS with a consistent methodology to assess and track changes in watershed condition on National Forests. Among the purposes of implementing the WCF are identifying existing conditions, protection and restoration of aquatic ecosystems using an integrated, ecosystem-based approach. The National Fish and Aquatic Strategy compliments the WCF by designating "conservation watersheds" to "protect and maintain intact aquatic systems as well as restore degraded watersheds of high importance for stewardship of fish and aquatic resources over the long term."

The USFS and BLM have developed procedures for interagency cooperation in the management of mineral exploration and extraction on NFs. Regulations governing mineral operations and surface management under the General Mining Act on NFs are stipulated in 36 CFR 228 Subpart A and require that a plan of operations demonstrating that mining will not cause significant disturbance of surface resources must be approved by the USFS prior to initiating mining activities. The USFS Mineral's Program Policy states that the Forest Service will strive to ensure that mining activities are conducted in an environmentally sensitive manner and integrated with other management activities using ecosystem management principles. The policy further states that NF lands disturbed by mining activities il be restored to other productive uses.

Enforcement, monitoring and outcomes

For forest or project level decisions the NEPA is enforced through a variety of checks and balances beginning with the agency-designated Responsible Official (decision-maker). Primary responsibility for ensuring proper implementation of NEPA is vested in the Council on Environmental Quality (CEQ), which was established by Congress through the enactment of NEPA. CEQ is located in the Executive office of the President of the United States. The Environmental Protection Agency's (EPA) Office of Federal Activities is required to review Environmental Impact Statements and provide comments on the adequacy of the analysis and the impact to the environment. If EPA determines that the action is environmentally unsatisfactory, it is required by law to refer the matter to CEQ.

As a result of the regulatory framework that mandates the USFS to consistently emphasize ecosystem health and integrity in the development of LRMPs and project level activities, any conversion of natural ecosystems to other uses would need to be justified and managed to limit environmental impacts to the extent feasible. The cumulative effect of these laws and directives effectively discourages land conversion away from natural ecosystems. The 2020 Resources Planning Act Assessment shows (Figure 6-8) that over 6 million hectares (roughly 15 million acres) of federal forest lands have been lost to non-forest uses between 2007 and 2017 (USDA Forest Service, 2023). These figures are inclusive of all federal lands, including the NFS, throughout the US. Data provide by the USDA Forest Service FIA Program (Personal communication, Brett Butler, 2023) indicates that approximately 713,000 acres of NFS forests in the lower 48 states have been converted to non-forest land over the past decade. This data is derived from FIA plot measurements taken during the current and previous inventory cycles, which range from five to ten years between remeasurements. When compared to the total area reported for CONUS NF lands (135,832,423 ac.), the loss of forests to non-forest represents 0.5% of total NFS forest lands over a ten-year period in the contiguous US.

NF LRMPs reviewed do not explicitly and categorically prohibit conversion of forest, wetlands, peatlands, or native grasslands to other uses. There are instances of LRMPs that discourage or prohibit conversion in specific situations. For example, the GMUG LRMP requires avoidance of permanent conversion to non-forest in the context of fuels management and timber management. GMUG also prohibits timber harvest in wetlands if it leads to irreparable damage. CNNF prohibits conversion of natural opening to tree plantations.

The 1991 Modoc NF LRMP lists the continuation of wetland development as a goal, including management of ephemeral wetlands to maintain species dependent on those habitats. The Nantahala-Pisgah NF LRMP includes protection for wetlands and other aquatic resources. Timber harvest is permitted only where protection is provided for wetlands, and where forested sites can be adequately restocked within five years, which is consistent with the NFMA. The Chequamegon-Nicolet NF (CNNF) LRMP describes a desired future condition as including a diversity and abundance of wetlands maintained or restored over time, and that natural hydrological regimes for a variety of wetland types are maintained.

Multi-regional planning initiatives such as the Northwest Forest Plan (NWFP) and the Sierra Nevada Framework enhance protections at the NF level through administrative obligations for NFs to amend LRMPs by adopting applicable standards and designations. The NWFP impacted the management on 17 NFs in CA, OR and WA by establishing reserves for protection of riparian areas. Standards and guidelines established in 2004 Sierra Nevada Forest Plan Amendment include maintenance of the ecological integrity of aquatic, riparian and meadow ecosystems. Riparian Conservation Areas (RCAs) for Special Aquatic Features, which are defined as lakes, meadows, bogs, fens, wetlands, vernal pools, and springs, require a 300 foot buffer around the perimeter of the feature. The Sierra Nevada Framework impacts 11 NF's including portions of the Modoc NF.

Nevertheless, there are no laws, regulations or policies that categorically prohibit conversion of forests to other uses on NFs. For example, the McClellanville Area 115-kV Transmission Project currently proposed by the USDA Rural Utilities Service would include clearing timber

along a 150 foot right-of-way on portions of the Francis Mation NF. The Supplemental Draft EIS for the project states that merchantable timber harvested on SF lands would be cut and decked roadside for loading and hauling to appropriate markets. Additionally, the Mining and Minerals Policy Act of 1970 reinforced the US governments interest in encouraging development of mineral resources on federal lands, including NFs. While the USFS is responsible for stewardship of surface resources on NFs, the USDI Bureau of Land Management (BLM) maintains responsibility for minerals owned by the US government. The Mining Law of 1872 establishes that lands in the public domain, including NFs, are open to prospecting and sets forth general rules for conveyance of surface and mineral rights for lands determined to be worthy of issuing a formal patent. A moratorium on mineral patent applications has been in effect since 1994, however all patents issued prior to that time remain valid. The Mineral Leasing Act assigned authority to the US government to lease public lands, including lands within the NFS, for exploration and development of resources including coal, oil, natural gas, and certain other minerals specifically noted in the statute. The US government is also granted authority to manage the development of leased minerals. The USDI BLM is responsible for administering the law, while other agencies like the USDA Forest Service are typically assigned responsibility for NEPA analysis and planning, and determination of land surface suitability for leasing of mineral development.

The USFS has increased investment in mapping of wetlands. In the Eastern Region (R9), several NFs (Chequamegon-Nicolet, Superior, Chippewa, Hiawatha NFs) have partnered with other organizations to identify and map wetlands and ephemeral ponds to improve existing inventory data and enhance protection of wetlands.

According to the USFWS, palustrine (fresh water) forested wetlands experienced a net decrease of 426,000 acres , or 0.8%, across the CONUS on all ownerships from 2009 to 2019. All freshwater wetlands declined (net) by 0.2% during the same time period (Lang et al, 2024). Although this data is not specific to NFS lands, it indicates a very low net loss of wetlands. Given the many laws, regulations, directives and policies governing the USFS management of wetlands, net loss on National Forests is likely negligible.

The Landscape Change Monitoring System (LCMS) co-developed by the USDA Forest Service, produces annual maps indicating changes in land cover types and land use across the CONUS from 1985 to the present time. Shoshone NF reported that coarse scale data generated by the LCMS indicates most of the land cover change in the region is driven by wildfire, but did not provide information specifically about long-term conversion to other uses. As reported by the Natural Resources Staff Officer for Francis Marion and Sumter NFs, there have been no wetlands, peatlands, forest, or native grasslands converted to other uses since 2008. Lassen NF generated a report from the FACTS database indicating that a total of 339 acres of NF lands had been converted to other uses. Land use conversion was driven in all cases by public infrastructure needs such as commuter rail line, power lines, water treatment, and highway safety.

Risk conclusion and justification

The US Forest Service is legally obligated by numerous federal laws that prohibit degradation of forests, wetlands, grasslands and other native ecosystems. It is legally required to identify areas under their management that are not appropriate for timber production, including lands that are not defined as forest lands. All forest management plans and significant management activities such as timber harvesting are subjected to formal and comprehensive environmental review as required of NEPA. Timber harvests for the purpose of timber

	production are prohibited from taking place on lands not suitable for timber production. Tree harvests can potentially take place on lands designated as not suitable for timber production for restoration or other specific objectives, however timber harvesting is prohibited if soil, slope, or other watershed conditions would be irreversibly damaged. Although there are no laws explicitly prohibiting conversion of NFS lands to other uses, in practice, data show natural ecosystems occurring on NFS lands are rarely converted to other uses and historically the Forest Service has not converted lands other then as required for public domain use. The total forest loss over the past ten years represents 0.5% of the NFS forest area in the contiguous US. There is a low risk for this indicator as the assessment found no evidence that conversion of forests, wetlands, peatlands or highly diverse native grasslands to other uses is either directly or indirectly driven by commercial timber harvesting interests or objectives.
Supply Base Verifiers	▪ Maps ▪ Forest Plan ▪ Project Plan ▪ Monitoring and Evaluation Reports ▪ NEPA documents, e.g., EIS, EA, Decision Memo, Record of Decision (ROD), Finding of no Significant Impact (FONSI)
Evidence reviewed	▪ General Mining Law of 1872 ▪ Organic Administration Act of 1897 ▪ Mineral Leasing Act of 1920 (30 USC Section 181 et seq) ▪ Multiple-Use Sustained Yield Act (MUSYA) of 1960 (16 U.S.C. 528-531) ▪ Wilderness Act of 1964 ▪ National Environmental Policy Act (NEPA) of 1969 ▪ Minerals Policy Act of 1970 ▪ Clean Water Act (CWA) of 1972 ▪ Forest and Rangeland Renewable Resources Planning Act of 1974 ▪ The National Forest Management Act (NFMA) of 1976 (P.L. 94-588) ▪ Code of Federal Regulations Title 40, Parts 1500 – 1508 ▪ Code of Federal Regulations Title 36, Part 219, section 219.11 ▪ Code of Federal Regulations Title 36, Part 220 NEPA Compliance ▪ Code of Federal Regulations Title 36, Part 228 Subpart A ▪ Presidential Executive Order 11988, Protection of Floodplains (1977) ▪ Presidential Executive Order 11990, Protection of Wetlands (1977) ▪ FSM 1900, Chapter 1950, Environmental Policy, and Procedures ▪ FSM 2400 Timber Sales ▪ FSM 2520 Watershed Protection and Management ▪ FSH 1909.12 Chapter 60 - Forest Vegetation Resource Management ▪ FSH 1909.15 NEPA Handbook

	▪ FSH 2409.13 Timber Resource Land Suitability Process ▪ FSH 2409.18 Timber Sale Preparation Handbook ▪ Land and Resource Management Plan, Modoc National Forest. 1991 ▪ Chequamegon-Nicolet National Forests 2004Land and Resource Management Plan. R9-CN-FP. April 2004 ▪ Nantahala and Pisgah National Forests Final Land Management Plan. January 2023 ▪ Lang, M.W., Ingebritsen, J.C., Griffin, R.K. 2024. Status and Trends of Wetlands in the Conterminous United States 2009 to 2019. U.S. Department of the Interior; Fish and Wildlife Service, Washington, D.C. ▪ Watershed Condition Framework, USDA Forest Service. FS-977. May 2011. ▪ Wait, Karen L., and Pak, Mariya. 2022. Watershed Condition Framework 2011–2020: 10 years of restoration. FS-1191. U.S. Department of Agriculture, Forest Service, Washington Office. Washington, DC. 68 p. ▪ Rise to the Future: National Fish and Aquatic Strategy, USDA Forest Service. FS-1100b. November 2017 ▪ Hofmeister, K.L., Eggert, S.L., Palik, B.J., Moreley, D., Creighton, E., Rye, M., Kolka, R.K. The Identification, Mapping, and Management of Seasonal Ponds in Forests of the Great Lakes Region. December 2021. ▪ Forest Service Minerals Program Policy ▪ Mining Claims and Sites on Federal Lands. USDI Bureau of Land Management. May 2011. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3801585.pdf ▪ Policy and Procedures for The Review of Major Federal Actions with Environmental Impacts, U.S. Environmental Protection Agency. September 26, 2023 ▪ U.S. Department of Agriculture, Forest Service. 2023. Future of America's Forest and Rangelands: Forest Service 2020 Resources Planning Act Assessment. Gen. Tech. Rep. WO-102. Washington, DC. ▪ Personal communication, Brett Butler, Research Forester, USDA Forest Service Northern Research Station, Forest Inventory and Analysis. September 10, 2024.
Risk rating	Low Risk

Principle 2 – Biomass sourcing does not harm the environment	
Criterion 2.2 – **Ecosystem, their productivity, functions, and services are maintained or enhanced**	
2.2.2	Ecosystems, their health, vitality, functions and services in the Supply Base shall be maintained or enhanced.
Findings	**Scale of assessment** All US National Forests located in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 2, Region 5, Region 8, NFs in Mississippi, Grand Mesa Uncompahgre and Gunnison (GMUG) NFs, and Six Rivers NF.

The Organic Act of 1897 effectively established the national forest system and directed that these public forest reserves be administered to improve and protect the forests, watersheds, and provide a continuous supply of timber. The Multiple-Use Sustained Yield Act of 1960 requires that all renewable surface resources on NFs be managed for a range of values, including non-timber values such as watersheds, wildlife and fisheries. The National Forest Management Act (NFMA) of 1976 requires the USFS to use an interdisciplinary approach to evaluating and planning natural resource management on NFS lands, and to protect those lands from irreversible damages from timber harvesting. The National Environmental Policy Act (NEPA) requires the completion of a comprehensive environmental analysis prior to approval and implementation of plans and activities on National Forests. NEPA specifically requires the use of an interdisciplinary approach to evaluate potential direct and cumulative impacts on ecosystems and associated resources. Presidential Executive Order 14072 was issued in 2022 directing all federal agencies to promote the continued health and resilience of old-growth forests.

As required by the NFMA, a fundamental requirement in the development of a NF LRMP (forest management plan) is determination of areas that are/are not appropriate for timber production. Also stipulated in the 2012 Planning Rule is identification and assessment of information relating to a wide range of values and resources, including terrestrial and aquatic ecosystems and water resources. Forest Plans must include standards to maintain or restore the ecological integrity of terrestrial and aquatic ecosystems. Legal requirements for environmental review and consultation including the requirements under various acts, are integrated into the environmental review, documentation, and decision-making completed under NEPA. All activities taking place on NFs must align with the forest plan and are required to undergo the NEPA process and associated consultations.

As part of the planning process NFs inventory the land base Ecosystems are defined and classified in assessments required for Forest Plan Revision. Forest Ecologists and other resource specialists are responsible for conducting assessments to identify existing ecological communities and site conditions that allow them to assess and prioritize needs for restoring or maintaining ecosystem health, resilience and viability. The FSVeg (Field Sampled Vegetation) database stores current and historic data on ecosystems. As an example, the NFs of Mississippi have mapped where longleaf pine systems should be present on the landscape, and then prioritize and direct management activities to areas of greatest need. NFs conduct stand exams on a regular schedule to collect inventory data and information on forest health and condition. Forest health indicators are monitored through the USDA Forest Service FIA program. Biennial monitoring and evaluation reports are used to monitor changes to ecosystem functions and services across the NF and address each identified RTE species. Project-level General Management Reviews (GMRs) are conducted by NEPA interdisciplinary teams to evaluate the effectiveness of project activities in achieving objectives. Budget limitations can constrain the ability of some forests to conduct monitoring and other activity reviews as planned, however NEPA processes are always conducted in advance of every plan and proposed project or decision. Each Ranger District maintains a five-year program of work that is tied to LRMP objectives and guides management activities. NFs commonly work with partners to achieve shared objectives. As an example, the NFs in Mississippi have partnered with the Longleaf Alliance and National Wild Turkey Foundation to implement ecosystem and habitat restoration projects.

Purpose and need are required by project-level NEPA. Fiber and biomass harvesting are never the main objective of projects. Plan assessments are required to identify and evaluate ecosystem 'drivers' and 'stressors'. Impacts to ecosystems health and vitality are

assessed in NEPA processes and documents (i.e., EIS, EA). Ecosystem health and vitality is evaluated by multiple specialists (e.g., hydrology, vegetation, wildlife, soils) at the forest level during LRMP amendment and revision processes, and through NEPA at the project specific level.

In addition to applicable laws and regulations, maintaining and enhancing ecosystem health, vitality and function are guided by numerous agency manuals and handbooks. Forest Service Manual (FSM) 1900, Chapter 1950 and Forest Service Handbook (FSH) 1909.15 provide guidance and instruction on implementing NEPA procedures. FSM 2000, Chapter 2020 FSM 2520, FSM 2600, FSH 2090.11 and others address ecological classification, ecosystem and watershed restoration maintenance. FSH 1909.12, FSH 2409.13, and FSH 2409.18 provide directions for ensuring timber production does not result in permanent harm or conflict with maintenance or restoration of health ecosystems and provide clear framework for implementing forest management activities in a manner consistent with ecosystem management objectives.

Enforcement, monitoring and outcomes

For forest or project level decisions NEPA is enforced through a variety of checks and balances beginning with the agency-designated Responsible Official (decision-maker). Primary responsibility for ensuring proper implementation of NEPA is vested in the Council on Environmental Quality (CEQ), which was established by Congress through the enactment of NEPA. CEQ is located in the Executive office of the President of the United States. The Environmental Protection Agency's (EPA) Office of Federal Activities is required to review Environmental Impact Statements and provide comments on the adequacy of the analysis and the impact to the environment. If EPA determines that the action is environmentally unsatisfactory, it is required by law to refer the matter to CEQ.

The Black Prairie Restoration Project on the Tombigbee NF (NFs of Mississippi) provides an example of a management activity whose primary objective is restoration of a rare ecological community through timber harvesting and prescribed fire. The project EA describes management activities designed to transition existing off-site pine stand to prairie and woodland and savannah ecosystems that are consistent with native communities historically present in the landscape.

Multi-regional planning initiatives such as the Northwest Forest Plan (NWFP) and the Sierra Nevada Framework enhance protections at the NF level through administrative obligations for NFs to amend LRMPs by adopting applicable standards and designations. The NWFP impacted the management on 17 NFs in CA, OR and WA by establishing reserves for protection of riparian areas. Standards and guidelines established in 2004 Sierra Nevada Forest Plan Amendment include maintenance of the ecological integrity of aquatic, riparian and meadow ecosystems. Riparian Conservation Areas (RCAs) for Special Aquatic Features, which are defined as lakes, meadows, bogs, fens, wetlands, vernal pools, and springs, require a 300 foot buffer around the perimeter of the feature. The Sierra Nevada Framework impacts 11 NF's.

The Collaborative Forest Landscape Restoration Program (CFLRP) operated by the USDA Forest Service is a national initiative to encourage collaborative restoration of ecosystems in priority landscapes. The CFLRP has representatives in all USFS Regions. Projects funded

through the CFLRP in 2023 included a longleaf pine restoration and hazardous fuels reduction project on the NFs in Mississippi, and a project on the Pisgah-Nantahala NFs focused on restoring fire-adapted forests and rare ecosystems, while improving ecological integrity across the landscape.

The Land Management Plans for the NF of Mississippi and Grand Mesa, Uncompahgre, and Gunnison (GMUG) NF have established desired conditions, objectives, standards, guidelines and management approaches for the ecological sustainability of a broad range of resource values including aquatic and terrestrial ecosystems, old forests, native species diversity, and other issues related to maintaining and enhancing ecosystem health, vitality, functions and services. The 1995 Six Rivers NF LRMP similarly establishes forest management goals, objectives, desired future conditions as well as forest-wide standards and guidelines for a range of issues. A stated goal for the general forest is to "Provide multiple-use development opportunities and a sustained yield of timber in a manner which preserves ecosystem function, biodiversity, and landscape integrity." All NF Forest Plans also include monitoring plans that identify specific issues representative of the issues and objectives established in the Forest Plan. The monitoring plans are typically structured around questions posed to address desired conditions and objectives, paired with performance measures/indicators and prescribed frequency for monitoring, typically five years. Monitoring results are used to determine of NF objectives are being attained, whether management activities are achieving intended outcomes, and whether the NF is moving toward stated desired conditions.

The Biennial Monitoring and Evaluation Specialist Report for FY2020-2023 produced by the NFs in Mississippi is a comprehensive document summarizing findings and considerations for adaptive management associated with maintaining and enhancing the health, vitality and function of native ecosystems, habitats and associated species across the NF. The report finds that achieving the LRMP goals for distribution of ecosystems is trending in a positive direction with more emphasis recommended for native hardwoods and rare ecosystems. The terrestrial ecosystem assessment conducted as part of the GMUG Forest Plan revision process evaluates ecosystem integrity for the major terrestrial ecosystems present on the NF and identifies key issues and management recommendations to be included in the revised Forest Plan to improve ecosystem resiliency and function. The revised plan incorporates the results of the assessment. Ecological sustainability is described as "the foundation" of the GMUG plan. Desired future conditions address health and resiliency of ecosystems and ecosystem functions. A similar assessment was conducted for aquatic ecosystems.

The majority of lands administered by the three NFs sampled for this indicator (NFs in Mississippi, GMUG, Six Rivers) have been designated as not suited for timber production, either having been formally withdrawn for legal or technical reasons or because timber production has been deemed incompatible with management objectives. These designations are documented in the LRMPs for each NF. When combined, the three NFs have designated 64.4% of the NFS land base as unsuitable for timber production, ranging from 91% unsuitable for the Six Rivers NF, to 19% unsuitable for NFs in Mississippi. The designations for these three NFs indicate both the regional variability in the characteristics of National Forest lands, as well as the application of a consistent methodology for protecting ecosystem health, vitality functions and services that could be diminished by timber production objectives. The remaining lands designated as suitable for timber production function as the primary land base supporting commercial timber sales.

Table 9: Lands Designated Suitable for Timber Production: Nantahala-Pisgah NF, GMUG NF, Six Rivers NF.

Administrative Unit	NFS Lands	Not Forested	Withdrawn for Legal & Technical	Incompatible Management	Suitable for Timber Production	% Suitable
NFs in Mississippi	1,172,524	18,826	14,426	203,843	954,255	81.4%
GMUG NF	2,967,000		2,093,230	102,770	771,000	26.0%
Six Rivers NF	958,480	34,160	253,160	583,460	87,700	9.1%
Total – All 3 NFs	**5,098,004**	**52,986**	**2,360,816**	**871,247**	**1,812,955**	**35.6%**

Source: USDA Forest Service. Individual LRMPs for each NF.
Note: For GMUG NF, all non-forested areas, legally withdrawn areas, and lands not suited for timber production based on technical considerations are combined under "Withdrawn - Legal Designation."

The Timber Resource Program Suitability Analysis for NFs in MS details proposed management interventions for maintaining specific ecosystems, including longleaf pine forests which are significantly underrepresented relative to their historic range and host 29 threatened and endangered species. The analysis identifies both underrepresented and overrepresented forest ecosystems, with the stated objective and proposed treatment schedules designed to reduce overrepresented species such as loblolly pine and slash pine, and to convert these forests to more ecologically appropriate forests (e.g. longleaf pine, shortleaf pine, based on site conditions and historic range. Restoration and maintenance of other forest ecosystems are also reflected in the analysis.

Every proposed timber sale on every NF, every vegetation management activity must be covered by a NEPA analysis which includes current conditions and desired future conditions and how the proposed activities move stands towards or maintains the desired future condition. The analysis includes suitability for timber production as well as evaluating potential effects of harvest on project area resources and values, e.g., soils, water, wildlife. On-site evaluations are conducted in addition to other analyses to confirm that proposed harvest activities include measures to protect the affected environment from damage. A detailed silvicultural prescription is prepared and approved by a certified Silviculturist for each stand subject to timber harvesting. The stand exams and other data used to produce the prescriptions include Land Class (or comparable field) which includes suitability for timber production and/or harvest. The Silviculturist certifies that the proposed treatments do not diminish long-term site productivity, and can be regenerated in accordance with USFS standards.

Risk conclusion and justification
There is a low risk ecosystems, their health, vitality, functions and services in National Forests are not maintained or enhanced by the USFS operations. Forest plans are required to maintain or restore the ecological integrity of all terrestrial ecosystems, and therefore forest

	degradation and forest conversion to other uses is not consistent with Forest Service mandates. The Forest Service is legally obligated by numerous federal laws such as the NFMA that prohibit degradation of native ecosystems. All forest management plans and significant management activities such as timber harvesting are subjected to formal and comprehensive environmental review as required of NEPA. NEPA requires all federal agencies, including the Forest Service, to identify issues and resources that could potentially be impacted by proposed activities, to assess those impacts, and to develop alternatives that minimize direct, indirect and cumulative impacts that can occur as a result of proposed activities. Further, forest plans are required to maintain or restore the ecological integrity of all terrestrial ecosystems, and therefore forest degradation and forest conversion to other uses is not consistent with Forest Service mandates. These requirements are stipulated in the National Forest Management Act, the 2012 USFS Planning Rule (36 CFR Part 219, section 219.11) and FSH 1909.12 Chapter 60 - Forest Vegetation Resource Management. All projects and activities occurring in National Forests are consistent with the approved forest plan as required by law (36 CR 219.15) and confirmed via NEPA processes involving interdisciplinary teams of resource management specialists. Timber production is secondary to primary objectives which aim to improve and to restore environmental attributes of the area affected by the project. USFS staff interviewed during the assessment process described means of implementation and provided documented examples of methods used to identify and manage native ecosystems. Forest plans, project-level NEPA documents, regional initiatives, monitoring reports, specialist reports, and other related documents and protocols provide reasonable assurance that measures to maintain and enhance the health, vitality and function of native ecosystems are consistently implemented across the NFS. Responsibilities and lines of authority are clearly established, ensuring that appropriate review and approval occurs before project implementation. Well established processes for public notification and appeal provide added measures of assurance that laws, regulations and best practices are employed.
Supply Base Verifiers	▪ Forest Plan ▪ Project Plans ▪ Maps ▪ Monitoring and Evaluation Reports ▪ NEPA documents, e.g., EIS, EA, Decision Memo, Record of Decision (ROD), Finding of no Significant Impact (FONSI)
Evidence reviewed	▪ Organic Administration Act of 1897 ▪ Multiple-Use Sustained Yield Act of 1960 (16 U.S.C. 528-531) ▪ Wilderness Act of 1964 (Pub. L. 88-577) ▪ Wild and Scenic Rivers Act of 1968 (16 U.S.C. 1271-1287) ▪ National Environmental Policy Act (NEPA) of 1969 ▪ Endangered Species Act (ESA) of 1973 16 U.S.C. § 1531 et seq. ▪ Forest and Rangeland Renewable Resources Planning Act of 1974 ▪ National Forest Management Act (NFMA) of 1976 (P.L. 94-588) ▪ Roadless Area Conservation Rule of 2001 (36 CFR Part 294) ▪ Healthy Forests Restoration Act (HFRA) of 2003 (16 U.S.C. 6501-6591)

- 2012 USFS Planning Rule (36 CFR Part 219, section 219.11)
- Code of Federal Regulations Title 40, Parts 1500 – 1508
- Code of Federal Regulations Title 36 Part 219 Planning
- Code of Federal Regulations Title 36, Part 220 - National Environmental Policy Act Compliance
- Presidential Executive Order 14072. April 22, 2022.
- Forest Service Manual (FSM) 1900, Chapter 1950, Environmental Policy, and Procedures
- FSM 2000, Chapter 2020 Ecosystem Restoration
- FSM 2400 Timber Sales
- FSM 2520 Watershed Protection and Management
- FSM 2600, Chapter 2670 - Threatened, Endangered and Sensitive Plants and Animals
- Forest Service Handbook (FSH) 1909.12 Chapter 60 - Forest Vegetation Resource Management
- FSH 1909.14 Resource Inventory Handbook
- FSH 1909.15 National Environmental Policy Act Handbook
- FSH 2090.11 Ecological Classification And Inventory Handbook
- FSH 1909.12 Land Management Planning Handbook
- FSH 2409.13 Timber Resource Land Suitability Process
- FSH 2409.18 Timber Sale Preparation Handbook
- Policy and Procedures for The Review of Major Federal Actions with Environmental Impacts, U.S. Environmental Protection Agency. September 26, 2023
- Land and Resource Management Plan, National Forests in Mississippi. USDA Forest Service. August 2014.
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- Timber Resource Program Suitability and Sustainability Analysis, National Forests in Mississippi. June 2014.
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- Summary of Tribal Collaboration and Consultation: Proposed National Old-Growth Amendment. USDA Forest Service. April 2024.
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- Fiscal Year 2021 Landscape Scale Restoration Program National Guidance. USDA Forest Service. January 9, 2020.
- Grand Mesa, Uncompahgre, and Gunnison (GMUG) National Forests, Revised Draft Forest Assessments, Terrestrial Ecosystems: Integrity and System Drivers and Stressors. USDA Forest Service. March 2018.
- Biennial Monitoring Evaluation Report, Francis Marion National Forest, Reporting Years 2019 and 2020
- Bioregional Assessment of Northwest Forests. USDA Forest Service. July 2020.

	▪ Supplemental Report to the Bioregional Assessment of Northwest Forests. USDA Forest Service. March 2021. ▪ Black Prairie Restoration Project, Environmental Assessment. Tombigbee National Forest. August 2023. ▪ Biennial Monitoring Evaluation Specialists Report for 2015-2019, National Forests in Mississippi ▪ Monitoring & Evaluation Specialists Report for FY2020-2023, National Forests in Mississippi ▪ Management Indicator Species Population and Habitat Trends, National Forests in Mississippi. March 2005 ▪ Pisgah Restoration Initiative CFLRP Proposal. USDA Forest Service. 2019.
Risk rating	Low risk

Principle 2 – Biomass sourcing does not harm the environment	
Criterion 2.2 – **Ecosystem, their productivity, functions, and services are maintained or enhanced**	
2.2.3	Soil quality in the supply base shall be maintained or enhanced
Findings	**Scale of assessment** All US National Forests located in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 2, Region 5, Region 8, Francis Marion NF, Shoshone NF, and Lassen NF. The National Forest Management Act (NMFA) states that timber harvest may only take place where "soil, slope, or other watershed conditions will not be irreversibly damaged." This requirement is repeated in the 2012 Planning Rule which specifically states that plans must include standards for maintaining or restoring soils and soil productivity and provide guidance to reduce soil erosion and sedimentation. The FSM 2550 - Soil Management defines the management framework to ensure resources on NF lands are managed to sustain ecological processes and function so that ecosystem services are provided in perpetuity. It defines soil quality as "The capacity of a specific kind of soil to function, within natural or managed ecosystem boundaries, to sustain plant and animal productivity, maintain or enhance water and air quality, and support human health and habitation and ecosystem health". The Forest Service is required under NEPA to complete a comprehensive environmental analysis (EA) prior to approval and implementation of plans and activities on National Forests. Soils analysis included in EA is undertaken by Forest Soil Scientist or their equivalent which are a member of the interdisciplinary team assessing potential effects of projected activities. The results of the analysis are either in a stand-alone soils report or in a watershed report that combines hydrology and soils analysis. The reports describe current soil conditions and potential effects of proposed activities based on standards detailed in the National Forest's Land Resource Management Plan (See Soil Effects Analysis - Region 5, 5/3/2022). Soil classification must conform with the requirements of the Forest and Rangeland Renewable Resources Planning Act and others (see FSM 1901 for the complete list of Acts) and the Resource Inventory Handbook. Inventory and other resources such as the Terrestrial Ecological Unit Inventory (TEUI) system are used to classify ecosystem types and map ecological units at different spatial scales. Mitigation measures or Integrated Design Features (IDF) are determined to prevent detrimental soil disturbance of the proposed actions.

Once the projects have gone through the NEPA process and are approved, the timber sale incorporates detailed instructions for implementing the project in the field, including all measures required to align with the NEPA decision. Timber Sale Contracts include provisions and BMP's to mitigate and to prevent irreversible damage to soils and other resources. Contracts are bipartite in nature which describe roles of each parties. For example, Forest Service personnel approve landing locations, water crossings, skid trails, etc. and the contractor is required to notify the Forest Service before taking any actions not specifically addressed in the contract. Certain states such as California have a Soil Conservation Standard Guidelines to support staff and users in appropriately implementing the standards. It also provides procedures on how to assess compliance and to monitor operations on a given area.

Enforcement, monitoring and outcomes

NFs implement Monitoring Programs in accordance with their Land and Resource Management Plans. Forest Soil Scientists use various monitoring protocols such as Forest Soil Disturbance Monitoring Protocol: Volume I: Rapid Assessment and Interpreting Indicators of Rangeland Health (Technical Reference 1734-6). The frequency of monitoring is defined in the Monitoring Programs but is also dependent on the availability of Soil Scientists. IDFs are added to the Timber Sale Contracts confirming the USFS and the contractors responsibilities and the operations requirements. Shoshone Green Union draft Project Design (2024) lists several IDFs concerning soil moisture, organic ground cover, soil disturbance, management of water influence zones (WIZ), etc. For this project, localization of skid trails must be pre-approved before harvest operations can begin. Post-project monitoring is a shared responsibility such as in the state of California where field surveying and reporting are done by both the California Regional Water Control Boards and the NF regional office.

States also report their monitoring of BMP's on all lands including federal. The Forest Service's Forest Inventory and Analysis (FIA) program has implemented a national soil monitoring program. The FIA soil quality indicator data provides "critical baseline information on the current status of soil resources and the potential effects of natural and human disturbance on forest health and productivity". The Forest Service possess Forest Soil Disturbance Monitoring Protocols (e.g., Volume 1 Rapid Assessment) as well as the Soil Disturbance Field Guide to establish consistent methods for identifying soil condition, assessing risk and monitoring soil disturbance on National Forests with the ultimate objective of incorporating maintenance or restoration of soil health in project plans and designs.

The Lassen NF LRMP includes standards and guidelines for protection and maintenance of soil quality that must be implemented as applicable for all projects. These standards include slope limitations for tractor logging, retention of soil organic matter, litter, duff and CWD, and retention of ground cover in riparian areas. Project-level EAs include analysis and recommendations from soil report, and require implementation of BMPs, as well as monitoring in compliance with CA Regional Water Board and NF requirements.

Risk conclusion and justification

The Forest Service utilizes several systems and tools to ensure timber harvests are carried out in a manner consistent with the protection of soil and other critical resources that can occur only when soil is not irreversibly damaged.

	Tools used by the USFS to ensure soil quality is maintained or restored include soil disturbance rapid assessments, the TEUI system, FIA soil quality data, NEPS assessments, and a structured timber sale preparation and execution process.
Supply Base Verifiers	▪ Terrestrial Ecological Unit Inventory (TEUI) system ▪ Forest Inventory Assessment (FIA) ▪ Timber Sale Contracts ▪ Timber Sale Administration Inspections ▪ Net Ecosystem Production (NEP) ▪ Soil Reports
Evidence reviewed	▪ Organic Administration Act of 1897 ▪ Multiple-Use Sustained Yield Act of 1960 ▪ National Environmental Policy Act (NEPA) of 1969 ▪ Clean Water Act of 1972 ▪ Forest and Rangeland Renewable Resources Planning Act of 1974 ▪ National Forest Management Act (NFMA) of 1976 ▪ Federal Land Policy and Management Act of 1976 ▪ Code of Federal Regulations Title 36, Part 220 - National Environmental Policy Act Compliance ▪ Code of Federal Regulations Title 40, Parts 1500 – 1508 ▪ 2012 USFS Planning Rule (36 CFR Part 219, section 219.11) ▪ Soil Effects Analysis - Region 5, 5/3/2022 ▪ California Soil Conservation Standard Guidelines ▪ FSM 1900, Chapter 1950, Environmental Policy, and Procedures ▪ FSH 1909.12 Land Management Planning Handbook ▪ FSH 1909.14 Resource Inventory Handbook ▪ FSH 1909.15 National Environmental Policy Act Handbook ▪ Forest Service Manual (FSM) 2550 Soil Management ▪ FSH2409.18 Timber sale preparation gate system ▪ Forest Soil Disturbance Monitoring Protocol: Volume I: Rapid Assessment. USDA Forest Service, General Technical Report WO-82a, September 2009. ▪ Interpreting Indicators of Rangeland Health (Technical Reference 1734-6). ▪ California Regional Water Quality Control Board Fall Monitoring Form - Hog Fire Salvage Jan2024 ▪ DRAFT Upper Butte Creek Soils Report-27DEC2023 ▪ Lassen NF LRMP Soils Standards and Guidelines ▪ Central Valley Regional Water Quality Control Board Inspection Report - Diamond Oro Oski Timber Sale Project-LNF SEPT2023 ▪ California Regional Water Quality Control Board Winter Monitoring Form - Hog Fire Salvage MAY2023

	▪ Wilson Fire Effectiveness Monitoring Report JUNE2020 (Lassen NF) ▪ Timber Sale Administration Report Thousand Springs Timber Sale - MARCH2024
Risk rating	Low risk

Principle 2 – Biomass sourcing does not harm the environment	
Criterion 2.2 – **Ecosystem, their productivity, functions, and services are maintained or enhanced**	
2.2.4	Where the removal of harvest *forest residues* and/or stumps occurs, this shall not lead to irreversible negative impacts to the *ecosystem*
Findings	**Scale of assessment** All US National Forests located in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 2, Region 5, Region 8, Francis Marion NF, Shoshone NFs, and Lassen NF. As previously noted in Indicator 2.2.3 the NFMA states that timber harvest may only take place where "soil, slope, or other watershed conditions will not be irreversibly damaged." This requirement is repeated in the 2012 Planning Rule, which further requires that all forest land management plans include standards to maintain or restore soil health and productivity and provide guidance to reduce soil erosion and sedimentation. The Planning Rule further stipulates that all field level projects must fully align with corresponding forest management plans. The Multiple-Use Sustained Yield Act (MUSYA) directs the USFS to equally consider multiple resources and uses on NFs (timber, range, water, recreation and wildlife management), which prompted the agency to engage interdisciplinary experts (e.g., soil scientist, wildlife biologists) in multiple-use planning for forest activities, including timber harvests. Timber Sales Contracts have address retention and removal of slash and other forest residuals. FSM 2500 establishes as policy that all Forest Service management activities are designed to "minimize short-term impacts on the soil and water resources and to maintain or enhance long term productivity, water quantity, and water quality". Chapter 2550 of the Watershed and Air Management Manual (FSM 2500) provides policy and direction for management and monitoring of soil resources to ensure appropriate conservation practices are implemented and effective. FSH 2509.15 - Watershed Conservation Practices includes instructions for maintaining or enhancing long-term levels of organic material and nutrients. NEPA requires the completion of a comprehensive environmental analysis prior to approval and implementation of plans and activities on National Forests. Forest Service compliance with NEPA is spelled out in 36 CFR Part 220, and further addressed in FSM 1950 Environmental Policies and Procedures, and FSH 1909.15 NEPA Handbook. NEPA specifically requires the use of an interdisciplinary approach to evaluate potential direct and cumulative impacts on ecosystems and associated resources. The Forest Service uses the Terrestrial Ecological Unit Inventory (TEUI) system to classify ecosystem types and map ecological units at different spatial scales. Inventory data is collected and mapped for a range of ecological factors, including soils, hydrology, and

vegetation. The TEUI system is used to inform management planning and activity design. A management framework for maintaining and improving soil quality is provided in FSM 2550.

Forest Plans provide for BMP effectiveness monitoring. States also report their monitoring of BMP's on all lands including federal. The Forest Service's Forest Inventory and Analysis (FIA) program has implemented a national soil monitoring program. The FIA soil quality indicator data provides "critical baseline information on the current status of soil resources and the potential effects of natural and human disturbance on forest health and productivity".

Timber Sale Contracts include provisions and BMP's to mitigate and to prevent irreversible damage to soils and other resources. Contracts are bipartite in nature which describe roles of each parties. For example, Forest Service personnel approve landing locations, water crossings, skid trails, etc. and the contractor is required to notify the Forest Service before taking any actions not specifically addressed in the contract.

Additionally, the Forest Service has developed Forest Soil Disturbance Monitoring Protocols (e.g., Volume 1 Rapid Assessment) as well as the Soil Disturbance Field Guide to establish consistent methods for identifying soil condition, assessing risk and monitoring soil disturbance on National Forests with the ultimate objective of incorporating maintenance or restoration of soil health in project plans and designs.

Enforcement, monitoring and outcomes

Forest Plans for all three NFs sampled for Indicator 2.2.4 address soil quality. Practices on removal of forest residual material varies regionally and among NFs depending on site conditions, management objectives, wildfire risk, and markets. Stump within harvest sites is atypical and is normally limited to clearing for permanent and temporary roads, and log landings.

Logging slash and residual material, potentially including stumps, is sometimes used to mitigate soil erosion on temporary roads and skid trails that are obliterated or put back to grade following completion of harvesting activities. Slash and debris created during construction of temporary roads may be scattered in those situations where the volume of residual slash is relatively light, and the adjacent timber stands are sufficiently open to accommodate the scattering without damage. In regions with seasonally high risk of wildfire, NFs are required to balance retention of forest residuals with prevention of wildfire. In these situations, slash and other residual logging material of often burned or otherwise disposed of (e.g., chipped, hauled). Sometimes redistribution of slash inside cutting unit boundaries is permitted or required. Forest Service timber harvesting contracts include both standard provisions and special provisions outlining project requirements for slash disposal and development of roads, skid trails and log landings. Standard USFS timber sale contract provisions C6.6 and C6.7 often addresses slash disposal.

Within the Francis Marion NF Plan, Desired Condition DC-WAT-3 states that impacts from human activity such as operation of heavy equipment do not impair soil productivity or damage other resources. Any environmental degradation caused by human activities is

promptly rehabilitated or mitigated. Desired Condition DC-SCC-1 maintain 34 – 44 stumps and/or root mounds per acre to associated at-risk species. Several standards and guidelines in the Francis Marion Forest Plan address soil quality and productivity, however there are no Forest-wide restrictions on removal of coarse woody debris outside of riparian zones, and no specific restrictions on stump removal. Even in the absence of Forest-wide restrictions, the Nantahala-Pisgah NF is not currently allowing for the removal of any residues. Total tree harvest has occurred in the past where approved, and effects analyzed. In any case, activities would have to follow forest plan standards and guidelines, along with any NEPA design criteria. Stump removal was requested on the Francis Marion several years ago but was denied due to soil disturbance and wildlife habitat concerns.

The Lassen NF is confronted with significant forest health threats, particularly risk of wildfire, as a result of past forest management decisions that have contributed to heavy fuel loads and dense forest areas that are inconsistent with historic natural conditions. Surface fuels are considered a key factor affecting fire behavior. The Forest Plan provides direction for reducing the potential for large, intense wildfires and includes several ecosystem-based management strategies to achieve a more fire-resilient condition. At an operational level, slash management is an important tool for reducing risk of catastrophic wildfire.

The Lassen NF has deliberately designed numerous projects for removal of biomass, for example via pre-commercial thinning, fire salvage, and removal of logging slash following timber sales. Lassen NF also actively burns slash from logging and thinning operations to reduce fire hazard. The Lassen Plan standards and guidelines promote retention of large and small woody debris in clear-cuts for soil cover, nutrient cycling and wildlife habitat. In practice, while cut to length or whole tree harvest operations are occasionally employed, most timber harvesting on the Lassen NF is done with cut/skid/deck operations. As a result, limbs and tops of harvested trees are typically deposited within the harvest units. Tops and limbs are commonly chipped on site and delivered to a local energy co-generation facility to reduce wildfire hazard. Logging slash left at log landings, including limbs, tops, and CWD are typically piled and burned. The standards and guidelines for soils in the Lassen NF Plan include retention of litter and duff on at least 50% of the project area to provide effective ground cover for erosion and nutrient cycling for maintaining productivity. There is no stump removal on the Lassen NF with the exception of landing areas and roads. Stumps are left on site. Coarse woody debris is sometimes removed to reduce fuel on the ground. Forest Plan guidelines for CWD require at least five logs per acre. Sites determined to be deficient of nutrients will have higher levels of retention for CWD and forest residuals. Prescribed burning is also used as a tool for reducing risk of catastrophic wildfire. It takes multiple entries to reduce the duff layer via post-harvest prescribed fire.

The Creeks II Project Draft Environmental Impact Statement provides an example of the deliberate approach taken by Lassen NF for management of forest residuals in the broader context of ecosystem-based management. A key objective of the project is to restore forest resilience through increased species and structural diversity and recruitment of later-seral habitats. The proposed activities include numerous activities to reduce fuel loads (e.g. less than 10 tons per acre) and at the same time propose to retain at least 85% of pre-treatment soil organic matter, 10 to 20 tons of CWD per acre, and at least 60% of the pre-treatment forest floor cover, including spreading of slash as needed to cover exposed soil.

A recent inspection report of the Oro Oski Timber Sale Project on Lassen NF conducted by the regional Water Quality Board shows that logging slash and forest residuals "appeared to completely cover the soil surface within the unit," indicating measures were taken to protect ecosystem attributes both in the adjacent riparian zone, and in the harvest unit. The Oro Oski project included some whole tree harvesting.

The stated goal in the Shoshone NF Plan is to "Maintain or improve long-term levels of organic matter and nutrients, including soil carbon."

The Shoshone NF is challenged by elevated risk of wildfire, which is amplified as a result of widespread bark beetle infestations and increased mortality across the forest. Consequently, the management direction provided in the Forest Plan includes measures for restoring forests to naturally occurring conditions and reducing hazardous fuel loads on up to 250,000 acres. Lassen NF addresses biomass directly in the Forest Plan, stating that provisions have been added to timber sale contracts to facilitate removal of biomass. Timber sales may provide for removal of smaller dimeter material. Slash at log landings is typically piled and burned. Some soils are subject to nutrient deficiency, and in those instances if a need for mitigation is identified in NEPA process, appropriate measures would be identified and reflected in contract special provisions.. The Shoshone NF applies watershed conservation practices provided in the Region 2 Watershed Conservation Practices Handbook (FSH 2509.25), and site specific practices based on site conditions. Shoshone NF does not permit removal of stumps. Roots and stumps are not harvested and are either left in place or ground up and left in place to allow the nutrients to return to the soil depending on the contract or NEPA requirements.

The USFS National Core BMP Guidelines state that timber sale activities should not include burning large stumps in slash piles to reduce the time required to burn the pile. The only other BMP reference to stumps recommends cutting stumps flush with the ground or grinding them rather than removing them when clearing ski runs. There are no practices listed in the BMPs addressing retention of harvest residuals, but they are addressed in the silvicultural prescription for the vegetation treatment.

Risk conclusion and justification

There is a low risk removal of harvest *forest residues* and/or stumps will lead to irreversible negative impacts to the *ecosystem.* The Forest Service is legally obligated by numerous federal laws that prohibit degradation of native ecosystems. NEPA requires all federal agencies, including the Forest Service, to identify issues and resources that could potentially be impacted by proposed activities, to assess those impacts, and to develop alternatives that minimize direct, indirect and cumulative impacts that can occur as a result of proposed activities.

Further, forest plans are required to maintain or restore the ecological integrity of all terrestrial ecosystems, inclusive of soils and habitats. All LRMPs for NFs sampled for Indicator 2.2.4 address soil quality and include standards and guidelines for treatment of forest residuals. Stumps are typically removed only in association with construction of roads and log landings. None of the NFs sampled allow harvesting of stumps. Timber sale contracts include standard and special provisions addressing retention and disposal of forest residuals. These contracts are actively enforced through regular on-site inspections.

Supply Base Verifiers	▪ Forest Management Plans ▪ Project level NEPA documents ▪ Silvicultural prescriptions ▪ Project maps ▪ Timber sale prospectus' ▪ Timber sale contract provisions
Evidence reviewed	▪ Organic Administration Act of 1897 ▪ Multiple-Use Sustained Yield Act of 1960 (16 USC 528-531) ▪ National Environmental Policy Act (NEPA) of 1969 ▪ Clean Water Act of 1972 ▪ Forest and Rangeland Renewable Resources Planning Act of 1974 ▪ Federal Land Policy and Management Act of 1976 ▪ Code of Federal Regulations Title 36, Part 220 - National Environmental Policy Act Compliance ▪ Code of Federal Regulations Title 40, Parts 1500 – 1508 ▪ 2012 USFS Planning Rule (36 CFR Part 219) ▪ Forest Service Manual (FSM) 2550 Soil Management ▪ FSM 1900, Chapter 1950, Environmental Policy, and Procedures ▪ Forest Service Handbook (FSH) 1909.12 Land Management Planning Handbook ▪ FSH 1909.14 Resource Inventory Handbook ▪ FSH 1909.15 National Environmental Policy Act Handbook ▪ FSH 2409.19 Chapter 40 Brush Disposal Fund ▪ FSH 2430 - Commercial Timber Sales ▪ FSH 2436 - Brush Disposal Plan ▪ FSH 2509.25 - Watershed Conservation Practices ▪ Forest Service Handbook 2509.25 - Watershed Conservation Practices ▪ National Best Management Practices for Water Quality Management on National Forest System Lands; Volume 1: National Core BMP Technical Guide. FS-990a. USDA Forest Service. April 2012 ▪ Final Revised Land Management Plan, Francis Marion National Forest. R8-MB 151 A. USDA Forest Service. 2016.January 2023 ▪ Land and Resource Management Plan, Lassen National Forest. USDA Forest Service. 1992. ▪ Land Management Plan, 2015 Revision, Shoshone National Forest, May 2015. ▪ Shoshone National Forest, Forest Plan Monitoring Report for Fiscal Year 2006 ▪ Lassen Land and Resource Management Plan FY 2006 Monitoring Report, Lassen National Forest ▪ Draft Environmental Impact Statement, Creeks II Project, Lassen National Forest. USDA Forest Service. November 2011. ▪ Central Valley Regional Water Quality Control Board Inspection Report. Oro Oski Timber Sale Project, Eagle Lake Ranger District, Lassen National Forest. October 18, 2023.

	▪ Chuck Lewis, District Fuels Specialist. Campbell DFPZ Project, Report for Fire and Fuels. Eagle Lake Ranger District, Lassen National Forest. May 31, 2012 ▪ Biennial Monitoring Evaluation Report, Reporting for Years 2017 and 2018. Francis Marion National Forest. May 2020. ▪ Biennial Monitoring Evaluation Report, Reporting for Years 2019 and 2020, Executive Summary. Francis Marion National Forest. August 2021. ▪ Timber Sale Administration Reports No. 5 - No. 7. Thousand Springs Timber Sale, Hat Creek District, Lassen National Forest. ▪ Sample Timber Sale Contract, North Fork Ranger District, Clearwater National Forest. March 2024.
Risk rating	Low risk

Principle 2 – Biomass sourcing does not harm the environment	
Criterion 2.2 – **Ecosystem, their productivity, functions, and services are maintained or enhanced**	
2.2.5	Quality and quantity of ground water, surface water and water downstream shall be maintained or enhanced.
Findings	**Scale of assessment** All US National Forests in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 2, Region 5, Region 8, Nantahala-Pisgah NF, Six Rivers NF, Grand Mesa, Uncompahgre and Gunnison NF. Executive Order 11990 directs all federal agencies, including the US Forest Service to "take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands." The Clean Water Act is the primary legislation for protecting the integrity of US waters. Regulations flowing from the CWA are primarily administered by the US Environmental Protection Agency and state regulatory agencies. As a US government agency, the US Forest Service is obligated to comply with applicable parts of the law. Normal silvicultural and forest management activities are exempt from CWA permitting requirements under Section 404 of the CWA. Forestry activities are defined in Section 208 as "nonpoint source" pollution activities. Actions required to prevent nonpoint source pollution are addressed in Section 319, which directs states to develop standards and programs for nonpoint source pollution, including implementation and monitoring of best management practices. Individual states are directed to establish programs to control NPS pollution. As a result, Best Management Practices (BMPs) for protecting water quality during forestry operations have been developed in all 50 states, inclusive of the 48 states in the conterminous US. Forest Service policy requires compliance with applicable CWA permits and State regulations and requires the use of BMPs. The USFS strategy for controlling nonpoint source pollution relies on implementation of site-specific BMPs as well as adaptive management principles employed as needed in response to monitoring results. In an effort to improve management of water quality throughout the country as required by the CWA, and to provide consistency in implementation and monitoring of BMPs on National Forests, the US Forest

Service developed "National Best Management Practices for Water Quality on National Forest System Lands" (See the National Core BMP Technical Guide).

The 2012 Planning Rule states that land management plans must comply with all applicable laws, specifically including the NFMA, MUSYA and the CWA. Forest plans are required to assess aquatic ecosystems, watersheds and water resources within the planning area, and must include standards for maintaining and restoring ecological integrity of aquatic ecosystems and watersheds and protecting water quality and water resources. The Forest and Rangeland Renewable Resources Planning Act requires that timber harvesting on National Forests must provide protections for water bodies from impacts that are likely to negatively affect water conditions or fish habitat. Section 219.8(a)(4) of the Planning Rule further directs the Forest Service to establish and implement BMPs for water quality. Each National Forest adopts a Monitoring Program relative to their Land and Resource Management Plan (LRMP).

Legal requirements for environmental review and consultation, including the requirements under the Clean Water Act, are integrated into the environmental review, documentation, and decision-making completed under the National Environmental Policy Act (NEPA). Primary responsibility for implementing NEPA is vested in the Council on Environmental Quality (CEQ), established by Congress in NEPA. Congress placed CEQ in the Executive Office of the President and gave it many responsibilities, including the responsibility to ensure that Federal agencies meet their obligations under the Act.

The Environmental Protection Agency's (EPA) Office of Federal Activities is required to review Environmental Impact Statements and provide comments on the adequacy of the analysis and the impact to the environment. For forest or project level decisions NEPA is enforced through a variety of checks and balances beginning with the agency-designated Responsible Official (decision-maker). As mentioned in prior indicators, forest resources such as water are analyzed by an interdisciplinary team (IDT) to assess potential effects of projected activities. The results of the analysis are usually found in a watershed report. The reports describe current conditions and potential effects of proposed activities based on standards detailed in the National Forest's Land Resource Management Plan.

NEPA also requires consultation with other federal agencies, affected Tribes, and state agencies who are charged with enforcing the CWA. The public is also assigned with a formal consultative role and authority in the enforcement of NEPA. Once the projects have gone through the NEPA process and are approved, as described in FSH2409.18, the timber sale incorporates detailed instructions for implementing the project in the field, including all measures required to align with the NEPA decision.

Specific direction and guidance for measurement, monitoring and protection of water resources is provided through the Forest Service system of manuals and handbooks. FSM 2500 establishes as policy that all Forest Service management activities are designed to "minimize short-term impacts on the soil and water resources and to maintain or enhance long term productivity, water quantity, and water quality". FSM 2510 Watershed Planning sets forth policy to ensure protection of water resources are adequately addressed in land management plans consistent with the RPA. Water resource surveys must be designed to collect information necessary to evaluate impacts from management activities, respond to public input, and incorporate results in management planning processes.

Several Forest Service Handbooks, issued as service-wide or region specific, provide specific direction, procedures and practices for conservation and protection of soil and water resources. Specific practices are required to meet or exceed State BMPs. Examples include FSH 2509.22 - Soil and Water Conservation Handbook and FSH 2509.25 - Watershed Conservation Practices Handbook

FSM 2520 Watershed Protection and Management … "To protect National Forest System watersheds by implementing practices designed to maintain or improve watershed condition, which is the foundation for sustaining ecosystems and the production of renewable natural resources, values, and benefits."

FSM 2532 provides specific direction for management of water quality on NFS lands, including use of "approved best management practices to all management activities as the method for control of non-point sources of water pollution, and for compliance with established state or national water quality goal.

Enforcement, monitoring and outcomes

The USFS uses the Natural Resources Manager (NRM) Watershed Classification and Assessment Tracking Tool (WCATT) for the classification of information for watersheds that contain US Federal Lands. This classification is the product of watershed assessments following the Watershed Condition Framework (WCF) approach. It allows the USFS to track and to monitor priority watersheds, restoration plans and their accomplishments. An interactive map of the Watershed Condition Classification and Prioritization can be found here https://arcg.is/1LKDWv . For those watersheds identified as priority, it contains supplemental information regarding the rationale for selection, partners, and a downloadable copy of the Watershed Restoration Action Plan and Restoration Accomplishment Report.

Under the CWA, states are required to adopt and to monitor programs to achieve water quality goals. Biennial Integrated Reports are required and submitted by states and the EPA. The state of Colorado has a three year water quality monitoring cycle. The California Water Boards 2016-2017 fiscal year report highlight findings relative to the program's goals and objectives, inspection results, local assistance program and interagency collaborative activities. National Forests produce Biennial Monitoring and Evaluation Specialist Reports in accordance with their LRMP and defined monitoring questions. For example, the NFMS Monitoring Program monitors habitat and aquatic and riparian-dependent species, if stream mitigation and restoration measures are being implemented, if road maintenance and construction are implemented to provide resource protection, etc. The LNF Monitoring Program validate if LRMP standards are implemented such as slope limitations for tractor logging, retention of soil organic matter, litter, duff and CWD, retention of ground cover in riparian areas.

Timber Sale Contracts include provisions and BMP's to mitigate and to prevent irreversible damage to soils and other resources. Contracts are bipartite in nature which describe roles of each parties. For example, Forest Service personnel approve landing locations, water crossings, skid trails, etc. and the contractor is required to notify the Forest Service before taking any actions contrary to the contract. Timber sale administration procedures and protocols require periodic monitoring of activities to ensure adherence to contract specifications.

	Contract Officers and Inspection Officers conduct Timber Sale and LEO Sale Inspections to verify contractor operations respect IDFs and BMPs. The NFMS Timber Sale Inspection Reports as the Timber Sale & Stewardship IRTC Inspection Reports validate if harvest operations respect riparian zones, if the cutblock had limited rutting, if roads and skid trails were well planned and if there was any presence of erosion, etc. **Risk conclusion and justification** There is a low risk quality and quantity of ground water, surface water and water downstream are not maintained or enhanced. The USFS in collaboration with other federal and state agencies define, plan and monitor activities to ensure the protection, the maintenance and the restoration of aquatic ecosystems, watersheds and water resources on National Forests. Evaluations are conducted at local, regional and national levels. NFs must implement their Monitoring Programs in accordance with their Land and Resource Management Plans. Several public databases and websites provide access to documentation about water resources, management goals and monitoring results. Timber sale contract administration through regular site inspections ensures adherence to contract provisions requiring protection of water quality, surface water and ground water.
Supply Base Verifiers	▪ Timber Sale Contracts ▪ Timber Sale Administration Inspections ▪ Watershed Condition Classification and Prioritization
Evidence reviewed	▪ Executive Order 11990 ▪ Clean Water Act of 1972 ▪ Multiple-Use Sustained Yield Act of 1960 ▪ National Environmental Policy Act (NEPA) of 1969 ▪ National Best Management Practices (BMP) Program ▪ 2012 USFS Planning Rule (36 CFR Part 219, section 219.11) ▪ National Forest Management Act (NFMA) of 1976 ▪ Multiple-Use Sustained Yield Act ▪ Forest and Rangeland Renewable Resources Planning Act of 1974 ▪ Land and Resource Management Plan ▪ Federal Land Policy and Management Act of 1976 ▪ Timber Sale Contracts ▪ Timber Sale Inspection Reports ▪ FSM 2500 Watershed and Air Management ▪ FSM 2510 Watershed Planning ▪ FSM 2520 Watershed Protection and Management ▪ FSM 2532 Management of Water Quality

	▪ Watershed Classification and Assessment Tracking Tool (WCATT) ▪ California Water Boards 2016-2017 Fiscal Year Report ▪ National Forest of Mississippi Biennial Monitoring and Evaluation Specialist Report ▪ Lassen National Forest Monitoring Program ▪ Code of Federal Regulations Title 36, Part 220 - National Environmental Policy Act Compliance ▪ Code of Federal Regulations Title 40, Parts 1500 – 1508 ▪ FSH2409.18 Timber sale preparation gate system ▪ Central Valley Regional Water Quality Control Board Inspection Report - Diamond Oro Oski Timber Sale Project-LNF SEPT2023 ▪ Monitoring & Evaluation Specialists Report for FY2020-2023, National Forests of Mississippi
Risk rating	Low risk

Principle 2 – Biomass sourcing does not harm the environment	
Criterion 2.2 – **Ecosystem, their productivity, functions, and services are maintained or enhanced**	
2.2.6	Air emissions shall comply with national legislation or in the absence of national legislation with industry best practice
Findings	**Scale of assessment** All US National Forests located in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 2, Region 5, Region 8, Nantahala-Pisgah NF, Chequamegon-Nicollet NF, and Modoc NF. The Forest and Rangeland Renewable Resource Planning Act (RPA) directs the Secretary of Agriculture to protect and improve the quality of soil, water, and air resources. The NFMA directs the Forest Service to protect air quality. The 2012 Forest Service Planning Rule (36 CFR Part 219 requires that all NFS management plans include provisions to maintain or restore air quality. The Clean Air Act (CAA) directed the US EPA to establish national thresholds for the amount of air pollution that can be in the air at any given time, anywhere in the US. The CAA further grants authority to the EPA for enforcing limits on sources of air pollutants. The EPA has developed National Ambient Air Quality Standards (NAAQS) for six key pollutants that are common and considered harmful to human health and the environment. The CAA Regional Haze Rule also requires states and federal agencies to control degradation of air quality and visibility in "Class 1" areas which include designated Wilderness Areas and Wild and Scenic Rivers. Additionally, the EPA has listed 188 hazardous air pollutants that are regulated and controlled under the CAA. States and Native American tribes may – and have - also enacted laws establishing limits on air pollutants, and also enforce CAA regulations through EPA-approved State Implementation Plans (SIPs). Each state has an SIP designed to meet the NAAQS by specific deadlines imposed by the CAA. Most states have enacted state-wide plans and regulations for controlling smoke from prescribed fires and debris burning.

The Forest Service is legally mandated to comply with the Clean Air Act as well as any applicable state or local laws (e.g. SIPs, NAAQS, Smoke Management Plans) regulating air quality. Fossil fuel emissions, smoke, fugitive dust from roads, and air-borne chemical pesticides are examples of air pollutants associated with forest management activities that are subject to the CAA.

The North Carolina (NC) Smoke Management Program (SMP) is a comprehensive document that governs prescribed fire in North Carolina. The NC SMP is part of NC's SIP and includes guidelines for managing smoke from forestry burning operations. The NC Department of Environmental Quality enforces The Nantahala-Pisgah NF makes every effort to adhere to these guidelines.

All activities taking place on NFs must align with the forest plan and are required to undergo the NEPA process and associated consultations. NEPA requires the completion of a comprehensive environmental analysis prior to approval and implementation of plans and activities on National Forests. Forest Service compliance with NEPA is spelled out in 36 CFR Part 220, and further addressed in FSM 1950 Environmental Policies and Procedures, and FSH 1909.15 NEPA Handbook. NEPA specifically requires the use of an interdisciplinary approach to evaluate potential direct and cumulative impacts on ecosystems and associated resources. NFs are required to consider potential impacts from proposed activities on air resources. As an example, as stated in the Environmental Assessment (EA) for the Nantahala Mountains Project on the Nantahala-Pisgah NF, the NF Air Quality Specialist describes the existing condition for air resources as meeting NAAQS and has determined that there would be no significant direct or indirect impacts to air resources as a result of either proposed alternative action. For forest or project level decisions the NEPA is enforced through a variety of checks and balances beginning with the agency-designated Responsible Official (decision-maker).

Legal requirements for environmental review and consultation are integrated into the environmental review, documentation, and decision-making completed under the National Environmental Policy Act (NEPA). Primary responsibility for implementing NEPA is vested in the Council on Environmental Quality (CEQ). The Environmental Protection Agency's (EPA) Office of Federal Activities is required to review Environmental Impact Statements and provide comments on the adequacy of the analysis and the impact on the environment. In a 2016 memorandum to federal agencies, the Council of Environmental Quality (CEQ) provides guidance for consideration of GHG emissions associated with proposed activities to ensure adherence to NEPA rules and other applicable federal laws and regulations. Federal agencies are instructed to quantify direct and indirect GHG emissions projected to result from agency actions.

The Forest Service operates a national Air Resources Management Program with a network of national and regional specialists charged with monitoring air quality and air pollution occurring on National Forests. Managing smoke, air quality and visibility involves balancing human health and safety with ecosystem health and natural processes, including wildfire and fire-generated emissions. The Forest Service has developed several tools to assist managers in assessing potential direct and indirect impacts on air quality resulting from forest management activities.

FSM 2580 establishes objectives, policies and responsibilities for protection of air quality within the NFS. A key objective of Forest Service Air Resource management is to "control and minimize air pollutant impact from land management activities." The FS takes a number of

smoke management actions to minimize impacts like development of a prescribed fire plan, pre-burn smoke forecasting, public outreach, on-site monitoring, etc. Prior to implementing a burn, a formal Agency Administrator Ignition Authorization and completion of a "go/no go checklist" is required after review of key operational functions and pre-burn site and weather conditions. Among the items on the checklist are confirmation that all required permits and clearances have been attained, and all required notifications have been made.

Enforcement, monitoring and outcomes

All timber sales on lands administered by the USDA Forest Service are transacted through formal contracts. These timber sale contracts are comprehensive documents that address a wide range of issues, including prevention of air pollution. Standard provisions in Forest Service timber sale contracts require purchasers to "take all reasonable precautions to prevent pollution" of air resulting from their operations (Section B.6.34). Timber purchasers are required to take numerous fire precautions and control measures as warranted by conditions (Section B.7.0). Contracts also require application of dust abatement measures during dry periods when fugitive dust can occur (Section B.8.35 and others). As an example, the Sample Timber Sale Contract for the Fandango Fire Salvage includes Specification T-806 with detailed specifications for dust abatement. Conducting regular site inspections of timber sale operations is standard operating procedure for all timber sales occurring on NFs. These inspections review and evaluate all aspects of the logging operations. Inspections are conducted "as often as is necessary" to ensure compliance with timber sale contract provisions. Timber sale inspections are documented and incorporated into the contract file.

The LRMPs for all three NFs sampled for this indicator address air resources and include some combination of a description of existing conditions, desired future conditions, management goals, standards, and/or guidelines. For example, the Modoc NF LRMP establishes that the NF will comply with air quality laws and regulations for all levels of government including ban implementation plans for California Air Pollution Control Districts. The Nantahala-Pisgah NF LRMP includes a desired future condition that the NF meets all NAAQS requirements. Goal 1.6 of the Chequamegon-Nicolet NF (CNNF) LRMP states that "Forest ecosystems are not adversely affected by air pollution; forest management activities are conducted to protect or maintain air quality".

The CNNF Monitoring and Evaluation Report for 2016-17 evaluated effects of prescribed burning on local air sheds based on annual area burned, data collected on fine particulates and smoke monitoring in the immediate vicinity of prescribed burns. Monitoring results show that while there are high values for short term (5 minute average) durations, impacts to surrounding airsheds from prescribed burning are "nominal."

The EPA, as well as state and tribal governments monitor air quality. The USFS also collaborates with state agencies in monitoring ambient levels of air pollutants. State agencies as well as the US EPA enforce air quality laws, including the CAA. For example, the NC Department of Environmental Quality's Division of Air Quality Civil Penalties enforces State air quality laws and assesses civil penalties for violations of those laws. Monthly reports detailing each violation cited by NC DEQ are posted on their website.

	Risk conclusion and justification There is a low risk air emissions do not comply with national legislation or in the absence of national legislation with industry best practice. NFs have well established and comprehensive procedures for ensuring burns do not violate state and federal air quality standards. Forest Plan direction includes compliance with the Clean Air Act and state air quality standards and state implementation plans for air quality. NEPA requires that potential impacts to air quality are identified, evaluated and if necessary mitigated for all project level activities. Forest Plan monitoring provide information on current status and trends of air quality. Contract provisions address prevention of air pollution. Timber sale operations are regularly inspected to ensure compliance with contract provisions. Management activities on NFs most likely to impact air quality are prescribed burns. Monitoring indicates that burns do not typically result in significant, long term impacts to air quality, and do not violate air quality laws.
Supply Base Verifiers	▪ NF LRMPs ▪ NEPA documents associated with NF LRMPs ▪ Project-level NEPA documents ▪ Timber sale contracts
Evidence reviewed	▪ Multiple-Use Sustained-Yield Act of 1960 ▪ National Environmental Policy Act (NEPA) of 1969 ▪ Clean Air Act of 1970, as amended (42 CFR Chapter 85) ▪ Forest and Rangeland Renewable Resource Planning Act (RPA) of 1974 ▪ National Forest Management Act (NFMA) of 1976 ▪ Code of Federal Regulations Title 36 Part 219 Planning ▪ US Code Title 42, Chapter 85 – Air Pollution Prevention and control ▪ Forest Service Manual (FSM) 2500, Chapter 2580 Air Resource Management ▪ Forest Service Handbook 2409.15 – Timber Sale Administration Handbook ▪ USDA Forest Service Timber Sale Contract 2400-6 Division A, Division B, Division C ▪ Land and Resource Management Plan, Modoc National Forest. 1991 ▪ Chequamegon-Nicolet National Forests 2004Land and Resource Management Plan. R9-CN-FP. April 2004 ▪ Nantahala and Pisgah National Forests Final Land Management Plan, January 2023 ▪ "Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews," Council on Environmental Quality, August 1, 2016 ▪ The Plan English Guide to the Clean Air Act, US EPA. EPA-456/K-07-001. April 2007 ▪ Policy and Procedures for The Review of Major Federal Actions with Environmental Impacts, U.S. Environmental Protection Agency. September 26, 2023 ▪ NC Smoke Management Program, Guidelines for Managing Smoke from Forestry Burning Operations, NC Forest Service. December 12, 2023 ▪ Florida's Certified Smoke Management Plan 2014, Florida Department of Agriculture and Consumer Services, Florida Forest Service

	▪ Prescribed Fire Plan, Great Divide MA8 Areas, Chequamegon-Nicolet NF, Great Divide Ranger District. December 20, 2022 ▪ Great Divide Ranger District, Chequamegon-Nicolet NF, Southwest Lake RX Fire Effects Monitoring Report, Burn Unit Summary ▪ Photographs and videos of Southwest Lake Prescribed Fire. September 2023 ▪ Chequamegon-Nicolet National Forests Land and Resource Management Plan, Monitoring and Evaluation Report: 2016 – 2017. May 2019. ▪ Environmental Assessment, Nantahala Mountains Project. Nantahala Ranger District, Nantahala National Forest. January 2024. ▪ Timber Sale Contract provision C7.2# Spark Arrestors and Mufflers ▪ California Public Resources Code 4442 - Use of turbo on exhaust engines ▪ Sample Timber Sale Contract, Fandango Fire Salvage, Warner Mountain Ranger District, Modoc National Forest. Undated.
Risk rating	Low risk

Principle 2 – Biomass sourcing does not harm the environment	
Criterion 2.2 – **Ecosystem, their productivity, functions, and services are maintained or enhanced**	
2.2.7	Pesticides shall only be used as part of an Integrated Pest Management (IPM) plan in compliance with national legislation, chemical safety data sheets and industry best practice. *Banned pesticides* shall not be used.
Findings	**Scale of assessment** All US National Forests located in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 2, Region 5, Region 8, Nantahala-Pisgah NF, Grand Mesa, Uncompahgre and Gunnison NFs, and Six Rivers NF. US Code Title 7, Chapter 6 addresses environmental pest control and establishes a wide range of requirements for registration, use, storage, disposal, recordkeeping and many other aspects of pesticide use. With the exception of "minimum risk pesticides" which are precisely and narrowly defined in law (40 CFR Section 152.25), all pesticides are required to be registered with the US Environmental Protection agency (EPA). The EPA regulates pesticides in the US and maintains a list of approved (registered) products and corresponding uses. The EPA evaluates pesticides to ensure they do not cause harm to human health or the environment when used according to the label before they are registered. It is illegal to distribute or sell any pesticide that is not registered by the EPA. The EPA maintains several tools to facilitate verification of the registration status of pesticides, including the Active Pesticide Product Registrational Informational Listing (APPRIL) which lists all pesticides with active and cancelled registrations, with links to the EPA Pesticide Product Label System (PPLS). In addition to federal regulation and registration of pesticides, some states such as NY and CA have implemented additional requirements or restrictions and maintain their own lists of registered pesticide products. The Resource Conservation and Recovery Act (RCRA) requires that all pesticide waste is safely handled, managed and disposed of.

All states have EPA-approved plans for certification of commercial applicators using "restricted use" pesticides, which is required by federal law (USC Chapter 6, Section 136i). As an example, in North Carolina (NC), all commercial pesticide applicators must be certified by the NC Department of Agriculture and Consumer Services for the specialty categories that apply to their work, i.e., forestry. The certification verifies that commercial applicators are knowledgeable of all applicable laws, regulations, and best practices. Anyone who applies, or supervises the application of pesticides in forests, either for compensation or as part of their governmental job, is required to have an active license in forest pest management. Training classes and a Forest Pest Management Manual are available through the NC Cooperative Extension Service. Applicants must score 70% or higher on two exams (one for core requirements, and one specifically for forest pest management) to achieve certification and must complete 4 hours of continuing education every 3 years in order to maintain a license. Active licenses can be confirmed in a database maintained by the State by contacting the NC Department of Agriculture & Consumer Services.

The USDA Office of Pest Management Policy (OPMP) functions as the lead for all USDA agencies on pesticide regulation and policy. OPMP reviews proposed pesticide risk mitigation strategies and works with federal agencies such as the USFS to implement IPM as described in the National Road Map for Integrated Pest Management. USFS only uses pesticides approved by the Environmental Protection Agency (EPA). Any pesticide that is not approved for corresponding use by the EPA would be considered a banned pesticide. Federal law mandates that pesticides be used in accordance with their labeling. As stated in FSM 2100, Chapter 2150, it is the policy of the U.S. Forest Service that all pesticide use on National Forests comply with applicable federal, state and local laws and that personnel involved in pesticide use are appropriately trained and certified. FSM 2150 outlines required procedures for planning, approval, training, monitoring and evaluation, safety, storage and disposal, record keeping and reporting of pesticide use. FSH 2109.14 Chapter 20 details the risk assessment process to be applied for proposed pesticide use. FSH 2109.14 Chapter 50 addresses compliance with labels and affirms that all use of pesticides must follow the EPA-approved label instructions.

Pesticides approved by the EPA are used by the Forest Service within an integrated pest management approach. USDA Departmental Regulation 9500-4 directs all USDA agencies, including the USFS, to use integrated pest management practices for control of invasive species and other damaging agents. The USFS is further directed to support adoption of IPM, described in the statute as "a sustainable approach to managing pests by combining biological, cultural, physical, and chemical tools in a way that minimizes economic, health, and environmental risks." The use of forest chemicals is also addressed in the USFS National Core BMP Technical Manual, including the explicit statement that "Use Integrated Pest Management as the basis for all pesticide-use prescriptions in consultation with the unit Pesticide Use Coordinator." As an example, standards contained in the Grand Mesa, Uncompahgre and Gunnison (GMUG) NFs Revised Land Management Plan state that mitigation measures used to control invasive species will employ best management practices and integrated pest management practices. The Six Rivers NF LRMP states that "application of herbicides would be limited to situations where their use is essential to achieve the assigned land management objectives," and only when their use is "consistent with the Biological Diversity standards and guidelines, and after a full range of alternative methods have been considered." The Six Rivers Forest Plan further asserts that only pesticides registered by the EPA and the State of California will be used, and that any use of pesticides will fully comply with product labels, FIFRA, NEPA, and other applicable laws and regulations. The use of pesticides varies

widely within the NFS depending on resource conditions as well as local social norms. For example, Six Rivers NF hasn't used pesticides for over 20 years, at least in part because pesticide use is generally not considered socially acceptable among stakeholders within surrounding communities.

NEPA requires the U.S. Forest Service to evaluate potential environmental impacts of proposed management activities, including application of pesticides. Biological assessments are completed as required when actions may threaten federally listed species at risk. For commonly used pesticides, Human Health and Ecological Risk Assessments (HHERA) are completed to determine the potential harm from pesticide use. These assessments are conducted in addition to EPA registration of pesticides under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) which is a comprehensive law setting rules for use and storage of pesticides as well as for protections for workers. Relevant information contained in HHERAs is incorporated into environmental assessments conducted for pesticide projects, which guide decision-making and also disclose potential environmental effects to the public in advance of implementing pesticide use. Formal Pesticide Use Proposals (PUPs) must be submitted and approved for each application of pesticides.

The Worker Protection Standard (WPS) (40 CFR Part 170) is a regulation authorized by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and updated by the US EPA in 2015 to strengthen worker protections for application of pesticides. Many herbicides used in forestry applications are subject to the WPS. The WPS is a comprehensive regulation that applies to commercial application of pesticides in agriculture and forestry requires a suite of protection for workers including mandatory training, notifications, employment of safety measures, and provision of protective equipment. Compliance with the WPS is legally mandated when using a pesticide with labeling that refers to the WPS. Failure to do so is in violation of federal law and can result in federal civil and criminal penalties. State agencies generally have primary jurisdiction for enforcing violations of the WPS.

The responsibility for ensuring the proper use of pesticides on National Forests falls to the U.S. Forest Service Forest Health Protection staff who provide management, technical support and training. National oversight of pesticide use, and coordination is provided by the FHP Director, with Pesticide Use Coordinators assigned for each Region. A Pesticide Use Proposal (PUP) form must be submitted for each application of pesticides on National Forests. All proposed pesticide use must be reviewed by Pesticide Use Coordinator and approved in advance of application. A Pesticide Use Coordinator is assigned to each Region and some NFs with the responsibility to ensure pesticide use compliance with all applicable federal and state laws, and in accordance with USFS standards and directives.

Enforcement, monitoring and outcomes

Pesticide record-keeping is required by federal regulations for restricted use pesticides and for compliance with the EPA Worker Protection Standard. Each NF maintains records of pesticide use throughout each year. Forest Service personnel who apply or administer contracts for the application of pesticides are required to keep records of all pesticide use including general-use and restricted-use pesticides. Pesticide application records are required to meet state and federal standards. Regional and national reports of all pesticides used on National Forests including the amount applied and total area treated are available online for 1999 through 2004. More recent data on pesticide use is available by contacting regional Pesticide Use Coordinators.

	Monitoring techniques such as photo points, line point intercept and cover frequency are used to monitoring efforts to determine the efficacy of pesticide/herbicide applications. **Risk conclusion and justification** Several federal laws including NEPA, FIFRA, and RCRA govern the use of pesticides on lands administered by the USFS. US Code Title 7, Chapter 6 is a comprehensive statute establishing legal requirements for a broad range of issues relating to pesticide use. The USFS is subject to all of these laws and has developed detailed work instructions in the form of handbooks and manuals to guide employees in ensuring compliance with all applicable leas and regulations. NEPA applies to the use of pesticides and requires the Forest Service to evaluate potential effects of pesticide use and to consider alternative approaches to minimize negative impacts. The use of IPM is widely promoted within the USDA and the USFS. The Forest Service uses pesticides within the framework of Integrated Pest Management (IPM), and staff consistently demonstrate awareness of IPM. Pesticide use and waste disposal is regulated by multiple laws and regulations and addressed in USFS timber sale contracts. Compliance with contract specifications is regularly evaluated and recorded via on-site inspections. Examples of pesticide use records, PUPs, Biological Assessments, and accomplishment reports confirm that laws and best practices are followed. Interviews with USFS staff confirm appropriate knowledge and familiarity with applicable state and federal requirements regarding pesticide use. Additionally, the Forest Service Pesticide Impact Assessment Program conducts studies to further develop use and effects data for "priority forestry pesticides" to support NEPA assessment of pesticide use in forestry applications and to supplement the data used for EPA pesticide registration process.
Supply Base Verifiers	▪ NF Pesticide use records ▪ Project level NEPA documents, silvicultural prescriptions, PUPs, HHERAs, applicable pesticide labels ▪ EPA Active Pesticide Product Registrational Informational Listing (APPRIL) ▪ EPA Pesticide Product Label System (PPLS) ▪ State pesticide use regulations and product registrations
Evidence reviewed	▪ National Environmental Policy Act (NEPA) of 1969 ▪ Clean Water Act of 1972 33 ▪ Endangered Species Act (ESA) of 1973 16 U.S.C. § 1531 et seq. ▪ Resource Conservation and Recovery Act (RCRA) of 1976 (42 U.S.C. 6901 et seq.) ▪ 2012 USFS Planning Rule (36 CFR Part 219) ▪ Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) ▪ National Occupational Safety and Health Act (OSHA) ▪ Environmental Policy Act (NEPA)

- 36 CFR, Part 219-Planning
- 7 USC Chapter 6 – Insecticides and Environmental Pest Control
- Worker Protection Standard (40 CFR Part 170)
- USDA Department Regulation 9500-4. August 1983
- U.S. Department of Agriculture Regulation 9500-4
- Forest Service Manual (FSM) 1900 Chapter 1950 Environmental Policy and Procedures
- Forest Service Manual (FSM) 2100 Chapter 2150 Pesticide Use Management and Coordination
- FSH 1909.12 Chapter 30 Monitoring
- Forest Service Handbook (FSH) 1919.15 NEPA Handbook
- Forest Service Handbook (FSH) 2109.14 Pesticide Use Management
- Nantahala and Pisgah National Forests Final Land Management Plan, January 2023
- Grand Mesa Uncompahgre and Gunnison NFs Revised Land Management Plan. June 2024
- Land and Resource Management Plan, Six Rivers National Forest. 1995.
- National Best Management Practices for Water Quality Management on National Forest System Lands. Volume 1: National Core BMP Technical Guide. FS-990a. April 2012.
- Memo to USFWS – Biological Assessment and request for concurrence of "not likely to adversely affect Gunnison Sage Grouse or critical habitat for the Upper Gunnison Basin Gunnison Sage Grouse Brood Rearing Habitat Restoration and Weed Treatment
- Biological Assessment Appendix A. Integrated Weed Management: Preventing the Spread of Invasive Plants
- Biological Assessment Appendix B: Enhancing Ecosystem Resilience of Riparian/Wet Meadow Habitats In the Upper Gunnison Basin
- USFWS Memo to NPS, BLM, GMUG Forest Supervisor - Programmatic concurrence for the Upper Gunnison Basin Gunnison Sage Grouse Brood Rearing Habitat Restoration and Weed Treatment
- Almont Triangle Noxious Weed Treatments, Gunnison Ranger District, Grand Mesa Uncompahgre and Gunnison National Forest, Rocky Mountain Elk Foundation Project Report
- Rocky Mountain Elk Foundation (RMEF) Report - Pesticide Use Project Report
- Milestone Specialty Herbicide Label
- Plateau herbicide PUP, Grand Mesa Uncompahgre and Gunnison National Forest, May 2023
- Rejuvra herbicide PUP, Grand Mesa Uncompahgre and Gunnison National Forest, May 2023
- USFS Pesticide Application Record - Gunnison County – 2021
- USFS Pesticide Application Record - Gunnison County – 2022
- Gunnison Ranger District Daily Herbicide Application Records - 2023
- Invasive weed prevention BMP Brochure - Western Colorado
- National Strategic Framework for Invasive Species Management. USDA Forest Service. FS-1017. August 2013.
- National Road Map for Integrated Pest Management September 2018.
- How to Comply with the 2015 Revised Worker Protection Standard for Agricultural Pesticides: What Owners and Employers Need to Know. Pesticide Educational Resources Collaborative, US Environmental Protection Agency. 2017.

Risk rating	Low risk

Principle 2 – Biomass sourcing does not harm the environment	
Criterion 2.2 – **Ecosystem, their productivity, functions, and services are maintained or enhanced**	
2.2.8	Waste shall be disposed of in an environmentally appropriate manner.
Findings	**Scale of assessment** All US National Forests located in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 2, Region 5, Region 8, Francis Marion NF, Shoshone NF, and Lassen NF. Title 36 of the Code of Federal Regulations, Part 261 provides a comprehensive accounting of prohibited activities on National Forest lands, including, specifically, improper disposal of waste and littering which are detailed in Section 261.11. Violations are subject to fines and imprisonment. Comprehensive laws and regulations must also be followed for solid waste disposal and handling of hazardous materials. Presidential Executive Order 12088 requires all federal agencies, including the Forest Service, to fully comply with applicable pollution control laws and regulations. Disposal of hazardous and toxic materials on NFS lands is prohibited. FSM 2130 and FSM 2160 set forth policies and responsibilities for management of solid waste and hazardous materials including storage, disposal and clean up in the event of spills. Waste is generated from administrative activity, legal forest visitor use, and illegal forest visitor use (illegal dumping). All waste is typically disposed of at landfills or other waste disposal and recycling facilities operated by local government Environmental Management departments. For example, for the Francis Marion NF, all waste at the district office, work center, recreation sites and from illegal dumping is collected and then disposed of through contractors or direct delivery at County Environmental Management Dept processing sites. These sites are monitored by the State Department of Health and Environmental Control's Environmental Quality Control program. All three NFs sampled indicate they experience occasional illegal dumping of household waste by the general public. Review of LEI weekly reports suggests that all or most NFs likely have similar experiences. The Law Enforcement and Investigations (LEI) unit operates within the USDA Forest Service to enforce federal laws and regulations governing the use of NFS and lands and associated resources. Uniformed Law Enforcement Officers (LEOs) patrol NFs and support other USFS personnel in enforcing regulations and contracts. Additionally, USFS field employees are trained and designated as Forest Protection Officers (FPOs). Illegal disposal of waste on NF's is typically addressed by LEI when an LEO discovers a dump site or other instances of improper disposal of waste. Illegal incidents are investigated by LEO. Littering and/or dumping of waste or hazardous materials (e.g. oil cans, oil, fuel) on logging sites is atypical. Records of disposal are kept in one of two ways, either a receipt directly from the county processing center or through receipt from the collection contractor. All waste collection and disposal receipts are maintained as part of service contract or purchasing files.

Within the national USFS organizational structure is the Engineering, Technology, & Geospatial (ETG) Services whose responsibilities include facilities operations and maintenance, as well as environmental compliance. As an example, the Rocky Mountain Region (R8) Environmental Engineering Program oversees and supports cleanup, compliance, and spill response for all NF's in the Region. Specific areas of responsibility for USFS Environmental Engineering specialists include illegal dumping & spill cleanup, abandoned mine lands, solid waste management & landfill compliance, emergency response coordination, toxic & hazardous materials management, hazardous waste disposal, and wastewater treatment.

Several waste management topics are also included in the USFS National Core BMP Technical Manual, including sanitation systems for collection and disposal of sewage and wastewater at USFS administered facilities, solid waste management, hazardous materials, vehicle and equipment wash water, nonrecreational special uses, pipelines, transmission facilities, rights-of-ways, and facility site reclamation. Each of these topics is also addressed in one or more Forest Service Manuals, which are cross-referenced in the BMPs.

All commercial timber sale harvesting activities on National Forests occur under the terms of a formal contract or agreement. These legal agreements stipulate timber to be cut as well as related responsibilities of the purchaser regarding utilization, site protection, waste disposal and other activities. Treatment and/or disposal of logging slash and debris from road construction and maintenance is considered in harvest design and timber sale appraisal processes. Contracts frequently require cash deposits to be held as bonds to ensure appropriate slash disposal and maintenance of roads.

Timber sale contract standard provisions require purchasers to prevent pollution, littering, and to avoid leaks and spills of materials such as oil, gas, coolants and other harmful substances. More than 5 gallons is considered a spill and must be reported and cleaned up. Equipment leaks must be contained. Purchasers are further required to remove all contaminated soil, vegetation and waste from NFS lands. Waste disposal, leaks and spill prevention/containment are addressed in Contract Standard Provisions, section B6.34. Use of pits for storing fuel must be approved in advance. Compliance is monitored by contract officers. Incidents are recorded in timber sale inspection reports.

The US Forest Service employs chemical fire retardants as part of the agency's fire control strategy. Use of fire retardants results in irretrievable deposition of chemicals in forest environments. All chemical fire retardants used by the Forest Service are categorized as "practically non-toxic" for mammals, including aquatic species, by the US EPA. The USFS has completed a Supplemental Environmental Impact Statement (SEIS) for the programmatic nationwide use of chemical fire retardant, as well as formal consultation with the USFWS. A final Record of Decision outlines specific conditions that must be in place, including mitigation measures in the event of misapplication, allowing continued use of certain retardants. In response to a lawsuit filed in October 2022 by the environmental group named Forest Service Employees for Environmental Ethics, a US District court ruling found the USFS could continue to use fire retardant.

Enforcement, monitoring and outcomes

LEOs document violations in an Incident Report. The waste is then properly disposed of, and the incident is recorded in the LEI Report into Law Enforcement Investigations Reporting System (LEIRS), which is an internal USFS database for maintaining and accessing digital LEI records. Illegal dumping on National Forest System lands is documented through Law Enforcement Incident Reports or Violation Notices and then entered into LEIRS database. A receipt is provided by the county landfill or the dumpster service contractor.

All disposal of hazardous materials is coordinated through the Forest HazMat Coordinator. The HazMat coordinator maintains records of HazMat incidents. All Law Enforcement activities are documented through Incident Reports and Violation Notices and then entered into LEIRS database. A recent example occurring on the Francis Marion NF involved a USFS Recreation Technician who discovered an illegal campsite while performing FPO duties. Upon examination of the site, there was possibly fentanyl present. The USFS FPO contacted Law Enforcement and the District Ranger, who then notified the Forest Hazardous Materials (HazMat) coordinator. The Forest HazMat coordinator contracted certified professionals to properly dispose of potential hazardous material. Both the FPO and LEO underwent medical examination and testing for potential exposure to fentanyl. This incident was documented through an Incident Report, HazMat Coordinator documentation and through receipt from the contractor of the hazardous material disposal.

Eighteen National LEI weekly reports were reviewed during the assessment. A total of 11 reports included instances of littering or illegal disposal of waste. One instance involved improper dumping of waste on a timber sale on the Sumter NF in South Carolina. The violation was referred to the Timber Sale Contracting Officer. These reports indicate the vast majority of improper waste disposal are associated with illegal roadside dumping and littering at recreational campsites. Investigations typically follow discovery of violations, often resulting in citations and fines. A Violation Notice issued on August 22, 20022 for improper waste disposal on the Shoshone National Forest indicates a fine of $230 was imposed on the accused offender.

Timber harvests are actively administered by Forest Service staff to ensure contract provisions are adequately met. Harvest inspectors are directed to conduct periodic inspections in keeping with the progress of operations and to communicate the results of these inspections to contract operators. Performance bonds posted for unfulfilled contract obligations are held until a contract is closed and can be used to mitigate waste unlawfully disposed of by timber purchasers on NFS lands. Harvest inspections are recorded and maintained on file. Contract Officers have the authority to initiate punitive actions in the event that contract requirements are not fully satisfied.

Risk conclusion and justification

There is a low risk that waste is not appropriately disposed of on NFs. Several federal laws including NEPA, CWA, and Solid Waste Disposal Act govern the disposal of waste on lands managed by the USDA Forest Service in an environmentally appropriate manner. Forest Service manual and BMPs explicitly address management of solid waste, hazardous wastes, sanitation systems and other potential sources of waste generated directly or indirectly by USFS activities.

	Interviews with NF and RO staff reflect a strong level of familiarity with USFS protocols regarding waste disposal. Illegal disposal of waste at impromptu roadside dump sites as well as littering at campgrounds are the most common problems with waste disposal and appear to occur at a reasonably low level on many or most NFs. Incidences of waste disposal problems on logging sites are reportedly atypical and infrequent. One incident was reported on 18 LEI national weekly reports reviewed during the assessment. The USFS operates a Law Enforcement and Investigations program, and additionally trains field staff as Forest Protection Officers. On each NF, there are numerous employees traversing the forest on a daily basis, with LEO's focused primarily on enforcement of laws and regulations. LEI reports reviewed during the assessment indicate LEO's are actively monitoring forest activities and enforcing applicable laws.
Supply Base Verifiers	▪ Timber sale contracts ▪ Timber sale inspection reports ▪ LEI reports
Evidence reviewed	▪ Solid Waste Disposal Act of 1965 (P.L. 89-272, 79 Stat. 992), ▪ National Environmental Policy Act (NEPA) ▪ Resource Recovery Act of 1970 (P.L. 91-512, 84 Stat. 1227) ▪ Clean Water Act (CWA) of 1972 ▪ Endangered Species Act (ESA) of 1973 (16 U.S.C. § 1531 et seq.) ▪ Resource Conservation and Recovery Act of 1976 (P.L. 94-580, 90 Stat. 2796) ▪ 36 CFR Part 261 Prohibitions ▪ Presidential Executive Order 12088—Federal Compliance with Pollution Control Standards ▪ Forest Service Manual (FSM) 2100, Chapter 2130 Solid Waste Management ▪ Forest Service Manual (FSM) 2100, Chapter 2160 Hazardous Materials Management ▪ Forest Service Manual (FSM) 7400 - Public Health and Pollution Control Facilities ▪ Forest Service Handbook (FSH) 2409.15 Timber Sale Administration ▪ Forest Service Handbook (FSH) 5309.11 Law Enforcement ▪ Forest Service Handbook (FSH) 7409.11 - Sanitary Engineering and Public Health Handbook ▪ FS-2400 (06/2006) Forest Service Timber Sale Contract and Provisions ▪ National Best Management Practices for Water Quality Management on National Forest System Lands. Volume 1: National Core BMP Technical Guide. FS-990a. April 2012. ▪ Timber Sale Administration Report, Contract Number 064609. Lassen National Forest. November 2, 2017. ▪ USDA Forest Service Law Enforcement and Investigations (LEI), Weekly Report for the Week of January 14 - 20, 2024 ▪ USDA Forest Service Law Enforcement and Investigations (LEI), Weekly Report for the Week of February 12 - 18, 2023 ▪ USDA Forest Service Law Enforcement and Investigations (LEI), Weekly Report for the Week of August 27 - September 2, 2023 ▪ USDA Forest Service Law Enforcement and Investigations (LEI), Weekly Report for the Week of August 13 - 19, 2023

	▪ USDA Forest Service Law Enforcement and Investigations (LEI), Weekly Report for the Week of August 6 - 12, 2023 ▪ USDA Forest Service Law Enforcement and Investigations (LEI), Weekly Report for the Week of May 21 - 27, 2023 ▪ United States District Court Violation Notice, Failing to dispose of garbage. Clark Fork Ranger District, Shoshone National Forest. August 22, 2022. ▪ USFWS 2023 Revised Biological Opinion for the U.S. Forest Service Programmatic Nationwide Aerial Application of Fire Retardant on National Forest System Land. February 13, 2023 ▪ USDA Forest Service Record of Decision, Nationwide Aerial Application of Fire Retardant on National Forest System Lands. January 2024. ▪ 2023 Aerial Fire Retardant Use on National Forest System Lands. March 22, 2024. ▪ Human Health Risk Assessment of Wildland Firefighting Chemicals: Long-term Fires Retardants. Auxillo Management Services. October 2021
Risk rating	Low risk

Principle 2 – Biomass sourcing does not harm the environment	
Criterion 2.2 – **Ecosystem, their productivity, functions, and services are maintained or enhanced**	
2.2.9	Harvesting levels shall be justified as to how they can be sustained with reference to inventory and growth data for the Supply Base.
Findings	**Scale of assessment** All US National Forests located in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 2, Region 5, Region 8, NFs in Mississippi, Chequamegon-Nicolet NF, and Modoc NF. The MUSYA and NFMA both require that harvest levels on National Forest must be established such that harvest quantity does not exceed levels that can be sustained in perpetuity. The annual volume of timber harvested from each National Forest must be no more than the quantity that can be produced on a sustained-yield basis (16 US Code Section 1611). Compliance with this requirement is evaluated over ten year periods used to calculate annual sale quantity (ASQ) in the Forest Plan. Timber removal of a given year can exceed the ASQ just as long as the calculated decade removal is not exceeded. Any departures from this approach must be subject to public review and consistent with established objectives in the land management plan. Timber harvested salvage is excluded from the ASQ. The USFS retains sufficient flexibility in their operating plans to allow salvage or sanitation harvesting of timber stands that are "substantially damaged by fire, windthrow, or other catastrophe, or which are in imminent danger from insect or disease attack" (NFMA Section 13 (b)). The USFS can substitute salvaged timber for timber that would otherwise be sold under the plan or, if not feasible, sell such timber over and above the plan volume. (16 U.S.C. 1611)

The NFMA requires forest land management plans to include specific information regarding timber management. Plans must include "appropriate written material, including maps and other descriptive documents, reflecting proposed and possible actions, including the planned timber sale program and the proportion of probable methods of timber harvest within the unit necessary to fulfill the plan."

The Forest and Rangeland Renewable Resources Planning Act (RPA) directs the Forest Service to conduct periodic inventories of present and potential forest resources, including timber, and to assess current and anticipated demand and supply of forest resources. The 2012 Planning Rule, 36 CFR 219 outlines forest management plan requirements for timber management in Section 219.11. The quantity of timber sold must be "limited to an amount equal to or less than that which can be removed from such forest annually in perpetuity on a sustained yield basis." Section 219.5 further requires that forest activities such as timber sales must be demonstratively consistent with applicable components of the forest plan.

As stated in 36 CFR Part 221.3, management plans for National Forest timber resources must provide for a continuous supply of timber, based on sustained yield principles, to provide for an even flow of timber in consideration of forest conditions and other uses, and establish maximum allowable harvest levels bound by time and area.

The first step in any Forest Service planning process is collection and analysis of resource inventory information necessary to inform land management decision-making. The USFS uses a suite of tools and methods for collecting inventory data including the USFS Forest Service Forest Inventory and Analysis (FIA) Program. FIA data is extrapolated to State, Regional, and National levels. Stand, plot, and tree level data is collected from both permanent and temporary plots such as stand exams conducted at the Ranger District level. Inventory data is maintained at the District and Forest level and accessible to Regions. These data are used to calculate forest level inventories for forest planning, forest level projects, and in development of NF LRMPs.

Forest inventory data is collected at the stand and tree level, including tree species, size, condition, as well as numerous site attributes such as down woody biomass and forest ground cover. Current inventory records are stored in the Natural Resource Manager database and in the FSVeg system, both of which are operated by the USFS. FSVeg is a national database that allows access to any USFS staff at the District, Forest, Region, or National level and provides the latest stand exam data. Inventory data should be updated prior to and after each timber harvest, as well as approximately every 10 years or after major disturbance events.

Based on stand inventory data, National Forests determine desired future conditions, silvicultural systems and harvesting levels for forest areas determined to be suitable for timber harvest. Long-term sustained yield modeling is conducted as part of the Forest Plan revision process, using the most current inventory data and factoring in loss due to mortality or disturbance events. Calculation of ASQ is calculated for ten-year intervals for each planning period, in consideration of other resources and uses, using growth and yield modeling tools. ASQ is required to be developed at the Forest level or at the level of the administrative management unit when National Forests are administratively combined. ASQ is the maximum amount allowed, not a requirement to achieve. ASQ and planned timber harvesting levels are documented in forest plans.

All forest plans and significant management activities such as commercial timber sales are subject to comprehensive environmental review consistent with NEPA. The NF LRMP, Final Environmental Impact Statement and Alternatives are developed through in interdisciplinary process that involves public comment and feedback. As a fundamental step in the planning process, each NF is required to identify areas that are deemed suitable for timber production. The forest types, age class, and desired forest condition for each forest type are used to develop a calculation of the ASQ. The Forest is required to monitor the implementation of the Forest Plan to assure that management outcomes are consistent with Plan objectives. Each LRMP includes a monitoring and evaluation plan.

Successful and timely reforestation is fundamental to maintaining long-term sustainability. Wildfire accounts for about 80% of reforestation needs on NFS lands, and just 6% of post wildfire needs are met on an annual basis. The Repairing Existing Public Land by Adding Necessary Trees (REPLANT) Act provided additional funding for the USFS to address backlogs that have developed in their reforestation needs and requires that post-disturbance reforestation needs are identified and met. The 2022 National Forest System Reforestation Strategy places renewed emphasis on ensuring that National Forests are promptly and appropriately regenerated and managed to provide the best chance of survival and foster ongoing resilience.

Numerous Forest Service manuals and handbooks outline responsibilities and detailed direction for how inventory data is collected and used to develop plans and to define annual sale quantities (ASQs). FSH 1909.12 provides detailed procedural direction for land management planning consistent with the 2012 Planning Rule, including the use of best available scientific information in the assessment, planning and monitoring processes. FSH 1909.12 Chapter 10 addresses the assessment process, including specific information to be collected and evaluated for timber resources. FSH 1909.12 Chapter 60 provides detailed procedural direction specifically for determining timber harvest levels for inclusion in land management plans. FSH 1909.14 provides direction on the timber management information system, including Chapter 20 which addresses information required for the timber resource portion of the forest plan including "timber inventory and analysis of data, determination of rotations, development of harvest schedules, and regulation of cut." FSH 2409.18 provides detailed instruction for the development of timber sales, including ensuring the proposed sale aligns with the approved land management plan.

Data housed in Timber Information Management (TIM), Forest Products Financial System (FPFS) and the Central Data Warehouse (CDW) systems enable the Forest Service to track timber harvest volumes established in the land management plan and timber harvest volumes included in timber sales using reports such as the Periodic Timber Sale Accomplishment Reporting (PTSAR) and Cut and Sold standard reports housed in CDW.

Enforcement, monitoring and outcomes

Each NF is required by law to develop and implement a Forest Plan, and to revise the Plan periodically or in response to material changes to the Forest environment or in operating conditions. As part of the NEPA process for each proposed management project, data regarding suitability for timber production is updated for the lands within the project area. Each Forest Plan includes a determination of forest areas

suitable for timber production, as well as an ASQ calculated for ten-year increments. Forest Plans vary considerably in terms of the age of the Plan; however, all Plans include these fundamental components. The Forest Plan and associated ASQ is approved by the Regional Forester District Foresters, Forest Silviculturist, and Line Officers are responsible for ensuring harvesting levels remain within sustainable levels.

The Revised 2014 LRMP for the NFs in Mississippi established the ASQ for the 10-year period of 2014 – 2023 at 906 MMBF, or 181.2 MMCF, with 1.4% of that timber sale volume generated in support of conservation objectives on lands determined to be unsuitable for timber production. The LRMP team including the Forest Silviculturist and others were responsible for the analysis and determination of the recommended ASQ.

According to interviews with staff, the ASQ target does not influence the NFs of Mississippi in their project planning and implementation. The ASQ is met, or not met, indirectly through the implementation of timber harvesting activities conducted to meet other objectives associated primarily with ecosystem restoration and maintenance. NFs of Mississippi have regularly met the ASQ goal in past years with the exception of recent challenges with unsold timber sales. There is no punitive consequence imposed on NFs for falling behind and not meeting ASQ targets. Area restored is a better indicator for meeting Forest Plan objectives than timber volume sold. The ten-year allowable sale quantity of 181MMCF has been exceeded as a result of projects designed to restore critical habitat for red-cockaded woodpeckers which are federally listed as an endangered species. Requirements imposed by the USFWS for maintaining RCW habitat influences where, how, and how much forest area is treated. Annual growth far exceeds harvest levels.

The Modoc LRMP was approved in 1991 and has not been formally revised since that time. The ASQ calculated for Modoc for the 1991 LRMP was 45.5 MMBF or 7.6 MMCF. Regional initiatives including the Northwest Forest Plan (NWFP) and the Sierra Nevada Framework have effectively amended the Modoc Forest Plan, resulting in de facto reductions in the area designated as suitable for timber production and significant restrictions on harvesting to protect federally listed wildlife species including the Northern Spotted Owl and marbled murrelet. Modoc NF is also severely constraint by budget limitations. The ASQ has not been formally recalculated at the Forest level and is not a driver for Modoc. The current ASQ assigned to Modoc from the Regional Office is 50.4 MMBF based on production capacities assessed in the northern six NFs n Region 5. ASQ is not used for planning forest management activities and the current timber harvest is well below ASQ estimations. Modoc NF management is primarily driven by a fuel reduction plan and wildlife habitat management objectives.

ASQ for CNNF was last calculated during the 2004 LRMP process and is currently set at 1580 MMBF, or 256 MMCF over a ten-year period. ASQ is monitored annually, and cumulative volumes sold during the decadal calculation period are compared against the total ASQ for the planning period. The calculated ASQ is revised if the Forest Supervisor determines there has been significant change in forest conditions, for example widespread insect infestations or wildfire. Interviews with CNNF staff indicate that in the first 10-year period following the 2004 Forest Plan, 60% of the calculated ASQ volume was sold. CNNF staff also stated that the volume sold increased to 85% of ASQ in the second decade following the Plan approval. The Forest is largely constrained by budget limitations from meeting the 10-year ASQ.

	ASQ is one of several measures used to evaluate attainment of Forest Plan objectives and is not typically prioritized relative to achieving ecosystem maintenance and restoration goals. Question 17 in the CNNF Forest Monitoring plan addresses the Forest's timber harvest relative to ASQ as a measure for assessing harvest sustainability. Monitoring is based on timber harvest volume data reported in the Forest Products Financial System and Forest Activity Tracking System databases. These are national databases with Unit level information input by the local national forest. The 2016 – 2017 monitoring and evaluation report found that timber harvest was below the ASQ established in the Forest Plan and therefore are considered sustainable. The Forest was found to have harvested 52% of the projected acres which resulted in harvesting 68% of the projected volume. **Risk conclusion and justification** There is a low risk harvesting levels on NFs are not justified and are not sustainable with reference to inventory and growth data. Each National Forest is required to calculate a sustained yield limit (SYL) of timber that can be harvested annually in perpetuity. Excluding natural disasters such as fires, FIA data provides the means to demonstrate the state of timber volume on each National Forests and other scales. The latest FIA data indicates that the NFS lands of the country grow significantly more volume that is harvested or lost to mortality, unless caused by catastrophic natural disturbances. Harvest levels in time and space are specified in Forest Plans through decisions made in compliance with NEPA. Project-level harvest must follow Forest Plan direction in time and space or the Forest Plan must be amended (in compliance with NEPA). The Forest Service is mandated by the MUSYA, the NFMA, and the 2012 Planning Rule to ensure that ten-year harvest volumes on National Forests remain within levels that can be sustained in perpetuity in consideration of multiple use objectives and desired future conditions. Departures from established allowable harvest limits are permitted to the extent they are consistent with management plan objectives. Interviews with staff, records provided of annual ASQ, and monitoring reports indicate that NFs typically operate below the level calculated as sustainable in perpetuity. Timber Sale Contracts outline requirements in respect to timber volume reporting, to the forest plan and to mechanism of approval to follow prior to any modifications to the plan.
Supply Base Verifiers	▪ NF Forest Management Plans ▪ NEPA Documents ▪ NF Records for annual ASQ ▪ NF Monitoring Reports
Evidence reviewed	▪ Organic Administration Act of 1897 ▪ Multiple-Use Sustained Yield Act of 1960 (16 U.S.C. 528-531) ▪ National Environmental Policy Act (NEPA) of 1969 ▪ Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974 ▪ National Forest Management Act (NFMA) of 1976 (P.L. 94-588) ▪ 2012 USFS Planning Rule (36 CFR Part 219)

	▪ Repairing Existing Public Land by Adding Necessary Trees (REPLANT) Act of 2021 (P.L. 117-58, Title III, Section 70301-70303) ▪ 16 US Code Chapter 36 ▪ Code of Federal Regulations Title 36, Part 219 Planning ▪ Code of Federal Regulations Title 36, Part 220 - National Environmental Policy Act Compliance ▪ Code of Federal Regulations Title 36, Part 221 Timber Management Planning ▪ Forest Service Manual (FSM) 1900 Planning ▪ FSM 2400 Timber Management ▪ Forest Service Handbook (FSH) 1909.12 Chapter 60 Forest Vegetation Resource Management ▪ FSH 1909.14 Resource Inventory Handbook ▪ FSH 1909.15 National Environmental Policy Act Handbook ▪ FSH 2090.11 Ecological Classification And Inventory Handbook ▪ FSH 2409.13 Timber Resource Planning ▪ FSH 2409.14 Timber Management Information System ▪ FSH 2409.18 Timber Sale Preparation ▪ National Forest System Reforestation Strategy. FS-1198. USDA Forest Service. July 2022. ▪ Policy and Procedures for The Review of Major Federal Actions with Environmental Impacts, U.S. Environmental Protection Agency. September 26, 2023 ▪ Land and Resource Management Plan, Modoc National Forest. 1991 ▪ Chequamegon-Nicolet National Forests 2004 Land and Resource Management Plan. R9-CN-FP. April 2004 ▪ Land and Resource Management Plan, National Forests in Mississippi. USDA Forest Service. August 2014. ▪ Chequamegon-Nicolet National Forests Land and Resource Management Plan Monitoring and Evaluation Report: 2016 – 2017. USDA Forest Service. May 2019.
Risk rating	Low risk

Principle 2 – Biomass sourcing does not harm the environment	
Criterion 2.2 – **Ecosystem, their productivity, functions, and services are maintained or enhanced**	
2.2.10	Harvesting areas shall be regenerated
Findings	**Scale of assessment** All US National Forests in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 2, Region 5, Region 8, Nantahala-Pisgah NF, Grand Mesa Uncompahgre and Gunnison (GMUG) NF, and Six Rivers NF.

The NFMA amended the Forests and Rangeland Renewable Resources Planning Act specifying that "...all forested lands in the National Forest System shall be maintained in appropriate forest cover with species of trees, degree of stocking, rate of growth, and conditions of stand designed to secure the maximum benefits of multiple use sustained yield management in accordance with land management plans." The NFMA specifically requires that USFS LRMPs include standards that timber harvest areas "can be adequately restocked within five years after harvest." The 2012 Planning Rule requires that timber harvesting only occurs where the regeneration standard stipulated in the NFMA can be achieved. The Planning Manual (FSM 1900) also reinforces the Forest Service objective to sustain renewable resources in perpetuity, and to maintain the long-term health and productivity of the NFS (FSM 1921.02). FSM 1920 is used in conjunction with Forest Service Handbook (FSH) 1909.12 which provides detailed guidance to USFS Interdisciplinary Teams (IDTs) and planning staff for implementing land management planning in accordance with the 2012 Planning Rule. FSM 2400 establishes responsibilities for timber management, including reforestation, within the Forest Service for all levels of the organization. FSM 2470 (Silvicultural Practices) provides direction for planning and implementing silvicultural practices, including timber harvesting and reforestation, for achieving desired future conditions established in LRMPs. FSM 2471 addresses methods for regeneration harvesting using even-aged methods such as clearcutting, coppice, seed tree and shelterwood techniques, as well as development of two-aged stands through retention of reserve trees using even-aged techniques. Salvage and sanitation harvests are also considered regeneration harvests when the level of removal precludes the existing stand form maintaining minimum stocking levels and reforestation is required (FSM 2471.41). Broad objectives and responsibilities for reforestation are provided in FSM 2472, which reinforces objectives to restore harvested areas to a forested condition that meets desired stocking levels, and to monitor reforested areas to ensure forest cover is maintained. FSM 2496 directs each USFS Region to assess results of monitoring reforestation, formally certify reforestation activities have met stocking standards, and determine future reforestation needs.

More detailed instructions for planning and implementing reforestation activities are provided in Forest Service Handbooks. The development of silvicultural plans that are tailored to meet management objectives and address site conditions are a fundamental step in preparing a timber sale. Silvicultural prescriptions are developed in accordance with FSH 2409.17. Chapter 9 sets out instructions and guidelines for the development of stocking guides for the NFS. Chapter 80 provides detailed instruction for site specific analysis, including for development of regeneration measures. Existing site-level ecological and operational conditions, in combination with desired future conditions, are evaluated to determine the appropriate method of regeneration prescribed. FSH 2409.17 also provides direction for conducting silvicultural examinations, including regeneration examinations.

FSH 1909.12, Chapter 60 (section 64.14) provides detailed direction for developing standards in land management plans that meet the requirements of the NFMA and 2012 Planning Rule that timber is harvested only where there is a reasonable expectation that the harvested area will be adequately regenerated within five years of harvest. Section 219.15 of 36 CFR Part 219 (2012 Planning Rule) stipulates that all forest management activities occurring on National Forests must be implemented in a manner consistent with the corresponding land management plan. Further, every land management plan must include a monitoring plan. Monitoring plans must,

among other things, measure "management effectiveness and progress toward achieving or maintaining the plan's desired conditions or objectives."

Environmental assessments required by NEPA include comprehensive evaluations of impacts to natural ecosystems resulting from proposed activities. Evaluations of environmental impacts must include potential conflicts between proposed actions and applicable federal laws policies and plans (40 CFR Part 1502).

The Repairing Existing Public Land by Adding Necessary Trees (REPLANT) Act was signed into law in 2021 to address post disturbance reforestation needs and reforestation backlogs on National Forest System mostly due to catastrophic wildfires. The REPLANT Act removed a $30 million annual funding cap on the Reforestation Trust Fund, which had been in place since the 1980s. Removal of the cap is expected to increase available funding from the US Congress for reforestation activities to about $123 million per year, primarily targeted for areas impacted by catastrophic natural disturbances. The added funding will also alleviate pressure on other funding sources initially intended to address reforestation of harvest sites such as the Knutson-Vandenberg (K-V) Act.

Enforcement, monitoring and outcomes

The Forest Service has developed the NFS Reforestation Strategy as a roadmap for ensuring that all reforestation needs on National Forests are addressed in the future. Natural disturbance events currently cause the overwhelming majority of reforestation needs on National Forests (81% wildfire, 4% insects and disease and 5% due to weather, regeneration failures, etc.). As of the end of Fiscal Year 2021, only 10% of the NFS reforestation needs were created by timber harvesting. The Reforestation Strategy contains specific goals and objectives intended to "increase the pace and scale of reforestation" to address existing anticipated future needs. As described in FSH 2409.17, the USFS uses tree planting, seeding, and natural regeneration (coppice and/or natural seed fall) techniques, depending on conditions. From 2017 – 2021, the USFS reforested an average of 190,000 acres per year throughout the NFS, with 60,000 acres of tree planting and 130,000 acres of natural regeneration (USDA Forest Service, July 2022).

Design and implementation of appropriate and effective silvicultural treatments, including regeneration harvest methods, tailored for site conditions and management objectives is a fundamental step in preparing commercial timber harvesting operations via contracted timber sales on National Forests. Numerous Forest Service manuals and handbooks establish responsibilities and a management framework for ensuring harvested areas are restored to appropriate stocking levels and forest conditions.

The USFS operated eight tree nurseries that produce nearly 35 million seedlings annually. Seeds used in the Forest Service Nursery System are collected from natural stands and seed orchards. Bare-root and containerized native species tree seedlings are available for use on NFs, other federal lands, state and tribal lands. Forest Service Nursery System also produces native shrubs, grasses and forbs for restoration purposes.

The previous 1991 and the current 2023 GMUG Land and Resource Management Plans both confirm reforestation requirements to establish a satisfactory stand cover on cutover areas. The latter requires the NF to minimally restock harvest areas within 5 years after final harvest. Restocking requirements by cover types for areas suitable for timber production are also included.

Timber sale preparation procedures, outlined in FSH 2409.18, ensure the development of appropriate treatment design measures are incorporated in timber sale contracts and harvest plans. Sale area improvement (SAI) plans are developed for timber sales in accordance with land and resource management plan objectives. Activities prescribed in SAI plans are designed to protect and improve the future productivity of timber sale areas, including regeneration. FSH 2409.19 Chapter 10 sets out direction for the development of SAI plans and the administration of associated K-V funds.

The K-V Act requires the Forest Service to collect deposits from timber sale purchasers to cover the costs of reforestation created by timber harvesting, along with associated activities such as site preparation. Timber sale contract administrators ensure that contract provisions are met, including required payments. Additionally, the Reforestation Trust Fund (RTF) is funded by tariffs imposed on imported timber and wood products and can be used for reforestation, timber stand improvement, and other forest health activities on NFs. Since the passage of the REPLANT Act, the RTF has grown significantly, with a FY2024 balance of nearly $512 million. The Vegetation and Watershed Management program and the Reforestation Trust Fund primarily fund reforestation needs for areas outside timber sale areas, including, for example, past timber sale areas that have subsequently been impacted by wildfire. Funding for reforestation needs received a significant boost with passage of the REPLANT Act in 2021.

The USFS is directed to monitor reforestation areas after one year and three years to confirm they have been returned to adequate stocking, and if not, to schedule them for retreatment. In Fiscal Year (FY) 2023, the USFS planted a total of 62,585 acres on CONUS NFs from known seed sources. Additionally, 7,526 acres were treated with direct seeding, 30,4689 acres were naturally regenerated with site preparation, and 77,515 acres were naturally regenerated without site preparation. In total 83,937 acres were treated with sanitation or regeneration harvests in CONUS NFs (Table 10). Reforestation activities were certified as successfully meeting stocking targets on 119,509 acres in CONUS NFs (USDA Forest Service 2023).

Table 10. Acres harvested on US National Forests in the Contiguous US, FY 2023.

Region	Clearcut	Prep Cut	Seed Cut	Removal Cut	Selection Cut	Improvement Cut	Thinning	Sanitation Cut	Special Cut	Total
1	3,679	0	3,514	491	7	2,645	3,700	945	116	15,097
2	5,110	0	3,018	4,846	4,574	2,219	2,721	564	374	23,426
3	0	0	0	0	3,286	3,793	9,628	11	0	16,718
4	1,217	0	0	588	1,977	657	2,664	1,275	0	8,378
5	460	0	0	0	1,312	309	8,686	10,912	0	21,679
6	524	0	704	398	2,047	812	29,843	6,526	0	40,854
8	6,593	93	2,153	1,563	75	41	28,375	3,439	176	42,508
9	11,356	223	4,875	2,375	9,491	446	17,929	6,801	554	54,050
CONUS	**28,939**	**316**	**14,264**	**10,261**	**22,769**	**10,922**	**103,546**	**30,473**	**1,220**	**222,710**
% CONUS	**13.0%**	**0.1%**	**6.4%**	**4.6%**	**10.2%**	**4.9%**	**46.5%**	**13.7%**	**0.5%**	**100.0%**

Source: Annual Reforestation and Timber Stand Improvement Report, Fiscal Year 2023. USDA Forest Service.

SAI plans are recorded in the Forest Service Activity Tracking System (FACTS). Planned and accomplished reforestation treatments are managed and tracked in FACTS. Reviewed Nantahala-Pisgah stocking inspection reports demonstrate data collection, objectives and site analysis. Recommendations are noted in the inspection form if adjustments should be required.

Risk conclusion and justification

The USFS provides for the regeneration of forests as required by law and as explicitly referenced in FSM 2400 Timber Management following timber harvest. Evidence shows implementation of the Forest Service Handbook and Manuals as well as access to monitoring results. Therefore, there is a low risk that sites will not be regenerated after harvests.

The NFMA, which builds on requirements set for in the RPA, directs the Forest Service to maintain "appropriate forest cover with species of trees, degree of stocking, rate of growth, and conditions of stand designed to secure the maximum benefits of multiple use sustained yield management." The Forest Service is further directed to monitor reforestation areas after one year and three years to confirm they have been returned to adequate stocking, and if not, to schedule them for retreatment. Sufficient funds to meet regeneration needs must be collected from timber purchasers in compliance with K-V Act.

Supply Base Verifiers

- NF Forest Management Plans
- Forest Service Activity Tracking System (FACTS)
- NF Monitoring Reports

Evidence reviewed	▪ Interdisciplinary environmental assessment of proposed timber sales (NEPA) ▪ Forest Vegetation Simulator (FVS) ▪ Sale Area Improvement (SAI) Plans ▪ Forest Service Activity Tracking System (FACTS) ▪ Timber Information Manager (TIM) ▪ Field Sample Vegetation (FSVeg) database and ArcMap extension (FSVeg Spatial) ▪ Ecosystem Restoration Framework ▪ Organic Administration Act of 1897 ▪ Knutson-Vandenberg (K-V) Act of 1930 ▪ Multiple-Use Sustained-Yield Act (MUSYA) of 1960 ▪ National Environmental Policy Act (NEPA) of 1969 ▪ Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974 ▪ National Forest Management Act (NFMA) of 1976 ▪ Repairing Existing Public Land by Adding Necessary Trees (REPLANT) Act of 2021 (Public Law 117–58) ▪ Reforestation Fact Sheet. February 2020. USDA Forest Service. ▪ Annual Reforestation and Timber Stand Improvement Report. Fiscal Year 2023. USDA Forest Service. ▪ 16 US Code Chapter 36 ▪ 36 CFR Part 219 Planning ▪ Forest Service Manual (FSM) 1900 - Planning ▪ FSM 2400 - Timber Management ▪ Forest Service Handbook (FSH) 1909.12 - Land Management Planning ▪ FSH 2409.17 - Silvicultural Practices ▪ FSH 1909.12 Chapter 60 - Forest Vegetation Resource Management ▪ F FSH 2409.13 - Timber Resource Planning ▪ FSH 2409.14 - Timber Management Information System ▪ FSH 2409.17 - Silvicultural Practices ▪ FSH 2409.19 Renewable Resources ▪ FSH 6509.11f, Chapter 60 - Nursery and Seed Programs ▪ National Forest System Reforestation Strategy. July 2022. USDA Forest Service. FS-1198.
Risk rating	Low risk

PRINCIPLE 2 – BIOMASS SOURCING DOES NOT HARM THE ENVIRONMENT	
Criterion 2.2 – **Ecosystem, their productivity, functions, and services are maintained or enhanced**	
2.2.11	The impacts of natural processes such as fires, pests and diseases shall be managed.

Findings

Scale of assessment
All US National Forests in the lower (contiguous) 48 states.

Analysis of the legal requirements and best practices
Sampling for this indicator included Region 2, Region 5, Region 8, Mississippi NF, Six Rivers NF, and Grand Mesa, Uncompahgre and Gunnison NF.

Integrated Pest Management (IPM) is defined as "a sustainable approach to managing pests...that minimizes economic, health, and environmental risks" (see United States Code, 2006 Edition, Supplement 4, Title 7 - AGRICULTURE). Federal agencies are required by law to use IPM in their pest management activities. One focus of the revised "A National Road Map for Integrated Pest Management" (2018) is to help minimize the adverse environmental effects of pest species in natural areas by protecting the ecosystem functions, aesthetic standards and values of natural resources and recreational environments.

Title IV of the Healthy Forest Restoration Act (HFRA), focused on insect and disease infestations, directs the Forest Service to conduct comprehensive information gathering and assessment of damaging forest insects and diseases, and to develop strategies for reducing susceptibility to these damaging agents as a means for improving forest health. Impacts of natural processes are managed through NEPA decisions that authorize vegetation management actions on federal lands. The HFRA allows for a variety of categorical exclusions (CE) to be used in response to natural processes. These CE are limited in size so most often the appropriate level of analysis to achieve landscape scale size treatment is formally implemented through proposed actions within an EA or an EIS authorized by the appropriate line officer.

Forest Service Line Officers are the responsible officials that authorize proposed actions on NFs to mitigate impacts from natural processes on individual forests. Line officers will sign the decision of the analysis and authorize the selected proposed action. Program managers are responsible for the implementation of the proposed actions. Other national programs such as the Burned Area Emergency Response (BAER) program will assign teams to mitigate impacts caused from wildfires.

Forest Service policy is to maintain an updated annual wildfire prevention and mitigation plan for each administrative unit (i.e., district, forest, region). These plans must align with established fire and ecosystem management objectives. Policies, responsibilities and instructions for prevention of wildfires is provided in FSM 5110 Wildfire Prevention and Mitigation, and FSH 5109.18 Wildfire Prevention.

Objectives and responsibilities for fire management on National Forests are set forth in FSM 5100 and FSH 5109 including wildfire prevention planning, educational programs, and fuels management. The Forest Service manages fire as a natural, essential and inevitable process in many forest ecosystems while at the same time preventing unwanted wildfires.

Enforcement, monitoring and outcomes
The Forest Service administers the Forest Health Monitoring (FHM) Program to monitor and report on forest health conditions throughout

the United States. The FHM is an ongoing multi-agency collaborative effort to monitor insect and disease activity as well as occurrences of wildfire and extreme weather. Conducting aerial surveys and site visits are the most common methods used to detect and monitor impacts from natural processes. These surveys and site visits are performed by FHM and will inform foresters and silviculturists on necessary follow up actions and treatments. Reports on current forest health conditions and accompanying analysis are provided on a monthly and annual basis (https://www.fs.usda.gov/science-technology/forest-health-protection/publications-reports/forest-health-monitoring-publications/annual-national-forest-health-monitoring-reports). Information collected through the FHM efforts is used by the Forest Service and other forest managers to respond both individually and collaboratively as appropriate to manage threats to ecosystem health. Inventory and management of forest ecosystems is enabled by funding, workforce, and establishing national goals and priorities.

As a member of the Federal Integrated Pest Management Coordinating Committee, the Forest Service contributes to information exchange and establishment of priorities for IPM with other agencies. USFS reports on monitoring and effectiveness of IPM activities are available online (e.g., https://www.fs.usda.gov/foresthealth/publications/fhaast/index.shtml).

NFs are provided with maps and supporting data identifying areas with highest priority for treatment to prevent or mitigate damage from insects and wildfire. In Region 5, from 2019 to 2024, the Lassen NF completed 1,556 acres of priority forest health thinning projects. Currently 6,716 acres of high priority areas remain untreated (https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd604536.pdf).

The USFS also maintains a robust organizational capacity for fighting wildfires and actively participates in cooperative interagency initiatives to combat wildfires. The Forest Service invests in research and development through fire science laboratories and research stations around the country. The Wildland Fire Mitigation and Management Commission was established in 2021 to make recommendations for policies and strategies to restore lands impacted by wildfires across public and private jurisdictions, including the NFS. The commission includes representatives from numerous federal agencies (including the USFS), state, local, and Tribal governments, as well as representatives of the private sector. The final report, released in September 2023, included 148 recommendations intended to improve the national approach to wildfire to include reduced loss of life and property, as well as healthy and resilient ecosystems.

Unplanned human ignited fires are illegal under 36 CFR § 261.5 Fire. The USFS suppresses all unplanned, human caused fires. The Forest Service may manage unplanned natural ignitions (lightning caused) with an appropriate response based on the potential to benefit or harm resources and other considerations including cost. Public and firefighter safety is always the priority in responding to any fire. Fines, imprisonment, and civil lawsuits are among the enforcement actions available to the stakeholders and the Forest Service for ensuring implementation of applicable laws and regulations.

As a result of climate change and past management policies, the scale and frequency of natural disturbance has increased in scale, intensity and frequency. Wildfire is the most significant disturbance agent on NFS lands in the western US. As noted in the assessment for Indicator 2.2.10, wildfire accounts for over 80% of the Forest Service reforestation needs. Several federal laws and Executive Orders have

	been issued in response to the growing threat to forest health. Strategies and measures employed by the Forest Service to manage the effects of these disturbances on forest health include investments in education, prevention, resilience and restoration. A recent example of the information collected on current forest health conditions, analyzed and reported can be found in Forest Health Monitoring, National Status Trends and Analysis 2021, GTR SRS-266, May 2022. The Bipartisan Infrastructure Investment and Jobs Act of 2021 provides the Forest Service $5.5 billion and the authority to tackle the most pressing issues. In fiscal year 2022, the Forest Service made critical investments to reduce wildfire risk, restore healthy, productive forests, and improve environmental, recreation and economic infrastructure. In 2022 the USFS: ▪ Invested $131 million on 10 high-risk landscapes that can reduce exposure of people, communities, and natural resources to the risk of catastrophic wildfire, identified in the 10-year wildfire strategy. ▪ Issues $1 billion in grants to help private forest owners, Tribal communities, state forestry agencies and other at-risk communities plan for and reduce wildfire risk by launching the Community Wildfire Defense Program with support from the National Association of State Foresters, Intertribal Timber Council, and others. ▪ Developed the Wildland Fire Mitigation and Management Commission alongside the Department of the Interior and Federal Emergency Management Agency (FEMA) to recommend strategies and policies to prevent, suppress and recover from wildfires. ▪ Released a new National Reforestation Strategy including a strategy to plant a billion trees across National Forests over the next ten years, eliminating a four-million-acre backlog. This work has started with four national reforestation agreements. **Risk conclusion and justification** There is a low risk impacts of natural processes that are not managed on National Forests. Legislation, inter federal agency collaboration, monitoring and assessments are concrete examples of how natural processes are part of the day to day operations of the USFS.
Supply Base Verifiers	▪ Forest Service manuals and handbooks ▪ Forest Health Monitoring (FHM) Program ▪ Public education and awareness campaigns ▪ Slash disposal and fuels management practices, including prescribed fire ▪ Maintained robust firefighting capacity (people, equipment, technology) ▪ Research in fire behavior and fire effects ▪ National Insect and Disease Risk Map ▪ Wildfire Crisis Implementation Plan

Evidence reviewed	▪ Organic Administration Act of 1897 ▪ Multiple-Use Sustained-Yield Act (MUSYA) of 1960 ▪ Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974 ▪ National Forest Management Act (NFMA) of 1976 ▪ Cooperative Forestry Assistance Act of 1978 ▪ Healthy Forest Restoration Act Of 2003 ▪ United States Code, 2006 Edition, Supplement 4, Title 7 - AGRICULTURE ▪ A National Road Map for Integrated Pest Management (2018) ▪ 36 CFR, Part 219-Planning ▪ Burned Area Emergency Response (BAER) ▪ Forest Health Monitoring ▪ Infrastructure Investment and Jobs Act of 2021 ▪ Forest Health Monitoring, National Status Trends and Analysis 2021, GTR SRS-266, May 2022 ▪ Federal Integrated Pest Management Coordinating Committee ▪ On Fire: The Report of the Wildland Fire Mitigation and Management Commission. September 2023. ▪ 36 CFR § 261.5 Fire ▪ FSM 5100, Fire Management ▪ FSH 5109.18 Wildfire Prevention
Risk rating	Low risk

PRINCIPLE 2 – BIOMASS SOURCING DOES NOT HARM THE ENVIRONMENT	
Criterion 2.2 – **Ecosystem, their productivity, functions, and services are maintained or enhanced**	
2.2.12	Genetically modified trees shall not be used.
Findings	**Scale of assessment** All US National Forests in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 2, Region 5, Region 9, Region 8, Mississippi NF, Chequamegon-Nicolet NF, Modoc NF, and Shoshone NF. The use of plant GMOs is regulated by the USDA Animal and Plant Health Inspection Service (APHIS) under the Plant Protection Act of 2000. The Forest service operates the National Forest Genetics Lab and the regional forester appoints a Regional Geneticist for review and approval of species being planted on the Forests.

	The Forest Service operates the National Forest Genetics Laboratory (NFGEL). NIGEL works with land managers to maintain species diversity and sustain healthy forests through genetic conservation and management. The Forest Service appoints a Geneticist for each region to set priorities according to species, traits of importance, and intensity of genetic resource management efforts. Intensity levels range from collection of seed from designated tree seed zones (least intensive) to selective breeding (most intensive) using seed of "known parentage to provide an improved base from which to select materials for advanced generation seed orchards." Generic resource management is addressed in section 2475 of FSM 2400. The use of GMO's is not addressed in any Forest Service manuals or handbooks. **Enforcement, monitoring and outcomes** APHIS classifies most GMO plants as pests or potential pests based on their potential to spread to native ecosystems and negatively affect native species. Because US regulation of GMOs is based on the premise that the nature of the GMO is more important than the process in which it is produced, restrictions on the use of GMOs depend on the context of the application and the characteristics of each GMO. There is no absolute restriction on GMOs in the US, however APHIS administers a rigorous and comprehensive administrative process for considering applications for use. The Genetic Resource Management of the USFS goal is to provide seeds for reforestation and restoration that are locally adapted, genetically diverse and that can possess insect and disease resistance. There are currently no GMO trees approved for use in production environments in the United States. The Forest Service uses natural regeneration, coppice, or plants trees grown from seed produced in a seed orchard or gathered from trees outside of seed orchards. **Risk conclusion and justification** There is a low risk GMO trees are used on National Forests. There are no known references and documentation on GMO use on National Forests.
Supply Base Verifiers	▪ Forest Management Plan
Evidence reviewed	▪ Plant Protection Act of 2000 ▪ 36 CFR, Part 219-Planning ▪ FSM 2400, Chapter 2470 Silvicultural Practices
Risk rating	Low risk

PRINCIPLE 3 – BIOMASS SOURCING HAS A NEUTRAL/POSITIVE IMPACT ON THE CARBON STOCK IN THE SUPPLY BASE OR REGION

Criterion 3.3 – **Carbon Feedstock sourcing is consistent with international requirements for land use, land-use change and forestry (LULUCF) emissions.**	
3.1.1	LULUCF *emissions* shall be accounted for through one of the following routes: **Route A** *Feedstock* may be sourced from a country of origin which is party to the Paris Agreement, and which has submitted a Nationally Determined Contribution to the United Nations Framework Convention on Climate Change (UNFCCC) covering carbon emissions and removals from agriculture, forestry and land use which ensure the changes in carbon stock associated with biomass harvest are counted towards the country's commitment to reduce or limit greenhouse gas emissions, or **Route B** *Feedstock* may be sourced from a country of origin which is party to the Paris Agreement and has national or sub-national laws in place (developed in accordance with Article 5 of the Paris Agreement and applicable in the area of harvest), to conserve and enhance *carbon stocks* and *sinks*, and provided there is evidence that reported LULUCF-sector emissions do not exceed removals, or **Route C** *Feedstock* may be sourced from a *Supply Base* where an assessment demonstrates that both the *carbon stock* is stable, and the *forests'* capacity to act as a *carbon sink* is stable or increasing over the long term.
Findings	**Scale of assessment** All US National Forests in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 2, Region 5, Region 8, Nantahala-Pisgah NF, Six Rivers NF, and Grand Mesa, Uncompahgre and Gunnison NF. Since 2021, the United States of America is a Party of the Paris Agreement. Each NF is required by law to develop and implement a Land and Resource Management Plan (LRMP), and to revise the Plan periodically or in response to material changes to the Forest environment or in operating conditions. The Plan is developed in conformance with the NEPA process. Each specific project is required by law to align with the LRMP. The 2012 Planning Rule requires an assessment of carbons stocks for NF plans. USFS must consider the role of forests in sequestering carbon and the effects of disturbances and management on carbon stocks. Other policy and direction must be followed for the assessment such as Executive Order 14072 recognizing the role of mature and

old growth forests play in carbon storage and the Secretary's Memorandum 1077-004 on Climate Resilience and Carbon Stewardship of America's National Forests and Grasslands. The Resources Planning Act (RPA) Assessment reports on the status, trends and projected futures of renewable resources such as carbon.

Timber requirements in 36 CFR 219.11 define how plan development and revision shall consider timber extraction. The 2012 Planning Rule directs the Forest Service to develop land management plans to ensure that lands are ecologically sustainable and contribute to social and economic sustainability. Lands are identified if they are suitable for timber production (a) and if timber harvests are for timber production (b) or for other purposes (c) such as improving wildlife or fish habitat, thinning to reduce fire risk, etc. The Code further defines a set of limitations (d) on timber harvests to protect the sites ecological integrity and productivity. Timber removal "... is limited to an amount equal to or less than that which can be removed from such forest annually in perpetuity on a sustained yield basis." (36 CFR 219.11 (d)6). An Annual Sale Quantity (ASQ) is calculated and included in Plans (see indicator 2.2.9). Increases of harvest levels may occur only in conformance with the Multiple Use Sustained Yield Act (MYSYA) and National Forest Management Act (NFMA), and only after public review and comment period of at least 90 days.

Sale and disposal of timber on NFs is allowed for the purpose of achieving the policies set forth in the MYSYA and Forest and Rangeland Renewable Resource Planning Act (RPA). FSH 2409.18 establishes a process for development of timber sales which include a financial analysis to measure economic viability of the timber sale. FSM 2430 directs the Forest Service to set minimum bid rates according to species and product on each National Forest, thus ensuring that higher value products such as sawlogs are sold at appropriate prices. Discounting options are permitted if purchasers require incentives to bid on the timber sale in order to achieve forest management objectives, for example salvage or restoration harvests with forest health objectives and low value products that may justify lower prices. Contracting Officers ensure Timber Sale Contracts are consistent with applicable plans and standards through contract provisions and associated documents.

US Code 16 USC Chapter 36, Subchapter IV: Wood Residue Utilization that governed pilot projects removing biomass off-site for fuel or other purposes defines wood residue as, "logging slash, down timber material, woody plants, and standing live or dead trees which do not meet utilization standards because of size, species, merchantable volume, or economic selection criteria and which, in the case of live trees, are surplus to growing stock needs.

Enforcement, monitoring and outcomes

The United States submitted their Nationally Determined Contribution (NDC) in line with article 4 of the Paris Agreement. The report confirms carbon uptake by standing forests, forest management and carbon storage in wood products. With more than 290 million hectares, forests play a significant role in the country's net 800 million metric tons of carbon sequestration reported in the NDC. Data for LULUCF is incorporated in the US Inventory of Greenhouse Gas (GHG) Emissions and Sinks in fulfillment of existing commitments under the UNFCCC Paris Agreement to submit annual reports of the national GHG inventory. The United States NDC includes an economy-wide target (inclusive of land use, land use change and forestry) to reduce emissions to 26% to 28% below 2005 levels by 2025.

	In November 2019, the USFS published a report on the influence of disturbance, and management activities on non-soil carbon stocks of the United States National Forests for the 1990 and 2011 period. The assessment built upon previous baseline assessments of carbon stocks incorporating detailed disturbance factors such as fires, harvests, insect outbreaks, wind and non-disturbance factors such as climate, nitrogen deposition and CO2 concentrations. Results found carbon stock trends are increasing but at a declining rate in the eastern forests of the country mostly due to aging stands. Forests of the western United States are either increasing or decreasing depending on the effects of disturbances. Some National Forests form the Pacific Southwest Region are switching from a carbon sink to a carbon source because of natural disturbances, aging stands, increasing temperatures and droughts. The USFS Carbon Dashboard is a tool supporting NFs to assess carbon stocks in planning. The Dashboard provides regional and individual data on carbon stocks defined in seven pools including soils, effects by type of disturbance, etc. With the exception of Rocky Mountain Region 2, Carbons Stocks continues to accumulate every year in the other sampled Regions 5, 8 and 9. The negative accumulation of carbon in Region 2 is explained by the repetitive insect outbreaks occurring since 2005 until the end of the study period in 2012. The methods and equipment used to harvest biomass are designed for the removal of residue following timber harvest and, in the western U.S., removing small diameter trees for forest restoration and wildfire hazard reduction. **Risk conclusion and justification** As a Party of the Paris Agreement, the country submitted their NDC in line with article 4. Carbon stocks are assessed and monitored by NF and by USFS Regions. NFs are required to assess carbon stocks in their plans since the 2012 Planning Rule. Baseline Carbon assessments and more recent resource assessments describe and monitor in detail Cabon Pools and the effects of disturbances and non-disturbances on the carbon resource. Combined with the systematic recording and reporting of timber harvests, there is a low risk LULUCF emissions are not accounted for by the USFS on National Forests. Therefore, feedstock sourced from NFs would conform with Route A.
Supply Base Verifiers	▪ Forest carbon stock monitoring reports ▪ FIA stocking, growth and drain data ▪ Annual NF cut and sold reports ▪ US NDC
Evidence reviewed	▪ National Forest land management planning processes ▪ NEPA assessment processes ▪ Climate Change Dashboard ▪ 2012 Planning Rule ▪ Executive Order 14072 recognizing the role of mature and old growth forests

	▪ Secretary's Memorandum 1077-004 on Climate Resilience and Carbon Stewardship of America's National Forests and Grasslands ▪ Multiple-Use Sustained-Yield Act (MUSYA) of 1960 ▪ National Environmental Policy Act (NEPA) of 1969 ▪ Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974 ▪ National Forest Management Act (NFMA) of 1976 ▪ 36 CFR Part 219 Planning ▪ Forest Service Manual (FSM) 2400 Timber Management ▪ Congressional Research Service (CRS). Updated June 6, 2023. US Forest Carbon Data: In Brief. ▪ US Environmental Protection Agency (EPA). Updated October 2024. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2022. U.S. Environmental Protection Agency, EPA 430-R-24-004 ▪ United States Nationally Determined Contribution. April 22, 2021. Reducing Greenhouse Gases in the United States: A 2030 Emissions Target.
Risk rating	Low risk

Principle 3 – Feedstock is only sourced from Supply Bases where the forest carbon stock is stable or increasing in the long term	
Criterion 3.2 – **Carbon stocks in the forest area of the Supply Base are stable or increasing in the long term.**	
3.2.1	All feedstock sourcing shall be consistent with either of these two options: Option A. Feedstock may be sourced from Supply Bases where an assessment of the Supply Base shows that the forest carbon stocks are stable or increasing, or Option B. Feedstock may be sourced, if the assessment shows that the forest carbon stocks are declining in the Supply Base, provided that the decline is due to natural processes (fire, pests etc.), and sourcing of feedstock has the aim to recover feedstock that would otherwise be lost or to assist regeneration.
Findings	**Scale of assessment** All US National Forests located in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 2, Region 5, Region 8, Shoshone NF, Lassen NF, and Francis Marion NF. All plan development and revisions are required to assess baseline carbon stocks (36 CFR 219.6(b)(4)). The purpose of the baseline is to assess issues with climate change and the role of carbon in maintaining long term site productivity of the plan area (FSH1909.12 Land Management Planning Handbook Chapter 10 - Assessment).

The US Forest Service is mandated by the Multiple Use Sustained Yield Act (MUSYA) to manage National Forests for the "achievement and maintenance in perpetuity of a high level annual or regular periodic output of the various renewable resources of the National Forests without impairment of the productivity of the land". The amount of timber harvested must be no greater than the volume that can be grown annually, in perpetuity on a sustained yield basis over a Planning Period or a decade as defined in Forest Plans , in consideration of multiple use objectives and desired future conditions. Departures from established allowable harvest limits are permitted on an annual basis providing the 10-year calculated allowable harvest is respected, and to the extent the departures are consistent with management plan objectives. The NFMA specifically directs the Forest Service to determine harvesting levels and develop forest management systems that ensure the continuous supply of timber without impairment of land productivity. The 2012 Forest Service planning Rule requires that "the quantity of timber that may be sold from the national forest is limited to an amount equal to or less than that which can be removed from such forest annually in perpetuity on a sustained yield basis."

The US Council on Environmental Quality (CEQ) released interim guidance in 2023 applicable to all federal agencies for consideration of GHG emissions and effects of climate change on proposed projects under NEPA. The 2023 guidance builds on "Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews," previously issued in 2016. These are comprehensive guidelines that instruct the USFS and other federal agencies to consider "the potential effects of a proposed action on climate change, including by assessing both GHG emissions and reductions from the proposed action; and the effects of climate change on a proposed action and its environmental impacts."

Additionally, effective in May 2016, the USFS issued their Ecosystem Restoration Policy in the form of a directive. This national policy provides guidance for restoring and maintaining self-sustaining ecosystems capable of renewing themselves in the event of disturbance or environmental change. The policy states that restoration objectives should consider, among other values, "the recovery, maintenance, and enhancement of carbon stocks."

The Forest Service released "Assessment of the Influence of Disturbance, Management Activities, and Environmental Factors on Carbon Stocks of United States National Forests" summarizing changes in forest carbon stocks on National Forests from 1990 to 2011. Published in November 2019, the report shows that factors affecting reduction of carbon stocks varies by USFS region. In the Eastern US, forest carbon stocks are shown to be generally increasing. In the western regions, forest carbon stocks on NFs may either be increasing or decreasing depending on the severity of natural disturbances (i.e., wildfire, insect infestations) and climate change. On a national level, wildfire had the largest impact on carbon stocks from 1990 through 2011. All disturbance factors combined, including timber harvest, resulted in a reduction in carbon stocks of approximately 3%. Despite decreases in forest carbon stocks due to natural disturbances, the NFS experienced a net increase in forest carbon stocks of 650 Tg CO_2e. The most recent inventory of US greenhouse gas emissions and sinks (Domke et al, 2024) shows that forest ecosystem carbon pools nationwide (all public and private ownerships) in forest land remaining as forest land continue to serve as a carbon sink, albeit at a declining rate, with carbon stocks of 65,092 MMT C in 2022, compared with 57,037 MMT in 1990, and 64,411 MMT C in 2020. Net carbon flux specifically on NFs vary considerably by region, however nationwide NFs continue to serve as a carbon sink with 39.5 MMT C sequestered in 2021 (Domke et al, 2023). See Table 10.

Enforcement, monitoring and outcomes

The net change in forest carbon stocks varies considerably within the NFS depending on Region largely due to geography, forest conditions and climatic conditions that impact vulnerability to large-scale, catastrophic disturbances, specifically wildfire and insect infestations in the Northern Rocky Mountain, Southwestern and Intermountain Regions of the US. Consequently, the method used to demonstrate conformance to Indicator 3.2.1 will vary from one Region and NF to another. Although the NF-level carbon flux will vary within Regions, as indicated in Table 11, on balance half of the Regions in the Continental US are net carbon sinks, and half are net carbon emitters. Option A can be demonstrated for all NFs with positive net carbon storage. Option B can be demonstrated for all NFs with negative net carbon storage.

Table 11: Carbon stock changes (net flux) from forest land remaining forest land within the National Forest System by Region and Year.

NFS Region	1990	2000	2010	2020	2021
R1 - Northern	1.5	0.6	-0.3	-0.9	-0.9
R2 - Rocky Mountain	-13	-13.4	-13.6	-12.3	-12.2
R3- Southwestern	-5.1	-5.5	-6	-6.8	-6.9
R4 - Intermountain	-9.1	-9.8	-10.8	-11.3	-11.5
R5 - Pacific Southwest	8.6	8.2	7.6	6	5.7
R6 - Pacific Northwest	25.7	25.1	26.6	28.2	28.3
R8 - Southern	31.4	29.4	27.7	25.8	25.5
R9 -Eastern	12.6	11.9	12.1	11.6	11.5
Net Carbon Removal	**52.6**	**46.5**	**43.3**	**40.3**	**39.5**

Source: Greenhouse gas emissions and removals from forest land, woodlands, urban trees, and harvested wood products in the United States, 1990-2021.
Note: Positive numbers indicate net gain in forest carbon stocks (MMT CO2 Equivalent).

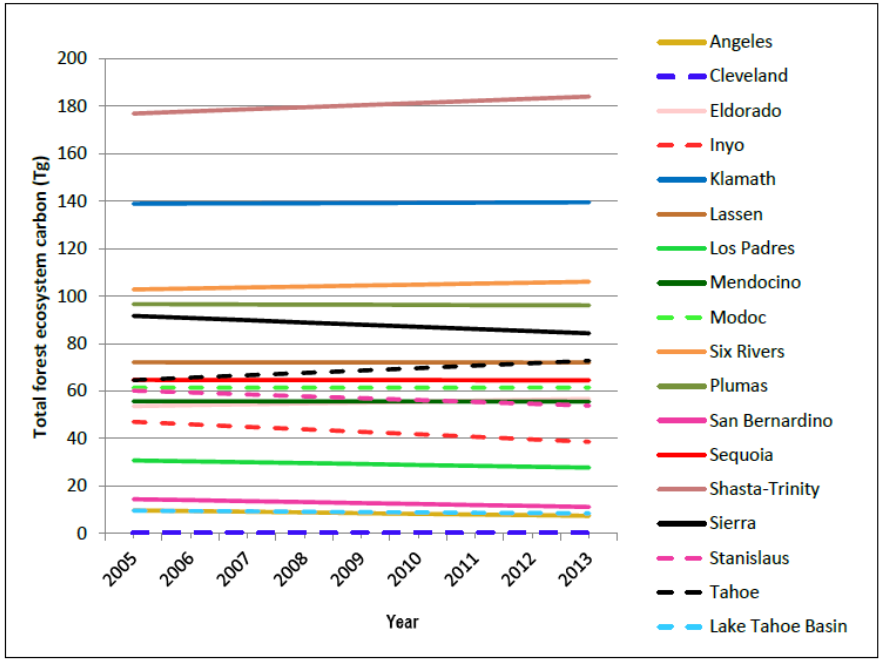
For example, Shoshone NF and Lassen NF conform with Option B. Each of these two NFs is perennially confronted with extended periods of hot, dry weather in the summer months, leading to increasing threats and impacts from bark beetles, other insects and/or wildfire. On the Shoshone NF, about 50% of forested acres were affected by bark beetle infestations from 2002 to 2011. Before the onset of those infestations, Shoshone NF had an annual carbon sequestration rate of 2.2 Tg of CO2e per year (Rice, J., undated). However, from 1990 to 2020 forest carbon stocks have decreased by 13%, and the NF is likely becoming a source of carbon emissions, primarily as a result of environmental conditions and disturbances. Timber harvest accounts for a very small portion (0.07%) of the overall removal of forest carbon from 1990 to 2011 (Forest Carbon Assessment for the Shoshone National Forest, 2024). Climate Change is addressed in Appendix 4 of the Shoshone NF 2015 Land Management Plan. Ecosystem management is the central underlying strategy throughout the Shoshone

Plan, including consistent emphasis on restoring and maintaining healthy and resilient forest ecosystems that can endure increasing stresses brought on by climate change. Management activities to increase carbon storage are identified in the Final Environmental Impact Statement for the Shoshone NF LRMP and incorporated into the 2015 Revised Plan. Management strategies include maintaining or increasing forest area, increasing forest resilience, and increasing the use of forest biomass. There are 177 active or completed projects listed on the Schedule of Planned Activities (SOPA) archive. Fourteen of those projects involve commercial harvest of forest products. All of those 14 projects include salvage and/or fuels reduction as a key treatment objective. All three projects currently under development or review that involve commercial timber harvest have improved resiliency and/or salvage of dead and dying timber as the primary objective. Therefore, as mentioned above, Shoshone NF conforms with Option B since the NF is experiencing a decline in carbon stocks directly as a result of natural disturbances (i.e., wildfire, pests etc.), and commercial timber harvesting activities designed to salvage dead or damaged trees that would otherwise be lost, to assist regeneration, or to increase forest resilience (and therefore reduce the likelihood of further loss to catastrophic wildfire and insect outbreaks).

From 1990 to 2011, timber harvest was the largest disturbance factor contributing to forest carbon loss on Lassen NF, equivalent to about 2.5% of the stored carbon in the NF over the 10-year period. Wildfire was the second leading factor, responsible for the loss of about 1% of carbon storage. Some amount of the carbon loss due to timber harvest is attributable to salvage operations following fire or insect activity (Birdsey et al, 2019. Appendix 10, Figure 3.1). According to staff interviewed during the assessment, forest carbon stocks on Lassen NF are currently decreasing due to large wildfires in the Forest since 2012. Over 500,000 acres have burned, including an estimated 30% to 40% of high severity burn. This trend was beginning to emerge in the last few years of the previous decade. Lassen NF has completed numerous salvage operations on the burned areas and have regenerated about 40% of the high severity burn area. Forest carbon stocks in the USFS Pacific Southwest Region (Region 5) declined from 2005 to 2013. Four NFs showed increases, 12 showed declines, and one did not change during that period. Region-wide Forest carbon stocks increased in above ground and below ground pools, and decreased in the understory, standing dead, down dead, forest floor and soil organic carbon pools. Carbon density also increased during that time across the region. Declines in forest carbon stocks for NFs in Region 5 as well as other western states are driven primarily by tree mortality caused by natural disturbances, particularly wildfire and insect infestations (Sosbe, K., 2023).

Projects listed on the Lassen NF SOPA also demonstrate that commercial harvests are designed to have the primary objective of recovering (salvaging) damaged or dead timber that would otherwise be lost, to assist regeneration, or to increase forest resilience. There are 43 projects listed on the Lassen NF Schedule of Planned Activities (SOPA) archive (older and completed projects) that involve commercial harvest of forest products. Over half (51%) of those projects have primary objectives that include restoration, improved forest health, increased fire resilience and fuels reduction. Salvage of windblown or fire-killed timber is the primary objective, often including reforestation, for 38% of projects involving timber harvest. The remaining 11% of projects involved flood plain rehabilitation, watershed restoration, or hazard reduction along roads, recreational sites of facilities. These projects also include fuels reduction activities, salvage activities, reforestation activities, activities to improve resiliency to wildfire or insect infestation and/or improve tree growth and vitality. Four of the five projects currently under development or review that involve commercial timber harvest have restoration as the primary objective and are designed to reduce fuels and/or increase resiliency to wildfire. The other project is aimed at reducing hazardous fuels in a powerline right-of-way. Additional, complimentary project objectives include increased carbon stewardship, climate change adaptation, improved forest health, improved wildlife habitat, improved watershed function, protection of local communities (from risk of wildfire), and wildfire restoration and recovery. These project objectives provide clear evidence that timber harvesting activities on the Lassen NF are overwhelmingly designed to restore healthy ecosystems and improve resiliency, or to salvage fire damaged trees. Therefore, Lassen NF conforms with Option B since the decline in carbon stocks is due to natural processes, and timber harvesting activities are designed to recover trees that would otherwise be lost or prevent future losses, which is functionally equivalent to assisting in regeneration. Timber harvesting activities on other NFs with declining forest stocks would likely reflect similar objectives and project designs, and would therefore also conform with Option B of this indicator.

Figure 20: Total forest ecosystem carbon (Tg) for the national forests in Region 5 from 2005 to 2013.



Source: Baseline Estimates of Carbon Stocks in Forests and Harvested Wood Products for National Forest System Units, Pacific Southwest Region. March 2015.

When compared to NFs in the western US, there are significant differences in climatic and environmental factors on the Francis Marion NF. Unlike the Lassen and Shoshone NFs where wildfire and/or insect infestations are the leading disturbance regimes, timber harvest is the primary disturbance factor on the Francis Marion NF, followed by fire. However, those disturbances have been significantly outpaced by growth. From 1990 to 2013, timber harvest and fire impacted an average of 0.5% of the NF annually (Dugan, A., McKinley, D., 2019).

From 1990 to 2020, forest carbon stocks on the Francis Marion and Sumter NFs increased by about 38 percent (Dugan, A. et al, 2023). Therefore, Option A applies to the Francis Marion NF.

A 2019 report by the Forest Service determined that forest carbon stocks increased by 650 Tg on National Forests from 1990 to 2011, and that carbon stocks in harvested wood products increased by 7.9 Tg during the same period. Further, data assembled for the Forest Service report "Greenhouse Gas Emissions and Removals from Forest Land, Woodlands, and Urban Trees in the United States, 1990-2020" indicates that total forest ecosystem carbon stocks on U.S. National Forests have increased by 221.97 MMT since 2002. As such, when considered at the national level, feedstock sourced from U.S. National Forests would satisfy option A. When considered at the level of individual NFs, Option A can be demonstrated for all NFs with positive net carbon storage. Option B can be demonstrated for all NFs with negative net carbon storage.

The Forest Service has developed a national carbon assessment framework to provide information on forest carbon for each National Forest. Baseline assessments of forest carbon have been completed for each national forest. In addition, the influence of disturbance, management activities and environmental factors on forest carbon pools have been completed. Reports and associated data are used by National Forests and Ranger Districts to include consideration of impacts to forest carbon in management plans and proposed management activities.

The 2020 Climate Adaptation Plan identifies shifting wildfire regimes and extreme disturbances such as insect infestations at the top two climate change threats to achieving the agency's mission. The plan reinforces climate-forward management of old-growth and mature forests among other strategies to increase resiliency of NFS to droughts, insect outbreaks and wildfire. The USFS launched the Climate Action Tracker (CAT) in 2022 as the agency's primary tool for recording and reporting on climate adaptation and stewardship activities.

Carbon assessments are completed for each US Forest Service Region to determine the amount of carbon stored in forests and harvested wood products. Data for these assessment are collected for each national forest. The methodology Information collected through these assessments is used to develop the Land Use, Land-Use Change, and Forestry (LULUCF) section of the official "U.S. Inventory of Greenhouse Gas Emissions and Sinks." The USDA Forest Service Forest Inventory and Analysis (FIA) Program is the primary mechanism used by the Forest Service to collect data on carbon and greenhouse gas emissions from forest land use and land use change.

As part of the planning process, each NF is required to identify lands that are, or are not, deemed suitable for timber production. The results of the analysis as well as the criteria and methods used are included in Forest Plans, updated (if needed) at the project level as part of NEPA processes, and used to inform proposed management activities in corresponding areas. Areas may be deemed unsuited to timber production on the basis of technical constraints (e.g., steep or unstable slopes, lack of access), site capacity (e.g., low productivity, barriers to regeneration), or congressional and administrative designations (e.g., Wilderness, Roadless Area, Late-Successional/Old Growth reserves).

Each National Forest is required to calculate a sustained yield limit (SYL) of timber that can be harvested annually in perpetuity. The SYL must be re-calculated for new forest plans and cover multiple planning periods. The SYL is based on all lands within the corresponding NF that may be suitable for timber production without consideration of multiple uses and is therefore an expression of biological sustained yield. Allowable Sale Quantity (ASQ) or Planned Timber Sale Quantity (PTSQ) volumes establish maximum thresholds for timber harvesting on all lands and for any reason within the context of multiple use management, consistent with operational constraints and LRMP objectives. ASQ/PTSQ is not a target, but serves as the upper limit allowable under the plan. ASQ/PTSQ is typically calculated for ten-year periods, and can be revised as needed to respond to significant changes in the condition or operating environment on the NF, for example in response to large-scale wildfire or insect mortality. Timber harvested as a result of "salvage and sanitation" activities in forests that have experienced, or are in imminent danger of, significant damage from natural catastrophes such as wind, fire or insect outbreaks is not included in the SYL and is typically not included in the ASQ/PTSQ calculation. Salvage harvest volumes can either substitute for timber that would otherwise be harvested according to the approved forest management plan or, if that is not possible, the harvested quantity of timber may exceed the plan volume (16 USC 1611) in one or more years. Some NFs may elect to include estimates of salvage harvest volumes. For example, the 2024 revised LRMP for GMUG NF lists the SYL as 127,620 CCF per year, and the ASQ is listed as 55,000 CCF per year, which includes 5,000 CCF of anticipated salvage harvest. This exception provides the USFS with flexibility to salvage damaged timber in case natural disturbances affect such large areas that the amount of timber damaged, in combination with timber volume already sold, and/or timber harvests associated with planned activities required to pursue other conservation objectives (i.e., fuel reduction, increased resilience to wildfire and insect infestation, or other forest health objectives), exceeds the calculated SYL within either an annual or decadal period (e.g., at the end of a planning period). As previously noted, there are numerous federal laws (i.e., MUSYA, NFMA, 2013 Forest Service Planning Rule) that prohibit commercial timber harvest from occurring if it results in irreparable harm to natural resources, cannot be adequately restocked within five years, and is not consistent with the approved LRMP. Therefore, if elevated annual harvest levels resulting from salvage or sanitation harvesting, either by themselves or in combination with planned timber harvests, do not align with these legal mandates, adjustments in harvest volumes are required. Additionally, proposals to exceed SYL are subjected to a rigorous review and approval process. First, the rationale for any departure from the SYL must be explained, must comply with all applicable laws, and designed to meet the LRMP objectives. The departure is then subjected to a formal, multidisciplinary NEPA evaluation, published for a minimum 90-day public consultation period, and must be formally approved by the Responsible Authority, typically a Regional Forester, or Forest Supervisor (FSH 1909.12.64.33). Departures from SYL are intended to be exceedingly rare, and according to one USFS staff member, have never occurred to their knowledge. It is also atypical for a NF to exceed the 10-year ASQ. However, NFs are permitted to exceed average annual ASQ/PTSQ, providing NFs with flexibility to respond to unforeseen developments, such as large scale natural disturbance events.

NF level ASQ was compared to the annual volume of timber sold over a ten-year period (2014 - 2023) in 55 NFs within four USFS Regions (R2, R5, R8, R9). Reported volumes for timber sold include all Forest areas, and all activities, including firewood permits and special use permits, i.e., activities that are not associated with timber production. The total 10-year ASQ for all 55 NFs sampled was 56,304,130 CCF (Table 12). Annual volumes of timber sold are published in Periodic Timber Sale Accomplishment Reports (PTSAR).

In total, 12 NFs (21.8% of the sample) were found to have exceeded the ten-year ASQ. Five of the 12 NFs exceeding ASQ do not operate timber programs, and therefore did not calculate an ASQ (i.e., ASQ equals zero). Timber sold from NFs without timber programs is associated with achieving management objectives unrelated to timber production such as providing firewood to local community members or habitat restoration, and is comparatively small in scale. The cumulative volume sold over the 10-year period on the five NFs without calculated ASQs totaled 47,852 CCF, which represents 0.8% of the total ASQ for all 55 NFs and is therefore insignificant.

The volume of timber sold over 10-year ASQ by the seven NFs operating timber programs was 778,801 CF, which represents 1.4% of the total ASQ for all 55 NFs. Six of the seven NFs are located in the western states. All of these seven NFs were responding to natural disturbance activities. For example, the Rio Grande NF in Colorado (CO) had 309.202 CCF in total volume sold over ASQ, representing 37% of volume sold over ASQ on all NFs. Over 20 years of severe drought and tornadic wind events led to large scale spruce beetle infestations requiring extensive salvage operations. The San Juan NF and Arapahoe-Roosevelt NFs, also located in CO, have experienced large scale mountain pine beetle infestations formally declared as emergencies and requiring extensive salvage operations. The total volume sold over ASQ on the sampled forests was 828,653 CCF, which represents approximately 1.5% of the total ASQ. Within the four regions sampled, the only NF in the eastern US to exceed the 10-year ASQ is the Kisatchie NF located in Louisiana. The Kisatchie NF experienced repeated hurricanes over a period of several years including tornadic winds that leveled large swaths of forest area comprised largely of pine species requiring extensive salvage operations. In all these cases, although 10-year ASQs were exceeded, the volume of timber sold in any one year or in the 10-year period did not come close to the calculated SYL, which approximates the biological sustained yield without consideration of budgetary or operational limitations. For each forest, SYL is a larger than ASQ, and typically much larger than ASQ. For example, the SYL for the San Juan NF is 85,400 CCF per year, as compared to the ASQ of 40,000 CCF/year. For the Rio Grande NF, SYL is 73,749 CCF compared to the ASQ of 5,600 CCF. For the three NFs in Region 5 that harvested in excess of ASQ, Inyo NF has an ASQ of 4,000 CCF versus SYL of 40,000 CCF; Sequoia NF has an ASQ of 8,000 ASQ and an SYL of 244,000 CCF; Sierra NF has an ASQ of 36,000 CCF and an SYL of 487,000. When considering the accumulated ASQ of all NFs within each of the four Regions sampled, no Region was found to exceed the ten-year ASQ (Table 12). These data demonstrate that although ASQ is occasionally exceeded in order to address natural disturbance events, timber harvesting operations have not approached, much less exceeded, sustained yield levels.

Table 12. Average annual volume sold and Annual Sale Quantity (CCF) for Region2, Region 5, Region 8 and Region 9.

USFS Region	ASQ	Average Annual Sold	Ave Annual Sold Volume Below ASQ	% ASQ Volume Sold
Region 2	544,460	505,387	38,873	92.9%
Region 5	1,895,800	657,152	1,238,648	34.7%
Region 8	1,799,207	1,081,209	717,998	60.1%
Region 9	1,391,146	939,611	451,536	67.5%
Total - All Four Regions	**5,630,413**	**3,183,358**	**2,447,255**	**56.5%**

Source: USDA Forest Service.

For the nine NFs selected for the RRA sample group, the analysis found that four NFs exceeded ASQ for one or more individual years, but none of the sampled NFs exceeded their ten-year ASQ or their calculated SYL. Over the ten year period, only one NF (Chequamegon-Nicolet nearly reached their ten year ASQ, and when taken as a whole, the NFs achieved roughly two-thirds of the cumulative ASQ for all nine forests (Table 13).

Table 13. Average Annual volume sold and Annual Sale Quantity (CCF) for nine NFs selected for the RRA sample group

National Forest	ASQ or PTSQ	Average Annual Sold	Ave Annual Sold Volume Below ASQ	% ASQ Volume Sold
GMUG NF	76,600	64,927	11,673	84.8%
Shoshone NF	22,800	18,475	4,325	81.0%
Lassen NF	192,000	84,033	107,967	43.8%
Modoc NF	91,000	41,878	49,122	46.0%
Six Rivers NF	31,000	21,639	9,361	69.8%
Mississippi	181,000	146,501	34,499	80.9%
North Caroliana	65,407	27,318	38,089	41.8%
FM-Sumter	254,000	124,284	129,716	48.9%
Chequamegon/Nicolet	210,910	206,306	4,604	97.8%
Total - All Nine NFs	**1,124,717**	**735,361**	**389,356**	**65.4%**

Source: USDA Forest Service.

In any case the NFMA prohibits timber harvesting for any reason, on NFS lands, if such harvesting would result in irreversible damage to "soil, slope, or other watershed conditions (36 CFR § 219.11(d)(2)). All commercial timber harvests occurring on NFs are subject to NEPA, ESA, and CWA. Timber sanitation and salvage operations over 250 acres must be evaluated through an EA or an EIS. Smaller sanitation and salvage operations qualify as Categorical Exclusions (CEs) under NEPA and require a Decision Memo. CE's are not subject to legal notice and opportunity to submit written comment (36 CFR 218.23((a)), however all proposed timber harvests on NFs are required to go through an initial scoping process (36 CFR 220.6(c)) involving public consultation and can be legally challenged, including Categorical Exclusions.

Risk conclusion and justification

National forest carbon assessments demonstrate that NFs in the lower 48 states function cumulatively as a net carbon sink, and that net flux of forest carbon stocks is positive. Timber harvesting is not a significant driver in loss of forest carbon. In the most recent national assessment, taken as a whole CONUS NFs had a net gain of 39.5 MMT CO2e in forest carbon stocks in 2021. NFs with net positive changes in carbon stocks comply with Option A of the Indicator. However, forest carbon flux varies considerably between NFs due to forest-level environmental and climatic conditions. Some NFs are currently functioning as sources of GHG emissions largely because of catastrophic natural disturbances. Carbon stocks in NFs in the Western US are decreasing in the long term as a direct result of climate change and associated increases in frequency and severity of natural disturbances, particularly wildfire and insect infestations. Ample evidence exists to demonstrate that NFs with net negative changes in forest carbon stocks comply with Option B. Although these NFs exhibit net negative carbon flux, the decline is directly attributable to natural processes, and timber harvesting is designed to salvage dead and damaged timber, and/or to assist in regeneration, including improved resiliency to natural disturbances and climate change for existing forests. In other CONUS regions, carbon stocks are experiencing increases, although at a decreasing rate in most USFS Regions. Therefore, NFs experiencing net positive growth in carbons stocks are conformant with Option A of the Indicator.

Numerous laws, regulations, policies, and directives establish legal obligations for the US Forest Service to implement management strategies and activities to maintain and enhance forest carbon stocks, and to reduce threats to forest carbon stocks by increasing resilience to natural disturbances such as wildfire, and insect infestations. The Forest Service has several safeguards in place to ensure that harvesting activities do not diminish the capacity of National Forests to store carbon. These include designation of forest areas unsuitable for timber production, calculation of SYL levels and allowable sale quantities for 10-year periods, standards and guidelines included in NF LRMPs, NEPA processes associated with proposed projects, site specific controls incorporated into timber sale contracts, and structured contract administration protocols including regular site inspections. Salvage operations are not required to be included in SYL and ASQ/PTSQ calculations, although some NFs elect to include estimated for harvested timber volumes. Ten-year ASQ has been exceeded by some NFs as a result of extensive salvage operations associated with large scale natural disturbances such as insect infestations, wildfire, and sever wind events. Salvage operations are conducted with the primary objectives of preventing further damage to residual and surrounding forests, and recovering damaged timber. None of the nine forests selected for the RRA sample set exceeded their ten-year ASQ or SYL. Departures from SYL have reportedly never occurred in the USFS, and are required to go through rigorous

	analysis, review and approval processes to ensure higher harvest schedules are necessary to achieve NF objectives, comply with all applicable laws, and do not damage long-term forest health and productivity. The risk of sourcing feedstock from NFs that have exceeded their calculated 10-year ASQ is very low, and there is virtually no risk of sourcing from forests their long term sustained yield limit. Therefore, the risk of sourcing feedstock from areas that are not consistent with either Option A or Option B are low.
Supply Base Verifiers	▪ Forest carbon stock assessments (NF level assessment) ▪ USFS Regional Forest Carbon Assessments ▪ USFS National Forest Carbon Assessments
Evidence reviewed	▪ Multiple Use Sustained Yield Act (MUSYA) of 1960 ▪ National Environmental Policy Act (NEPA) of 1970 ▪ Renewable Resource Planning Act (RPA) of 1974 ▪ National Forest Management Act (NFMA) of 1976 ▪ 2012 National Forest System Land Management Planning Rule, 36 CFR Part 219 ▪ Forest Service Climate Change Performance Scorecard, 2010 (version 1.2) ▪ National Roadmap for Responding to Climate Change, USDA Forest Service, FS-957b February 2011 ▪ US Forest Service Strategic Framework for Responding to Climate Change ▪ Forest Service Manual (FSM) 1920 – Land Management Planning ▪ FSM 2400 – Timber Management ▪ Forest Service Handbook (FSH) FSH 1909.12, Chapter 10 - Land Management Planning Assessments ▪ FSH 1909.12, Chapter 60 – Forest Vegetation Resource Management ▪ FSH 2409.13, Chapter 30 – Timber Sale Scheduling ▪ U.S. Code Title 16, Section 1611 ▪ Presidential Executive Order 14072. Strengthening the Nation's Forests, Communities, and Local Economies, April 22, 2022. ▪ Shoshone National Forest Land Management Plan 2015 Revision. USDA Foret Service. May 2015. ▪ Record of Decision, Land Management Plan Revision, Shoshone National Forest. USDA Forest Service. May 2015. ▪ Decision Notice and Finding of No Significant Impact. Acer Vegetation Management Project. Eagle Lake Ranger District, Lassen National Forest. USDA Forest Service. June 2022. ▪ Final Environmental Impact Statement, Shoshone National Forest Land Management Plan 2015 Revision. ▪ Land and Resource Management Plan, Lassen National Forest. UDA Forest Service. 1992. ▪ Forest Carbon Assessment for the Shoshone National Forest in the USDA Forest Service's Rocky Mountain Region, V.2.0. USDA Forest Service. March 2024. ▪ Climate Adaptation Plan. FS-1196. USDA Forest Service. July 2022. ▪ Birdsey, Richard A.; Dugan, Alexa J.; Healey, Sean P.; Dante-Wood, Karen; Zhang, Fangmin; Mo, Gang; Chen, Jing M.; Hernandez, Alexander J.; Raymond, Crystal L.; McCarter, James. November 2019. Assessment of the influence of disturbance, management activities, and environmental factors on carbon stocks of U.S. national forests. Gen. Tech. Rep. RMRS-GTR-402. Fort Collins, CO: USDA

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Risk rating	Low Risk

Principle 3 – Feedstock is only sourced from Supply Bases where the forest carbon stock is stable or increasing in the long term	
Criterion 3.2 – **Carbon stocks in the forest area of the Supply Base are stable or increasing in the long term.**	
3.2.2	Primary feedstock shall not be sourced from forest areas where site productivity is low and, according to local definitions or norms, the areas are classified as low-productive or difficult to regenerate.
Findings	**Scale of assessment** All US National Forests located in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 2, Region 5, Region 8, Modoc NF, NFs in Mississippi, and Chequamegon-Nicolet NF.

The Forest and Rangeland Renewable Resources Planning Act (RPA) directs the Forest Service to conduct periodic inventories of forest resources, including timber, and to assess current and anticipated demand and supply of forest resources. The USFS is further directed to develop a plan every five years to ensure long-term sustainability of forest resources. The NFMA, which builds on requirements set for thein the RPA, directs the Forest Service to use an interdisciplinary approach in the development of forest plans, and to maintain "appropriate forest cover with species of trees, degree of stocking, rate of growth, and conditions of stand designed to secure the maximum benefits of multiple use sustained yield management."

The NFMA requires the Forest Service to identify the suitability of lands for production of timber. Timber harvesting may occur on some lands deemed unsuitable for timber production in the furtherance of other management objectives only if such harvesting does not result in irreparable environmental damage. The NFMA specifically requires that Forest Service LRMPs include standards that timber harvest areas "can be adequately restocked within five years after harvest," and timber harvest is prohibited in areas where harvesting is likely to cause irreversible damage to soils or water resources. The 2012 Planning Rule further stipulates that timber harvest (with the objective of timber production) does not take place on lands that are not suitable for timber production. Refer to Indicator 2.2.2 for additional information on determination of lands suitable for timber production.

The 2012 Planning Rule requires that land management plans be developed to maintain or restore ecological integrity of all aquatic and terrestrial ecosystems within the plan area, including development of standards for maintaining structure, function and composition. Consistent with the NFMA, the 2012 Planning Rule further directs the Forest Service to identify lands that are not suited for timber production. Timber harvesting (for the purpose of timber production) on lands not suited for timber production is expressly prohibited (36 CFR 219.11(d)(1)). The 2012 Planning Rule requires that timber harvesting only occurs where the regeneration standard stipulated in the NFMA can be achieved.

NEPA requires an interdisciplinary evaluation of environmental impacts associated with proposed management plans and activities. NEPA processes evaluate all proposed alternatives to ensure timber production is compatible with desired conditions and objectives for that area. Resource specialists (e.g., soil scientists, wildlife biologists, forest ecologists, botanists, etc.) participate in interdisciplinary teams and provide reports summarizing current conditions and potential impacts from proposed projects on their corresponding areas of expertise.

The Forest Service Land Management Planning Handbook (FSH 1909.12) provides specific guidance for identification of lands not suited for timber production, including lands that cannot be reasonably expected to regenerate within 5 years of final harvest, which can be indicative of the capacity of the land to sustain timber production. Section 61.13 gives instruction for determination of site capacity to sustain timber production. Chapter 20 in FSH 2409.13 provides direction for the process of determining land suitability for timber management.

Enforcement, monitoring and outcomes

Identification of lands not suitable for timber harvest is a fundamental step in calculating sustained yield harvest levels. Every NF has developed a land and resource management plan (LRMP), and every LRMP includes the results of a formal analysis of the suitability of timber production on NF lands. Low productivity and difficult to regenerate sites are identified in the LRMP. Lands for which timber harvest is not compatible with meeting objectives established in the approved management plan are also designated as unsuitable for timber production, although timber harvest may be employed on some of these lands for the expressed purpose of achieving other management objectives, e.g., improved wildlife habitat, watershed restoration. On the three NFs evaluated for Indicator 3.2.2, about 46% of the land base has been designated as not suited for timber production.

Table 14: Lands Designated Suitable for Timber Production (Acres): Modoc NF, NFs in Mississippi, Chequamegon-Nicolet NF.

Land Class Designation	Modoc NF	NFs in Mississippi	Chequamegon-Nicolet NF	Total
NFS Lands	1,663,320	1,172,524	1,522,485	4,358,329
Not Forested	505,024	18,826	203,622	727,472
Formally Withdrawn	28,604	14,426	53,237	96,267
Potential Irreversible Damage	0	0	3,234	3,234
Regeneration Not Assured	17,840	0	22,816	40,656
Incompatible Management	92,416	185,017	358,903	636,336
Other Unsuitable	500,456	0	16,579	517,035
Suitable for Timber Production	**518,980**	**954,255**	**864,094**	**2,337,329**
% Suitable	**31.2%**	**81.4%**	**56.8%**	**53.6%**

Source: LRMPs for Modoc NF, NFs in Mississippi, Chequamegon-Nicolet NF

Analyses conducted during project design further ensure that harvesting for timber production does not occur on low productivity sites. Resource specialists (e.g., soil scientists, wildlife biologists, forest ecologists, botanists, etc.) form interdisciplinary teams for conducting NEPA analyses for proposed projects. These specialists provide reports summarizing current conditions and potential impacts from proposed projects on their corresponding areas of expertise. The NEPA analysis also considers suitability for timber production for any activity that involves harvesting of timber. A detailed silvicultural prescription is developed for each forest stand proposed for timber harvest. Prescriptions are approved by a certified Silviculturist who verifies the proposed harvesting activities do not result in significant environmental harm. For stands harvested for timber production, the Silviculturist also confirms that the site is suitable for timber production and can be regenerated within five years.

	The USFS uses land classification codes to designate suitability for timber production and other attributes. Determinations for land classifications are made based on inventory data, remote sensing data (e.g., Lidar), soil maps, silvicultural exams, and other measures of productivity. Land Class Code 530 indicates low site productivity. These Land Class Codes designations are recorded in the FSVeg database and included in all silvicultural prescriptions. Low productivity lands incapable of regeneration are classified as unsuitable for timber production. Ecosystem-based management is a fundamental theme for all NFs. Consequently, timber production is considered a by-product of activities designed to achieve other objectives such as forest restoration, increased resilience to natural disturbances and stressors, habitat improvement, watershed restoration, salvage, sanitation and hazard reduction, or other ecosystem enhancements. Therefore, there are instances where NFs use timber harvesting as a tool to achieve objectives on lands designated as not suitable for timber production, either due to low productivity, or incompatibility with other resource priorities. As an example, Modoc NF is currently planning a project to restore juniper and sage brush habitat for wildlife species. While these lands have low productivity and are designated as unsuitable for timber production, trees will be harvested to restore desired conditions for optimum habitat. However, in no instance can timber harvesting occur if it causes irreparable harm to the environment. **Risk conclusion and justification** The US Forest Service is legally required to identify areas under their management that are not appropriate for timber production, including lands that are not defined as forest lands. Timber harvests for the purpose of timber production are prohibited from taking place on lands not suitable for timber production. Therefore, it is unlikely that forest areas with low productivity would be subjected to commercial timber harvests. Further, forest plans are required to maintain or restore the ecological integrity of all terrestrial ecosystems. These requirements are stipulated in the National Forest Management Act, the 2012 USFS Planning Rule (36 CFR Part 219, section 219.11) and FSH 1909.12 Chapter 60 - Forest Vegetation Resource Management. Numerous processes are in place to ensure that low productivity sites and other lands considered unsuitable for timber production are identified, and managed accordingly to maintain and enhance ecosystem health, productivity and function. There are instances when timber is harvested on low productivity sites as a tool for achieving other management objectives. However, timber harvest does not, in any circumstances, lead to forest degradation, contribute to climate change, or diminish the long-term productivity of the forest.
Supply Base Verifiers	▪ NF Forest Management Plans ▪ Project-level silvicultural prescriptions
Evidence reviewed	▪ National Environmental Policy Act (NEPA) of 1969 ▪ Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974

	▪ National Forest Management Act (NFMA) of 1976 ▪ 2012 Forest Service Planning Rule (36 CFR Part 219 Planning) ▪ Forest Service Manual (FSM) 1900 Planning ▪ FSM 2400 Timber Management ▪ Forest Service Handbook (FSH) 1909.12 Chapter 60 Forest Vegetation Resource Management ▪ FSH 2409.13 Timber Resource Planning ▪ FSH 2409.14 Timber Management Information System ▪ FSH 2409.17 Silvicultural Practices ▪ Timber Suitability Analysis for Land Management Planning Technical Guide. FS-WO-EMC. USDA Forest Service. May 2020. ▪ Land and Resource Management Plan, Modoc National Forest. 1991 ▪ Chequamegon-Nicolet National Forests 2004 Land and Resource Management Plan. R9-CN-FP. April 2004 ▪ Land and Resource Management Plan, National Forests in Mississippi. USDA Forest Service. August 2014. ▪ Chequamegon-Nicolet National Forests Final Environmental Impact Summary, 2004 Land and Resource Management Plan. R9-CN-FEIS-Summary. April 2004 ▪ Timber Resource Program Suitability and Sustainability Analysis, National Forests in Mississippi. June 2014.
Risk rating	Low risk

Principle 3 – Feedstock is only sourced from Supply Bases where the forest carbon stock is stable or increasing in the long term	
Criterion 3.2 – **Carbon stocks in the forest area of the Supply Base are stable or increasing in the long term.**	
3.2.3	Primary feedstock shall not be sourced from forest areas in the Supply Base which, according to local definitions or norms, are classified as having combined attributes of high carbon stocks and high conservation value (HCV).
Findings	**Scale of assessment** All US National Forests located in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 2, Region 5, Region 8, Grand Mesa, Uncompahgre, and Gunnison (GMUG) NF, Six Rivers NF, and NFs in Mississippi. The Multiple-Use Sustained-Yield Act (MUSYA) requires the USFS to maintain the long term health and productivity of NFs while sustaining the multiple uses of its renewable resources in perpetuity. The Forest and Rangeland Renewable Resources Planning Act (RPA) directs the Forest Service to conduct periodic inventories of forest resources, including timber, and to assess current and anticipated demand and supply of forest resources. The National Forest Management Act (NFMA) requires the Forest Service to identify the suitability of lands for resource management. The NFMA, which builds on requirements set forth in the RPA, also directs the Forest Service to maintain "appropriate forest cover with species of trees, degree of stocking, rate of growth, and conditions of stand designed to secure the maximum benefits of multiple use sustained yield management."

The Endangered Species Act (ESA) requires that all federal agencies including the USFS conserve threatened and endangered species and the habitats critical to their ongoing viability. In addition to federally listed species, each Regional Forester develops and maintains a list of Species of Conservation Concern (SCC). Protections for SCCs and their associated habitats are employed at the NF land Region level.

The Clean Water Act (CWA) provides for the regulatory framework for protecting water quality in the US and is administered by the US Environmental Protection Agency (EPA), with certain responsibilities delegated to state governments. The USFS is required to fully comply with applicable sections of the Clean Water Act as well as applicable state regulations associated with implementation of the CWA. The USFS has also developed national BMPs to establish consistent practices for maintaining and improving water quality on NFs. Additionally, the USFS is directed to manage National Forest watersheds that supply municipal water under multiple use prescriptions in forest plans. Municipal watershed agreements can be established at the request of local governments to assure protection of water supplies (36 CFR 251.9.

The Wilderness Act, Wild and Scenic Rivers Act, and Roadless Area rule establish mechanisms for protection of landscape level ecosystems that have been identified as having retained all or most of the characteristics and functions of natural, endemic ecosystems. The USFS is required to manage wilderness areas to maintain their "primaeval character" such that they are principally affected by "the forces of nature."

Section 106 of the National Historic Preservation Act (NHPA) (36 CFR Part 800) specifically addresses protection of historic properties and requires federal agencies like the Forest Service to identify, assess and consider potential impacts of their activities on historic properties. Similarly, the Clean Air Act established a framework for regulating air pollutants by federal and state agencies.

As a federal agency, the USFS is mandated to comply with the National Environmental Policy Act (NEPA). NEPA requires evaluation of environmental impacts associated with proposed management plans and activities. The USFS conducts assessments to identify key ecological resources at numerous scales and planning stages including at the level of the NF LRMP and at the project level. NEPA requires the USFS to conduct a comprehensive assessment of potential impacts as a fundamental step in the land management planning process and in advance of implementing specific management activities. Every proposed timber sale on every NF must be covered by a NEPA analysis which includes current conditions and desired future conditions and how the proposed activities move stands towards or maintains the desired future condition. The analysis includes suitability for timber production as well as evaluating potential effects of harvest on project area resources and values, e.g., soils, water, wildlife. These assessments ensure timber production is compatible with desired conditions and objectives for that area.

Forest Management Plans must be developed to maintain or restore ecological integrity of all, including development of standards for maintaining structure, function and composition. All six types of HCV's identified by the HCV Network are explicitly addressed in USFS planning processes. Forest management plans are also required to address identification and conservation of large intact ecosystems

(e.g., formal wilderness areas, wild and scenic rivers, roadless areas), critical ecosystem services, community needs, and cultural and historic resources. Project plans are required to follow plan components in the Forest's land management plan. The 2012 Planning Rule (36 CFR 219.6) explicitly requires that land management plans identify and evaluate relevant information for a wide range of resources, as well as associated ecological, climatic and other system drivers within the plan area including:

- threatened, endangered, proposed and candidate species and species of concern (HCV1)
- designated areas including wilderness and wild and scenic rivers (HCV 2)
- terrestrial and aquatic ecosystems, and watersheds (HCV 2, HCV 3, HCV 4)
- air, soil, and water resources (HCV 4)
- carbon stocks (HCV 4)
- recreational opportunities and access (HCV 4)
- benefits to people and contributions to local, regional, and national economies (HCV 5)
- Areas of tribal importance, cultural and historic resources and uses (HCV 6)

Consistent with the NFMA, the 2012 Planning Rule further directs the Forest Service to identify lands that are not suited for timber production. Timber harvesting (for the purpose of timber production) on lands not suited for timber production is expressly prohibited (36 CFR 219.11(d)(1)). Consistent with the MUSYA, the NFMA, and the 2012 Planning Rule Section 219.11, timber harvesting can be used as a tool to achieve conservation and restoration objectives. However, timber harvest for any purpose can only occur when measures are in place to protect soil, watersheds, fish, and wildlife.

Presidential Executive Order (EO) 14072 was issued in 2022 directing all federal agencies to conserve America's mature and old-growth forests on Federal lands, including protecting these forests from wildfire. The USFS is directed to inventory of mature and old-growth forests on NFS lands, and analyze potential threats, including wildfires and other climate impacts. The USFS is further required to identify and adopt climate-smart conservation strategies that address threats to mature and old-growth forests on Federal lands. Executive Order 14008, issued in January 2021, directs the USDA, USDI and US CEQ to identify measures for achieving the goal of protecting 30% of all US lands and waters by 2030. A memorandum issued by the US Secretary of Agriculture in June 2022 clarifies the intent of the USDA, including the USFS, to continue protection of old-growth stands consistent with approved LRMPs or by specific direction provided by the Secretary.

In addition to applicable laws and regulations, several Forest Service Manuals (FSMs) and Handbooks (FSH) provide guidance and instruction to USFS staff in protecting resources with HCV attributes. Responsibilities and procedures for assessing potential impacts from proposed management activities on ecosystems, species of concern, habitats and HCVs are detailed in several Forest Service manuals and handbooks. Forest Service Manual (FSM) 1900, Chapter 1950 and Forest Service Handbook (FSH) 1909.15 provide guidance and instruction on implementing NEPA procedures. FSM 2520, FSM 2600, FSH 2090.11 and others instruct the USFS to protect watersheds on NF by implementing practices that sustain and improve watershed conditions. FSH 2509.25 provides instructions for implementing watershed conservation practices. FSH 1909.12 FSH 2409.13 FSH 2409.18 provide directions for ensuring timber production does not

result in permanent harm or conflict with maintenance or restoration of health ecosystems and provide clear framework for implementing forest management activities in a manner consistent with ecosystem management objectives. FSM 1563 provides objectives, policy and responsibilities for Forest Service relations with tribes. Sections 1563.3, 1563.4, 1563.6, and 1563.8f provide direction to Forest Service staff for protection of cultural resources. FSH 2360 establishes a comprehensive framework for implementation of the Forest Service Heritage Program, including identification and protection of cultural and historic resources.

Enforcement, monitoring and outcomes

Although the USFS doesn't use the term "high conservation value" in their agency vernacular, HCV concepts are incorporated into core management strategies and used in identification of conservation and protected areas, as well as in the development of standards, guidelines, and specific measures to achieve Forest-wide and project-level objectives. Similarly, NFs do not explicitly identifying areas with high carbon stock, however the FIA Program produces annual total carbon stock estimates and forest carbon per acre.

The Forest Service uses special land designations to ensure key species, habitats, ecosystems, and other areas of high conservation value pertaining to biodiversity are protected in perpetuity. Currently more than 400 distinct Wilderness Areas representing nearly 32 million acres have been formally designated in National Forests by acts of the US Congress. Similarly, the Wild and Scenic Rivers Act of 1968 provides protection for water quality, habitat, and recreation on nearly 5,000 river miles in National Forests. Formal designation as a Wilderness Area or a Wild and Scenic River segment clearly addresses HCV 1 Species Diversity, HCV 2 Landscape Level Ecosystems, HCV 3 Ecosystems and Habitats and HCV 4 Ecosystem Services. In addition to Congressionally designated reserve areas, the USFS also utilizes several administrative management designations that impose protections for areas supporting ecologically important attributes or values such as Research Natural Areas and Roadless Areas.

Identification of lands not suitable for timber harvest is a fundamental step in calculating sustained yield harvest levels. The USFS has established a system for land classification that includes whether the land is suitable for timber production. These codes are described in user guides (e.g., FSVeg Common Stand Exam USER Guide, Region 8 Appendix H), and used to identify stands with proposed treatment in all silvicultural prescriptions. Lands for which timber harvest is not compatible with meeting objectives established in the approved management plan are also designated as unsuitable for commercial timber harvest. These lands are subtracted from the area used to calculate harvest levels for each forest and therefore excluded from commercial timber harvests.

Table 15: Area by land class designation on NFs in the contiguous US.

Land Class	Acres	% Acres
Total Forest Area	136,678,811	100.0%
Total Reserved Area	24,641,961	18.0%
Total Roadless Area	31,328,439	22.9%
Total Other Land Allocation	80,708,412	59.0%
Total Other Productive	67,934,471	49.7%
Total Other Non-productive	12,773,941	9.3%

Source: USDA Forest Service Forest Inventory and Analysis (FIA) Program

In total, slightly over 50% of the forest area across all CONUS NFs has been excluded from commercial timber harvesting (Table 15). The majority of these forests are in congressionally or administratively designated areas designed to protect and preserve their natural values. Nearly 55% of old-growth on NFs is included in designated wilderness, Roadless Areas, and National Monuments. In addition, all national forests currently protect or limit management actions in old-growth stands through forest specific land management plan components or by specific Secretarial direction, such has the NWFP or the Sierra Framework.

Several regional and other sub-national initiatives have been implemented to provide additional protections for management designations for protection of forest areas that support combined attributes of high carbon stocks (HCS) and HCV. The Northwest Forest Plan (NWFP) established reserves for protection of designated riparian conservation areas and late-successional habitat on 17 NFs in WA, OR, and northern CA. The LRMPs for all are formally tiered to the NWFP, resulting in de facto adoption of designated protected areas and associated conservation measures. While not technically considered HCS areas, Late Successional Reserves (LSR)s could be inferred to have high carbon stocks and are deliberately recognized as having high conservation value as habitat reserves for federally-listed species requiring late seral habitat. Within LSRs, limitations are placed on timber harvesting based on stand size, age and conditions. The 2004 Sierra Nevada Forest Plan Amendment was adopted by 11 NFs in California and resulted in enhanced protection measures for ecosystems, wildlife habitat and watersheds that support HCVs. Standards and guidelines established in Sierra Nevada Framework include maintenance of the ecological integrity of aquatic, riparian and meadow ecosystems. Riparian Conservation Areas (RCAs) for Special Aquatic Features, which are defined as lakes, meadows, bogs, fens, wetlands, vernal pools, and springs, require a 300 foot buffer around the perimeter of the feature.

From a practical perspective, areas supporting HCS and HCVs are captured in "reserved" land classifications (wilderness, national monuments, national recreation areas, wild and scenic river corridors, and national scenic areas, etc.) as well as designated roadless areas which collectively represent 41% of the forested area on NFs in the contiguous US. The NWFP, Late-Successional Reserve Assessment, and Presidential Executive Order 14072 all place restrictions on management activities within areas that have high amounts of stored carbon. For proposed management activities in areas with HCS/HCV (e.g., LSR, mature and old growth stands), NFs are required to demonstrate those activities contribute to the conservation objectives associated with those areas and must receive permission from the

Region and Washington Office (WO) to proceed with proposed activities. An example of this process was provided for a proposed fuel reduction project in an LSR on Six Rivers NF, including approval from the USFS Regional Ecosystem Office. Therefore, any management occurring within these HCS/HCV areas would only occur if it were designed specifically to maintain or enhance HCV and HCS (e.g., LSOG) characteristics. This approach is consistent with guidance for Indicator 3.2.3 which states that management is conducted with a focus on promoting sustainable land use practices and protecting these important forest resources for future generations.

The USFS Carbon Dashboard is used by NF staff to evaluate effects of proposed management activities on carbon sequestration, carbon storage and stability of forest carbon stocks. The Dashboard shows total carbon stock and average carbon stock density increased steadily on eight of nine sampled NF administrative units from 2005 to 2023, with only the GMUG NFs declining during that time. The Dashboard also demonstrates a stark difference between NFs in the western and eastern US, largely reflecting the increasing influence of large-scale natural disturbance events related to climate change, primarily wildfire and insect infestations.

Table 16: Change in total forest carbon stocks on nine sampled USFS administrative Units from 2005 to 2023

USFS Administrative Unit	**Total Carbon Stocks (Tg)**		**Change in Carbon Stocks (2005 – 2023)**	
	2005	**2023**	**Volume (Tg)**	**Percent**
GMUG NF	191.52	190.33	-1.19	-0.6%
Shoshone NF	68.40	69.69	1.29	1.9%
Lassen NF	109.87	111.63	1.76	1.6%
Modoc NF	80.88	82.91	2.03	2.5%
Six Rivers NF	161.11	170.90	9.79	6.1%
Francis Marion and Sumter NF	43.11	51.29	8.18	19.0%
Nantahala-Pisgah NF	123.41	131.15	7.74	6.3%
NFs in Mississippi	79.65	99.19	19.54	24.5%
Chequamegon-Nicolet NF	115.30	130.67	15.37	13.3%
Total - Western Sampled Forests	**611.78**	**625.46**	**13.68**	**2.2%**
Total - Eastern Sampled Forests	**361.47**	**412.299**	**50.826**	**14.1%**
Total - All Nine Sampled Units	**973.25**	**1,037.76**	**64.51**	**6.6%**

Source: USFS Carbon Dashboard

In response to EO 14072, the USFS in collaboration with the USDI Bureau of Land Management (BLM) completed an inventory of old-growth and mature forests on lands managed by the two agencies. The results of the inventory show that approximately 17% of all NFs are identified as old-growth forests, and an additional 47% of NFs are classified as mature forests. The data further show that 55% of old-growth forests and 38% of mature forests are currently protected under existing laws and rules that preclude commercial timber harvest.

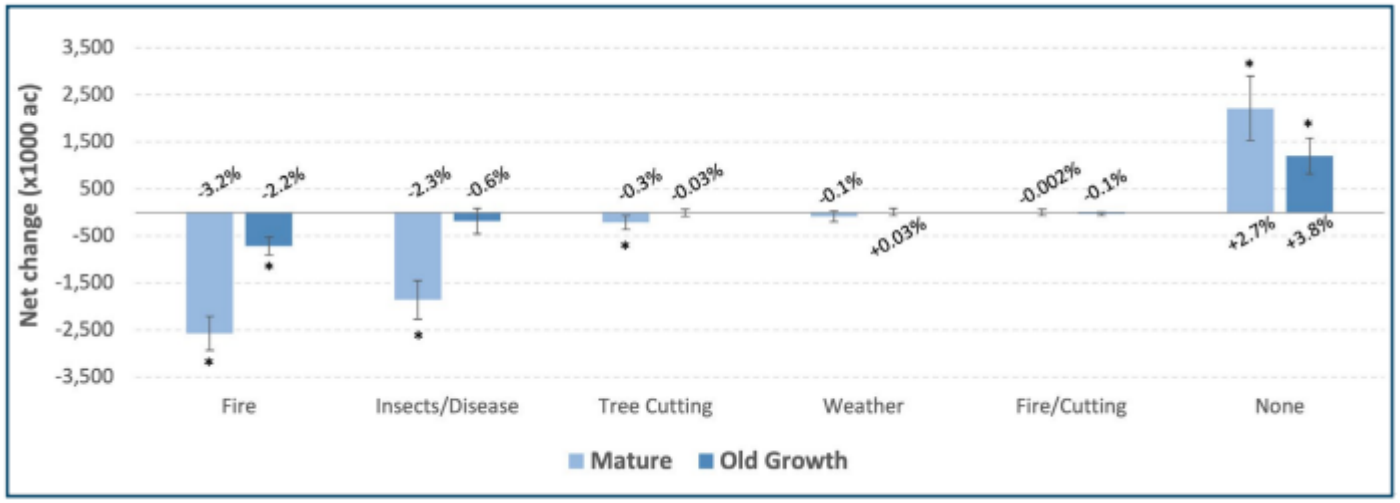
Table 17: Total area of mature and old-growth forests on lands managed by the USDA Forest Service.

Land Use Allocation	Younger Forests	Old-Growth Forests	Mature Forests	Total Forest Lands
Wilderness	9,937,704	4,194,748	9,335,433	23,467,885
Inventoried Roadless Area	12,094,847	9,116,931	16,076,595	37,288,373
National Monument	243,552	88,470	212,917	544,938
Other	30,229,500	10,999,871	41,788,417	83,017,797
Total	**52,505,613**	**24,400,019**	**67,413,361**	**144,318,993**

Source: Mature and Old-Growth Forests. USDA Forest Service. April 2023.
Note: Excludes 3.4 million acres in Alaska.

The information contained the resulting report is being used by the agencies to "enhance carbon sequestration and address climate-related impacts, including insects, disease, wildfire risk, and drought." A 2024 threat analysis found that old-growth and mature forests have a high level of exposure to numerous threats. FIA measurements taken since 2000 indicate that cutting trees was found to be a minor threat. Although timber harvest has the primary historical driver for loss of old-growth and mature forests, recent analysis shows that wildfire and insects and disease are now the dominant causes. Losses from tree cutting are the third-ranking contributor nationally, accounting for less than 1% of net loss. The threat analysis also found that the loss of old-growth and mature forests over a nine-year period were lower outside protected areas and that old-growth increased by 7.8% outside protected areas. These results suggest that active measures to lower threats by reducing hazards and increasing resilience should be considered. These results have prompted the USFS to develop a Wildfire Crisis Strategy, including designation of specific landscapes and fire sheds as highest priority for restoration and reduction of threats from wildfire. The USFS has issued a Notice of Intent (NOI) to modify the existing LRMPs for management of old-growth on all NFs. The proposed modification is intended to establish a flexible yet consistent framework to enable proactive management through restoration and threat reduction measures that foster the long-term resilience of old-growth forests. The stated purpose of the amendment in the NOI is to "foster ecologically appropriate management across the National Forest System by maintaining and developing old-growth forest conditions while improving and expanding their abundance and distribution and protecting them from the increasing threats." The proposed amendment prohibits proactive stewardship of old-growth for the purpose of timber production.

Figure 17: Net change in mature and old growth forest area by disturbance type, US National Forests.



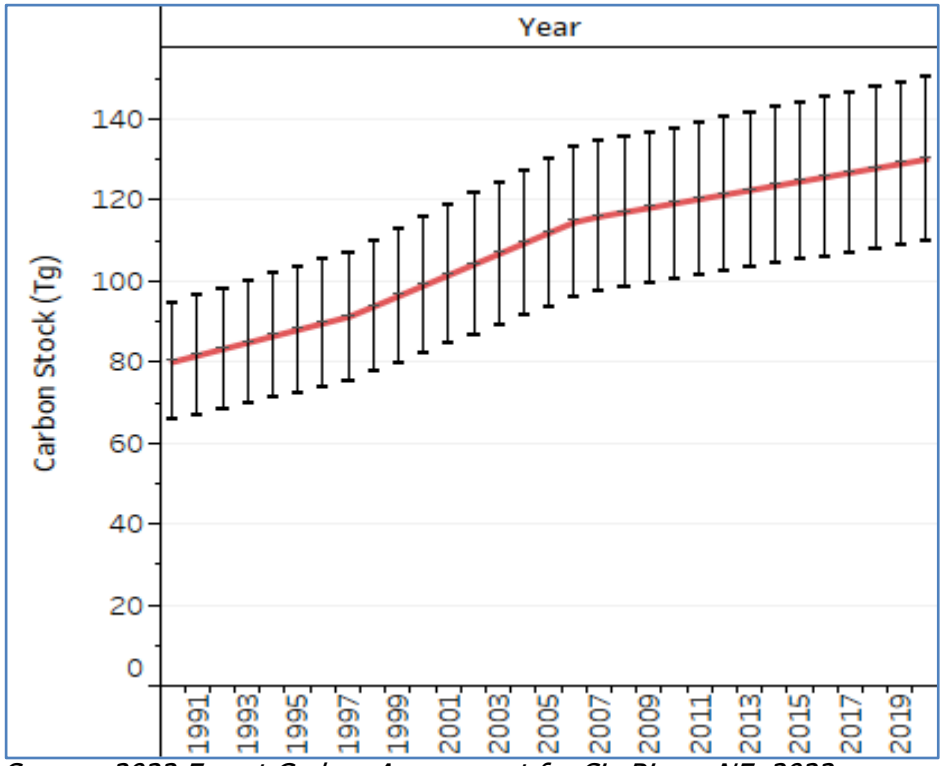
Source: Mature and Old-Growth Forests: Analysis of Threats. USDA Forest Service. June 2024.

The USFS has developed national guidelines for development of silvicultural management prescriptions of old-growth forests. These guidelines are predicated on an assessment of vulnerability to disturbances that are likely to change its current and likely future condition. For old-growth forest areas that don't exhibit resilience or high ecological integrity, silvicultural treatments may be considered to improve ecological integrity. In any case, commercial timber harvesting is prohibited in reserve areas and designated roadless areas.

Consistent with protocols adopted across the NFS, GMUG NF integrates several spatially explicit layers from multiple data sources, including FIA data, into project planning processes. The attributes of these layers and geodatabase content include both HCS and HCV areas if present on proposed projects. Project-level NEPA planning processes, and associated analyses identify resources such as HCS and HCV that might be adversely affected by project implementation, and measures to avoid or mitigate negative impacts are proposed. If project areas contain stands that meet the recently developed criteria for mature and old-growth forest, the project IDT project team will seek guidance, review and approval from the WO or RO. GMUG NF has designated 26.0% of the NF as suitable for commercial timber harvest, with 70.5% formally withdrawn as protected reserves, and an additional 3.4% determined to have management objectives that are incompatible with commercial timber production. These areas likely support HCVs and may also contain HCS. The US Fish and Wildlife Service (USFWS) also requires implementation of prescribed conservation measures and a formal monitoring plan for areas that support federally-listed species and their habitat. The GMUG Forest Plan provides broad direction to "maintain a healthy and vigorous ecosystem resistant to insects, diseases, and other natural and human causes".

According to staff interviewed there is no long-term net carbon loss on any lands on the Six Rivers NF with the exception of wildfires. This assertion is verified in the 2022 Forest Carbon Assessment for Six Rivers NF, which shows that forest carbon stocks were stable and may have increased from 80 Tg in 1990 to 130 Tg in 2020 (Figure 18). The USFS Forest Carbon Dashboard indicates a 6.1% increase in forest carbon stocks on the Six Rivers NF from 2005 to 2023 (Table 16). Six Rivers NF has designated 9.1% of the NF as suitable for commercial timber harvest, with 50.9% withdrawn as protected reserves, and 40% determined to have management objectives that are incompatible with commercial timber production. These areas likely support HCVs and may also contain HCS.

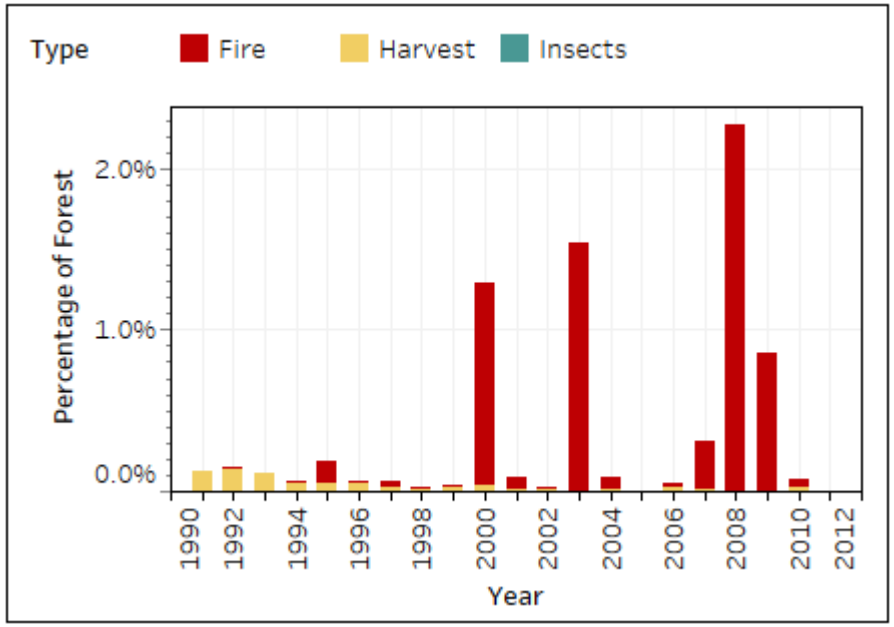
Figure 18: Change in total forest carbon stocks on Six Rivers NF



Source: 2022 Forest Carbon Assessment for Six Rivers NF, 2022.

The Report further demonstrates the increasing impact of wildfire relative to other disturbance factors, including timber harvest, on Six Rivers NF (Figure 19).

Figure 19: Percentage of Six Rivers NF disturbed by type of disturbance.



Source: 2022 Forest Carbon Assessment for Six Rivers NF, 2022.

The USFS emphasizes ecosystem restoration throughout the NFS as part of its multiple use mandate in accordance with numerous laws, regulations, agency manuals and handbooks described above. Forest Management Plans for all NFS, including those sampled for Indicator 3.2.3 include elements that address conservation of HCVs, and indirectly, HCS. For example, Chapter 2, Part II of the GMUG Forest Plan addresses ecological sustainability with objectives, standards and guidelines expressed for all relevant resources and values present on the forest including watersheds, riparian areas, forest carbon, native species diversity, key ecosystems, and cultural resources. The Forest Plan for NFs in Mississippi similarly provides a vision, strategy and design criteria (standards and guidelines) for ecosystem diversity, species diversity, watersheds, and cultural resources among other issues.

Risk conclusion and justification

The USFS does not specifically use the terms HCS and HCV, however fundamental concepts are reflected in numerous laws, standards, and guidelines that protect HCVs and HCSs, and provide for limitations to ensure conservation objectives are achieved in those areas. Forest areas that align with HCS and HCV concepts are identified using multiple integrated data sources including the FIA. All HCVs are addressed in the 2012 Planning Rule (36 CFR Part 219, section 219.11) and are either excluded from harvest or managed with the overarching objective of maintaining or restoring associated HCVs. All LRMPs contain management objectives, standards and guidelines

	for identification and protection of forests with HCVs. By law, all management activities on NFs must align with the associated LRMP. Well established processes for public notification and appeal provide added measures of assurance that laws, regulations and best practices are employed. Although it is possible that trees may be cut on forest areas that support HCS and HCV in support of non-timber oriented conservation objectives, commercial timber harvesting is prohibited on the majority of those areas. Within the NFS, nearly all forest areas that support both HCS and HCV attributes are classified as designated Wilderness Areas, Wild and Scenic River Corridors, Primitive Areas, Inventoried Roadless Areas, Research Natural Areas, National Monuments, and LSOG Reserves. All of these land classifications are protected areas. Commercial timber harvesting is legally prohibited or functionally excluded from all of these land classifications. In rare cases where commercial timber operations are conducted in areas that contain HCV and HCS, the management objectives and activities are required to maintain, restore or enhance HCV and HCS attributes. In other words, management interventions would occur only in the situation where the absence of these activities is likely to result in the loss of HCV and HCS. This approach is consistent with guidance for Indicator 3.2.3 which states that management is conducted with a focus on promoting sustainable land use practices and protecting these important forest resources for future generations. Therefore, there is a low risk that feedstock would be sourced from areas where carbon emissions from harvesting require extended periods to replenish forest growth (i.e. carbon stock) to pre-harvest equivalent, where net emissions of GHG are increased as a result of harvesting, or where there is a loss of conservation values.
Supply Base Verifiers	▪ NF Land and Resource Management Plans ▪ Project-level NEPA documents ▪ Silvicultural prescriptions ▪ USFS Carbon Dashboard ▪ Forest carbon assessments ▪ Maps and reports identifying old-growth and protected reserve areas ▪ Timber sale contracts and maps
Evidence reviewed	▪ Multiple-Use Sustained-Yield Act of 1960 (16 USC 528-531) ▪ The Wilderness Act of 1964 (Pub. L. 88-577) ▪ National Historic Preservation Act (NHPA) of 1966 ▪ The Wild and Scenic Rivers Act of 1968 (16 U.S.C. 1271-1287) ▪ National Trails System Act of 1968 (16 U.S.C. 1241) ▪ National Environmental Policy Act (NEPA) of 1969 ▪ Clean Water Act (CWA) of 1972 ▪ Endangered Species Act (ESA) of 1973 ▪ Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974 ▪ National Forest Management Act (NFMA) of 1976 ▪ Archaeological Resources Protection Act (ARPA) of 1979 ▪ North American Wetlands Conservation Act of 1989

- Native American Graves Protection and Repatriation Act (NAGPRA) of 1990
- Roadless Area Conservation Rule of 2001 (36 CFR Part 294)
- Healthy Forests Restoration Act (HFRA) of 2003 (16 U.S.C. 6501-6591)
- 2012 USFS Planning Rule (36 CFR Part 219)
- Code of Federal Regulations Title 36, Part 220 - National Environmental Policy Act Compliance
- Code of Federal Regulations Title 36, Part 251 – Land Uses
- Code of Federal Regulations, Title 36, Part 292 - National Recreation Areas
- Executive Order 11593 - Protection and Enhancement of the Cultural Environment, May 13, 1971
- Presidential Executive Order 11988, Protection of Floodplains (1977)
- Presidential Executive Order 11990, Protection of Wetlands (1977)
- Executive Order 13007 - Indian Sacred Sites, May 24, 1996
- Executive Order 13175 – Consultation and Coordination with Indian Tribal Governments, November 6, 2000
- Executive Order 13287 – Preserve America, March 3, 2003
- Presidential Executive Order 14008. January 27, 2021.
- Presidential Executive Order 14072. April 22, 2022.
- USDA Secretary's Memorandum, Climate Resilience and Carbon Stewardship of America's National Forests and Grasslands. USDA Office of the Secretary, Washington, D.C. June 23, 2022
- National Best Management Practices for Water Quality Management on National Forest System Lands. Volume 1: National Core BMP Technical Guide. FS-990a. USDA Forest Service. April 2012.
- Forest Service Manual (FSM) 1900 Planning
- FSM 1900, Chapter 1950, Environmental Policy, and Procedures
- Forest Service Manual (FSM) 2360 Heritage Program Management
- FSM 2380 Landscape Management
- FSM 2400 Timber Management
- FSM 2520 Watershed Protection and Management
- FSM 2580 Air Resource Management
- FSM 2600, Chapter 2670 - Threatened, Endangered and Sensitive Plants and Animals
- Forest Service Handbook (FSH) 1909.12 Chapter 60 Forest Vegetation Resource Management
- FSH 1909.15 National Environmental Policy Act Handbook
- FSH 2309.12 Heritage Program Management
- FSH 2409.13 Timber Resource Planning
- FSH 2409.14 Timber Management Information System
- FSH 2509.22 - Soil and Water Conservation Handbook
- FSH 2509.25 - Watershed Conservation Practices Handbook
- FSH 2409.17 Silvicultural Practices

	▪ FSH 2509.19 National Best Management Practices ▪ Revised Land Management Plan, Grand Mesa, Uncompahgre, and Gunnison (GMUG) National Forests. June 2024. ▪ Land and Resource Management Plan, Six Rivers National Forest. 1995. ▪ Land and Resource Management Plan, National Forests in Mississippi. USDA Forest Service. August 2014. ▪ Revised Draft Forest Assessments: Carbon. GMUG NF. March 2018. ▪ Revised Draft Forest Assessments: Terrestrial Ecosystems, Integrity and System Drivers and Stressors. GMUG NF. March 2018. ▪ Forest Carbon Assessment. Six Rivers National Forest. USDA Forest Service, Pacific Southwest Region. October 26, 2022. ▪ Late-Successional Reserve Project-Level Consistency Review, Rattail Fuels Vegetation Management Project. Mad River Ranger District, Six Rivers NF. November 2022. ▪ Regional Ecosystem Office Draft Memo to Forest Supervisor, Six Rivers NF. Review of the Rattail Vegetation Management Project. 2022 ▪ Forest Wide LSR Assessment, V1.0. Six Rivers National Fores. April 1999. ▪ Memorandum from Regional Ecosystem Office to R% Regional Forester. Review of Six Rivers National Forest Late-Successional Reserve Assessment. March 3, 2000. ▪ Heritage Implementation Plan for Six Rivers Hazardous Fuels and Fire Management Project. ▪ Mature and Old-Growth Forests: Definition, Identification, and Initial Inventory on Lands Managed by the Forest Service and Bureau of Land Management. FS-1215a. USDA Forest Service, Washington Office. April 2023. ▪ Mature and Old-Growth Forests: Analysis of Threats on Lands Managed by the Forest Service and Bureau of Land Management. FS-1215c. USDA Forest Service, Washington Office. June 2024. ▪ Amendments to Land Management Plans to Address Old-Growth Forests Across the National Forest System, Draft Environmental Impact Statement. USDA Forest Service. June 2024. ▪ Notice of Intent: Land Management Plan Direction for Old-Growth Forest Conditions Across the National Forest System. USDA Forest Service. Federal Register Vol. 88, No. 243, Wednesday, December 20, 2023. ▪ Consideration of Species of Conservation Concern for the Old-Growth Amendment. USDA Forest Service. June 2024. ▪ Draft Biological Evaluation for National Old Growth Amendment. U.S. Forest Service Planning Service Organization. June 2024. ▪ Draft Social, Economic and Cultural Impacts Analysis Report for the Draft EIS for Amendments to LMPs to Address Old-Growth Forests Across the NFS. USDA Forest Service. June 2024. ▪ Technical Guidance for Standardized Silvicultural Prescriptions for Managing Old-Growth Forests. USDA Forest Service, Washington Office. July 2024.
Risk rating	Low risk

PRINCIPLE 3 – BIOMASS SOURCING HAS A NEUTRAL/POSITIVE IMPACT ON THE CARBON STOCK IN THE SUPPLY BASE OR REGION	
Criterion 3.3 – **Carbon stocks in the forest area of the supply base are maintained or strengthened in the long term**	
3.3.1	Feedstock sourcing shall be in compliance with the principles of cascading use, high quality stem wood shall not be used as feedstock if it is in substantial demand for long-lived products in the Supply Base.

Findings	**Scale of assessment** All US National Forests in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 9, Region 5, Region 8, Francis Marion NF, Lassen NF, and Chequamegon-Nicolet NF. Timber requirements in 36 CFR 219.11 define how plan development and revision shall consider timber extraction. The 2012 Planning Rule directs the Forest Service to develop land management plans to ensure that lands are ecologically sustainable and contribute to social and economic sustainability. Sale and disposal of timber on USNF is allowed for the purpose of achieving the policies set forth in the MYSYA and Forest and Rangeland Renewable Resource Planning Act (RPA). The Forest Service uses a standardized appraisal process and bidding process for developing timber sales. The timber sale preparation process includes a series of steps, organized in a logical sequence. Each step is accompanied by an associated "gate" to ensure all required measures are completed. FSH 2409.18 establishes a process for development of timber sales which include a financial analysis to measure economic viability of the timber sale. FSM 2430 - Commercial Timber Sales directs the Forest Service to set minimum bid rates according to species and product on each National Forest. Regions refer to regional FSH 2430 to determine minimum rates or appraised value of Timber Sales. The appraisal of timber of NF is defined in FSM 2409.18 Chapter 40 and based on several key principles such as hauling costs, residual value, Transaction Evidence Appraisal (TEA) database to estimate fair market value based on past timber sale transactions. In the presence of noncompetitive markets, data from adjacent competitive zones or from trade association lumber indexes may be used. The total appraised value must always reflect all operating costs and values of sale. High-valued species and products will subsidize sales of low-valued species and products. FSM 2430 directs the Forest Service to set minimum bid rates according to species and product on each National Forest, thus ensuring that higher value products such as sawlogs are sold at appropriate prices. Sale value must be at appraised rates or minimum rates, whichever is higher (36 CFR 223.60 & .61) thus ensuring that higher value products such as sawlogs are sold at appropriate prices. Long-lived wood products such as lumber, beams, panels and utility poles command higher prices than short-lived products like paper and wood pellets. Where markets exist for sawlogs, veneer poles and other raw materials for long-lived products, appraisal rates and competitive bidding processes typically favor sale to higher priced end uses. Discounting options are permitted if purchasers require incentives to bid on the timber sale in order to achieve forest management objectives, for example salvage or restoration harvests with forest health objectives and low value products that may justify lower prices. Contracting officers ensure Timber Sale Contracts are consistent with applicable plans and standards through contract provisions and associated documents.

US Code 16 USC Chapter 36, Subchapter IV: Wood Residue Utilization that governed pilot projects removing biomass for off -site for fuel or other purposes defined wood residue as, "logging slash, down timber material, woody plants, and standing live or dead trees which do not meet utilization standards because of size, species, merchantable volume, or economic selection criteria and which, in the case of live trees, are surplus to growing stock needs.

Enforcement, monitoring and outcomes

The USFS tracks timber harvest volumes established in the land management plan and timber harvest volumes included in timber sales housed in Timber Information Management (TIM), and the Central Data Warehouse (CDW) systems. Current Advertised Timber Sales are public and can be found on the USFS Advertised Timber Sale site. USFS publishes reports such as the Periodic Timber Sale Accomplishment Reporting (PTSAR) and Cut and Sold standard. Total volume of timber harvests by NFs is publicly available in this chart covering 1984 until 2023 (See Table 18 for years 2021 until 2023). Individual Timber Sales documentation is publicly available on National Forests' websites. Timber Sale Prospectus list products, quantities, product minimum bid rates, and other costs such as road maintenance.

Table 18. Harvest Trends on National Forest System Lands

FY2023

Region	Clearcut	Prep Cut	Seed Cut	Removal Cut	Selection Cut	Total Clearcut and Removal Cut	Total Clearcut, Removal and Selection Cuts	Improvement Cut	Commercial Thin	Sanitation	Special Cut	Total all Harvests
R1, Northern Region	3,679	0	3,514	491	7	4,170	4,177	2,645	3,700	945	116	15,098
R2, Rocky Mountain Region	5,110	0	3,018	4,846	4,574	9,956	14,530	2,219	2,721	564	374	23,426
R3, Southwestern Region	0	0	0	0	3,286	0	3,286	3,793	9,628	11	0	16,718
R4, Intermountain Region	1,217	0	0	588	1,977	1,805	3,782	657	2,664	1,275	0	8,378
R5, Pacific S-West Region	460	0	0	0	1,312	460	1,772	309	8,686	10,912	0	21,680
R6, Pacific N-West Region	524	0	704	398	2,047	922	2,969	812	29,843	6,526	0	40,854
R8, Southern Region	6,593	93	2,153	1,563	75	8,156	8,231	41	28,375	3,439	176	42,507
R9, Eastern Region	11,356	223	4,875	2,375	9,491	13,731	23,222	446	17,929	6,801	554	54,050
R10, Alaska Region	823	0	0	189	23	1,012	1,035		7	0	0	1,042
All Regions	29,762	316	14,264	10,449	22,793	40,212	63,004	10,923	103,553	30,473	1,220	223,753

FY2022

Region	Clearcut	Prep Cut	Seed Cut	Removal Cut	Selection Cut	Total Clearcut and Removal Cut	Total Clearcut, Removal and Selection Cuts	Improvement Cut	Commercial Thin	Sanitation	Special Cut	Total all Harvests
R1, Northern Region	2,647	0	2,780	472	206	3,119	3,325	3,342	3,220	1,701	6	14,374
R2, Rocky Mountain Region	6,022	0	1,297	6,814	3,601	12,836	16,437	5,593	4,125	3,223	321	30,996
R3, Southwestern Region	8	0	316	0	3,866	8	3,874	351	19,575	407	0	24,523
R4, Intermountain Region	493	0	26	1,141	1,352	1,634	2,986	397	869	2,192	0	6,470
R5, Pacific S-West Region	1,059	0	0	0	79	1,059	1,138	112	6,561	6,323	0	14,134
R6, Pacific N-West Region	191	29	700	108	535	299	834	700	27,622	3,474	0	33,359
R8, Southern Region	4,212	102	1,600	403	205	4,615	4,820	0	23,650	1,177	108	31,457
R9, Eastern Region	10,312	96	4,116	2,001	8,658	12,313	20,971	612	18,213	5,803	415	50,226
R10, Alaska Region	25		54	0	2	25	27	0	0	0	0	81
All Regions	24,969	227	10,889	10,939	18,504	35,908	54,412	11,106	103,836	24,299	850	205,620

FY2021

Region	Clearcut	Prep Cut	Seed Cut	Removal Cut	Selection Cut	Total Clearcut and Removal Cut	Total Clearcut, Removal and Selection Cuts	Improvement Cut	Commercial Thin	Sanitation	Special Cut	Total all Harvests
R1, Northern Region	3,806	25	3,932	1,420	314	5,226	5,540	2,048	2,916	1,780	183	17,784
R2, Rocky Mountain Region	4,496	25	673	6,415	5,973	10,911	16,884	8,782	3,776	1,070	274	28,661
R3, Southwestern Region	0	0	123	0	9,430	0	9,430	703	12,952	148	0	16,158
R4, Intermountain Region	183	514	0	347	1,310	530	1,840	297	863	1,839	0	5,440
R5, Pacific S-West Region	10	0	0	0	174	10	184	27	6,647	3,469	32	17,170
R6, Pacific N-West Region	181	33	268	354	663	535	1,198	796	21,189	633	0	39,608
R8, Southern Region	2,471	334	2,895	281	252	2,752	3,004	9	21,395	813	25	35,155
R9, Eastern Region	10,628	461	4,608	2,153	6,309	12,781	19,090	798	14,663	5,715	271	43,989
R10, Alaska Region	418	0	0	0	1	418	419	0	0	0	0	562
All Regions	22,193	1,391	12,499	10,969	24,425	33,162	57,587	13,460	84,399	15,466	785	185,589

Source: [USFS Advertised Timber Sale site]

The Forest Service's current investments and emphasis on biofuels target residue for timber harvest and forest thinning efforts targeting small diameter trees. Legislation that requires forest resources to be managed to be "sustainable in perpetuity" (MUSYA, NFMA, 2012

	Forest Planning Rule) effectively prevent the diversion of feedstock from timber that would normally be used for more valuable long-lived wood products. The methods and equipment used to harvest biomass are designed for the removal of residue following timber harvest and, in the western U.S., removing small diameter trees for forest restoration and wildfire hazard reduction. These methods are not suitable for the harvest and removal of large trees. Small diameter trees harvested as biomass feed stock would typically be sold as pulpwood if viable markets exist or burned on site after being either lopped and scattered or piled to mitigate wildfire risk. **Risk conclusion and justification** There is a low risk feedstock sourced is not in compliance with the principle of cascading use. The Forest Service uses a standardized appraisal process and bidding process ensuring Timber Sales are sold at appraised value or minimum bid rates, whichever is higher. Advertised and completed Timber Sales are documented and available on the USFS website.
Supply Base Verifiers	▪ Forest carbon stock monitoring reports ▪ FIA stocking, growth and drain data ▪ Annual NF cut and sold reports
Evidence reviewed	▪ National Forest land management planning processes ▪ NEPA assessment processes ▪ Climate Change Dashboard ▪ Forest Service manuals and handbooks for timber sale preparation ▪ Silvicultural evaluations, including timber inventory ▪ Timber sale appraisals ▪ Timber Information Management (TIM) ▪ USFS Advertised Timber Sale site ▪ Timber sale bidding process ▪ Multiple-Use Sustained-Yield Act (MUSYA) of 1960 ▪ National Environmental Policy Act (NEPA) of 1969 ▪ Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974 ▪ National Forest Management Act (NFMA) of 1976 ▪ EPA Renewable Fuel Standards ▪ 36 CFR Part 219 Planning ▪ 2012 Forest Planning Rule ▪ Forest Service 2011 Strategic Energy Framework ▪ Forest Service Manual (FSM) 2400 Timber Management ▪ FSM 2430 - Commercial Timber Sales

Risk rating	Low risk

Principle 4 – Biomass benefits people and communities	
Criterion 4.1 – **Decent working conditions are provided, and labor rights are safeguarded long term**	
4.1.1	Freedom of association and the right to collective bargaining shall be respected in the workplace
Findings	**Scale of assessment** All US National Forests in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 2, Region 5, Region 8, Nantahala-Pisgah NF, Six Rivers NF, GMUG NF, and the USFS national management framework including federal laws and regulations, national agency directives, and applicable state agency programs. The National Labor Relations Act (NLRA) of 1935, which is the preeminent labor law in the US, encourages collective bargaining and prohibits unfair labor practices. The NLRA covers employers, employees and labor unions in both the public and private sectors. Policies established in US Code (5 USC Chapter 71 Labor - Management Relations) provide statutory protection of the right of federal employees to "organize, bargain collectively, and participate through labor organizations of their own choosing in decisions which affect them." The Federal Service Labor-Management Relations Statute (FSLMRS), 5 U.S.C. Chapter 71, Section 7114(a)(2)(B) provides Federal employees represented by a labor organization the right to request a union representative in conjunction with investigations conducted by agency representatives under certain conditions. The National Federation of Federal Employees (NFFE), a national workers union established in 1917, has a current membership of approximately 110,000 federal employees, including roughly 20,000 US Forest Service employees located throughout the US. The Forest Service Council, a part of the NFFE, specifically represents US Forest Service union members. The Master Agreement between the Forest Service and the NFFE expires on 4 June 2029. Although government employers (i.e., the US Forest Service) are exempt from the NLRA, most employers contracting or otherwise doing business with the US Forest Service are covered by the NLRA. The NLRA, in general covers the rights of employees, such as the rights to self-organization, collective bargaining, the right to strike, definitions of unfair labor practices. The NLRA protects coordinated actions of two or more employees acting together to negotiate for wages, benefits, or other terms and conditions of employment. The NLRA is codified in US Code Title 29, Chapters 1 – 32.

Contractors, such as Timber Sale purchasers and their subcontractors are required to comply with state labor laws. Specific requirements depend on the organization's number of employees and state of residence. However, federal law preempts state law when there is a conflict between them. Federal agencies can compel, in certain situations, contractors to abide to additional requirements than those specified by state laws.

Enforcement, monitoring and outcomes

The NLRA establishes a legal framework in the US for protecting worker rights for association and collective bargaining for improved working conditions in the private sector.

The NLSA is enforced by the National Labor Standards Board (NLSB) consisting of five members appointed by the President and a General Council. The NLSB is an independent federal agency represented by field offices located throughout the country. Allegations of unfair labor practices in the private sector are investigated and prosecuted through the NLSB. Federal contractors and sub-contractors are required by law to inform their employees of their rights under the NLRA. Cases and decisions of the NLSB are listed on the internet and can be found at www.nlrb.gov/cases-decisions/cases .

Consistent with Executive Order 13496, federal agencies entering into contracts with private contractors must include the above requirement in contract language. Prior to entering into a contract with a purchaser, the Forest Service contracting Officer is required to evaluate and confirm purchaser responsibility consistent with 36 CFR 223.11, and relevant contract provisions. Timber Sale Contract provision B8.63 Nondiscrimination in Employment require the Purchaser to share a USFS notice with each of their union or worker representative confirming their commitment to comply with provisions of the contract.

The Master Agreement between Forest Service and the National Federation of Federal Employees (NFFE) is a legal document establishing agreed upon rights, including the right to organize and the right to collective bargaining for Forest Service employees. The agreement also includes procedures for filing grievances and for arbitration. Both GMUG and SR NFs have non-supervisory personnel members of the union. The NP NF does not currently have any collective initiatives.

Risk conclusion and justification

There is a low risk the right to collective bargaining and the freedom of association is not respected in the workplace. USFS policy and procedures ensure compliance with relevant Acts and Code of Regulations. USFS employees have a newly approved Master Agreement expiring in June 2029. Once approved by USFS contracting Officers and contract signed, Purchasers and their workers are notified of these rights. NLSB manage and document NLSA cases presented by employer and by employees. Cases are posted on the NLSB website by status (i.e.. open, closed, open blocked).

Supply Base Verifiers	▪ Master Agreement between the U.S. Forest Service and the NFFE ▪ Workplace postings and notices

	▪ Grievance procedures ▪ Arbitrations ▪ Contracts and associated provisions ▪ Contractor suspension and debarment procedures ▪ The U.S. federal court system
Evidence reviewed	▪ National Labor Relations Act (NLRA) of 1935 ▪ Federal Service Labor-Management Relations Statute (FSLMRS) ▪ US Code Title 5, Chapter 71 Labor Management Relations ▪ US Code Title 29, Chapters 1 – 32 ▪ 29 CFR Part 471, Obligations Of Federal Contractors And Subcontractors; Notification Of Employee Rights Under Federal Labor Laws ▪ 36 CFR Section 223 ▪ Annual Weingarten Notice (June1, 2023) ▪ Executive Order 13496, Notification of Employee Rights Under Federal Labor Laws, January 30, 2009 ▪ FSM 2400, Chapter 2450 Timber Sale Contract Administration ▪ FSH 2409.18a Timber Sale Debarment And Suspension Procedures ▪ FS-2400-6 Timber Sale Contract (GMUG, 09/08/2021)
Risk rating	Low risk

Principle 4 – Biomass benefits people and communities	
Criterion 4.1 – **Decent working conditions are provided, and labor rights are safeguarded long term**	
4.1.2	Forced or compulsory labor shall not be used
Findings	**Scale of assessment** All US National Forests in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 2, Region 5, Region 8, Francis-Marion NF, Lassen NF, Shoshone NF, and the USFS national management framework including federal laws and regulations, national agency directives, and applicable state agency programs. Several federal laws protect the rights of workers who provide services under contract with the US Forest Service and other federal agencies, including protections against forced or compulsory labor. These laws include the McNamara-O'Hara Service Contract Act (SCA), the Contract Work Hours and Safety Standards Act (CWHSSA) and the Migrant and Seasonal Agricultural Worker Protection Act (MSPA). The National Labor Relations Act (NLRA) of 1935, which is the preeminent labor law in the US, prohibits unfair labor practices. The NLRA covers employers, employees and labor unions in both the public and private sectors. The NLRA protects coordinated actions of two or more employees acting together to negotiate for wages, benefits, or other terms and conditions of employment. The NLRA is codified in US Code Title 29, Chapters 1 – 32.

Forced labor is illegal in the United States. Numerous domestic laws including the Abolish Human Trafficking Act of 2017 exist to prevent human trafficking and forced labor. ILO Convention 105 has been ratified by the US and is in force. U.S. Code Title 18, Section 1589 explicitly prohibits providing or obtaining services or labor through application or threat of force or physical restraint. Anyone providing or receiving forced labor services is subject to criminal penalty including imprisonment of up to 20 years.

Occupational Safety and Health Act (OSHA) provides guidance on what is considered extended or unusual work shifts although it currently does not have specific OSHA standard on the matter. It does specify it is the employers responsibility to ensure safe working conditions for their workers.

Service Contracts such as for reforestation, silviculture, and herbicide application are subject to the Fair Acquisition Regulation (FAR), the Migrant and Seasonal Agricultural Worker Protection Act (MSPA) and 29 Code of Federal Regulations (CFR) Part 500. MSPA eliminates activities detrimental to migrant and seasonal agricultural workers, requires registration of Farm Labor Contractors, and ensures necessary protection for the workers. Information regarding MSPA can be found at https://www.dol.gov/agencies/whd/agriculture/mspa. Employers contracted by the USFS for reforestation for example are subject to the MSPA requirements.

Contractors, such as Timber Sale purchasers and their subcontractors are required to comply with state labor laws. Specific requirements depend on the organization's number of employees and state of residence. However, federal law preempts state law when there is a conflict between them. Federal agencies can compel, in certain situations, contractors to abide to additional requirements than those specified by state laws.

Enforcement, monitoring and outcomes

The Office of Child Labor, Forced Labor, and Human Trafficking (OCFT) in the Bureau of International Labor Affairs (ILAB) at the U.S. Department of Labor (USDOL) leads the US efforts on eradication of forced labor and modern slavery.

Consistent with Executive Order 13496, federal agencies entering into contracts with private contractors must include certain labor requirements in contract language. Prior to entering into a contract with a purchaser, the Forest Service contracting Officer is required to evaluate and confirm purchaser responsibility and relevant contract provisions.

If workers are hired under the H-2B program, (8 CFR Section 274A provisions of the Immigration and Nationality Act (INA) for the admission of non-immigrants to the U.S. to perform temporary labor or services), a Temporary Employment Certification issued by the Office of Foreign Labor Certification (OFLC) in the Department of Labor Employment and Training Administration is required.

	Risk conclusion and justification There is a low risk forced or compulsory labor is used on NF. USFS policy and procedures ensure compliance with contract requirements. USFS monitor project operations and can notify relevant authorities in case of observed non compliances.
Supply Base Verifiers	▪ Master Agreement between the U.S. Forest Service and the NFFE ▪ Contracts and associated provisions ▪ Contractor suspension and debarment procedures ▪ Law enforcement
Evidence reviewed	▪ National Labor Relations Act (NLRA) of 1935 ▪ Fair Labor Standards Act of 1938 ▪ Abolish Human Trafficking Act of 2017 ▪ U.S. Code Title 18, Section 1589 ▪ FSM 2400, Chapter 2450 Timber Sale Contract Administration ▪ FSH 2409.18a Timber Sale Debarment And Suspension Procedures
Risk rating	Low risk

Principle 4 – Biomass benefits people and communities	
Criterion 4.1 – **Decent working conditions are provided, and labor rights are safeguarded long term**	
4.1.3	Child labor shall not be used
Findings	**Scale of assessment** All US National Forests in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 5, Region 9, Region 8, Nantahala-Pisgah NF, CN NF, Modoc NF, and the USFS national management framework including federal laws and regulations, national agency directives, and applicable state agency programs. The Fair Labor Standards Act (FLSA) of 1938 protects the rights of minors and ensures that when young people work, their well-being, health and safety is not put at risk, and their educational opportunities are not compromised. Restrictions exist for age related working hours and occupational standards. No one under 18 can be employed in any occupation deemed by the Secretary of Labor to be hazardous. Additional child labor laws exist at the state level. However, there is often overlap in coverage between the state and federal child labor laws. For example, all Wisconsin employers are required to follow the Wisconsin Child Labor laws. If both apply, the more stringent standard of the two applies. Section 212.c of the FLSA states: "No employer shall employ any oppressive child labor in commerce or in the production of goods for commerce or in any enterprise engaged in commerce or in the production of goods for commerce." Some exceptions are provided in

Section 213.c such as for employment in family agriculture operations with parental consent. The FLSA prohibits employment of workers under the age of 18 in forestry or reforestation activities deemed "hazardous" by the Department of Labor. For instance, workers under 18 may not drive (except in limited circumstances), or engage in most forestry services, timber tract management, forest fire fighting, forest fire prevention, logging, or use chainsaws. These prohibitions include tree planting and tree thinning operations in forests.

Comprehensive legal requirements addressing prevention of child labor are stipulated in detail within the Code of Federal Regulations (29 CFR Part 570). Section 570.54 specifically lists "certain occupations to be particularly hazardous for the employment of minors between 16 and 18 years of age" that relate to forestry and associated occupations.

Service Contracts such as for reforestation, silviculture, and herbicide application are subject to the Fair Acquisition Regulation (FAR), the Migrant and Seasonal Agricultural Worker Protection Act (MSPA) and 29 Code of Federal Regulations (CFR) Part 500. MSPA eliminates activities detrimental to migrant and seasonal agricultural workers, requires registration of Farm Labor Contractors, and ensures necessary protection for the workers. Information regarding MSPA can be found at https://www.dol.gov/agencies/whd/agriculture/mspa. Employers contracted by the USFS for reforestation for example are subject to the MSPA requirements. The following clauses are included in all Forest Service supply contracts: Federal Acquisition Regulation (FAR) clause 52.212-5 contains FAR 52.222-19, Child Labor-Cooperation with Authorities and Remedies (Feb 2024).

Contractors, such as Timber Sale purchasers and their subcontractors are required to comply with state labor laws. Specific requirements depend on the organization's number of employees and state of residence. However, federal law preempts state law when there is a conflict between them. Federal agencies can compel, in certain situations, contractors to abide to additional requirements than those specified by state laws.

Enforcement, monitoring and outcomes

The Office of Child Labor, Forced Labor, and Human Trafficking (OCFT) in the Bureau of International Labor Affairs (ILAB) at the U.S. Department of Labor (USDOL) leads the US efforts on eradication of child labor.

Consistent with Executive Order 13496, federal agencies entering into contracts with private contractors must include certain labor requirements in contract language. Prior to entering into a contract with a purchaser, the Forest Service contracting Officer is required to evaluate and confirm purchaser responsibility consistent with 36 CFR 223.11, and relevant contract provisions.

If workers are hired under the H-2B program, (8 CFR Section 274A provisions of the Immigration and Nationality Act (INA) for the admission of non-immigrants to the U.S. to perform temporary labor or services), a Temporary Employment Certification issued by the Office of Foreign Labor Certification (OFLC) in the Department of Labor Employment and Training Administration is required.

	The US Department of Labor enforces federal laws for contractors and their workers nationally. The USFS Law Enforcement Officer (LEO) will report observed noncompliance or if made aware of them. Complaints submitted to the US DOL prompt investigations. The Administrative Review Board issues decisions on a wide range of employee protection laws such as child labor. The Board's decisions can be searched by date or by name (website). No child labor non compliances were identified from the sampled USFS Law Enforcement and Investigation weekly reports the USFS provided to the working body. **Risk conclusion and justification** There is a low risk child labor is used on NF. The hazardous nature and regulated definition of forest operations exclude the possibility of child labor. USFS monitor project operations and can notify relevant authorities in case of observed non compliances.
Supply Base Verifiers	▪ Contracts and associated provisions ▪ Contractor suspension and debarment procedures ▪ Law enforcement
Evidence reviewed	▪ Fair Labor Standards Act (FLSA) of 1938 ▪ 29 CFR Part 570 Child Labor ▪ FSM 2400, Chapter 2450 Timber Sale Contract Administration ▪ FSH 2409.18a Timber Sale Debarment And Suspension Procedures
Risk rating	Low risk

Principle 4 – Biomass benefits people and communities	
Criterion 4.1 – **Decent working conditions are provided, and labor rights are safeguarded long term**	
4.1.4	Workers shall not be discriminated against in hiring, remuneration, access to training, promotion, termination or retirement
Findings	**Scale of assessment** All US National Forests in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 5, Region 2, Region 8, Nantahala-Pisgah NF, Grand Mesa, Uncompahgre and Gunnison (GMUG) NF, Six Rivers NF, and the USFS national management framework including federal laws and regulations, national agency directives, and applicable state agency programs. The Civil Service Reform Act requires a merit based system for management of human resources and prohibits taking personnel actions that discriminate against a Federal employee on the basis of race, color, religion, sex, or national origin, age, handicapping conditions, marital status, or political affiliation. The Rehabilitation Act bans discrimination on the basis of disability and is applicable to any program that receives federal funding. Immigration and Nationality Act (INA), 8 U.S.C. § 1324b protect workers rights against discrimination based on race or nationality. Regulations for this law are found at 28 C.F.R. Part 44.

Discrimination and civil rights are also addressed by state laws based. Requirements vary depending on state and on the size of the organization usually of 15 or more employees.

Title 29, Part 1614 of the Code of Federal Regulations directs each federal agency to "maintain a continuing affirmative program to promote equal opportunity and to identify and eliminate discriminatory practices and policies." Requirements are stipulated for staffing, responsibilities and functions for agency programs.

The US Forest Service is an equal opportunity and employment agency. Numerous federal laws including the FLSA, Age Discrimination in Employment Act (ADEA), Americans with Disabilities Act (ADA), Equal Pay Act, Civil Rights Act, Rehabilitation Act, and the Civil Service Reform Act protect the rights of workers and prevent discrimination in the workplace. Federal No FEAR Act allows employees to report violations of antidiscrimination and whistleblower protection laws. Employees are required to take training on the act within 90 days of hire and every 2 years thereafter.

The US Equal Employment Opportunity Commission (EEOC) was established to enforce federal laws prohibiting discrimination in the workplace for most employers of 15 or more employees. Among the EEOC's responsibilities is to monitor employment programs at all federal agencies such as the US Forest Service and ensure compliance with EEOC regulations.

Executive Order (EO) 13985 directs the U.S. federal government to develop and implement a comprehensive, systematic approach to affirmatively advance "equity, civil rights, racial justice, and equal opportunity." In response to EO 13985, U.S. Department of Agriculture (USDA), which includes the U.S. Forest Service, launched the USDA Equity Action Plan. Among the priority actions addressed in the plan are the advancement of equity in procurement of goods and services and reinforcing civil rights and equity as "part of the DNA and culture of the USDA."

Enforcement, monitoring and outcomes

The U.S. Equal Employment Opportunity Commission (EEOC) is responsible for enforcing federal laws regarding discrimination against workers. Generally, any employer with more than 15 employees are subject to EEOC laws. The Immigrant and Employee Rights Section (IER), enforces the anti-discrimination provision of the Immigration and Nationality Act (INA), 8 U.S.C. § 1324b. It provides free help to workers who believe they are being treated unfairly.

The USDA Office of the Assistant Secretary for Civil Rights (OASCR) ensures the enforcement of civil rights laws, regulations and policies with USDA agencies, including the U.S. Forest Service..

The US Forest Service operates several programs to promote equitable access to Forest Service programs, benefits and services for minority employees (e.g., women, Hispanic, Native American, African American, Asian American) and employees with disabilities. A key

objective of these programs is to increase the number of women and minorities employed at all levels of the organization. These programs are described in Forest Service Manual (FSM) 1700, Chapter 1760 Equal Employment Opportunity. Three of the past five individuals serving as Chief of the Forest Service have been either women or minority employees, including the current Chief.

FSM 1700 provides direction for development and implementation of civil rights plans and programs for the Forest Service, including related responsibilities throughout the agency.

FSH 1709.11 provides specific direction for operating the Forest Service Civil Rights Program including impact analysis, training, monitoring and evaluation and other program components. Resources provided on Civil Rights Bulletin Boards at each District/SO and Annual Training required for all employees in AgLearn. Anti-discrimination and/or equal employment opportunity language is included in contracts, agreements, and job announcements.

The Timber Sale Award Letter addresses EEO and Labor Laws, with postings placed in the workplace.

The US Forest Service has established the Office of Civil Rights within their own agency to ensure equal opportunity in the workplace and works to prevent and/or remedy discrimination under federal laws to include discrimination for age, race, color, religion, disability, nationality, sexual orientation, gender, etc. It has a Pre-Complaints Branch and Formal Complaints Branch to receive complaints of discrimination. Employees can also file a complaint with the U.S. Office of Special Counsel. A central monitoring each year, the Forest Service publishes a "Federal Agency Annual EEO Program Status Report" summarizing the agency's performance in complying with civil rights laws and regulations. The report also provides an action plan to attain the Essential Elements of a Model EEO Program.

The Office of Civil Rights has a Pre-Complaints Branch and Formal Complaints Branch to receive complaints of discrimination from employees of covered employers. Employees can also file a complaint with the U.S. Office of Special Counsel.

Contractors, such as Timber Sale purchasers and their subcontractors are required to comply with federal and state labor laws. Provisions B8.63 Nondiscrimination in Employment requires Purchasers to not discriminate against any employee because of race, religion, sex, or national origin. If the total bid value of the timber sale is greater than $10 million, the USFS requests an equal opportunity compliance review of the higher bidder. Specific requirements included in contracts depend on the organization's number of employees and state of residence. However, federal law preempts state law when there is a conflict between them. Federal agencies can compel, in certain situations, contractors to abide to additional requirements than those specified by state laws. In comparison to Timber Sale Contracts, Service Contracts include provisions to comply with 52.222-36, Equal Opportunity for Workers with Disabilities (Jul 2014) (29 U.S.C. 793).

	Risk conclusion and justification There is a low risk workers are discriminated against in reasons listed by the indicator. USFS policy and procedures ensure compliance with contract requirements. USFS monitor project operations and can notify relevant authorities in case of observed non compliances. Workers have access to resources in case they believe they are treated unfairly.
Supply Base Verifiers	▪ Annual Forest Service Management Directive 715 report ▪ Affirmative Employment Plans and Reports ▪ Federal Agency Annual EEO Program Status Report ▪ US Forest Service Civil Rights Advisory Committee ▪ Workplace postings and notices ▪ Grievance procedures ▪ Civil rights training ▪ Operation of Special Emphasis Programs for specific civil rights issues ▪ Employee organizations such as the African American Strategy Group
Evidence reviewed	▪ Equal Pay Act of 1963 ▪ Civil Rights Act of 1964 ▪ Immigration and Nationality Act ▪ Age Discrimination in Employment Act (ADEA) of 1967 ▪ Rehabilitation Act of 1973 ▪ Civil Service Reform Act of 1978 ▪ Americans with Disabilities Act (ADA) of 1990 ▪ Notification and Federal Employee Anti-discrimination and Retaliation (No-FEAR) Act of 2002 ▪ 29 CFR Part 1614 Federal Sector Employment Opportunity ▪ Executive Order 13985, January 20, 2021 ▪ USDA Office of the Assistant Secretary for Civil Rights ▪ USDA Civil Rights Policy Statement, June 8, 2022 ▪ USFS Office of Civil Rights ▪ EEOC Management Directive 715 ▪ Forest Service Manual (FSM) 1700, Chapter 1760 Equal Employment Opportunity
Risk rating	Low risk

Principle 4 – Biomass benefits people and communities	
Criterion 4.1 – **Decent working conditions are provided, and labor rights are safeguarded long term**	
4.1.5	Workers shall be paid at least the legal minimum wage or in the absence of a legally established minimum wage the industry average shall be paid

Findings

Scale of assessment
All US National Forests in the lower (contiguous) 48 states.

Analysis of the legal requirements and best practices
Sampling for this indicator included Region 5, Region 2, Region 8, Francis-Marion NF, Shoshone NF, Lassen NF, and the USFS national management framework including federal laws and regulations, national agency directives, and applicable state agency programs.

President Biden issued Executive Order 14021 on April 14, 2021, setting the minimum wage for federal contractors at $15 per hour, subject to annual adjustments for increases to the cost of living.

The FLSA sets requirements for minimum wage and overtime pay for employees in the private sector as well as federal, state, and local governments. Overtime pay (not less than one and one-half times their regular pay) is required after 40 hours of work in a workweek. Hourly rates of forest harvest workers operating under timber sale contracts are based on local norms, type of work performed, and the USFS timber sale bidding process. The US Bureau of Labor Statistics (BLS) reports on occupational employment and wages at the national level and state level based on data collected from employers in all industry sectors and all states. The May 2023 national wage estimates reported by BLS for logging related occupations are as follows: general logging workers, $24.67/hour; timber fallers, $29.42/hour; logging equipment operators, $23.94/hour; log graders and scalers, $22.65/hour; other logging workers, $25.46/hour. These wages are well above the federal minimum wage of $7.25.hour, and the minimum wage for federal contractors of $15.00/hour. States also set minimum wage rates ranging from a high of $16.28/hour (WA) to a low of $5.15/hour (GA, WY).

Forest Service employees are paid according to a federal pay scale called the General Schedule (GS) that classifies all positions according to the difficulty, qualifications and responsibilities associated with each position. The GS system is based on a series of grades and steps that reflect the requirements of the position and level of experience of the employee. The base pay schedule is typically adjusted annually to account for cost-of-living indices and trends in wages of private sector workers.

The McNamara-O'Hara Service Contract Act (SCA) requires federal agencies like the Forest Service to ensure fair wages for workers of federal service contractors and sub-contractors. The Migrant and Seasonal Agricultural Worker Protection Act (MSPA)prescribes wage protections for seasonal forest workers and establishes employment standards for wages, housing, transportation, disclosures, and recordkeeping.. "Fact Sheet #63" published by the U.S. Department of Labor (US DOL) summarizes laws that apply to reforestation workers, and which are enforced by the US DOL Wage and Hour Division.
The MSPA

Enforcement, monitoring and outcomes

The Office of Personnel Management manages employee benefits for the Forest Service and other federal agencies and publishes federal salary tables online. Pay rates established for specific levels in the GS Schedule vary by locality to account for differences in the cost of living.

Each state is responsible for the oversight and implementation of their laws.

The GS classification and pay system is overseen by the US Office of Personnel Management.

A free online resource for federal employees – FederalPay.org – publishes pay tables and summary statistics for federal government pay scales. For fiscal year 2021 the average annual salary for Forest Service employees nationally was nearly $70,000. Average annual pay for Forestry Technicians was nearly $52,000.

The SCA includes requirements for wages, benefits and recordkeeping for work included in service contracts with the federal government, such as USFS service contracts for tree planting, brush clearing, pre-commercial thinning and forest fire-fighting. The SCA requires service contractors and subcontractors (on contracts of $2,500 and greater) to pay employees no less than the prevailing local wage rates and benefits as provided in Section 6(a)(1) of the Fair Labor Standards Act. When greater than $2,500, contractors are required to pay their employees at least the locally prevalent wage rates and benefits, or the rates contained in the preceding contractor's bargaining agreement. For larger contracts (greater than $100,000), contractors and subcontractors must also pay workers at least one and one-half times their regular pay for anything over 40 hours worked per workweek.

Contractors, such as Timber Sale purchasers and their subcontractors are required to comply with state labor laws. Specific requirements depend on the organization's number of employees and state of residence. However, federal law preempts state law when there is a conflict between them. Federal agencies can compel, in certain situations, contractors to abide to additional requirements than those specified by state laws.

According to the US Bureau of Labor Statistics, logging workers in the US median wage is $23.52 per hour. This is higher than federal and state defined minimum wages. These rates are influenced by geographic location and by occupation of logging workers such as logging equipment operators, fallers or log grade and scalers. The complete USFS Timber Sale process ensure forest operations are executed by qualified workers .

Risk conclusion and justification

There is a low risk that workers are not paid at least the legal minimum wage as prescribed by the indicator. USFS policy and procedures ensure compliance of the contractor with contract and legal requirements. USFS monitor project operations and can notify relevant authorities in case of observed non compliances. Workers have access to resources in case they believe they are treated unfairly.

Supply Base Verifiers	▪ Annual Forest Service Management Directive 715 report ▪ Affirmative Employment Plans and Reports ▪ Federal Agency Annual EEO Program Status Report ▪ Workplace postings and notices ▪ Grievance procedures
Evidence reviewed	▪ Davis-Bacon Act of 1933 ▪ Fair Labor Standards Act of 1938 ▪ McNamara-O'Hara Service Contract Act (SCA) of 1965 ▪ Migrant and Seasonal Agricultural Worker Protection Act (MSPA) of 1982 ▪ Presidential Executive Order 04021, April 2021 ▪ FSM 6100 Chapter 6150 – Classification and Pay Administration ▪ FSH 6109.11 – Pay Administration, Attendance And Leave Handbook ▪ Individual state minimum wage laws ▪ General Schedule (GS) pay scale for federal employees ▪ FSM 6100 ▪ FSH 6109.11
Risk rating	Low risk

PRINCIPLE 4 – BIOMASS BENEFITS PEOPLE AND COMMUNITIES	
Criterion 4.1 – **Decent working conditions are provided, and labor rights are safeguarded long term**	
4.1.6	Workers Working hours shall comply with legal requirements
Findings	**Scale of assessment** All US National Forests in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 9, Region 5, Region 8, Mississippi NF, Modoc NF, Chequamegon-Nicolet NF and the USFS national management framework including federal laws and regulations, national agency directives, and applicable state agency programs. The Fair Labor Standards Act (FLSA) established a forty hour work week and provides for overtime pay. 5 CFR Section 610.111 provides specific requirements for establishing flexible and "standard" work schedules for federal employees, e.g., not to exceed 40-hour work weeks, hours per day, overtime pay, etc. Articles 23 and 24 address employment of seasonal and temporary employees. Overtime for training is handled in accordance with 5 CFR 550, 5 CFR 551, and 5 CFR 410.

Service contract workers are subject to the Contract Work Hours and Safety Standards Act (CWHSSA), the Service Contract Act (SCA), and the Migrant and Seasonal Agricultural Worker Protection Act (MSPA). The Immigration and Nationality Act (INA) extend wages and working hours protections to different types of nonimmigrant workers such as those associated with reforestation and silviculture (see 29 CFR Section 500 Wage and Hour division, Department of Labor).

As stipulated in FSH 6109.11 "all wage employees are entitled to overtime pay for work in excess of 8 hours in a day or 40 hours in an administrative workweek, whichever is the greater number of overtime hours."

Article 18 of the Master Agreement between the US Forest Service and National Federation of Federal Employees (Labor Management Relations for Forest Service Employees) addresses work schedules for Forest Service employees, essentially mirroring 5 CFR Section 161.11.

Federal child labor laws prohibit 15-year olds from working before 7:00 a.m. and working more than 8 hours per day or more than 40 hours per week. Compliance with State child labor laws is required if they are more restrictive than Federal laws.

The Contract Work Hours and Safety Standards Act (CWHSSA) requires overtime pay for work exceeding 40 hours per week on work associated with federal service contracts. The Migrant and Seasonal Agricultural Worker Protection Act (MSPA) sets standards for employment of migrant and seasonal workers such as wages, housing, transportation, disclosure of wages, hours, and working conditions, and recordkeeping.

Enforcement, monitoring and outcomes

Human Resources Management is centrally managed for the U.S. Forest Service. Forest Service line officers (e.g., Regional Foresters) are responsible for setting work schedules. Supervisors are responsible for ensuring employee work hours comply with established work schedules and applicable laws and policies. All overtime must be ordered and approved in writing using Form FS-6l00-30, Overtime Request and Authorization.

The US Department of Labor (DOL) enforces federal laws for contractors and their workers nationally unless USFS personnel observe or are made aware of non-compliances. Complaints submitted to the US DOL prompt investigations. The Wage and Hour Division (WHO) administers the FLSA as well as the INA. Data enforcement of the WHO such as debarred employers can be found on their website. The Office of Foreign Labor Certification, within the Employment and Training Administration, does not accept filing of any application or attestation submitted by debarred employers under 20 CFR Part 656 or 20CFR subparts A, B, C, D, E, H, or I. (See, 20 CFR 655.750(d); 20 CFR 655.855(d).

Each state is responsible for the oversight and implementation of their laws such as the Bureau of Field Enforcement (BOFE) in California or the Equal Rights Division in Wisconsin. Employers and employees have access to their services to file a complaint or request mediation

	services. Agency websites provide detailed information on their processes as well as statistics for example on number of complaints filed, decisions and appeals recorded. Service contract include specific provisions related to workers' conditions such as wages and working hours. Contractors, such as Timber Sale purchasers and their subcontractors are required to comply with state labor laws. Specific requirements depend on the organization's number of employees and state of residence. However, federal law preempts state law when there is a conflict between them. Federal agencies can compel, in certain situations, contractors to abide to additional requirements than those specified by state laws. **Risk conclusion and justification** There is a low risk working hours are not in compliance with legal requirements. Resources for employers and for employees are accessible if they are treated unfairly. USFS monitor project operations and can notify relevant authorities in case of observed non compliances.
Supply Base Verifiers	▪ Annual Forest Service Management Directive 715 report ▪ Affirmative Employment Plans and Reports ▪ Federal Agency Annual EEO Program Status Report ▪ Workplace postings and notices ▪ Grievance procedures ▪ https://doa.wi.gov/Pages/LicensesHearings/DHAResources.aspx ▪ https://www.dir.ca.gov/dlse/dlse-bofe.html
Evidence reviewed	▪ Fair Labor Standards Act of 1938 ▪ Title 5 Code of Federal Regulations, Section 610.111 ▪ McNamara-O'Hara Service Contract Act (SCA) of 1965 ▪ Contract Work Hours and Safety Standards Act (CWHSSA) ▪ Migrant and Seasonal Agricultural Worker Protection Act (MSPA) of 1982 ▪ Immigration and Nationality Act (INA) ▪ FSM 6100 Chapter 6150 - Classification and Pay Administration ▪ FSH 6109.11 - Pay Administration, Attendance And Leave Handbook ▪ FSH 6109.41 - Department Personnel Manual ▪ Master Agreement between the U.S. Forest Service and the NFFE ▪ FSH 6109.11 ▪ https://doa.wi.gov/Pages/LicensesHearings/DHAResources.aspx ▪ https://www.dir.ca.gov/dlse/dlse-bofe.html
Risk rating	Low risk

PRINCIPLE 4 – BIOMASS BENEFITS PEOPLE AND COMMUNITIES

Criterion 4.1 – **Decent working conditions are provided, and labor rights are safeguarded long term**

4.1.7	Workers shall have access to health care provisions, sickness benefits, retirement benefits, invalidity benefits, death benefits, workers' compensation
Findings	**Scale of assessment** All US National Forests in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 9, Region 5, Region 8, Nantahala-Pisgah NF, Six Rivers NF, Grand Mesa, Uncompahgre and Gunnison NF and the USFS national management framework including federal laws and regulations, national agency directives, and applicable state agency programs. President Jimmy Carter issued Executive Order 12196 - Occupational Safety and Health Programs for Federal Employees, in February 1980. Among other things, the Executive Order requires federal agencies to provide safe and healthy working conditions, free of hazards, and to operate occupational safety and health programs. Employees are provided with official time to participate in these programs. Title 20 of the CFR cover Employees' Benefits. All Federal employees are covered by the Federal Employees' Compensation Act (FECA) which provides workers' compensation insurance coverage. OSHA has established regulations for employee health and safety. Service Contractors employing workers in forestry related work are required to comply with wage and payroll standards and recordkeeping requirements (See Fact Sheet #63: Application of Federal Labor Laws to Reforestation found on the Department of Labor (DOL) Wage and Hour Division webpage). State and local wage and hour laws may also apply to workers concurrent with compensation requirements under Service Contract Act (SCA). The Forest Service has developed and maintains several internal directives including Forest Service Handbook (FSH) 6709.11 Health and Safety Code Handbook as well as Forest Service Manual (FSM) 6700 Safety and Occupational Health Programs. These comprehensive documents address issues relating to employee health and wellness, work work-life programs, employee assistance programs and occupational safety and health programs. The Forest Service has established policies and procedures for provision of benefits to employees. The Master Agreement between the US Forest Service and National Federation of Federal Employees (Labor Management Relations for Forest Service Employees) addresses Article 36 Unemployment Compensation, Article 42 Personal Hardship and Article 27 Safety and Health of work for Forest Service employees. The Fair Labor Standards Act (FLSA) established a forty hour work week and provides for overtime pay. 5 CFR Section 610.111 provides specific requirements for establishing flexible and "standard" work schedules for federal employees, e.g., not to exceed 40-hour work

weeks, hours per day, overtime pay, etc. Articles 23 and 24 address employment of seasonal and temporary employees. Overtime for training is handled in accordance with 5 CFR 550, 5 CFR 551, and 5 CFR 410.

Service contract workers are subject to the Service Contract Act (SCA), the Migrant and Seasonal Agricultural Worker Protection Act (MSPA). The Immigration and Nationality Act (INA) extend wages and working hours protections to different types of nonimmigrant workers such as those associated with reforestation and silviculture. Contract solicitations contain language per the Federal Acquisition Regulation (FAR) - Part 22 - Application of Labor Laws to Government Acquisitions.

Enforcement, monitoring and outcomes

The Office of Personnel Management is the primary agency responsible for human resources management for federal employees. The U.S. Department of Labor (DOL) oversees the administration of insurance benefits for federal employees. The DOL Office of Workers Compensation Programs manages claims and payment of benefits for injured workers through the FECA Claims Administration. The Employees' Compensation Appeals Board has jurisdiction to consider and decide appeals from final decisions of the Office of Compensation Workers Programs (OCWP) case arising under FECA. The OCWP is required by law to submit annual reports to Congress.

The Occupational Safety and Health Administration (OSHA) administers the implementation of the OSH Act. It publishes annual reports of their monitoring and enforcement activities. It conducted over thirty four thousand inspections in 2023 of which 54% were unannounced. OSHA lists past enforcement penalties on their website that can be searched by organization, state, city and date.

The US Department of Labor (DOL) enforces federal laws for contractors and their workers nationally unless USFS personnel observe or are made aware of non-compliances. Complaints submitted to the US DOL prompt investigations. Workers employed by private companies pursue workers compensation claims through state workers compensation boards. The Bureau of Labor Statistics annually reports on Employment Benefits in the United States. Table 19 show percentage of nonunion workers in the private sector by type of program benefits.

Table 19. 2023 Benefits Statistics for Nonunion Workers in the Private Sector

Retirement	Defined Contribution Plan	Paid Sick Leave	Paid Holidays	Paid Personal Leave	Medical Care Benefits	Life Insurance Plans	Short Term Disability Plans
68%	68%	77%	79%	45%	69%	55%	41%
Construction, Extraction, Farming, Fishing and Forestry Workers							
67%	-	66%	78%	-	74%	46%	

Source: Bureau of Labor Statistics, US Department of Labor. Employee Benefits in the United States. March 2023.

	Each state is responsible for the oversight and implementation of their Labor Laws. Employers and employees have access to Federal and state services to file a complaint or request mediation services. National and state agency websites provide detailed information on their processes as well as statistics, for example on number of complaints filed, decisions and appeals recorded. Service contract include specific provisions related to workers' conditions such as benefits and compensation. Contractors, such as Timber Sale purchasers and their subcontractors are required to comply with state labor laws. Specific requirements depend on the organization's number of employees and state of residence. However, federal law preempts state law when there is a conflict between them. Federal agencies can compel, in certain situations, contractors to abide to additional requirements than those specified by state laws. **Risk conclusion and justification** There is a low risk that workers do not have access to benefits required by law. Resources for employers and for employees are accessible if they are treated unfairly. USFS monitor project operations and can notify relevant authorities in case of observed or informed non compliances.
Supply Base Verifiers	▪ Affirmative Employment Plans and Reports ▪ Workplace postings and notices ▪ Grievance procedures ▪ Bureau of Labor Statistics Reports (DOL)
Evidence reviewed	▪ President Jimmy Carter issued Executive Order 12196 - Occupational Safety and Health Programs ▪ Fair Labor Standards Act of 1938 ▪ McNamara-O'Hara Service Contract Act (SCA) of 1965 ▪ Contract Work Hours and Safety Standards Act (CWHSSA) ▪ Office of Compensation Workers Programs (OCWP) ▪ Migrant and Seasonal Agricultural Worker Protection Act (MSPA) of 1982 ▪ Immigration and Nationality Act (INA) ▪ Master Agreement between the U.S. Forest Service and the NFFE ▪ FSM 6700 Safety and Occupational Health Programs ▪ FSH 6709.11 Health and Safety Code Handbook
Risk rating	Low risk

Principle 4 – Biomass benefits people and communities	
Criterion 4.1 – **Decent working conditions are provided, and labor rights are safeguarded long term**	
4.1.8	Training shall be provided for all workers, including contractors, to allow them to implement the conditions set out in all elements of the SBP standards relevant to their responsibilities.

Findings

Scale of assessment
All US National Forests in the lower (contiguous) 48 states.

Analysis of the legal requirements and best practices
Sampling for this indicator included Region 2, Region 5, Region 8, Francis Marion NF, Lassen NF, and Shoshone NF.

The Government Employees Training Act of 1958 directs federal agencies to manage their own training, including determination of training needs for their personnel. Training requirements for federal agencies are codified in US Code Title 5, Chapter 41 – Training. The Office of Personnel Management (OPM) has designated training requirements for all federal employees, including USFS employees.

FSM 6140 establishes the training policy on how supervisors work with employees to identify training and development needs and ensure that opportunities are provided to address those needs. Individual Development Plans are created annually.

FSH 6109.13 Chapter 20 provides detailed direction for employee development including objectives, responsibilities and processes for required and elective training and development.

A Contracting Officer or Contracting Officer Representative must be certified and maintain certification in accordance with the September 6, 2011 Office of Federal Procurement Policy memorandum "Revisions to the Federal Acquistion Certification for Contracting Officer's Representatives (FAC-COR) which includes Continuing Education requirements. Training levels include COR I, COR II and COR III.

For timber sale purchasers, prior to contract award, the Forest Service is required to conduct a formal assessment of the prospective purchaser to verify competency and professionalism based on various criteria (36 CFR Section 223.101). Workers must possess the knowledge and skills required to be found responsible and capable if completing the work (33 CFR 154.1026 - Qualified Individual and alternate qualified individual). The purchaser must have a satisfactory performance record on timber sale contracts.

OSHA establishes training requirements for each type of job for contractors in addition to the training that may be assigned by the agency. OSHA 1910.266 requires employers to provide training for each employee at no cost to the employee.

State training and certification requirements for logging workers are common across the 48 lower states.

Enforcement, monitoring and outcomes
The USDA, Forest Service (Management) and the Forest Service Council of National Federation of Federal Employees have signed an agreement with the Federal District 1 of the International Association of Machinists and Aerospace Workers (Master Agreement Between Forest Service and National Federation of Federal Employees (USDA & International Association of Machinists and Aerospace Workers,

Effective date: 2024-06-04 Termination date: 2029-06-04). The implementation of the Agreement provides for appropriate training and recognizes the value of a well-trained workforce (see article 30).

The US Forest Service maintains and delivers training programs to their employees for a wide range of topics including civil rights, safety and health, ethics and conduct, employee orientation, and many skills-based trainings applicable to specific job responsibilities. All new USFS employees are provided with orientation training which covers essential information about the USFS organizational structure, mission, employee benefits, and opportunities for career advancement. Training on federal and applicable state laws is provided to ensure employees understand their responsibilities regarding legal compliance. Employee training is addressed in multiple Forest Service Manuals and Handbooks, including FSM 6140Employees meet with supervisors annually to discuss training needs and develop a plan for employee growth and development. Training records are maintained for all Forest Service employees in the Learning Management System (LMS). The Forest Service provides wildland fire training to staff and individuals external to the U.S. government.

In general, the USFS does not define training requirements nor review training of contractors unless deemed necessary for specific activities. The USFS and external cooperating entities may decide whether it is in their mutual best interest and if funding is available to assist in developing and conducting trainings, evaluations, and certification of the cooperators' employees. (e.g. Master Participating Agreement). The USFS do review all of the contracts requirements prior to commencing operations. Contractors are required to have qualified staff on-site during forest operations.

Contracts require timber purchasers to provide the necessary expertise and supervision to ensure their employees fully carry out contract terms, including adherence to provisions, plans, and specifications (see FSM 2451). External training opportunities are offered by various organizations such as logging trade associations. Some certified chain of custody mills require suppliers to prove recognized BMP training and some insurance companies verify conformance with training requirements. Assessments of competency and professionalism of contractors conducted by the USFS, as well as inspections of on-going operations ensure compliance with Timber Sale Contracts.

As mentioned at indicator 1.1.1, inspections are undertaken during and after completion of operations to verify implementation of contracts provisions. Interviews with USFS personnel and documentation provided confirm worker training or lack thereof is not directly assessed by inspection officers other than by assessing operations performance.

Risk conclusion and justification

USFS employees are provided with training in a wide range of topics from worker rights and safety to technical aspects of their specific positions. There is a low risk that USFS employees do not receive the training required to competently fulfill their responsibilities. The USFS does assess the performance of contractors and review the contract, plan, environmental standards and requirements before forest operations begin. Although the agency does not systematically verify contractors training programs and workers knowledge to implement the conditions set out in all elements of the SBP standards, it does undertake inspections and field visits to ensure compliance of their operations. There is a low risk contractor workers do not have the necessary training to comply with this indicator.

Supply Base Verifiers	▪ Annual performance assessments ▪ Annual training needs assessments ▪ Individual Development Plans ▪ Training request process ▪ Written requirements for training of contractors and subcontractors
Evidence reviewed	▪ National Government Employees Training Act of 1958 ▪ US Code Title 5, Chapter 41 – Training ▪ Title 36 CFR Part 223 - Award of Contracts ▪ Forest Service Manual 2451 Timber Sale Contract Administration ▪ Forest Service Manual (FSM) 6100, Chapter 6140 - Performance, Training, and Awards ▪ Forest Service Handbook (FSH) 6109.13, Chapter 20 Employee Development Program ▪ Fandango Inspection Reports ▪ Timber Sale Inspection Report (Carey Creek Sale)
Risk rating	Low risk

PRINCIPLE 4 – BIOMASS BENEFITS PEOPLE AND COMMUNITIES	
Criterion 4.1 – **Decent working conditions are provided, and labor rights are safeguarded long term**	
4.1.9	Mechanisms shall be in place for resolving grievances and disputes in the workplace
Findings	**Scale of assessment** All US National Forests in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 9, Region 5, Region 8, Mississippi NF, Modoc NF, and Chequamegon-Nicolet NF. The U.S. Department pf Agriculture (USDA), which includes the Forest Service, has established a policy and procedure for filing and processing of grievances for all employees in the USDA. These processes are described in Department Regulation 4070-771-001. The USDA Administrative Grievance System (AGS) is overseen by the Director of the USDA Office of Human Resource Management. Under the Notification and Federal Employee Antidiscrimination and Retaliation Act (No FEAR), Federal agencies must ensure manager have adequate training in the management of a diverse workforce and in dispute resolution. Under the Federal Advisory Committee Act of 1972 (FACA), federal agencies must follow certain guidelines for working with multiple committees, boards, commissions, councils and integrating their ideas into agency decisions. Rules and procedures exist to enable anyone to appeal planned and on-going actions supervised by the USFS (Parks, Forests, and Public Property Chapter II - Forest Service, Department of Agriculture Part 215 - Notice, Comment, and Appeal).

29 C.F.R. 1614.102(b)(2) – As of January 1, 2000, all federal agencies are required to establish or make available an ADR program during the pre-complaint and formal complaint stages of the EEO process. In order to build on the success of ADR programs in the federal sector, it is vital for people to understand and participate in the EEO ADR process.

The USFS has a Conflict Management and Prevention Center. The CMPC provides the means to resolve or manage conflict in an effective, efficient manner, at the lowest possible level, and is available for use by any Forest Service employee. By providing a collaborative, non-adversarial setting where issues can be openly discussed and resolution options explored, conflict resolution knowledge and skills are transferred to employees as they utilize ADR techniques or services. The parties in workplace ADR sessions have full authority to make, change, accept, and commit to proposals for resolution. It is essential that the parties to the conflict have authority to resolve their issues.

Consistent with Forest Service policy as outlined in the FSM 6170, disputes and grievances should be resolved informally whenever possible and employees who use the grievance process will not be subjected to reprisal, intimidation or personnel action. Regulations and procedures for the grievance process are detailed in the Department Personnel Manual (FSH 619.41).

Enforcement, monitoring and outcomes

The USDA operates the Office of Assistant Secretary of Civil Rights (OASCR) "for the fair and equitable treatment of all USDA customers and employees…." The OASCR provides online guidance, access to support, and resources for filing discrimination complaints against USDA employees. USDA Department Regulation 4070-771-001 Administrative Grievance System outlines policies, provisions, procedures, and responsibilities for resolution of disputes in the workplace. It provides a number of resources available online within the Administrative Grievance System.

In the event that grievances can't be resolved informally, for members of the NFFE union, grievance procedures are addressed in Article 9 of the Master Agreement. If the outcome of the grievance process is not acceptable, employees can pursue resolution through an arbitration process. The arbitration process for union member is described in Article 10 of the Maser Agreement. For non-union members, grievance procedures are outlined in the Department Personnel Manual. FSM 8100 - Anti Harassment article 8115, Management Officials follow the closure process to provide closure to the affected individual(s) and the alleged offender(s).

Timber Sale Contracts include clause B9.2 addressing procedures for addressing contract disputes, i.e., "a written demand or assertion by one of the parties seeking, as a legal right, the payment of money, adjustment or interpretation of contract terms, or other relief arising under or relating to this contract."

Contractor workers have access to complaints and dispute resolution mechanisms at the state and Federal levels related to workplace grievances (e.g. benefits, wages, health and safety, etc.). Both level of governments provide resources online such as procedures, guidelines and decisions.

	Risk conclusion and justification There is a low risk that USFS employees and contractor workers do not have access to workplace resolution mechanisms. The USFS have a detailed documented framework on workplace grievances and include employee resources for its implementation. In the private sector, workers have access to various mechanisms from different state and federal agencies.
Supply Base Verifiers	▪ Established grievance and arbitration processes contained in the Master Agreement between the Forest Service and NFFE union. ▪ USDA Department Regulation 4070-771-001 Administrative Grievance System ▪ Grievance procedures described in the Department Personnel Manual
Evidence reviewed	▪ Title 5 CFR Part 771 Agency Administrative Grievance System ▪ USDA Department Regulation 4070-771-001 Administrative Grievance System ▪ Notification and Federal Employee Antidiscrimination and Retaliation Act (No FEAR) ▪ Federal Advisory Committee Act (FACA) of 1972 ▪ Administrative Dispute Resolution Act of 1996 ▪ Forest Service Manual (FSM) 8100 ▪ FSH 6109.41 - Department Personnel Manual ▪ Master Agreement between the U.S. Forest Service and the NFFE ▪ State labor laws ▪ Timber Sale Contract
Risk rating	Low risk

PRINCIPLE 4 – BIOMASS BENEFITS PEOPLE AND COMMUNITIES	
Criterion 4.1 – **Decent working conditions are provided, and labor rights are safeguarded long term**	
4.1.10	Safeguards shall be put in place to protect the health and safety of workers by developing, communicating and implementing policies and procedures.
Findings	**Scale of assessment** All US National Forests in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 2, Region 5, Region 8, Mississippi NF, Six Rivers NF, and Grand Mesa, Uncompahgre and Gunnison NF. Chapter XVII of Title 29 of the Code of Federal Regulations, Occupational Safety and Health Administration, U.S. Department of Labor, issued September 4, 1971. This regulation mandates standards and program administration requirements for implementing Occupational Safety and Health Programs. Qualification System for Trades and Labor Occupations Series 0018, establishes the U.S. Office of Personnel Management requirements for the Safety and Occupational Health Management Series.

The Forest Service is subject to the laws and regulations administered by the Occupational Safety and Health Administration (OSHA). OSHA Standard 1910.266 Logging Operations establishes safety practices, means and operations methods for all types of logging regardless of the end use of the wood. U.S. Department of Agriculture, Departmental Regulation 4410-004 - Safety Management Program establishes requirements for developing and implementing Safety and Occupational Health standards and program elements within the Department.

As stated in Forest Service Manual (FSM) 6700, Chapter 6710 Safety and Occupational Health, "Forest Service employees shall use the Department of Labor's Occupational Safety and Health Standards (29 CFR 1910 and 1926) where standards apply to Forest Service operations. The Health and Safety Code Handbook (FSH 6709.11) is the source of standards for field operations". Employees are provided with various safety training courses and safety is generally emphasized within the USFS culture.

FSM 8100 establishes Forest Service policy for prevention of harassment, bullying and retaliation in the workplace. Included are responsibilities at all levels of the agency, direction for assessing and reporting harassment, confidentiality, and closure process.

FSH 6709.11 spells out safety protocols covering the range of relevant issues and activities including travel, work projects, facilities, operation of machinery/equipment, hazardous materials, general safety practices and use of personal protective equipment (PPE). Responsibilities are defined for line officers, supervisors, work leaders and all employees.

Timber purchases are subject to the laws and regulations administered by OSHA. The U.S. Secretary of Labor has legal authority to enforce OSHA regulations. As described in FSM 2451.12, if Forest Service timber sale administrators see violations of safety requirements, action can be taken under the contract to require operations be brought into compliance with the contract.

Enforcement, monitoring and outcomes

The Occupational Safety and Health Administration (OSHA) administers the implementation of the OSH Act. The agency also monitors State Plans that must be at least as effective as OSHA protecting workers. There are currently 22 State Plans covering both public and private sectors. OSHA publishes annual reports describing inspection activities by strategic groups of categories, enforcement and compliance assistance reports. Statistics of OSHA related incidents are publicly available on an annual basis. The most recent data show logging injury incidents represent less than 0.02% of total workplace injuries (https://www.osha.gov/data).

Every level of the USFS holds responsibilities for ensuring the safety of employees. These responsibilities are articulated in Forest Service policy (FSM 6704 - Responsibility) and various safety plans. Managers and supervisors have safety included as a performance review element. Supervisors are responsible for purchasing and providing required PPE. Although not required by OHSA standards, a reimbursement stipend for protective footwear is provided to employees, $500/3 years. Procedures include annual facility inspections, safety program assessments, various forms of hazard reporting (eSafety, forms, SAFENET), and analysis of lagging indicators such as

	injuries, to name a few. Additionally, all employees are trained and empowered to speak up about safety and to address hazards and concerns immediately. Contracts require timber purchasers to provide the necessary expertise and supervision to ensure their employees fully carry out contract terms, including adherence to safety requirements. FSM 2451.12 specifically addresses expectations for timber purchasers for compliance with safety requirements. Timber sale administration inspections include observations on adherence to state and federal safety requirements. Contractor workers have access to complaints and dispute resolution mechanisms at the state and Federal levels related to workplace grievances (e.g. benefits, wages, health and safety, etc.). Both levels of government provide resources online such as procedures, guidelines and decisions. **Risk conclusion and justification** There is a low risk health and safety safeguards are not in place for USFS and contract workers. USFS have detailed procedures and measures to ensure personnel awareness of their responsibilities, of the risks involved associated with specific tasks as well as the resources at their disposal for the implementation of safety safeguards. Timber Sale Contracts include provisions on health and safety requirements. The USFS monitor and visit all contractor operations. Contractors and their workers must comply with OSHA and State Plans where applicable.
Supply Base Verifiers	▪ Timber sale contract terms ▪ Routine timber sale inspections and enforcement of safety requirements ▪ Department of Labor investigation of violations and enforcement of OSHA regulations
Evidence reviewed	▪ Occupational Safety and Health (OSH) Act of 1970 ▪ Title 29 CFR Part 1910 Occupational Safety and Health Standards ▪ Title 29 CFR Part 1960 Occupational Safety and Health Programs for Federal Employees ▪ Executive Order 12196, February 26, 1980 ▪ U.S. Department of Agriculture, Departmental Regulation 4410-004 - Safety Management Program ▪ Master Agreement between the U.S. Forest Service and the NFFE ▪ Forest Service Manual (FSM) 2400 Chapter 2450 Timber Sale Contract Administration ▪ Forest Service Manual (FSM) 6700 Safety and Health Program ▪ Forest Service Manual (FSM) 8100 Anti-harassment ▪ Forest Service Handbook (FSH) 6709.11 Health and Safety Code ▪ Forest Service Handbook (FSH) 6709.12 Safety and Health Program ▪ Policies and procedures stipulated in Forest Service manuals and handbooks relating to safety and a safe working environment ▪ Provision and use of PPE ▪ Safety training and refreshers such as 'tail gate' safety meetings
Risk rating	Low risk

Principle 4 – Feedstock sourcing benefits people and communities	
Criterion 4.2 – **Feedstock sourcing benefits communities.**	
4.2.1	Negative social and community impacts shall be identified and avoided.
Findings	**Scale of assessment** All US National Forests located in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 2, Region 5, Region 8, Shoshone NF, Lassen NF, and Francis Marion NF. The Forest Service is mandated by the Multiple-Use Sustained-Yield Act (MUSYA) to provide for multiple uses on the NFS to meet the needs of the American people in perpetuity. The Forest Service is directed to cooperate with state and local governments, in effect ensuring that locally elected officials have a role in the management of National Forests. The National Forest Management Act (NFMA) requires the Forest Service to employ an interdisciplinary approach in planning and implementing management activities on national forests. Identification and assessment of potential socio-economic impacts on local communities resulting from forest management activities is mandated by NFMA and National Environmental Policy Act (NEPA). The 2012 Planning Rule and NEPA both require the Forest Service to conduct assessments of proposed management activities on the effected environment, including impacts to local communities. These assessments occur during the development of all LRMPs and revisions to LRMPs, as well as all timber sale projects as part of the NEPA process, including timber sales that qualify as CEs which must describe the public involvement process in the Decision Memo. "Public participation in the development of forest land management plans and activity plans by interested individuals and entities, including those interested at the local, regional, and national levels" is required by the 2012 Planning Rule. NEPA processes also require public participation. Consistent with the 2012 Planning Rule, forest land management plans include a comprehensive range of relevant social issues in their assessments process. Consideration must be given to social, cultural and economic conditions; ecosystem services provided; contributions to local and regional communities; recreational opportunities; land use and access patterns (36 CFR 219.6(b)) . Forest plan assessments are specifically required to assess the sustainability of social, economic and ecological systems within the planning area in the context of the surrounding landscape (36 CFR 219.5 (a) (1).) The content of the assessment must include, among other issues, the following: ▪ Social, cultural and economic conditions ▪ Benefits, i.e., ecosystem services, people receive from the forest ▪ Contributions from multiple uses on the forest to local and surrounding economies ▪ Recreational opportunities and access

- Infrastructure such as transportation networks and utility corridors
- Areas of importance to tribes
- Cultural and historic resources and uses within the forest
- Land status, ownership, use and access.

Presidential Executive Order 12898 requires federal agencies, including the USFS, to identify and address any disproportionate adverse human health or environmental effects from agency decisions and activities on minority or low-income populations. Presidential Executive Order 13175 requires all federal agencies to "to establish regular and meaningful consultation and collaboration with tribal officials" on policies that have significant effects on tribes. A memorandum from the US President to the heads of all departments and agencies in the Executive Branch of the federal government establishes uniform standards for consultation with tribes.

Tribal Nations are invited to participate in forest and project level planning processes. Many NFs also consult with representatives from local tribes on a regular basis, e.g., quarterly or semi-annually, to present and discuss existing and proposed projects that may directly or indirectly impact, or be of interest to tribes. As a federal agency, the USFS maintains a government-to-government relationship with federally recognized tribes and is legally obligated to manage Forest Service lands respectively and to honor existing treaties, laws, and policies.

All NFs are required by the NFMA, the 2012 Planning Rule, Forest Service Manual (FSM) 1900, FSM 2400, and Forest Service Handbook (FSH) 1909.12 to conduct an analysis of suitability for timber production.

Forest Service Manual (FSM) 1900 requires that social and economic assessments be completed as a fundamental component of the forest planning process. Chapter 10 of Forest Service Handbook (FSH 1909.12) provides comprehensive and detailed requirements for USFS officials to identify and assess information to be considered in forest planning processes. The Handbook also provides direction for public consultation on social, economic, and cultural issues, including outreach and communication with a variety of communities. The NFMA requires that LRMPs should be revised at least once every 15 years, or as needed to adapt to significant changes in conditions, new scientific information, or changes in management priorities.. In practice, many forest plan revisions have taken longer than 15 years due to various factors such as budget constraints, staffing limitations, and the complexity of the planning process.

FSH 1909.17 Chapter provides USFS officials with specific direction for assessing likely economic and social impacts of proposed forest management plans and projects. FSH 2409.18 provides a detailed description of processes employed in developing timber sales. A series of process "gates" are associated with each key step in the process to ensure all necessary considerations are fully evaluated.

National Forest Supervisors are responsible for ensuring their respective National Forest land management plans adhere to all applicable laws and regulations. The Chief of the Forest Service is responsible for completion of the NFS land planning program. Stewardship

Agreements and the Good Neighbor Authority represent important tools allowing the USFS to work in collaboration with states, Tribes, counties and other partners to support the best outcomes of projects.

Enforcement, monitoring and outcomes

Forest Management Plans for all three NFs sampled for Indicator 4.2.1 address social and economic issues. The plans include assessments of current conditions for a wide range of NF resources, including – as applicable -how they are used and their importance to the public. Standards and guidelines are established for the conservation and stewardship of various resources.

As an example of the social and economic assessment included in Forest Plans, four social groups were identified in the 1992 Lassen LRMP: ranchers, timber industry workers, government workers, and urban emigrants. All social groups use the forest for recreation, and to source firewood, while other uses vary among groups. Ranchers also rely on the NF for rangeland water. Although their political and economic significance has declined, the timber industry relies heavily, and directly on the NF for timber resources. Government workers represent the largest share of the in the surrounding area and value protection of forest amenities. An activist element of the urban immigrant group has strong views on forest protection and preservation. Native Americans have strong historical and cultural ties to the Forest and have been actively engaged in management issues. The 1992 Lassen NF Plan notes that there is a decreasing economic reliance on industries related to the operation of the NF. At the time the Lassen Forest Plan was approved, 98% of its revenues were generated from timber sales, and 25% of those revenues were returned to the counties where the NF is located.

The Homestead Park Fuels Reduction Project on the Shoshone NF is designed to address increased risk of wildfire on USFS lands located adjacent to a local housing development. The project responds to concerns raised through a collaborative dialogue with community members, and representatives of state and federal agencies. Shoshone NF collaborates with the local representatives of the Firewise Program to assist local community members to develop skills and knowledge to protect their properties from wildfire. Several public meetings and an official public scoping process were held including a project site visit and meetings with homeowners in the adjacent residential area. Several revisions to the proposed project plan were made in response to public comments.

Consistent with processes employed by all NFs, the Shoshone NF conducts environmental justice analysis, public outreach and consultation, and hosts public meetings for projects that are likely to affect specific communities, groups or resources. The Forest also leverages community partners such as county commissioners to gauge community needs. The Dunoir community located adjacent to the Shoshone NF was identified in 2023 as one of 250 high-priority fire sheds in the USFS Wildfire Crisis Strategy and recognized as being at risk of catastrophic wildfire. A goal of the Green Union Project on the Shoshone NF is to reduce the risk of wildfire to communities adjacent to the NF, including the Dunoir community. The project has been approved as an authorized emergency action under the 2022 Infrastructure Investment and Jobs Act. The 2024 Green Union Project Draft EA addresses a range of social economic and environmental issues that could impact local communities including climate, risk of wildfire, water resources, recreation, scenery, resources of cultural and historic importance. Project design features for avoiding or mitigating negative impacts to social and cultural resources and values are included in Appendix B of the EA. Additionally, Appendix B of the Fiddlers Lake Environmental Assessment provides a cataloguing of

39 comments received during the public consultation process. Responses to all comments are provided by the Shoshone NF via direct responses or references to specific sections in the EA. Sample correspondence provided by Shoshone NF demonstrate actions to invite participation of Native American tribes in the LRMP development process.

Many NFs have also established regular meeting schedules, e.g., quarterly, semi-annual or annual, with local stakeholders on specific areas of interest, for example wildfire preparedness, forest restoration, forest recreation. Shoshone NF collaborates with local counties to support and engage with a Resource Advisory Committee (RAC) on projects that are mutually beneficial to Shoshone National Forest and local counties. The project involves timber harvest, prescribed burning and slash disposal activities. The RAC solicits and reviews project proposals and recommends projects on federal lands to be funded under the Secure Rural Schools Act.

Similarly, the Francis Marion NF works with local counties and organizations on a range of projects addressing forest health, recreation and other issues of interest. The Francis Marion-Sumter Resource Advisory Committee (FMS RAC) includes local community members and provides recommendations and oversight of projects selected for funding. The Francis Marion NF also partners with numerous local, regional and national organizations in furtherance of shared values and objectives that serve the interests and needs of local communities. As is the case for other NFs, employees of Francis Marion NF are embedded within and members of local communities, and actively participate in a range of community initiatives and activities.

The first step in the USFS process for determining suitability for the NF land management planning process is to verify lands are owned by the US government and within the administrative area included in the management plan. This process is described in FSH 1909.12 and in the USFS technical guide of timber suitability analysis. The USFS has developed a series of tools that are used within the agency's GIS system, beginning with a basic ownership layer. This process ensures that title and associated tenure rights for lands under timber production are assigned to the USFS, and that there are no legal hindrances prohibiting timber production on those lands. For further information relating to tenure and use rights refer to Indicators 1.1.2, 4.2.4, 4.2.5, 4.2.6 and 4.2.7.

Stewardship Agreements and the Good Neighbor Authority represent important tools allowing the USFS to work in collaboration with states, Tribes, counties and other partners to support the best outcomes of projects. The agreement between the Shoshone NF and State of Wyoming involving the Wagonbox Timber Sale (and other activities) is an example of collaboration on forest management activities between the USFS and local agencies.

Risk conclusion and justification

There is a low risk negative social and community impacts are not unidentified and avoided. Economic and social impacts of National Forest lands on communities next to and dependent on those lands are considered in all phases of the planning process, including during the development of LRMPs and NEPA processes associated with timber sale projects. For the development LRMPs, the 2012 Planning Rule requires the USFS to engage the public during the scoping and assessment process, when developing a plan proposal, upon completion of a draft LRMP, and during the objection period associated with a new or revised LRMP. A similar approach is taken as part of the

	development of all proposed timber sale projects. Forest plans include economic and social assessments, as well as standards and guidelines for conservation of NF resources and values. The Forest Service has a very robust framework for evaluating potential impacts from forest plans and proposed activities supported by the National Environmental Policy Act (NEPA), 2012 Forest Service Planning Rule (codified in 36 CFR, Chapter II, Part 219), Forest Service Handbook 1909.12 Land Management Planning, and Forest Service Manual 1900. Numerous laws, Presidential Executive Orders and memorandums direct the USFS to conduct robust consultation with tribes on decisions and actions that may substantially impact the tribes, their rights and resources. Well established processes for public notification and appeal provide added measures of assurance that laws, regulations and best practices are employed. Projects undertaken on NFs sampled for this indicator, along with associated NEPA documents, demonstrate that NFs are consistently identifying and considering potential impact to local communities caused by management decisions and activities. Many NFs also engage members of the public throughout the year through open houses, or scheduled meetings focused on specific areas of interest. Records of public engagement reflect robust consultation and engagement of stakeholders and representatives of local communities. Interviews of NF staff demonstrate awareness and sensitivity to community needs and concerns.
Supply Base Verifiers	▪ NEPA documents applicable to specific proposed forest management projects ▪ NF Land and Resource Management Plans (LRMPs) ▪ Good Neighbor Authority Stewardship Agreements ▪ Timber sale contracts and maps
Evidence reviewed	▪ Organic Act of 1897 ▪ Multiple-Use Sustained-Yield Act (MUSYA) of 1960 ▪ National Environmental Policy Act (NEPA) of 1970 ▪ Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974 ▪ National Forest Management Act (NFMA) of 1976 ▪ Executive Order 12898 - Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, February 16, 1994 ▪ 2012 Forest Service Planning Rule (36 CFR, Chapter II, Part 219) ▪ Presidential Executive Order 12898 – Environmental Justice. February 16, 1994. ▪ Presidential Executive Order 13175 – Consultation and Coordination With Indian Tribal Governments. November 6, 2000. ▪ Presidential Memorandum on Uniform Standards for Tribal Consultation. November 30, 2022. ▪ Forest Service Manual 1900, Chapter 1970 Economic and Social Evaluation ▪ FSM 2400 – Timber Management ▪ Forest Service Handbook (FSH) 1909.12 Land Management Planning ▪ Forest Service Handbook (FSH) 1909.15 NEPA ▪ Forest Service Handbook (FSH) 1909.17, Chapter 20 Economic Impact Analysis ▪ Forest Service Handbook (FSH) 1909.17, Chapter 30 Social Analysis

	▪ Technical Guide: Timber Suitability Analysis for Land Management Planning. FS-WO-EMC. USDA Forest Service. May 2020. ▪ Final Revised Land Management Plan. Francis Marion National Foret. R8-MB 151A. USDA Forest Service. January 2017 ▪ Land Management Plan; 2015 Revision. Shoshone National Forest. USDA Forest Service. May 2015. ▪ Land and Resource Management Plan. Lassen National Forest. USDA Forest Service. 1992. ▪ Wildfire Crisis Strategy. Confronting The Wildfire Crisis; A Strategy for Protecting Communities and Improving Resilience in America's Forests. FS-1187a. USDA Forest Service. January 2022. ▪ Letter to Fort Peck Tribal Chairman. Invitation to participate in LRMP revision process. Shoshone National Forest. September 9, 2004. ▪ Meeting notes: Representatives of the Eastern Shoshone and Arapaho Tribes, Bureau of Indian Affairs, and Shoshone National Forest. March 1, 2007. ▪ 2021 East Winds Forest Health Project Scoping Notice. Shoshone National Forest. February 1, 2021. ▪ Fiddlers Lake Environmental Assessment, Scoping Comments and Responses. Shoshone National Forest. ▪ Scoping Statement, Homestead Park Fuels Reduction Project. South Zone/Washakie Ranger District, Shoshone National Forest. ▪ Homestead Park II – Homeowners Meeting Notes. Shoshone National Forest. November 12, 2002 ▪ Stakeholder Letter, Revised Proposal – Homestead Park Fuel Reduction Project. Washakie Ranger District, Shoshone National Forest. March 16, 2004. ▪ Homestead Park II Public Comment Analysis. Washakie Ranger District, Shoshone National Forest. ▪ Firewise Program Letter to Homestead Park landowners. Freemont County Firewise Program. April 15, 2003 ▪ Good Neighbor Agreement Supplemental Project Agreement; Wagonbox Timber Sale. Shoshone National Forest and the State of Wyoming. April 12, 2021. ▪ Green Union Project Draft Environmental Assessment. Shoshone National Forest. USDA Forest Service. March 2024 ▪ Campbell Integrated Design Features. Lassen National Forest.
Risk rating	Low risk

Principle 4 – Feedstock sourcing benefits people and communities	
Criterion 4.2 – **Feedstock sourcing benefits communities.**	
4.2.2	Feedstock sourcing shall positively contribute to the local economy, including employment.
Findings	**Scale of assessment** All US National Forests located in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 2, Region 5, Region 8, Modoc NF, NFs in Mississippi, and Chequamegon-Nicolet NF (CNNF). As noted in Indicator 4.2.1. the Forest Service is required by the Multiple-Use Sustained-Yield Act (MUSYA) to provide for multiple uses on the NFS to meet the needs of the American people in perpetuity. The Forest and Rangeland Renewable Resources Planning Act (RPA)

requires that NFs complete an assessment of current and expected uses of NFs and associated resources. Current and projected supply and demand of natural resources is required to be evaluated through environmental and economic impact analyses. Identification and assessment of potential socio-economic impacts on local communities resulting from forest management decisions and activities is also required by NFMA and National Environmental Policy Act (NEPA).

Consistent with the 2012 Planning Rule, forest land management plans must include a comprehensive range of relevant social issues in their assessments process as described in Section 219.6(b), consideration must be given to: social, cultural and economic conditions; ecosystem services provided; contributions to local and regional communities; recreational opportunities; land use and access patterns. NEPA requires assessment of impact on the effected environment, which includes impacts to local communities.

The McNamara–O'Hara Service Contract Act requires federal contractors and subcontractors on contracts exceeding $2,500 in value to pay employees at least the wage rates and fringe benefits found prevailing in the locality. For smaller contract values, contractors are required to pay employees at least the federal minimum wage.

The Twenty-Five Percent Fund Act requires that 25% of gross receipts (e.g., timber, grazing, etc.) generated by NFs be allocated to the State where the national forest is situated. The funds are invested by the State in public schools or public roads of the county or counties where the national forest is located. The Payments in Lieu of Taxes (PILT) Act allows for payment to local counties to compensate for property taxes that cannot be levied against federal lands. The Secure Rural Schools and Community Self-Determination Act direct the USFS to provide funding to over 700 counties. The payments are intended to help stabilize funds made available to rural counties. These funds are used for local schools and roads, county projects (i.e., wildfire protection, emergency services, and broadband access), and projects on federal lands (i.e., protection, restoration and enhancement of fish and wildlife habitat).

Additionally, FSH 1909.12, Section 13.23.4.c specifically directs USFS interdisciplinary teams to consider direct and indirect economic contributions from Forest Service activities and expenditures influenced by the forest management plan.

Presidential Executive Order 12898 requires federal agencies, including the USFS, to identify and address any disproportionate adverse human health or environmental effects from agency decisions and activities on minority or low-income populations.

Enforcement, monitoring and outcomes

All interested stakeholders, including members and representatives of local communities are invited to participate in planning and evaluating proposed management activities within the NFS. Stewardship Agreements and Good Neighbor Authority allow the USFS to develop restoration projects in collaboration with states, Tribes, counties and other partners. As such, the public has an active role in how NFS lands are managed, with access to legal mechanisms for registering and pursuing objections and appeals processes.

As stated in section 219.1 of the 2012 Planning Rule, National Forests and the resources contained within them are managed "for the benefit of human communities" and "contribute to social and economic sustainability." The USFS uses the IMPLAN (Impact analysis and Planning) software for modeling and evaluating economic impacts of proposed management actions as well as to describe current economic contributions from the management of NFs. IMPLAN is used for both forest planning and project-level analysis.

A detailed analysis of the affected environment is completed for each project that includes assessments of the specific economic impacts and benefits to local communities. Timber sales and other projects involving vegetation management on NFs typically contribute to local employment and employment income in surrounding counties, promote stability in the local economy and help maintain quality of life in the local communities. Labor and associated consumption of goods and materials generated by timber sale contracts and agreements associated with project work include purchases of fuel, food service, equipment supply, and lodging from local businesses. Treatment for Restoration Analysis Tool (TREAT) tables are on file in the Collaborative Forest Landscape Restoration Program. Annual reports provide further analysis of the economic impacts from timber sales and other NF projects including direct and indirect effects on local jobs. In addition, the USFS supports local communities by sharing revenue generated from NF activities with local governments through the Secure Rual Schools and Community Self-Determination Act and PILT. Federal regulations allow NFs to procure supplies and services below a threshold of $10,000 without solicitation. This allows the NFs to purchase supplies or services from vendors within the local community without having to participate in competitive bidding with large regional or national vendors. Supply and Service needs in excess of this threshold are competitively solicited and local sources are also encouraged to participate in this process. Procurement contracts (IRSC and IRTC) have benefits to the local workforce as part of the technical proposal evaluation criteria.

The CNNF completed a social and economic effects analysis as part of the Environmental Impact Assessments associated with the 2004 revised LRMP (pp. 3-306 to 3- 363 of the Final Environmental Impact Statement). The analysis provides a comprehensive description of the current environment as well as potential impacts of implementing the LRMP on the social and economic environment. Several economic impact indicators were identified for evaluation and monitoring including, a) projected PILT; b) income and employment resulting from CNNF management activities; c) economic efficiency in producing benefits. Contributions from the CNNF to local communities include jobs created sustained through timber harvest and processing, recreation, Forest expenditures and salary of Forest employees. Effects are generally within local and regional economic impact areas. According to CNNF staff interviewed, the CNNF directly contributed a total of 27,600 jobs and US$1.1 billion in labor income to the regional economy in 2001. In 2022, approximately $5.2 million was distributed to local governments and school districts.

Neither the NFs in Mississippi nor the Modoc NF have completed a forest-level economic impact assessment. However, economic impacts are at least briefly addressed in the LRMP for each of the two administrative units.

The NFs of Mississippi LRMP identifies economic benefits provided through harvesting of timber products, extraction of oil and gas resources, and indirect spending from recreational visitors to the NF. These benefits are expected to continue to flow from the forest at or above the levels occurring at the time of the plan approval in 2014. Additionally, the most recent monitoring and evaluation report for the

NFs in Mississippi included the question "What changes are occurring in the social, cultural, and economic conditions in the areas influenced by national forests in the region?" Although the monitoring plan does not specifically respond to the question with relevant quantitative or qualitative information, no changes relative to the issue are recommended to the monitoring program or to management activities. Economic impact analyses are not required for project level NEPA processes "unless there is an important interaction between anticipated environmental effects and economic effects" (FSM 1900, Section 1972). Three project level NEPA documents on the NFs in Mississippi were reviewed (FR 126 Storm Salvage, Clear Springs Sawtimber Thin, Black Prairie Restoration) and fount to not include an assessment of economic impacts stemming from the proposed project activities. The absence of an assessment of economic impacts for these projects indicates the issue was not identified as an important concern during the NEPA scoping phase.

The Modoc NF LRMP includes a description of the economic environment and projected local economic impacts of implementing the LRMP. The Plan notes that the NF administers up to 53% of the land area in each county that includes NF lands as well as economic sectors in each county. Revenues from the Twenty-five Percent Act, a California state timber tax, and other sources are noted. At the time pf the LRMP approval, the Modoc NF employed 154 permanent employees and 76 part-time employees. In 2020, the Modoc NF supported 1,030 jobs and roughly US$41.1 million in annual labor income. Timber harvested on the Modoc NF generated about US$5.8 million in annual revenue (USDA Forest Service, Pacific Southwest Region, 2020). According to interviews with Modoc NF staff, most timber purchasers and forest contractors for vegetation treatment contracts originate from the local region (i.e., Modoc and Lassen counties in CA, Lake and Klamath counties in OR).

In 2023, the USFS provided $252,636,930 in funding to counties in 49 states under Secure Rural Schools and Community Self-Determination Act. The three NFs sampled for Indicator 4.2.2 made contributions to local communities as follows: Modoc NF - $2,296,397; NFs in Mississippi - $4,813,615; Chequamegon-Nicolet NF - $1,776,283.

Several USFS manuals and handbooks address economic impact analyses including Forest Service Manual (FSM) 1900 and Forest Service Handbook (FSH) 1909.17. FSM 1900 Section 1972.1 provides guidance on when an economic assessment is appropriate or necessary. FSH 1909.17 Chapter 20 provides detailed instructions on purpose, process and content for conducting economic assessments.

It is the District Ranger's responsibility to encourage local individuals and organizations to become involved in the management of forest resources. Provide public notice of decisions affecting resource management activities implemented under the District Ranger's authority (36 CFR part 215 and FSH 1909.15).

Risk conclusion and justification

There is a low risk feedstock sourcing on NFs do not contribute to the local economy, including employment. Several laws and regulations including the MUSYA, NFMA, NEPA and the 2012 Planning Rule set forth mandates for incorporating economic conditions and potential impacts in the management of the NFS. As directed by the Twenty-Five Percent Fund Act, the PILT Act, and the Secure Rural Schools and Community Self-Determination Act NFs make significant cash contributions to local communities on an annual basis in support of local

	schools and infrastructure. Detailed guidance is provided for conducting economic impact analyses in Forest Service manuals, handbooks, technical guides, and various tools such as IMPLAN that have been developed and adopted by the USFS. These documents, tools and processes clearly demonstrate the capability and intent of the US Forest Service for ensuring management decisions and activities on NFs do not negatively impact local economies and communities. The USFS is further required to ensure there are no disproportionate adverse effects on underserved populations stemming from agency decisions and activities. Economic impact assessments vary considerably throughout the NFS depending on the significance of potential impacts resulting from NF management activities. However, in all instances reviewed in the assessment of Indicator 4.2.2, NFs have identified positive effects on local communities stemming from the management of NFs including production of timber and other forest commodities; wages and salaries for USFS employees, timber purchasers, and contractors; purchase of goods and services in local communities; indirect expenditures of recreational visitors to NFs. Workers contracted by NFs are required by the McNamara–O'Hara Service Contract Act to be paid at a level equivalent to prevailing wages and not less than the federal minimum wage.
Supply Base Verifiers	▪ NF Forest Management Plans ▪ NEPA documents associated with NF Forest Management Lans ▪ NF Social and Economic Effects Analysis
Evidence reviewed	▪ Organic Act of 1897 ▪ Twenty-five Percent Fund Act of 1908 ▪ Multiple-Use Sustained-Yield Act (MUSYA) of 1960 ▪ McNamara–O'Hara Service Contract Act of 1965 (41 U.S.C. 6701–6707) ▪ National Environmental Policy Act (NEPA) of 1970 ▪ Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974 ▪ Payments in Lieu of Taxes (PILT) Act of 1976 ▪ National Forest Management Act (NFMA) of 1976 ▪ Secure Rural Schools and Community Self-Determination Act of 2000 ▪ 2012 Forest Service Planning Rule (36 CFR, Chapter II, Part 219) ▪ Forest Service Manual 1900, Chapter 1970 Economic and Social Evaluation ▪ Forest Service Handbook (FSH) 1909.12 Land Management Planning ▪ Forest Service Handbook (FSH) 1909.17, Chapter 20 Economic Impact Analysis ▪ Forest Service Handbook (FSH) 1909.17, Chapter 30 Social Analysis ▪ How to Measure and Evaluate Social and Economic Sustainability in Forest Planning [Abridged Version]. USDA Forest Service. 2015. ▪ Land and Resource Management Plan, Modoc National Forest. 1991 ▪ Chequamegon-Nicolet National Forests 2004 Land and Resource Management Plan. R9-CN-FP. April 2004 ▪ Land and Resource Management Plan, National Forests in Mississippi. USDA Forest Service. August 2014. ▪ Monitoring & Evaluation Report for the National Forests in Mississippi FY 2020-2023. USDA Forest Service. June 2024.

	▪ Black Prairie Restoration Project Environmental Assessment, Tombigbee National Forest. USDA Forest Service. August 2023. ▪ FR 126B Storm Salvage Project Decision Memo, Homochitto National Forest. USDA Forest Service. February 22, 2016. ▪ Clear Springs Sawtimber Thin Project Decision Memo, Homochitto National Forest. USDA Forest Service. January 7, 2021. ▪ Social and Economic Impact Analysis, Final Environmental Impact Statement (FEIS), Chequamegon Nicolet National Forest. ▪ Nature's Benefits; Modoc National Forest. USDA Forest Service, Pacific Southwest Region. August 2020. ▪ Final Environmental Impact Statement, Revised Land Management Plan, Shoshone National Forest. Appendix B. May 2015 ▪ All Services Receipts (ASR) 2023 Final Payment Summary Report PNF by State (ASR-10-01). USDA Forest Service. April 02, 2024 ▪ All Services Receipts (ASR) 2023 Final Payment Summary Report PNF by NF (ASR-10-02). USDA Forest Service. April 02, 2024
Risk rating	Low risk

Principle 4 – Feedstock sourcing benefits people and communities	
Criterion 4.2 – **Feedstock sourcing benefits communities.**	
4.2.3	Food, water supply or *high conservation values (HCV)* that are essential for the fulfilment of basic needs of communities shall be maintained or enhanced.
Findings	**Scale of assessment** All US National Forests located in the lower (contiguous) 48 states **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 2, Region 5, Region 8, Shoshone NF, Six Rivers NF, and NFs in Mississippi. Public water supplies and associated water quality are well-established as being one of the fundamental multiple uses of National Forests. The Organic Act of 1897 declared a core objective of establishing national forests as ensuring continuous water flow for the "use and necessities" of the public. The Forest Service is mandated by the Multiple-Use Sustained-Yield Act (MUSYA) to provide for multiple uses on the NFS to meet the needs of the American people in perpetuity. The Forest Service is directed to cooperate with state and local governments, in effect ensuring that locally elected officials have a role in the management of National Forests. The National Forest Management Act (NFMA) requires the Forest Service to employ an interdisciplinary approach in planning and implementing management activities on national forests. Identification and assessment of potential socio-economic impacts on local communities resulting from forest management activities is mandated by NFMA and National Environmental Policy Act (NEPA). The Forest and Rangeland Renewable Resources Planning Act (RPA) requires the USFS to protect, develop, and enhance the productivity of forest resources and associated values. The USFS is directed to periodically evaluate current conditions and to develop and implement plans for the ongoing sustainability of natural resources.

The 2012 Forest Service Planning Rule directs the USFS to develop plans that "promote the ecological integrity of national forests" for the benefit of human communities and natural resources. The definition of ecosystem services includes four categories: provisioning services (e.g., clean air and water), regulating services (e.g., carbon storage, water filtration), supporting services (e.g., pollination, nutrient cycling), and cultural services (e.g., recreation, cultural and heritage values).

Additionally, the 2012 Planning Rule specifically requires identification and assessment of "benefits people receive" from the NFS, referring to ecosystem services (HCV 4). Aquatic ecosystems, watersheds and water resources are also specifically listed among relevant values that must be evaluated in planning processes. The 2012 Planning Rule requires forest plans to "provide for social, economic, and ecological sustainability" and must take account of "multiple uses that contribute to local, regional, and national economies in a sustainable manner." (36 CFR Part 219, Section 219.8). Forest plans are also required to include provisions for ecosystem services and multiple uses, specifically including consideration of habitat conditions needed for subsistence livelihoods. (36 CFR Part 219, Section 219.10).

The 2012 Planning Rule specifically requires identification and assessment of "benefits people receive" from the NFS, referring to ecosystem services. Section 219.10 of the Planning Rule requires that plans must provide for ecosystem services and multiple uses, specifically including public water supplies and associated water quality. include consideration of habitat conditions for wildlife, fish, and plants commonly enjoyed and used by the public for hunting, fishing, trapping, gathering, observing, and subsistence. Aquatic ecosystems, watersheds and water resources – including public drinking water supplies and associated water quality - are also specifically listed among relevant values that must be evaluated in planning processes. The Planning Rule also requires that areas of tribal importance, cultural and historic uses and land use patterns be identified and evaluated during the land planning process.

Presidential Executive Order 13175 requires the USFS to consult and collaborate with Native American tribes on policies that have significant effects on tribes. A 2022 memorandum from the US President establishes uniform standards for consultation with tribes.

The USFS FSM 2520 establishes Forest Service policy relating to water resources to include using an "integrated approach to identify specific watersheds as a priority for protection and management and for improvement." FSM 2520 directs the Forest Service to identify and evaluate watershed conditions, and to employ land management practices that "protect and restore watershed condition."

The Watershed Condition Framework (WCF) consists of reconnaissance-level assessments by individual national forests, identification of concerns/issues, implementation of integrated improvement activities within priority and other watersheds, validation and monitoring of watershed condition class changes, and aggregation of program performance data for national reporting.

The Wyden Amendment (Public Law 105-277, Section 323 as amended by Public Law 109-54, Section 434) authorizes the use of cooperative agreements to benefit resources within watersheds on federal lands. The USFS is thereby empowered to cooperate with other federal, state, tribal and local governments as well as individual private landowners for the protection, restoration, and

enhancement of wildlife habitat and other resources and/or to reduce the risk of wildfire and other natural disaster where public safety is threatened. Instructions for pursuing agreements for watershed restoration on lands outside the NFS is provided in the USFS document outlining the principle laws relevant to the USFS State & Private Forestry Program.

FSH 1909.15 provides detailed instruction to Forest Service staff for conducting NEPA analysis to assess the "physical, biological, social, and economic effects" of proposed management activities. FSH 2509.16 provides direction for identifying and inventorying water resources. FSH 1909.17 Chapter 30 directs the Forest Service to conduct a social analysis to include an analysis of individual and community lifestyles that could be affected by Forest Service practices. FSM 1563 and FSH 1509.13 provide direction to USFS staff regarding engagement, consultation and cooperation with Native American tribes. The Tribal Cultural and Heritage Cooperation Authority (CHCA) Technical Guide provides a standard for USFS conduct regarding treatment of cultural resources, allowances and protections for traditional and cultural practices, provisions for use of forest products for cultural purposes and protection of tribal reserved rights on NFs.

Enforcement, monitoring and outcomes

Issues considered during forest management planning include maintenance or enhancement of habitat conditions needed for hunting, fishing, and subsistence economies; and protection of ecosystem services such as public drinking water supplies that are important to local communities. Areas supporting HCVs that are considered important for providing basic needs of communities are often designated as special management areas through acts of Congress or through administrative designations. Examples include Wilderness Areas, Wild and Scenic River corridors, Research Natural Areas (RNAs) and Designated Wilderness Areas, and as defined and described in the Forest Plan 2014. There are currently 447 designated Wilderness Areas on National Forests encompassing a total of 36,160,078 acres, and 19% of the NFS. The USFS is involved in the management of over 5,000 miles of designated Wild and Scenic River corridors.

The USFS LRMP planning process provides multiple opportunities for national, regional and local community engagement including a public scoping phase, community meetings, attendance at tribal meetings and multiple public comment periods. Public input enables NFs to identify public perspectives and concerns. Applicable community values are incorporated into the analysis process and given due consideration in design and implementation of project protection measures. Mitigation measures are part of each project record for EA's and EIS's and are included as needed in Decision Memo's and associated documents for projects that qualify as Categorical Exclusions under NEPA. USFS national core BMPs as well state BMPs are implemented as applicable on all timber sales and other site disturbing activities on NFs. Streamside and riparian management zones are established for restricting logging operations close to water resources. Contract provisions require the use of BMPs and timber sale administration inspections verify contract compliance.

Project-level NEPA environmental analysis includes watershed conditions, municipal water supplies, source water areas, groundwater, and public water supplies. About 20% of the US water supply originates from national forests, with over 34,000 communities nationwide relying on NFs as a source of their drinking water. Climate change and wildfire are recognized as the primary threats to watersheds on NFs. The Burned Area Emergency Response (BAER) process identifies potential post-fire threats to critical values (e.g., municipal,

domestic, and agricultural water supply, critical habitat, cultural resources) and devises plans for reducing impacts and the probability of future reoccurrence (FSM 2520).

The USFS developed the WCF in 2011 to facilitate watershed restoration on NFs where it is most in need. As a result, a national assessment was completed of the 15,082 watersheds occurring on NFS lands. As of 2020, 54% of the NFS watershed are considered to be functioning properly, 44% are functioning at risk, and 3% have impaired function. The USFS has designated 423 of these as priority watersheds based on restoration needs, urgency, and alignment with community strategies. A Watershed Restoration Action Plan (WRAP) has been developed for each priority watershed. From 2011 to 2020, all restoration and maintenance activities identified in WRAPs for 135 priority watersheds have been completed resulting in direct improvements on 148,000 acres, 432 stream miles and 2,746 miles of trails and roads. During that time, there was a slight increase in watersheds functioning properly (from 7,892 to 7,995) and slight decreases in watersheds functioning at risk (6,759 to 6,703) and impaired (430 to 424).

One open court case involving the USFS has been identified regarding concerns over maintenance or enhancement of food, water supply or HCVs that are essential for the fulfilment of basic needs of communities. The lawsuit involves USFS approval of a special use permit for a private bottled water company to pump water on The San Bernadino NF in CA.

The Shoshone NF LRMP addresses public water supplies as a discrete management area, and state's that virtually all water originating on the Forest could serve downstream as a municipal water source, and specifically points to the city of Lander water supply. Production of high quality water in all watersheds used for public water supply is emphasized on the Shoshone NF, with other uses permitted only to the extent that they are mitigated to protect water quality. Recreational uses are addressed in several places in the Shoshone LRMP including preservation of scenic values and recreational uses along designated scenic areas and scenic travel corridors, scenic and historic trails, back country recreational opportunities and other special interest areas. Guidelines for the protection of Native American tribal rights and interests are provided in the Shoshone LRMP,, including consultation with tribes during initial scoping of project-level planning, NF land ownership transactions, and coordination with tribes in identification of traditional cultural properties and special interest areas. Shoshone NF staff meet annually with tribal representatives to review and discuss tribal uses, values, and concerns in the Forest.

There are 980 identified heritage resource sites on the Six Rivers NF. One cultural district and one property have been formally listed on the National Register of Historic Places and four additional districts have been deemed eligible for listing. Eleven areas have been designated in the LRMP as Native American Contemporary Use Areas (NACUAs) in recognition of Native American cultural values identified by local tribes. The Six Rivers LRMP specifically addresses NACUAs as a discrete management area within the Forest. NACUAs are preserved and protected for the ceremonial values that exist in these areas, and for the solitude and privacy of Native American users. If management activities are considered in NACUAs, tribes using these areas will be consulted and their concerns addressed. Native American tribes and their members also have special provisions defining access to resources for ceremonial purposes that extend beyond project specific considerations. For example, tribes can submit a request for traditional use of specific resources such as redwood logs for ceremonial canoes.

The Six Rivers NF operates under a Programmatic Agreement between USFS Region 5 and the California State Historic Preservation Office (CA SHPO) as a primary mechanism for ensuring compliance with the National Historic Preservation Act (NHPA). The Forest has also entered into Memorandums of Understanding (MOUs) with local tribes. Interviews with Six Rivers NF staff indicate that areas essential for the fulfilment of basic needs of Tribal communities are identified through formal consultation (government to government) and informal consultation (staff to staff). Frequent meetings with tribes, partners, and local community groups are used by the to monitor and evaluate the effectiveness of measures to maintain or enhance resources that provide basic needs of local communities. Sensitive information regarding cultural sites such as location is confidential and not shown on maps.

For project-related activities, important heritage resource properties are identified, evaluated, and protected. All proposed activities require an assessment of potential impacts to cultural resources, including contemporary use. Inventories are conducted to meet the requirements of the NHPA. Local Tribes are contacted to assist in developing measures to avoid or mitigate any potential adverse effects to cultural values and traditional uses. Six Rivers NF uses a Coordinated Resource Management concept to promote tribal involvement in resource management activities including the development of management projects that are co-sponsored by tribes, the Forest Service, and other public agencies.

At the time of the LRMP approval in 1995, Six Rivers NF maintained nearly 30 developed camping areas and 230 miles of trails for dispersed recreation, 366 miles of designated Wild and Scenic Rivers, and four designated Wilderness Areas totaling over 120,000 acres. There are seven Special Interest Areas (SIAs), and 8 RNAs on the Six Rivers NF. These areas are managed to maintain undisturbed natural conditions and ecological processes. The LRMP states that a total of 23% of the Forests is classified as late mature or old-growth forest. These areas serve as forest carbon reserves in addition to providing recreational opportunities for Forest users.

The LRMP for the NFs in Mississippi lists 38 geographic areas designated as special management units including botanical areas, scenic areas, Wilderness areas, Wild and Scenic Rivers, archaeological sites, recreation areas, experimental forests, and research natural areas. Thes special management areas are largely protected from commercial timber harvest and are managed primarily for other values including recreation, scenic integrity objectives (SIOs), and protection of natural ecosystem functions.

Risk conclusion and justification

There is a low risk that HCVs essential for the fulfilment of basic needs of communities are not maintained or enhanced. Maintenance of healthy and functioning ecosystems and ecosystem services is a central management objective across the NFS. The USFS is mandated by several laws and regulations to identify and protect places and resources such as food and water that are essential for the fulfilment of basic needs of communities. Numerous Forest Service manuals and handbooks provide guidance and direction to USFS staff for ensuring the maintenance of resources and areas considered essential for meeting the basic needs of communities., and for ensuring effective public engagement and consultation in identifying and protecting those areas. Hunting and gathering rights of Native Americans are

	protected under established treaties. Native American cultural values and uses are addressed in LRMPs and project-level NEPA processes. Tribes must be consulted as part of forest land planning and NEPA processes. Forest plans include measures to protect, maintain, and enhance values and resources important to meeting basic needs of surrounding communities including watersheds, recreational opportunities, ecosystem function and ecosystem services, cultural values and resources, fish and wildlife. Interviews of NF staff demonstrate awareness and sensitivity to community needs and concerns.
Supply Base Verifiers	▪ NF Forest Management Plans and associated NEPA documents ▪ Project-level NEPA documents ▪ Timber sale contracts and maps.
Evidence reviewed	▪ Organic Act of 1897 ▪ Multiple-Use Sustained-Yield Act (MUSYA) of 1960 ▪ The Wilderness Act of 1964 (Pub. L. 88-577) ▪ National Historic Preservation Act of 1966 ▪ The Wild and Scenic Rivers Act of 1968 (16 U.S.C. 1271-1287) ▪ Clean Air Act of 1970, as amended (42 CFR Chapter 85) ▪ Clean Water Act of 1972 ▪ National Environmental Policy Act (NEPA) of 1970 ▪ Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974 ▪ National Forest Management Act (NFMA) of 1976 ▪ American Indian Religious Freedom Act of 1978 ▪ 2012 Forest Service Planning Rule (36 CFR, Chapter II, Part 219) ▪ Presidential Executive Order 13175 – Consultation and Coordination With Indian Tribal Governments. November 6, 2000. ▪ Presidential Memorandum on Uniform Standards for Tribal Consultation. November 30, 2022. ▪ National Best Management Practices for Water Quality Management on National Forest System Lands; Volume 1: National Core BMP Technical Guide. FS-990a. USDA Forest Service. April 2012 ▪ The Principal Laws Relating to USDA Forest Service State and Private Forestry Programs. FS-758. USDA Forest Service. December 2020 (revised). ▪ Watershed Condition Framework: A Framework for Assessing and Tracking Changes to Watershed Condition. FS-977. USDA Forest Service. May 2011. ▪ Watershed Condition Classification Technical Guide. FS-978. USDA Forest Service. July 2011. ▪ Watershed Condition Framework 2011–2020: 10 Years of Restoration. FS-1191. USDA Forest Service. February 2022. ▪ Tribal Cultural and Heritage Cooperation Authority Technical Guide; A Companion to the Forest Service Directives. FS-1137. USDA Forest Service. October 2019. ▪ Forest Service Manual (FSM) 1563 Tribal Relations ▪ FSM 1900, Chapter 1970 Economic and Social Evaluation

	▪ FSM 2500, Chapter 2520 Watershed Protection and Management ▪ Forest Service Handbook (FSH) 1509.13 American Indian and Alaska Native Relations Handbook ▪ FSH 1909.12 Land Management Planning ▪ FSH 1909.15 NEPA ▪ FSH 1909.17, Chapter 30 Social Analysis ▪ Land and Resource Management Plan, National Forests in Mississippi. USDA Forest Service. August 2014. ▪ Land Management Plan; 2015 Revision. Shoshone National Forest. USDA Forest Service. May 2015. ▪ Land and Resource Management Plan, Six Rivers National Forest. 1995. ▪ Biennial Monitoring Evaluation Specialists Report for 2015-2019, National Forests in Mississippi ▪ Final Environmental Impact Statement, Revised Land Management Plan, Shoshone National Forest. Appendix B. May 2015 ▪ FY2019 Visitor Use Report, Shoshone National Forest. USDA Forest Service. February 18, 2022. ▪ State of Wyoming House Bill No. HB0083. Tribal agreements to hunt and Fish. 2023. ▪ Heritage Resources Specialist Report, 2013 Greater Greybull Vegetation Management Project, Shoshone National Forest. ▪ Treaty of Fort Laramie. U.S. Government and the Sioux Nation. April 29, 1868. ▪ Tribal Consultation; Best Practices In Historic Preservation. National Association of Tribal Historic Preservation Officers. May 2005. ▪ An Overview of Ecosystem Services in Forest Planning; A 2012 Planning Rule Requirement. USDA Forest Service, Washington Office. Undated. ▪ A Brief Guide to Assessing Ecosystem Services for Forest Plan Revision. USDA Forest Service, Washington Office. January 3, 2017. ▪ Assessing Forest Goods and Services (Ecosystem Services) for the Assessment Phase of the Plan Revision Process; A 5-Step Process for Interdisciplinary Planning Teams. USDA Forest Service, Washington Office. Undated. ▪ Conservation Science Partners. 2021. Ecological value of lands in the Six Rivers National Forest. Final Report. Truckee, CA
Risk rating	Low risk

Principle 4 – Feedstock sourcing benefits people and communities	
Criterion 4.2 – **Feedstock sourcing benefits communities.**	
4.2.4	Legal, customary, and traditional tenure and use rights of Indigenous Peoples and local communities related to the Supply Base shall be identified, documented, and respected.
Findings	**Scale of assessment** All US National Forests located in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 2, Region 5, Region 8, Lassen NF, Francis Marion NF, and Chequamegon-Nicolet NF. The U.S. government has a unique relationship with recognized tribes, established through the U.S. Constitution and the treaties entered into with tribes, which requires the federal government to protect the safety and well-being of the tribes. This trust responsibility is

conferred upon all federal agencies, including the Forest Service, to protect tribal treaty rights, lands, and resources, and to comply with all federal law regarding federally recognized tribes. It is Forest Service policy to consult with tribes to implement management plans and activities consistent with established treaties and with respect for other reserved rights. There are 346 federally recognized tribes in the continental US. Nearly 400 treaties with Native American tribes were ratified by the US before a law was passed in 1871 prohibiting the US government from entering into any new treaties with tribes.

The American Indian Religious Freedom Act (AIRFA) protects the rights of Native Americans to exercise their traditional religions by ensuring access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites. The USFS is authorized to provide tribes with access to NFs forest products for cultural and traditional uses, and further directed to "to strengthen support for the policy of the United States of protecting and preserving the traditional, cultural, and ceremonial rites and practices" of Native American tribes. Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies to assess potential impacts from management activities on historic properties, which can include areas of traditional and cultural importance to Native American tribes. Federal agencies are explicitly required to consult with tribes that identify "religious and cultural significance to historic properties" that could be impacted by management (36 CFR 800.2(c)(2)(ii)). The gathering of plants for traditional and cultural purposes by federally recognized tribes is addressed in 36 CFR Section 2.6.

US Code Title 25, Chapter 32A (Cultural And Heritage Cooperation Authority) requires that NFs be accessible to Native Americans for traditional and cultural use "to the maximum extent possible," and provides for the temporary closure of to the public of such areas to protect the privacy of tribal activities while practicing traditional and cultural customs. Authority s also established for providing tribes with trees and other forest products from NFs without charge for traditional and cultural purposes.

The purpose of NEPA includes determining the effects of federal actions on the *human environment*. NEPA defines the human environment as not only the natural and physical environment but also "…the relationship of present and future generations of Americans with that environment" and when the agency determines that economic or social and natural or physical environmental effects are interrelated, NEPA requires that agencies give appropriate consideration to these effects on the human environment.

The 2012 Planning Rule explicitly requires the Forest Service to consult with federally recognized tribes in the development of land management plans consistent with the direction provided in Executive Order 13175. Tribal rights are identified and respected.
As directed by the 2012 Planning Rule, forest management plans must contribute to social and economic sustainability. The Planning Rule specifically requires the Forest Service to consult with interested members of the public, including federally recognized tribes, during every phase of planning. According to section 219.6 (b), land status, land ownership and land use must be validated in the assessment process.

Regarding tribal lands, the Tribal Forest Protection Act (TFPA) directs the Forest Service to work in partnership with tribes to promote forest health on both tribal and USFS lands. For example, the TFPA provides for collaboration between the USFS and tribes to reduce the threat of wildfire spreading from NFs to adjacent tribal lands and causing environmental harm to tribal assets. Community needs such as

social and economic sustainability, grazing, hunting, fishing, gathering, and recreation are identified as key topics and considered in management planning processes.

FSM 1560 establishes the Forest Service policy and objectives for maintaining positive nation-to-nation relationships with tribes. The manual includes comprehensive directions for a range of topics including consultation, coordination and consultation with tribes. FSH 1509.13 provides direction to Forest Service staff for engaging with tribes. Chapter 10 specifically addresses processes and responsibilities for consultation with tribes. FSH 1909.15 directs the Forest Service to invite the participation of tribes throughout the NEPA process beginning with the initial scoping process, where potential issues associated with the proposed management activity are identified. FSM 2360 and FSH 2309.12 provide guidance and direction in identification and protection of cultural resources values. USFS staff are directed to engage and consult tribes using the NHPA Section 106 process when management could affect areas of religious, cultural or traditional significance to those tribes.

Enforcement, monitoring and outcomes

The Forest Service has developed an action plan for tribal relations. The action plan is focused on strengthening relationships with tribes, fulfilling trust responsibilities, and enhancing co-stewardship (with tribes) of the NFS. There are currently no known open court cases involving the USFS regarding legal, customary, and traditional tenure and use rights of Indigenous Peoples and local communities.

Both the USDA and the Forest Service operate an Office of Tribal Relations to provide leadership to local units for engagement and collaboration with tribes in support of upholding trust responsibilities, treaty rights and consideration of tribal objectives. The Forest Service Office of Tribal Relations provides agency-wide leadership and support for regional and local collaboration and consultation with tribes on all issues of tribal interest. Their primary objectives are to strengthen nation-to-nation relationships with tribes in support of sustaining trust responsibilities and treaty obligations; and to collaborate in shared stewardship of Forest Service lands. USDA DR 1350-002 establishes minimum criteria for all USDA agencies, including the Forest Service, for engaging tribes in consultation and coordination on management decisions.

The USFS Pacific Southwest Region (Region 5) has developed a strategic plan to guide tribal relations for the Region Office as well as all NFs within the Region, including Lassen NF. The Plan sets forth four strategic goals and associated objectives for enhancement of relationships with tribes, providing benefits to tribal communities, shared stewardship and incorporating tribal knowledge in management decisions. The USFS has subsequently developed an action plan with specific activities and associated completion dates focused on strengthening relations and relationships with tribes, fulfilling federal trust and treaty responsibilities, and enhancing co-stewardship of the NFS. The action plan is inclusive of all federally-recognized tribes as well as tribes that are not currently recognized by the federal government.

In the first five years following the passage of the TFPA, over 23,000 acres along 51.5 miles of shared boundary between NFs and Indian lands were treated through collaborative agreements to reduce fuel loads and restore forests for increased fire resiliency. In fiscal year 2024, the USFS participated in 21 TFPA projects involving 46 tribes and over 25 NFs.

There are 109 federally-recognized tribes in California. Interviews with staff indicate that there are no tribal lands that overlap with the Lassen NF, nor customary and traditional use rights held by tribes or local communities. The Lassen LRMP standards and guidelines require that traditional Native American religious rights and practices are protected on the Forest by identifying areas important to local tribes and ensuring traditional rights are not restricted by management activities as required by the American Indian Religious Freedom Act. The Forest has identified several Priority Heritage Assets (PHAs) which are considered to be the most valuable historic properties and can facilitate protection of sacred sites and the continuation of cultural practices. Lassen NF participates in a programmatic agreement between Region 5, the California State Historic Preservation Officer (SHPO) and others to facilitate compliance with Section 106 of the NHPA. The Lassen NF entered into a Memorandum of Understanding (MOU) with both the Greenville Rancheria and the Susanville Indian Rancheria to recognize shared interests and facilitate stronger relationships. The MOU with the Susanville Indian Rancheria expresses the intent to "facilitate meaningful consultation and a shared stewardship approach" for managing the Lassen NF. The MOU emphasizes communication, consultation and collaboration on issues of interest and concern to the Tribe regarding the management of Lassen NF. For example, Lassen NF is working with the Susanville Indian Rancheria to get them qualified to help with wildland fires and are simultaneously developing plans to implement cultural burns which will enhance traditionally important plant species gathered by tribal members for food and cultural practices such as basket making. Permits for collecting firewood on the NF are issued at no cost to tribal members. The permits are issued directly by the tribes within agreed upon amounts allotted to the tribes. Firewood is a key source of heat in the winter. Quarterly information sharing meetings are held with the interested tribes whose ancestral lands overlap with the Lassen NF. Feedback provided by tribes on a recently proposed timber harvest project involving cutting oak trees resulted in modifications to the project design to accommodate concerns.

A 1983 landmark court case in Wisconsin (Voight Decision) affirmed off-reservation fishing and hunting rights retained on lands ceded by Ojibwe (Chippewa) tribes in treaties signed with the US government in 1837 and 1842. The Voight Decision was a key milestone for affirming tribal sovereignty and treaty rights on ceded territories beyond the external boundaries of established Indian reservations and was a significant factor leading to the establishment of the Great Lakes Indian Fish and Wildlife Commission (GLIFWC). Digital maps of ceded territory are maintained by the Great Lakes Indian Fish and Wildlife Commission. Affected tribes have developed and adopted an "Off-Reservation Conservation Code" (Voigt Model Code) that establishes a consistent framework for tribes to control and regulate the exercise of retained right (i.e., fishing, hunting, gathering) on ceded lands outside reservation boundaries.

The Chequamegon-Nicolet NF (CNNF) overlaps with the ceded territory of eleven Ojibwe tribes. Several Ojibwe tribes retained certain rights within ceded territory as a result of the 1837 and 1842 treaties signed with the United States. These rights were later reaffirmed through court action (Voigt Decision) reflected in regulations to govern the exercise of these rights (Voigt Model Code). Other tribes have ancestral lands that overlap with the CNNF, but did not retain rights on off-reservation ceded territories. The CNNF participates in an MOU

signed between Ojibwe tribes and the Eastern Forest Service Region (Region 9) that provides guidance on USFS recognition of tribal sovereignty and implementation of tribal rights on USFS lands. The CNNF has also entered into n MOU with the Forest County Potawatomi Community in support of the Tribes interests, as well as the Red Cliff Band of Lake Superior Chippewa Indians. Tribes can propose projects to the USFS in accordance with the Tribal Forest Protection Act. The CNNF works regularly with Ojibwe tribes and GLIFWC to promote traditional practices of off reservation treaty rights. As an example, the CNNF is currently working with the Lac Vieux Desert Band of Lake Superior Chippewa on a project to increase and enhance wild rice habitat.

The Final Decision Notice for a recently approved project on the CNNF (Landscape Management in the Moose Two Axe Project Area) includes a summary of a comprehensive consultation process involving GLIFWC and regional tribes including the Lac Courte Oreilles Band of Lake Superior Ojibwe (LCO). Consultation and collaboration activities with tribes included several meetings and field visits. Input received from tribes resulted in modifications to the proposed activities.

The Francis Marion NF is located in South Carolina, which is home to one federally-recognized tribe, the Catawba Nation. Additionally, the State of South Carolina recognizes nine Tribes (South Carolina Commission for Minority Affairs, 2024). The Francis Marion LRMP includes four objectives relating to tribal issues, including the development of a Heritage Program Plan and Historic Program Plan in consultation with federally-recognized tribes with ancestral connections to the region. The Forest also intends to nominate three cultural resource areas as Priority Heritage Assets in consultation with local communities and tribes. There do not appear to be any specific use or tenure rights associated with the Francis Marion NF that are held by local communities or tribes.

Risk conclusion and justification

There is a low risk Indigenous Peoples and local communities legal, customary and traditional tenure and use rights are not identified, documented and respected on NFs. The USFS maintains a government-to-government relationship in recognition of the sovereign nation status conferred upon tribes, established through the U.S. Constitution and the treaties entered into with tribes. It is USFS policy to consult with tribes in the implementation of management plans and activities consistent with established treaties and with respect for other reserved rights. These policies are reflected in numerous manuals and handbooks. NEPA processes require the USFS to identify effected communities and use rights, and to consider mitigation actions to avoid or minimize negative socioeconomic and environmental impacts. Tribal Relations staff and/or Heritage Program Officers are located at national and regional offices, as well as within NFs. Interviews with staff, existing MOUs and other formal agreements, as well as LRMPs and project level NEPA documents demonstrate that the USFS is actively engaging with tribes and local communities, identifying and protecting legal, customary, and traditional tenure and use rights, and pursuing opportunities for co-stewardship of NFs with local tribes.

As a federal agency, the USFS shares a federal trust responsibility to protect the safety and well-being of the federally-recognized tribes. The USFS is authorized through 25 USC Chapter 32A to ensure tribal access to NFs to the "maximum extent practicable" for traditional and cultural uses. Several Presidential Executive Orders direct federal agencies to consult with tribes on matters that may affect their rights, resources and interests.

Supply Base Verifiers	▪ Digital maps of ceded territory maintained by the Great Lakes Indian Fish and Wildlife Commission ▪ Ojibwe Treaty Rights; A Guide to Understanding Ojibwe Treaty Rights. Great Lakes Indian Fish & Wildlife Commission. ▪ NF Land Management Plans ▪ Project-level NEPA documents ▪ Timber sale contracts
Evidence reviewed	▪ U.S. Constitution ▪ Treaty with the Ottawa, etc., March 28, 1836 ▪ Treaty with the Chippewa, July 29, 1837 ▪ Treaty with the Chippewa, October 4, 1842 ▪ Organic Act of 1897 ▪ Multiple-Use Sustained-Yield Act (MUSYA) of 1960 ▪ National Historic Preservation Act (NHPA) of 1966 ▪ National Environmental Policy Act (NEPA) of 1970 ▪ Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974 ▪ National Forest Management Act (NFMA) of 1976 ▪ The American Indian Religious Freedom Act of 1978 (AIRFA) (42 U.S.C. § 1996) ▪ The Tribal Forest Protection Act of 2004 ▪ US Code, Title 25, Chapter 32A – Cultural and Heritage Cooperation Authority ▪ Code of Federal Regulations (CFR) Title 36, Section 2.6 - Gathering of plants or plant parts by federally recognized Indian tribes ▪ Code of Federal Regulations (CFR) Title 36, Part 800 Protection of Historic Properties ▪ 2012 Forest Service Planning Rule (36 CFR, Chapter II, Part 219) ▪ Presidential Executive Order 11593 - Protection and Enhancement of the Cultural Environment ▪ Presidential Executive Order 13007 - Indian Sacred Site ▪ Presidential Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, November 6, 2000 ▪ Presidential Memorandum on Tribal Consultation and Strengthening Nation-to-Nation Relationships, January 26, 2021 ▪ Forest Service Manual 1500 External Relations, Chapter 1560 State, Tribal, County and Local Agencies; Public and Private Organizations ▪ FSM 1900, Chapter 1970 Economic and Social Evaluation ▪ FSM 2360 Heritage Program Management ▪ FSM 2400 - Timber Management Forest Service Handbook ▪ Forest Service Handbook (FSH) 1509.13 American Indian and Alaska Native Relations ▪ FSH 1909.12 Land Management Planning ▪ FSH 1909.15 NEPA ▪ FSH 2309.12 Heritage Program Management ▪ FSH 2409.18 - Timber Sale Preparation Handbook ▪ USDA Department Regulation (DR) 1350-002 Tribal Consultation, Coordination, and Collaboration

	▪ Tribal Relations Strategic Plan, Pacific Southwest Forst Service Region 5, FY2023 – FY 2028. ▪ Strengthening Tribal Consultations and Nation to Nation Relationships; A USDA Forest Service Action Plan. FS-1211. USDA Forest Service. February 2023. ▪ Final Revised Land Management Plan, Francis Marion National Forest. R8-MB 151A. USDA Forest Service. January 2017. ▪ Land and Resource Management Plan, Chequamegon-Nicolet National Forests. R9-CN-FP. USDA Forest Service. April 2004. ▪ Land and Resource Management Plan, Lassen National Forest. USDA Forest Service. 1992. ▪ Final Decision and Finding of No Significant Impact, Landscape Management in the Moose Two Axe Project Area, Great Divide Ranger District, Chequamegon- Nicolet National Forest. USDA Forest Service. June 21, 2024. ▪ Memorandum of Understanding, Tribal-USDA Forest Service Relations, National Forest Lands within the Territories Ceded in Treaties of 1836, 1837 and 1842. March 2012. ▪ Memorandum of Understanding, USDA Forest Service Chequamegon-Nicolet National Forest and the Forest County Potawatomi Community. December 14, 2016. ▪ Memorandum of Understanding, USDA Forest Service Chequamegon-Nicolet National Forest and the Red Cliff Band of Lake Superior Chippewa Indians. March 15, 2016. ▪ Memorandum of Agreement between the Red Cliff Ban of Lake Superior Chippewa and the USDA Forest Service – Washburn Ranger District. April 18, 2017. ▪ Voight Treaty Off-Reservation Conservation Code (Revised 4/2018) ▪ Ojibwe Treaty Rights; A Guide to Understanding Ojibwe Treaty Rights. Great Lakes Indian Fish & Wildlife Commission. October 2022. ▪ LAC Courte Oreilles Band of Lake Superior Chippewa Indians v. Voigt. Nos. 78-2398, 78-2443 and 79-1014. United States Court of Appeals, Seventh Circuit. Decided Jan 25, 1983 ▪ Memorandum of Understanding, Susanville Indian Rancheria and USDA Forest Service Lassen National Forest. March 3, 2023. ▪ Programmatic Agreement, USDA Forest Service Pacific Southwest Region (Region 5), California State Historic Preservation Officer, Nevada State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding Processes for Compliance with Section 106 of the National Historic Preservation Act for Management of Historic Properties by the National Forests of the Pacific Southwest Region. 2018.
Risk rating	Low risk

Principle 4 – Feedstock sourcing benefits people and communities	
Criterion 4.2 – **Feedstock sourcing benefits communities.**	
4.2.5	Mechanisms shall be in place for resolving grievances and disputes relating to tenure and use rights of the forest and other land management practices.
Findings	**Scale of assessment** All US National Forests located in the lower (contiguous) 48 states.

Analysis of the legal requirements and best practices

Sampling for this indicator included Region 2, Region 5, Region 8, Nantahala-Pisgah NF, Grand Mesa-Uncompahgre-Gunnison (GMUG) NFs, and Modoc NFs.

Ownership and possession of land, as well as land use rights on NFs, are secured and conveyed through legal processes and legal documents such as property deeds, land titles, and treaties established between the federal government and Native American tribes. Some lands that the Forest Service acquires are subject to previously reserved or outstanding rights (FSM 5470 and FSM 2830). Land ownership status includes information regarding land title as well as rights and obligations associated with each property. Reserved rights are legal rights in property that are retained by the seller when the land is conveyed to the US government. Occasionally the US government may acquire land with outstanding legal rights that have been severed and purchased by third parties prior to being sold to the US government. In each case, legal tenure and use rights are recorded and respected by the USFS.

Numerous laws, associated regulations and USFS manuals and handbooks provide protections and procedures for addressing the acquisition, disposal and transfer of lands with existing encumbrances and outstanding rights attached to the lands. In general, the USFS is disinclined to acquire new lands to include in the NFS if pre-existing encumbrances could interfere with achieving the USFS mission (FSM 5470).

During the initial scoping stages for Forest Service planning processes, including the NEPA process, land tenure and use status is identified. Legal ownership status is documented along with easements, Native American treaty rights and other established use rights. The 2012 Planning Rule requires forest plans to consider "land status and ownership, use, and access patterns relevant to the plan area" (36 CFR Part 219, Section 219.10). This information is contained in publicly available documents used for planning and evaluating proposed activities within the NFS. It is standard procedure, and legally required, for the Forest Service to notify the public of, and provide an opportunity to comment on, proposed actions prior to making a decision.

The Forest Service makes available a formal process for filing objections to land management plans. This process is referred to as a pre-decisional review process and is outlined in 36 CFR Part 219, Planning Subpart B - Pre-Decisional Administrative Review Process (§§ 219.50 - 219.62). The pre-decisional administrative review process for proposed project-level activities is outlined in 36 CFR Chapter II, Part 218.

There are also legal and administrative remedies available for other agencies and the public to challenge Forest Service management plans after a formal decision process has been completed. The Federal Tort Claims Act (FTCA) allows private individuals and organizations to sue the US Government, including the USFS, in federal court for civil wrongdoings that result in loss or harm to the claimant. Real Property Quiet Title Act allows the US Government to be sued in federal court to resolve disputes regarding property ownership and title.

Temporary tenure and use authorizations on NFs are commonly issued by the USFS in the form of permits, leases, or easements using well-established formal procedures. Individuals and organizations can apply for legal permission to utilize specific locations on NFs for defined periods of time, and defined uses. These authorized special uses are not equivalent to rights. A special-use authorization is a legal document that includes terms and conditions and allows occupancy, use, rights, or other privileges of NFS land. Special use applications must meet specific criteria in order to be accepted (36 CFR 251, Subpart B). Accepted applications are then subject to NEPA processes, including public notice and consultation. The objection process is outlined in 36 CFR 218. If a special use is approved and an authorization issued by the USFS, those decisions can be appealed as described in 36 CFR 214. Special use authorizations typically require general liability insurance, and parties issued the authorization assume all risks associated with the use. Resolution of grievances and disputes arising out of the exercise of authorized special uses can be pursued directly with the user through the court system.

Timber sales on NFs are transacted through contracts, permits and other formal agreements. Timber purchasers do not have tenure and use rights that would be subject to a post-decisional appeal process; however, dispute processes are described in contract clauses. All timber sale contracts include standard provisions for resolution of contract disputes (i.e., Timber Sale Contract, Division B, Clause B9.2). In addition, the USFS holds pre-work meetings to review project design features and contract provisions to discuss obligations and avoid subsequent disputes. USFS contracts are subject to the Contract Disputes Act.

Objections and appeals contain processing timeframes within respective regulations (36 CFR 214.12, 36 CFR 214.19, 36 CFR 218.26(b) and 36 CFR 218.32(b), 36 CFR 219.56(g)).

FSM 1570 describes responsibilities for administering appeals and litigation throughout the agency. Protocols are identified for processing appeals. The USFS is directed to "identify and inventory all known and suspected title claims and encroachments." FSM 5400 and FSM 5500 address As stated in FSM 5500, Chapter 5510, the USFS policy is to "provide all parties with fair, uniform and prompt treatment" as allowed by law when resolving title claims and encroachments. Responsibility for litigation is assigned to the U.S. Office of General Counsel (OGC) to provide legal services for all activities of the USDA, including the Forest Service.

FSH 1509.12 sets forth a structured process for the public to file a formal appeal against a decision made by the Forest Service. The Appeals Handbook describes responsibilities for processing and recording results of appeals. Procedures outlined in the Appeals Handbook are intended to supplement similar processes provided by NEPA. FSH 1909.12 Land Management Planning Handbook, Chapter 50 Objection Process provides direction to USFS officials for informing the public of their options for objecting to forest plans, and sets requirements for a process to receive, consider and resolve objections. FSH 5509.12 establishes required procedures for ensuring complete and accurate records are maintained and accessible for all lands within the NFS.

Enforcement, monitoring and outcomes

All properties administered by the USFS are accompanied with detailed legal descriptions and registered at county courthouses as well as in USFS information management systems. A sample quitclaim deed provided an example of the detailed information contained in

property deeds, including verification by appropriate government authorities. The Land Status Records System (LSRS) is the official, permanent repository for all USFS records regarding real estate, land titles and encumbrances (e.g., use rights) on NFS lands. These records are accessible by the public. The USFS posts the most recent Land Areas Report on their website. The USFS maintains the database Title Claims and Encroachments Management System (TCEMS) for storing and accessing records for tenure and use rights, and the Special Uses Data System (SUDS) for recording and managing authorized special uses. Region 8 has over 9,000 special use authorizations on record.

Pre-decisional objection processes are designed to prevent litigation or other downstream challenges by allowing groups to express concerns before a decision is finalized. For example, the USFS has recently completed the revision of the GMUG Land Management plan. Numerous objections were received during the NEPA process for the plan revision. GMUG provided responses to objections, and some changes were made in order to resolve objections. A similar process applies at the project level. For example, interested stakeholders used the project level objection process for the Spruce Beetle Epidemic and Aspen Decline Response project on GMUG NF. GMUG has further held yearly public meetings and field trips and holds an annual comment period on individual projects within the larger landscape. Sample contracts provided during the assessment verify that standard provisions include clauses to prevent and/or address disputes.

Forms are made available to the public to facilitate filing of appeals and disputes regarding proposed decisions and activities. The USFS maintains a website to inform and assist members of the public interested in environmental appeals, objections and litigation. Appeals and objections are tracked at the regional level. USFS responses to pre-decisional objections are intended to be recorded in the Project Activity Level (PAL) database and posted online for each Region. Some USFS staff interviewed indicated that the process of posting responses to objections online has not been consistently followed in the past, however public access is guaranteed through the Freedom of Information Act. Appeals documents are also stored in the project files for access by responsible local USFS staff. Fifteen open court cases have been identified involving the management of NFs, although it is possible that our search did not identify all existing open cases. Most cases involve decisions relating to logging or timber management. One case involves a special permit issued to a water bottling company, and one case involves timber theft in which the US Attorney's General Office has brought a case against a private logging company. Compared to the large number of timber sale projects initiated by the USFS each year, the number of open cases suggests that the USFS is effectively addressing concerns and resolving disagreements from the public regarding tenure and management of NFs. Each case also provides clear evidence of a functional and accessible legal system for resolving disputes that could not be resolved outside the court system.

Region 5, where there are over 100 federally recognized tribes, has made a concerted effort to hire Tribal liaisons on many of the NF's to improve relationships with Native American groups. Tribal Liaison's serve as a resource for local tribes. Additionally, the Modoc NF Contracting Officer is a member of a Tribal Community. On Modoc NF, quarterly consultations are held with tribal representatives to communicate planned proposals for forest management activities and to discuss concerns. Staff interviews indicate there are no current or recent disputes with tribes involving forest management activities on Modoc NF.

	Many NFs are also located in rural areas populated with dispersed residents and small local communities. For example, Modoc NF is located in a very rural area composed of several small towns. Modoc NF staff are integrated in the communities. Local people with concerns typically telephone or visit the USFS office to express concerns directly with USFS staff. As a result, grievances and disputes with local community members tend to be resolved informally or in semi-formal settings. If disagreements can't be resolved through discussions, they would be addressed in the court system. Staff interviewed during the assessment process stated that there have been no forestry disputes in recent memory on the Modoc NF that had to be resolved in the courts **Risk conclusion and justification** There is a low risk grievance and dispute mechanisms are not in place for the resolution of tenure and use rights of the forest and other land management practices on NFs. Current land ownership records are recorded and maintained at county courthouses and on databases administered by the USFS. Land ownership records include legal descriptions of each property as well as all legal use rights and encumbrances. The USFS is legally obligated to consult with interested stakeholders and the general public in advance of implementing proposed decisions and management activities. These consultations provide groups and individuals with processes for expressing concerns throughout the planning process, and to potentially resolve concerns before they become disputes. Processes for formal objections and appeals are readily available and well-known to interested members of the general public and advocacy organizations. The Forest Service pre-decisional review process and remedies associated with proposed projects are outlined in federal regulations. Corollary processes for filing pre-decisional objections at the land management planning level are similarly codified in law. There are also post-decision legal administrative remedies available to other agencies and the public. The U.S. has a robust legal framework for pursuing civil disputes. Disputes involving legal tenure and use rights are typically addressed in the court system if informal resolution is not achieved through arbitration or negotiation. There are ample examples of appeals and lawsuits having been filed in opposition to USFS proposed plans and activities. These records offer strong evidence of a functioning system for resolving disputes.
Supply Base Verifiers	▪ Project-level NEPA documents ▪ NF Management Plan NEPA documents ▪ Online records for USFS responses to pre-decisional disputes ▪ Records of open and active disputes and legal challenges
Evidence reviewed	▪ Federal Tort Claims Act (FTCA) of 1946 ▪ National Environmental Policy Act (NEPA) of 1970 ▪ Real Property Quiet Title Act of 1972 ▪ The American Indian Religious Freedom Act of 1978 (AIRFA) (42 USC § 1996) ▪ Contract Disputes Act of 1978 ▪ 2012 Forest Service Planning Rule (36 CFR, Chapter II, Part 219) ▪ Code of Federal Regulations, Title 36, Chapter II, Part 214 – Post-decisional Administrative Review Process for Occupancy or Use of

	National Forest System Lands and Resources ▪ Forest Service Manual (FSM) 1570 - Appeals and Litigation ▪ FSM 5400, Chapter 5470 - Reservations and Outstanding Rights ▪ FSM 5500, Chapter 5510 – Title Claims and Encroachments ▪ Forest Service Handbook (FSH) - 1509.12 Appeals ▪ FSH 1909.12 - Land Management Planning ▪ FSH 1909.15 - NEPA ▪ FSH 5509.12 - Land Status Records System ▪ Grand Mesa Uncompahgre and Gunnison NFs Revised Land Management Plan. June 2024 ▪ Land and Resource Management Plan, Modoc National Forest. 1991 ▪ Nantahala and Pisgah National Forests Final Land Management Plan, January 2023 ▪ Sample Special Use Permit – FS-2700-3f, V07.2012. ▪ Land Areas of the National Forest System. FS-383. USDA Forest Service. Updated October 2022. ▪ USDA Forest Service Title Claim Information Sheet ▪ USDA Land Acquisition Training Slide Deck. Land Acquisition Section, U.S. Department of Justice. October 20, 2022 ▪ Sample Quitclaim Deed for property in Macon County, North Carolina ▪ Procedures for Potential Claims against and for the Government. National forests in North Carolina. Undated. ▪ USDA Forest Service Right of Access Claim Information Sheet. ▪ Sample Stakeholder Objection Letter re: Spruce Beetle Epidemic and Aspen Decline Management Response, Environmental Impact Statement. Montrose Forest Products LLC. March 17, 2016 ▪ Sample response to objecting stakeholder re: Spruce Beetle Epidemic and Aspen Decline Management Response, Environmental Impact Statement. Deputy Regional Forester, Region 2. USDA Forest Service. May 5, 2016. ▪ Sample Legal Notice of Opportunity to Object, Surface Use Plan of Operations Approvals Associated with North Fork Mancos Master Development Plan for Oil and Gase Exploration and Development, GMUG NF. USDA Forest Service. November 23, 2023. ▪ Sample (redacted) Timber Sale Contract, GMUG NF. USDA Forest Service. September 8, 2021
Risk rating	Low risk

Principle 4 – Feedstock sourcing benefits people and communities	
Criterion 4.2 – **Feedstock sourcing benefits communities.**	
4.2.6	Where Indigenous Peoples' rights are identified in the Supply Base, and Free Prior and Informed Consent (FPIC) has not been achieved for the proposed and planned activities, a consultation and, if required, accommodation process shall be put in place.
Findings	**Scale of assessment** All US National Forests located in the lower (contiguous) 48 states.

Analysis of the legal requirements and best practices

Sampling for this indicator included Region 2, Region 5, Region 8, Six Rivers NF, NFs in Mississippi, and Chequamegon-Nicolet NF.

The trust responsibility conferred upon the federal government through the U.S. Constitution and treaties entered into with tribes requires the USFS to protect the safety and well-being of the tribes. As such, the USFS is legally obligated to protect tribal treaty rights, lands, and resources, and to comply with all federal law regarding federally recognized tribes, including protection of the sovereignty of each tribal government. The federal trust responsibility also requires the USFS to consider the best interests of tribes when taking actions that may impact the tribes, their rights and associated interests. The "supremacy clause" of the US Constitution Article IV, Clause 2) recognizes treaties as the "supreme law of the land" and therefore binding on all state and federal agencies.

There are 346 federally recognized tribes in the continental US. Nearly 400 treaties with Native American tribes were ratified by the US before a law was passed in 1871 prohibiting the US government from entering into any new treaties with tribes. For the most part, tribes ceded the majority of their traditional lands to the United States in exchange for designated areas reserved for the use and occupancy of the tribe. These designated areas are commonly referred to as Indian reservations. Some treaties also include retained rights on ceded lands that extend beyond reservation boundaries. The boundaries of numerous NFs overlap with ceded lands, including some ceded lands with off-reservation rights retained by the tribes. These retained rights are effectively property rights held by the sovereign Native American tribes who signed the treaties. The USFS is directed by law and by policy to ensure the management of NF lands protects retained treaty rights and interests in the resources reserved under applicable treaties.

NEPA requires federal agencies to invite Native American tribes to participate in the scoping process for projects and activities that affect Indian tribes and requires NEPA documentation of environmental impacts. The Federal Land Policy and Management Act (FLPMA) requires NFs to coordinate land use plans with planning and management of tribal land management programs (4 CFR 1712(b)).

The 2012 Forest Service Planning Rule explicitly requires the Forest Service to consult with federally recognized tribes in the development of land management plans consistent with the direction provided in Executive Order (EO) 13175. The Planning Rule requires forest plans to consider "land status and ownership, use, and access patterns relevant to the plan area" (36 CFR 219.10) and requires forest plans to "provide for social, economic, and ecological sustainability" (36 CFR 219.8). Both the Planning Rule and NEPA provide mechanisms for appeals and dispute resolution. A formal pre-decisional review process is available for tribes and other members of the public to file objections to land management plans.

A 1999 memorandum from the Council on Environmental Quality (CEQ) within the Executive Office of the President urges federal agencies to more actively engage with tribal (and other non-federal governments) as "cooperating agencies" in the implementation of NEPA processes. EO 13175 reinforces tribal sovereignty by directing all federal agencies to consult with tribal representatives early in the process when developing rules or policies that may have substantial direct impact on one or more tribes. EO 13175 was further reinforced by a November 2009 Presidential Memorandum on Tribal Consultation, a 2021 Presidential Memorandum on Tribal Consultation and

Strengthening Nation-to-Nation Relationships, and a 2021 Presidential Memorandum on Uniform Standards for Tribal Consultation. A 2021 Joint Secretarial Order from the USDA and US Department of Interior reinforces that federal lands and waters must be managed to protect treaty, religious, subsistence, and cultural interests of federally recognized tribes, and that tribal consultation and collaboration must be implemented as fundamental components of federal land management.

USDA Department Regulation 1350-002 "directs the USDA and its agencies to provide federally recognized tribes the opportunity for government-to-government consultation and coordination in policy development and program activities which have direct and substantial effects on their tribe, thereby ensuring that tribal perspectives on the social, cultural, economic, and ecological aspects of agriculture, as well as tribal food and natural resource priorities and goals are heard and fully considered in the decision-making processes…"

The USFS is one of 17 federal agencies to sign a MOU in 2021 to affirm their "commitment to protect tribal treaty rights, reserved rights and similar tribal rights to natural and cultural resources." The MOU commits the participating agencies to "early consideration of treaty and reserved rights" in planning, decision-making and development of regulations, and to increase coordination among agencies to protect tribal rights and fulfill treaty obligations. A best practices guide has been developed to assist signatory agencies in implementing tribal obligations.

Forest Service Manual (FSM) 1560 establishes the Forest Service policy and objectives for maintaining positive nation-to-nation relationships with tribes. The manual includes comprehensive direction for a range of topics including consultation, coordination and consultation with tribes. Section 1563.2 specifically addresses dispute resolution processes available for tribes and individual tribal members.

The US Government announced its formal support of the UN Declaration on the Rights of Indigenous Peoples (UNDRIP) in 2010. Importantly, FSM 1563 reinforces this commitment and provides guidance to employees for UNDRIP Article 19 which calls for obtaining free, prior, and informed consent (FPIC) from Indigenous peoples. USFS employees are directed to employ FPIC in their decision making with the objective of benefitting tribal communities to the greatest extent practicable and permitted by law.

FSM 1500 External Relations, Chapter 1560, Section 1563 Tribal Relations provides extensive and detailed guidance to USFS employees for "developing, maintaining, and enhancing the Forest Service's relations with Indian tribes." Section 1563.02 instructs employees that the Forest Service has "legally mandated trust responsibilities to consult, coordinate, and communicate with Indian tribes" and lists several important issues including protections of the rights and interests of tribes, acknowledgement and respect for traditional knowledge, and integration of tribal perspectives in decision making. Among the objectives listed in FSM 1560 is that the Forest Service support the aspirations of UNDRIP.

FSM 1570 describes responsibilities for administering appeals and litigation throughout the agency. Protocols are identified for processing appeals. Responsibility for litigation is assigned to the U.S. Office of General Counsel (OGC) to provide legal services for all activities of

the USDA, including the Forest Service.

FSH 1509.12 sets forth a structured process for all members of the public to file a formal appeal to a decision made by the Forest Service. The Appeals Handbook describes responsibilities for processing and recording results of appeals. Procedures outlined in the Appeals Handbook are intended to supplement similar processes provided by NEPA. FSH 1909.12, Chapter 40 provides comprehensive guidance and instruction for engaging the public, including local communities and tribes, throughout forest planning and monitoring processes. FSH 1909.12, Chapter 40, Section 44.3 provides detailed requirements for tribal consultation. FSH 1509.13, Chapter 10 provides Forest Service staff with guidance on how to engage in consultations with tribes, training, and compensation to tribes to facilitate information sharing and participation in decision making. FSH 1909.15 directs the Forest Service to invite the participation of tribes throughout the NEPA process beginning with the initial scoping process, where potential issues associated with the proposed management activity are identified. Forest Service Handbook 1909.17, Section 31.6 directs Forest Service officials to identify special concerns when conducting social analysis for forest plans and projects. Special concerns may include "legal rights and existing privileges of minorities, women, adjacent landowners, local governments, and National Forest users".

Enforcement, monitoring and outcomes

The USFS Office of Tribal Relations provides agency-wide support for strengthening nation-to-nation relationships with tribes in support of sustaining trust responsibilities and treaty obligations; and, to collaborate in shared stewardship of NFS lands. The USFS shares roughly 4,000 miles of boundaries with tribal lands, and the NFS includes lands where tribes maintain legal rights and interests. At the local level, District Rangers and the Forest Supervisor are responsible for government-to-government tribal relationships including resolution of disputes.

Although the U.S. government has formally supported UNDRIP, that endorsement has not been explicitly adopted into enforceable law. However, the UNDRIP declaration of self-determination is consistent with existing federal laws that provide recognition of federally recognized tribes as sovereign nations, and federal trust responsibilities that legally obligate the USFS to protect tribal rights and affected resources on NFs. Additionally, USFS employees are directed to "address the elements of UNDRIP," to fulfill treaty obligations, and to uphold federal trust responsibilities (FSM 1563.02). Article 19 of UNDRIP refers to obtaining free, prior and informed consent from Indigenous Peoples when making decisions that could impact them. The USFS does not have a policy specifically adopting FPIC. However, numerous laws and policies require the USFS to identify potential social and environmental impacts resulting from proposed activities, consult with tribal representatives on issues of concern, consider feedback in the design of projects, and ultimately to protect tribal rights and associated resources. The USFS has also systematically engaged with tribes nationwide to develop co-stewardship land management agreements. The USFS national tribal action plan, and Joint Secretarial Order 3403 all help strengthen and support the USFS trust responsibilities for tribes.

The terms and provisions contained in treaties signed between tribes and the US government vary considerably, including with respect to retained rights. There are no tribes with retained rights in the State of Mississippi. The Mississippi Band of Choctaw Indians (MBCI) is the

only federally recognized tribe in Mississippi. The Choctaw tribe signed the Treaty of Dancing Rabbit Creek with the US government in 1830. Native American tribes signed historic federal treaties before they were forcibly removed from the state of Mississippi in the early 19th century. As a result of the treaty, the Choctaw Tribe ceded all of their lands in Mississippi and agreed to be relocated to other lands in what is today the State of Oklahoma. There are no provisions for retained usufruct rights in the treaty. Interviews with staff indicate there are no outstanding unresolved or ongoing disputes with Native American tribes involving FPIC on NFs in Mississippi, and no formal legal challenges associated with tribal rights. The NFs in MS maintain records of consultation efforts, engagement activities, and partnerships such as the reburial of ancestorial remains that were returned to the tribals under the 1990 Native American Graves Protection and Repatriation Act (NAGPRA).

There are no signed federal treaties for tribes in the geographic area overlapping Six Rivers NF, however, there are 12 Federally recognized and 4 non-Federally recognized tribal groups with aboriginal territory that overlap and are potentially impacted by activities on Six Rivers NF. These 12 tribes are included in consultation for proposed activities on Six Rivers NF. The Six Rivers Hazardous Fuels and Fire Management Project was developed under the National Historic Preservation Act (NHPA) and addresses approximately 1.17 million acres in and around the NF. The plan was developed in consultation with seven tribes and other organizations. Six Rivers NF has also entered into MOUs with at least two tribes. The Forest collaborates with tribal partners in the region. Regional guidance is provided for how to work with tribes and applicable training is provided to staff. There are currently some unresolved issues with local tribes, including concerns relating to conducting cultural burns without federal oversite. There are no current legal disputes with tribes, although there have been past incidents that were addressed through the court system. In one instance that triggered legal action, a tribal cultural site was damaged as a result of logging activity in 2009 on the Orleans Community Fuels Reduction Project (OCFR) occurring on Six Rivers NF. Although the Karuk Tribe was consulted, participated in a collaborative planning process and agreed to the plan, project implementation did not align with expectations. Logging was halted, and the court ruled that Six Rivers NF had violated the NHPA. A formal resolution agreement was reached including the Karuk Tribe. Tribes periodically make requests from the NF, and are permitted without charge, for harvesting forest products, such as redwood logs to make ceremonial canoes.

The Chequamegon-Nicolet NF (CNNF) works directly with 11 Ojibwe tribes to protect their rights and associated resources through regular consultation to identify and consider issues of interest regarding the management of the NF. The CNNF sends a quarterly Schedule of Proposed Actions for upcoming vegetation projects to all tribes that have or had ancestral lands within the proclamation boundary of the National Forest with the invitation to respond with questions or concerns or work toward a more common project goal should one be attainable. CNNF has also entered into formal MOU's with two tribes and participates in co-stewardship projects authorized through the Tribal Forest Protection Act. While not related to forestry or forest management objectives, a proposed pipeline project that runs through the CNNF has been a source of on-going Tribal legal opposition. Thus far a permit for pipeline has not been reissued.

The US Forest Service formed the Office of Tribal Relations in 2004 to "institutionalize long-term consultative and collaborative relationships with tribal governments". The mission of the Office for Tribal Relations which applies to the Forest Service as an agency includes recognition and support for tribal sovereignty and tribal rights and upholding the federal trust responsibility to tribes.

The USFS has collaborated with other federal agencies and the Oklahoma State University to develop an online database of tribal treaties as a resource for the agencies as well as the general public to access treaties and other related documents. The USFS participated in the 2023 White House Tribal Nations Summit . Following the Summit, the USFS developed and released a resource guide to assist tribes in identifying opportunities to participate in new co-stewardship programs and funding initiatives available to tribes to reduce wildfire risk and create healthy and resilient ecosystems.

The Forest Service has earmarked $100 million for agreements that address tribal priorities within Forest Service "mission critical" work. The USFS entered into 120 new tribal co-stewardship agreements in FY2023, which is twice as many co-stewardship agreements entered the previous year, and more than three times the level of investment ($68 million) made the prior year. About 13 agreements representing $37 million were linked to Tribal Forest Protection Act (USDA Forest Service, 2023).

Risk conclusion and justification

There is a low risk tribal rights are not identified on NFs, and that if FPIC is not achieved for the proposed activities, an accommodation process is not put in place. Although USDRIP is not explicitly adopted in US law, and FPIC is not explicitly referenced in US law of USFS policy, the core components of both UDRIP and FPIC are represented in existing laws and policies. Interviews with USFS staff, as well as examples of correspondence and agreements indicate that the USFS is actively engaged in collaboration with neighboring tribes, recognizing their standing as sovereign nations, and incorporating tribal perspectives as appropriate in their management. Tribal rights are identified, respected and protected. On past occasions when tribal interests have not been adequately protected, resolutions have been agreed upon, including measures to prevent similar lapses from occurring in the future.

The USFS is legally obligated and organizationally committed to upholding the federal trust responsibility to federally recognized tribes by protecting tribal rights, resources and associated interests on NFs. Numerous regulations, directives, and agency memorandums encourage and/or require the USFS to strengthen the government-to-government relationship between the United States and Indian tribes, and to ensure meaningful consultation and collaboration with tribal representatives in the development of policies, decisions and proposed activities that have tribal implications.

There is a clear trend for increased USFS commitments to collaboration, cooperation consultation and co-stewardship with tribes, including significant funding to tribes for addressing tribal priorities such as watershed and habitat improvements, restoration, management of invasive species, and fuels reduction. Recently developed strategies, plans, guides as well as accomplishments detailed in annual reports indicate that the USFS and federal government are committed to integrating collaboration and consultation with tribes into their core objectives and standard operating procedures.

Supply Base Verifiers	▪ Digital maps of ceded territory maintained by the Great Lakes Indian Fish and Wildlife Commission ▪ NF Land Management Plans and associated NEPA Documents

	▪ Project-level NEPA documents ▪ Timber sale contracts
Evidence reviewed	▪ US Constitution ▪ National Historic Preservation Act (NHPA) of 1966 ▪ National Environmental Policy Act's (NEPA) of 1969 ▪ National Forest Management Act's (NFMA) of 1976 ▪ Federal Land Policy and Management Act (FLPMA) of 1976 ▪ American Indian Religious Freedom Act of 1978 (AIRFA) ▪ 2012 Forest Service Planning Rule Section (36 CFR 219) ▪ Presidential Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, November 6, 2000 ▪ Presidential Memorandum on Tribal Consultation. November 5, 2009. ▪ Presidential Memorandum on Tribal Consultation and Strengthening Nation-to-Nation Relationships, January 26, 2021 ▪ Joint Secretarial Order on Fulfilling the Trust Responsibility to Indian Tribes in the Stewardship of Land and Waters. No. 3403. November 15, 2021. ▪ Presidential Memorandum on Uniform Standards for Tribal Consultation. November 30, 2022. ▪ USDA Department Regulation (DR) 1350-002 Tribal Consultation, Coordination, and Collaboration. April 30, 2024. ▪ Council on Environmental Quality (CEQ) Memorandum to Heads of Federal Agencies Regarding Designation of Non-Federal Agencies to be Cooperating Agencies in Implementing the Procedural Requirements of the National Environmental Policy Act. July 28, 1999. ▪ Forest Service Manual 1500 External Relations, Chapter 1560 State, Tribal, County and Local Agencies; Public and Private Organizations ▪ FSM 1560 Pacific Southwest Region (Region 5) Supplement. Amendment No. 1500-2007-1. July 25, 2007 ▪ FSM 1500 External Relations, Chapter 1570 Appeals and Litigation ▪ FSH 1509.12 Appeals ▪ FSH 1509.13 American Indian and Alaska Native Relations ▪ FSH 1909.17 Economic and Social Analysis ▪ Land and Resource Management Plan, Chequamegon-Nicolet National Forests. R9-CN-FP. USDA Forest Service. April 2004. ▪ Land and Resource Management Plan, National Forests in Mississippi. USDA Forest Service. August 2014. ▪ Land and Resource Management Plan, Six Rivers National Forest. 1995. ▪ Tribal Relations Strategic Plan, Pacific Southwest Forest Service Region 5, FY2023 – FY 2028. ▪ Memorandum of Understanding Regarding Interagency Coordination and Collaboration for the Protection of Tribal Treaty Rights and Reserved Rights. Signed by 17 US federal Agencies. 2021. ▪ Best Practices for Identifying and Protecting Tribal Treaty Rights, Reserved Rights, and Other Similar Rights in Federal Regulatory Actions and Federal Decision-Making. Working Group of the Memorandum of Understanding Regarding Interagency Coordination and Collaboration for the Protection of Tribal Treaty and Reserved Rights. November 30, 2022. ▪ Strengthening Tribal Consultations and Nation to Nation Relationships; A USDA Forest Service Action Plan. FS-1211. USDA Forest

	Service. February 2023. ▪ Programmatic Agreement, USDA Forest Service Pacific Southwest Region (Region 5), California State Historic Preservation Officer, Nevada State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding Processes for Compliance with Section 106 of the National Historic Preservation Act for Management of Historic Properties by the National Forests of the Pacific Southwest Region. 2018. ▪ Annual Report on Tribal Co-Stewardship. Implementation of Joint Secretarial Order 3403: Fulfilling the Trust Responsibility to Indian Tribes in the Stewardship of Federal Lands and Waters. USDA Forest Service. December 2023. ▪ US Forests and Tribes Progress Update, Spring 2024. USDA. ▪ Resources for Implementing Joint Secretarial Order 3403; Information for Tribes on New Forest Service Programs and Landownership Authorities. FS-1211a. USDA Forest Service. December 2023. ▪ Tribal Relations Strategic Plan, Pacific Southwest Forst Service Region 5, FY2023 – FY 2028. ▪ Letter and Resolution Agreement, Orleans Community Fuels Reduction and Forest Health Project (OCFR), Six Rivers National Forest. August 11, 2008. ▪ Email correspondence between Siv Rivers NF and the Karuk Tribe/Western Klamath Restoration Partnership regarding cultural burning. June 2023. ▪ Summary of Tribal Collaboration and Consultation: Proposed National Old-growth Amendment. USDA Forest Service. April 2024. ▪ Western Klamath Restoration Partnership; A Plan for Restoring Fire Adapted Landscapes. Karuk Tribe and Mid Klamath Watershed Council. June 30, 2014. ▪ Formal Complaint filed by Karuk Tribe et al in the US District Court for the Northern District of California regarding the OCFR Project on Six Rivers NF. May 10, 2010. ▪ Clark, Sara A.; Tripp, Bill; Hankins, Don; Rossier, Colleen E.; Varnay, Abilgail; Nairn, Isobel. Good Fire II. Current Barriers to the Expansion of Cultural Burning and Prescribed Fire Use in the United States and Recommended Solutions. Prepared for the Karuk Tribe. March 5, 2024. ▪ NHPA Training records for Six Rivers National Forest staff. Undated. ▪ Email thread regarding agenda for coordination meeting between the Six Rivers National Forest and the Tolowa Dee-ni' Nation. March 2024. ▪ Memorandum of Understanding between the Hoopa Valley Tribe and the USDA Forest Service, Six Rivers National Forest regarding wildland fire management with the Hoopa Valley Tribal Government. May 2017. ▪ Six Rivers National Forest List of Tribal Groups for Consultation. Undated. ▪ Memorandum of Understanding between the Tolowa Dee-Ni' Nation and the USDA Forest Service, Six Rivers National Forest regarding government to government relations and ongoing collaboration. May 2019. ▪ Heritage Implementation Plan for Six Rivers Hazardous Fuels and Fire Management Project. September 2023. ▪ USDA Forest Service, undated. Region 5 Traditional Gathering Policy pamphlet.
Risk rating	Low risk

Principle 4 – Feedstock sourcing benefits people and communities	
Criterion 4.2 – **Feedstock sourcing benefits communities.**	
4.2.7	Designated cultural heritage sites shall be preserved.
Findings	**Scale of assessment** All US National Forests located in the lower (contiguous) 48 states. **Analysis of the legal requirements and best practices** Sampling for this indicator included Region 2, Region 5, Region 8, Lassen NF, Francis Marion NF, and Chequamegon- Nicolet NF. Section 106 of the National Historic Preservation Act (NHPA) (36 CFR Part 800) specifically addresses protection of historic properties and requires federal agencies like the Forest Service to identify, assess and consider potential impacts of their activities on historic properties. The Advisory Council on Historic Preservation (ACHP) provides guidance and advice and generally oversees the operation of the Section 106 process. The ACHP also consults with and comments to agency officials on individual undertakings and programs that affect historic properties. The ACHP developed an introductory training course for USFS staff on compliance with the NHPA and the USFS National Programmatic Agreement (NPA) for Phasing NHPA Section 106 for multi-year, large-scale projects. The NPA allows the USFS to "phase and defer" the NHPA Section 106 requirements for large scale projects such as wildfire prevention and fuel reduction, forest restoration that occur over extended periods of time. The NPA requires the USFS to consult early and often with tribes and other potentially affected entities and the USFS must develop a Heritage Implementation Plan (HIP) for the project. Section 106 requires agencies to consult with the ACHP, State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (THPO), as well as affected Tribes and other affected parties during each of the four phases of section 106 compliance. By statute, federal agencies must conclude the Section 106 process before approving the expenditure of funds on an undertaking or before the issuance of any license, permit, or approval for an undertaking to proceed. The Antiquities Act provides for the protection of significant cultural sites and other natural and scientific features through the establishment of national monuments. Most national monuments historically managed by the USFS have been transferred to the National Park Service, however the USFS still manages 12 national monuments including several that include Native American archaeological and cultural resources. Examples include Chimney Rock National Monument in Colorado, Baaj Nwaavjo I'tah Kukveni in Arizona, and San Gabriel Mountains National Monument in California. The Native American Graves Protection and Repatriation Act (NAGPRA) requires the USFS (and other federal agencies) to return Native American cultural items to descendants affiliated tribes and also establishes rules for discovery of cultural items on federal lands. The Archaeological Resources Protection Act (ARPA) protects archeological resources (at least 100 years old) on federal lands. ARPA prohibits unauthorized excavation, removal, damage or alteration of archaeological resources and imposes significant penalties and fines for violating the implementing regulations

The 2012 Planning Rule requires the Forest Service to identify and evaluate areas of tribal importance, cultural and historic resources. The Forest Service is further directed to develop guidelines for management and protection of these resources. The Planning Rule also requires the development of a monitoring plan. NEPA establishes a process for all federal agencies to identify uses and resources within the affected environment, and to assess potential impacts to those resources as a result of proposed plans or activities. Cultural and historic resources are explicitly included in the NEPA definition of the human environment.

The Cultural Heritage Cooperation Authority (CHCA) establishes legal requirements for reburial of cultural items in consultation with affected tribes. It also directs federal agencies to withhold public disclosure of locations of cultural resources and provides for the temporary closure of areas within the NFS to protect the privacy of traditional and cultural activities by tribes. The USFS Tribal Relation Program developed a guidebook to assist staff in implementing the Cultural and Heritage Authority (25 USC Chapter 32A). The guidebook provides comprehensive information regarding reburial of cultural resources and other topics related to the CHCA.

Presidential Executive Order (EO) 11593 Presidential Executive Order 13007. Requirements for enhanced consultation with tribes have been addressed in numerous directives and memorandums issued by the President, the USDA, the CEQ, and the Secretaries of the Departments of Agriculture and the Interior.

FSM 1563 provides objectives, policy and responsibilities for Forest Service relations with tribes. Sections 1563.3, 1563.4, 1563.6, and 1563.8f provide direction to Forest Service staff for protection of cultural resources. FSM 2360 establishes a comprehensive framework for implementation of the Forest Service Heritage Program. FSH 2309.12 provides USFS staff with detailed direction for identification, protection and stewardship of cultural and historic resources within NFS lands. Forest Service Handbook (FSH) 1509.13 also provides comprehensive direction to USFS staff for training and tribal consultation.

Enforcement, monitoring and outcomes

The Council on Environmental Quality (CEQ) and ACHP have developed guidance for agencies to integrate compliance with NEPA with compliance with section 106 and where possible to substitute NEPA compliance with section 106 such as public notification and involvement. Primary responsibility for implementing NEPA is vested in the CEQ. Congress placed CEQ in the Executive Office of the President and assigned it with the responsibility to ensure that federal agencies meet their obligations under NEPA.

In 2010, the USFS and the USDA Office of Tribal Relations initiated a review of policies and procedures for the protection of Native American sacred sites, and to investigate potential for improvement. The review process included over 50 listening sessions with members and representatives of Native American communities throughout the US. A draft report was distributed to all federally-recognized tribes for their review, comment and consultation. The final report summarizing the findings and conclusion of the assessment includes 36 recommendations for improving communication, training, staffing, policy, planning, partnerships and on-the-ground protection measures. The report led to a deliberate process to improve the USFS approach to sacred sites and catalyzed improvements to the Forest

Service's relationships with tribes. Numerous changes were implemented as a result of the report including increased staffing, training, enhanced consultation practices, revised regulations, and increased collaboration and partnerships between the USFS and tribes.

The Heritage Program serves as the USFS national lead for protection of cultural resources and the Tribal Relations Program is the lead staff for Indian sacred sites. Heritage staff include professional archaeologists who regularly attend trainings for continuing education. The Heritage Program Manager provides guidance and support to staff at NFs for identification and protection of cultural sites. Non-Heritage staff have formal trainings available to them but are also provided with informal trainings by the Heritage Program staff. According to their webpage for Cultural Heritage, in addition to conducting field survey and collaborating with local tribes, the USFS has used technologies such as LiDAR and ground penetrating radar to locate cultural sites.

Identification of cultural sites typically occurs through the Section 106 review process for proposed projects such as timber sales. Heritage Program staff review proposed projects and conduct additional surveys as needed to identify and evaluate cultural resources. Cultural survey results are summarized in a specialist report and incorporated in the NEPA process and recorded in site records. Information on the location and nature of cultural resources are stored in limited access network folders in the NF database. When a resource is found that requires protection, a shapefile with a 30m protection buffer is provided to the USFS project proponent. For timber sales, known cultural and archaeological resources are identified on maps and/or delineated on the ground as no-entry areas and excluded from the contract.

Cultural resources on NFs are defined as Heritage Assets. In FY2008, there were 370,940 heritage assets identified on NFs. Cultural sites are a subset of heritage assets. Priority Heritage Assets (PHAs) are considered the most significant properties administered by the USFS and are actively maintained. Designation as a PHA can lead to enhanced protections, monitoring and condition assessments by staff specialists trained in archaeology and cultural resources. By 2008, there were approximately 6,200 sites designated as PHAs, representing about 2% of known cultural sites on NFs. The USFS Heritage Program manages PHAs, however persistent funding gaps present challenges for staff to keep up with condition assessments and monitoring. Approximately 80% of PHAs were found to be in fair or good condition in 2008 (Preserve America Progress Report, 2008).

USFS timber sale contract standard provisions prohibit timber purchasers from entering, damaging or disturbing designated protection areas. Purchasers are also contractually obligated to immediately halt operations and notify the USFS if protected areas are inadvertently disturbed (Section B6.24). USFS contract officers have the authority to suspend or terminate contracts if necessary for the protection of cultural resources (Section B.624(iii) / B8.33.(i)).

There are also examples of previously unidentified cultural resources being discovered during project implementation. In these instances, timber purchasers and USFS staff are required to promptly notify the other party of the discovery and corresponding special protection measures. An example of a potential cultural site discovered while preparing to re-open a park on the CNNF was provided. Correspondence between the CNNF Heritage Program Manager and the Wisconsin State Heritage Program demonstrate collaboration with the Forest County Potawatomi Tribe, with precautionary actions taken as requested by the Tribe.

The Chequamegon-Nicolet NF (CNNF) has entered into a Forest wide Programmatic Agreement with the Wisconsin (WI) State Historic Preservation Officer (SHPO) outlining consultation procedures. CNNF also follows the 2004 Forest Plan, the CNNF programmatic guide for operating the Heritage Program, and the FSH 2309.12 regarding the operation of the Heritage Program. The CNNF programmatic guide requires close communication and collaboration with the WI SHPO. Each Ranger District on the CNNF is staffed with a Natural Heritage Program Coordinator trained as an archaeological paraprofessional. Forest wide Goal 2.4 in the 2004 CNNF Land and Resource Management Plan addresses Heritage Resources and includes Objective 2.4.b regarding consultation with tribes. Protection of cultural sites are addressed in Objective 1.2, and 2.4.b. The LRMP also includes guidelines for heritage resources. Refer to Indicators 4.4 and 4.2.6 for additional information regarding CNNF engagement with tribes.

The Francis Marion LRMP includes four objectives relating to tribal issues, including the development of a Heritage Program Plan and Historic Program Plan in consultation with federally-recognized tribes with ancestral connections to the region. The Forest also intends to nominate three cultural resource areas as Priority Heritage Assets in consultation with local communities and tribes.

Lassen NF maintains maps and records of cultural sites identified in the Forest. Lassen NF participates in the Region 5 Programmatic Agreement with the California and Nevada SHPOs and ACHP regarding compliance with Section 106 of the NHPA. Archaeologists are typically tasked with identifying cultural resources, conducting effects analyses, and advising line officers. However, District Rangers and Forest Supervisors are ultimately responsible for protection of cultural resources. There may be instances when an archaeologist identifies a geographic area as containing cultural resources, but the Line Officer can disagree and allow for the implementation of a project to move forward in that area if they feel it is important, for example imminent threat to human health and safety. Staff interviewed acknowledge that accidental damage to cultural sites on projects does occur on occasion, and that members of the public may loot artifacts or damage cultural resources. However, according to the Lassen Archaeologist, the most significant source of damage and sustained risk to cultural sites is catastrophic wildland fire and associated suppression efforts.

Occasionally protection areas have not been sufficiently respected or may be damaged as a result of negligence. In one instance that triggered legal action, a tribal cultural site was damaged as a result of logging activity in 2009 on the Orleans Community Fuels Reduction Project (OCFR) occurring on Six Rivers NF. Although the Karuk Tribe was consulted, participated in a collaborative planning process and agreed to the plan, project implementation did not align with expectations. Logging was halted, and the court ruled that Six Rivers NF had violated the NHPA. A formal resolution agreement was reached including the Karuk Tribe.

There are known cases of cultural resources that have been illegally excavated or collected. Such instances are to be reported to the USFS Law Enforcement Division and pursued through a criminal investigation. Locations of archaeological and cultural sites are considered confidential (43 CFR 7.18) and are not discoverable under the Freedom of Information Act.

	Risk conclusion and justification There is a low risk that designated cultural heritage sites are not preserved. The USFS has developed numerous resources to support staff in the identification and protection of cultural resources, including training, guidebooks, and technological tools. LRMPs set goals, guidance and standards for identification and protection of heritage sites including cultural resources. Correspondence shows that USFS staff are active in pursuing protections for cultural resources as well as in consulting with tribes. NEPA and the 2012 Planning Rule require the USFS to identify cultural resources that may be impacted by management decisions and activities, and to assess potential impacts to those resources. Known cultural sites are identified on maps and delineated on the ground in advance of implementation. Cultural sites are removed from timber sale areas. Timber sale contracts include provisions for protecting cultural resources and are enforced during regular site inspections of timber sales. Staff interviewed demonstrated awareness and knowledge of applicable laws and procedures for identifying and protecting cultural sites, as well as the importance of consulting with local tribes and other experts. While some cultural sites have been damaged either through looting by members of the public, or as a result of project implementation, there is no evidence to indicate those instances are systemic or frequent in occurrence. Records also indicate that the USFS pursues resolution when damage occurs.
Supply Base Verifiers	▪ Timber sale contracts and maps ▪ Project level NEPA documents
Evidence reviewed	▪ Antiquities Act of 1906 ▪ National Historic Preservation Act (NHPA) of 1966 ▪ National Environmental Policy Act of 1969 (NEPA) ▪ Federal Land Policy and Management Act (FLPMA) of 1976 ▪ American Indian Religious Freedom Act of 1978 (AIRFA) ▪ Archaeological Resources Protection Act (ARPA) of 1979 ▪ Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 ▪ Culture and Heritage Cooperation Authority of 2008 (25 U.S.C. Chapter 32(A) ▪ 2012 Forest Service Planning Rule (36 CFR, Chapter II, Part 219) ▪ United States Code (USC), Title 25, Chapter 32A – Cultural and Heritage Cooperation Authority ▪ Presidential Executive Order 11593 - Protection and Enhancement of the Cultural Environment, May 13, 1971 ▪ Presidential Executive Order 13007 - Indian Sacred Sites, May 24, 1996 ▪ Presidential Executive Order 13175 – Consultation and Coordination with Indian Tribal Governments, November 6, 2000 ▪ Presidential Executive Order 13287 – Preserve America, March 3, 2003 ▪ Presidential Memorandum on Tribal Consultation and Strengthening Nation-to-Nation Relationships, January 26, 2021 ▪ Joint Secretarial Order on Fulfilling the Trust Responsibility to Indian Tribes in the Stewardship of Land and Waters. No. 3403. November 15, 2021. ▪ USDA Department Regulation 1350-002, Tribal Consultation, Coordination, and Collaboration, January 18, 2013

- Council on Environmental Quality (CEQ) Memorandum to Heads of Federal Agencies Regarding Designation of Non-Federal Agencies to be Cooperating Agencies in Implementing the Procedural Requirements of the National Environmental Policy Act. July 28, 1999.
- CEQ Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (40 CFR 1500 – 1508)
- Forest Service Manual (FSM) 1560 External Relations – State, Tribal, County and Local Agencies
- FSM 2360 Heritage Program Management
- FSM 2400 Timber Management
- Forest Service Handbook (FSH) 1509.13 - American Indian And Alaska Native Relations
- FSH 1909.17 - Economic and Social Analysis
- FSH 2309.12 - Heritage Program Management
- Timber Sale Contract Division B, Standard Provisions for Scaled Timber Sales. Contract FS-2400-6, Pages 110 through 141 USDA Forest Service. June 2006.
- Land and Resource Management Plan, Chequamegon-Nicolet National Forests. R9-CN-FP. USDA Forest Service. April 2004.
- Land and Resource Management Plan, Lassen National Forest. USDA Forest Service. 1992.
- Final Revised Land Management Plan, Francis Marion National Forest. R8-MB 151A. USDA Forest Service. January 2017.
- National Programmatic Agreement Among the U.S. Department Of Agriculture Forest Service, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers for Phasing Section 106 of the National Historic Preservation Act for Large-Scale Multi-Year Undertakings. 2021.
- Programmatic Agreement, USDA Forest Service Pacific Southwest Region (Region 5), California State Historic Preservation Officer, Nevada State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding Processes for Compliance with Section 106 of the National Historic Preservation Act for Management of Historic Properties by the National Forests of the Pacific Southwest Region. 2018.
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	▪ Programmatic Guide Regarding the Operation, Maintenance and Development of the Heritage Program. Chequamegon-Nicolet National Forest. Revised June 8, 2004. ▪ Email regarding Green Lake Shelter – Discovery. Chequamegon-Nicolet National Forest. Undated. ▪ Letter and Resolution Agreement, Orleans Community Fuels Reduction and Forest Health Project (OCFR), Six Rivers National Forest. August 11, 2008. ▪ Formal Complaint filed by Karuk Tribe et al in the US District Court for the Northern District of California regarding the OCFR Project on Six Rivers NF. May 10, 2010.
Risk rating	Low risk

Annex 2 List of experts consulted and contacts of Working Body

Position Title	Affiliation
Forester	USDA Forest Service, Region 9, Chequamegon-Nicolet NF
Air Resource Specialist	USDA Forest Service, Region 8, Nantahala-Pisgah NFs
Safety Manager	USDA Forest Service, Region 5, Lassen NF
Patrol Officer, Law Enforcement Officer	USDA Forest Service, Region 8, Nantahala-Pisgah NFs
Reality Specialist	USDA Forest Service, Region 5, Lassen NF
Timber Management Officer	USDA Forest Service, Region 5, Six Rivers NF
Timber Sale Contracting Officer	USDA Forest Service, Region 9, Chequamegon-Nicolet NF
NFS Biomass Program Coordinator	USDA Forest Service, Natural Resources, Forest Management/Forest Products
Regional Sale Prep Forester	USDA Forest Service, Region 8, Regional Office
Working Body Member	INCOS Strategies
Ecologist	USDA Forest Service, Region 5, Six Rivers NF
Heritage Program Manager	USDA Forest Service, Region 9, Chequamegon-Nicolet NF
Region 8 Timber Accountant Coordinator	USDA Forest Service, Region 8, Regional Office
Workforce Development	USDA Forest Service, Region 2, Shoshone NF
Silviculturist	USDA Forest Service, Region 8, Nantahala-Pisgah NFs
Fire Program	USDA Forest Service, Region 8, Nantahala-Pisgah NFs
Timber Contract Officer	USDA Forest Service, Region 8, Nantahala-Pisgah NFs
Working Body Member	Cambium Consulting, LLC
Research Forester	USDA Forest Service, Northern Research Station, Forest Inventory and Analysis Program
Timber Contract Officer	USDA Forest Service, Region 5, Modoc NF

Position Title	Affiliation
Hydrologist	USDA Forest Service, Region 2, Shoshone NF
Admin Operations Specialist	USDA Forest Service, Region 5, Lassen NF
Forest Management Director	USDA Forest Service, Region 8, Regional Office
Principal and Head of the Government Affairs & Policy Practice	Cascade Advisory
Entomologist	USDA Forest Service, Region 5, Lassen NF
Supervisory Forester	USDA Forest Service, Region 5, Lassen NF
Timber Contract Officer	USDA Forest Service, Region 8, NFs in Mississippi
Natural Resource Specialist	USDA Forest Service, Region 2, Shoshone NF
Reality Specialist	USDA Forest Service, Region 2, Shoshone NF
Renewable Resources Director	USDA Forest Service, Region 2, Regional Office
Natural Resources Staff Officer	USDA Forest Service, Region 9, Chequamegon-Nicolet NF
Director, Office of Tribal Relations	USDA Office of Tribal Relations
Ecologist/Botanist	USDA Forest Service, Region 5, Modoc NF
Wildlife Biologist	USDA Forest Service, Region 8, Nantahala-Pisgah NFs
Silviculture	USDA Forest Service, Region 8, Nantahala-Pisgah NFs
Fish and Wildlife	USDA Forest Service, Region 8, NFs in Mississippi
Hydrologist	USDA Forest Service, Region 8, Nantahala-Pisgah NFs
Fisheries Biologist	USDA Forest Service, Region 5, Six Rivers NF
Public Services Staff Officer	USDA Forest Service, Region 5, Six Rivers NF
Area Geneticist	USDA Forest Service, Region 8, Nantahala-Pisgah NFs
Management Operations Staff Officer	USDA Forest Service, Region 5, Six Rivers NF

Position Title	Affiliation
Working Body Member	Dovetail Partners, Inc.
Renewable Resources Staff Officer	USDA Forest Service, Region 2, GMUG NF
Deputy Forest Supervisor	USDA Forest Service, Region 8, Nantahala-Pisgah NFs
Forester	USDA Forest Service, Region 5, Lassen NF
Environmental Coordinator	USDA Forest Service, Region 5, Modoc NF
Administrative Officer	USDA Forest Service, Region 5, Modoc NF
Public Affairs Officer	USDA Forest Service, Region 2, Shoshone NF
Stewardship Contracting, Good Neighbor Authority, and Collaborative Forest Landscape Restoration Program Coordinator	USDA Forest Service, Region 8, Regional Office
Silviculturist	USDA Forest Service, Region 2, GMUG NF
LEO Patrol Captain	USDA Forest Service, Region 2, Shoshone NF
Supervisory Forester	USDA Forest Service, Region 2, Shoshone NF
Wood Innovation Specialist	USDA Forest Service, State, Private and Tribal Forestry
Fire Planning	USDA Forest Service, Region 2, Shoshone NF
Natural Resource Staff Officer	USDA Forest Service, Region 8, NFs in Mississippi
Regional Silviculturist	USDA Forest Service, Region 8, Regional Office
Timber Program Manager	USDA Forest Service, Region 2, GMUG NF
Soil Scientist	USDA Forest Service, Region 8, Francis Marion and Sumter NF
Vegetation Program Manager	USDA Forest Service, Region 5, Six Rivers NF
Public Affairs Staff Officer	USDA Forest Service, Region 8, Nantahala-Pisgah NFs
Botanist/Ecologist	USDA Forest Service, Region 8, Nantahala-Pisgah NFs
Forest Supervisor	USDA Forest Service, Region 8, NFs in Mississippi

Position Title	Affiliation
Administrative Officer	USDA Forest Service, Region 9, Chequamegon-Nicolet NF
Fire Staff Officer	USDA Forest Service, Region 8, Nantahala-Pisgah NFs
Fire Staff Officer	USDA Forest Service, Region 2, Shoshone NF
Timber Resource Specialist	USDA Forest Service, Region 8, Nantahala-Pisgah NFs
Ecosystem Staff Officer	USDA Forest Service, Region 5, Modoc NF
Fire and Fuels Specialist	USDA Forest Service, Region 2, GMUG NF
Archaeologist	USDA Forest Service, Region 8, NFs in Mississippi
Senior Research Fellow	University of Massachusetts Amherst, Family Forest Research Center
Lead Forestry Technician	USDA Forest Service, Region 5, Lassen NF
GIS Specialist	USDA Forest Service, Region 8, Nantahala-Pisgah NFs
District Silviculturist/GIS Coordinator	USDA Forest Service, Region 8, NFs in Mississippi
Forest Supervisor	USDA Forest Service, Region 8, Nantahala-Pisgah NFs
Forest Products Resource Specialist	USDA Forest Service, Region 2, GMUG NF
Administration Officer	USDA Forest Service, Region 8, Nantahala-Pisgah NFs
Forest Supervisor	USDA Forest Service, Region 8, Francis Marion and Sumter NF
Engineering and Minerals NEPA Specialist	USDA Forest Service, Region 2, GMUG NF
National Program Lead – Mass Timber & BIL	USDA Forest Service, State, Private and Tribal Forestry
Timber Sale Administrator	USDA Forest Service, Region 5, Lassen NF
Watershed Program Manager	USDA Forest Service, Region 2, GMUG NF
Environmental Coordinator	USDA Forest Service, Region 8, Nantahala-Pisgah NFs
Fuels Specialist	USDA Forest Service, Region 2, Shoshone NF
Timber Sale Contracting Officer	USDA Forest Service, Region 9, Chequamegon-Nicolet NF

Position Title	Affiliation
Ecologist	USDA Forest Service, Region 2, GMUG NF
Soil Scientist	USDA Forest Service, Region 5, Lassen NF
Timber Sale Contracting Officer	USDA Forest Service, Region 2, GMUG NF
Wildlife Biologist	USDA Forest Service, Region 2, Shoshone NF
Biologist and Timber Staff Officer	USDA Forest Service, Region 8, Nantahala-Pisgah NFs
Regional Hydrologist	USDA Forest Service, Region 8, Regional Office and NFs in Mississippi
Administrative Officer	USDA Forest Service, Region 2, GMUG NF
Natural Resource Specialist	USDA Forest Service, Region 8, Regional Office
Program Manager	USDA Forest Service, Region 5, Six Rivers NF
Timber Sale Contracting Officer	USDA Forest Service, Region 2, Shoshone NF
Regional Silviculturist	USDA Forest Service, Region 8, Regional Office
Soils/Hydrologist	USDA Forest Service, Region 2, GMUG NF
Range/Invasive Plants Specialist	USDA Forest Service, Region 2, GMUG NF
Sales Prep Forester/Silviculturist	USDA Forest Service, Region 5, Modoc NF
Data Services Specialist	USDA Forest Service, Region 8, Regional Office
Botanist	USDA Forest Service, Region 5, Lassen NF
Soil Scientist	USDA Forest Service, Region 2, Shoshone NF
NEPA Objections and Litigation Coordinator	USDA Forest Service, Region 5, Six Rivers NF
Sales Forester	USDA Forest Service, Region 8, Francis Marion and Sumter NF
Ecologist	USDA Forest Service, Region 2, GMUG NF
Silviculturist	USDA Forest Service, Region 9, Chequamegon-Nicolet NF
Timber Contract Officer	USDA Forest Service, Region 8, Francis Marion and Sumter NF

Position Title	Affiliation
Wildlife Biologist	USDA Forest Service, Region 5, Modoc NF
Safety Manager	USDA Forest Service, Region 2, GMUG NF
Forest Planner	USDA Forest Service, Region 2, GMUG NF
Forest Engineer	USDA Forest Service, Region 5, Lassen NF
Deputy Forest Supervisor	USDA Forest Service, Region 8, Francis Marion and Sumter NF
Wood Innovations Coordinator	USDA Forest Service, Region 8, Regional Office
Forestry Technician	USDA Forest Service, Region 2, Shoshone NF
Administration Officer	USDA Forest Service, Region 8, NFs in Mississippi
Land Surveyor	USDA Forest Service, Region 2, Shoshone NF
Special Projects Forester	USDA Forest Service, Region 2, GMUG NF
Forest Fire Management Officer	USDA Forest Service, Region 2, Shoshone NF
Forester	USDA Forest Service, Region 9, Chequamegon-Nicolet NF
Tribal Relations Specialist	USDA Forest Service, Region 2, Shoshone NF
Wildlife Program Manager	USDA Forest Service, Region 2, GMUG NF
Region Geneticist	USDA Forest Service, Region 8, Regional Office
Timber Program Manager	USDA Forest Service, Region 9, Chequamegon-Nicolet NF
Natural Resource Staff Officer	USDA Forest Service, Region 8, Francis Marion and Sumter NF
Natural Resources Staff Officer	USDA Forest Service, Region 8, Francis Marion and Sumter NF
Air Resources Forester	USDA Forest Service, Region 9, Chequamegon-Nicolet NF
Administrative Officer	USDA Forest Service, Region 5, Six Rivers NF
Wildlife Program Manager	USDA Forest Service, Region 5, Six Rivers NF
Wildlife and Fisheries Specialist	USDA Forest Service, Region 8, Nantahala-Pisgah NFs

Position Title	Affiliation
Human Resources Specialist	USDA Forest Service, Region 2, GMUG NF
Assistant Director of Forest Management and Timber	USDA Forest Service, Region 8, Regional Office
District Ranger	USDA Forest Service, Region 8, NFs in Mississippi
Forest Archaeologist	USDA Forest Service, Region 2, Shoshone NF
Silviculturist/Timber Management Assistant	USDA Forest Service, Region 8, Francis Marion and Sumter NF
Forest Products Resource Specialist	USDA Forest Service, Region 2, GMUG NF

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Annex 4 List of Stakeholders

Summary of Stakeholders Consulted **[Note: the summary table is representative of the current list of stakeholders to be consulted.]**

Stakeholder Category	Number
Academia & Research Organization	26
Advocacy Organizations	42
Certification Programs	11
Environmental Conservation Organizations	14
Federally Recognized Indian Tribes	7
Forest Contractors	23
Forestry and Forest Products Industry	62
Forestry Consultants	11
Local Community Representatives	29
Professional Associations	65
Worker Associations	3
Other	2
Total - All Categories	293

No.	Organization	Type of organization

Annex 5 Stakeholder consultation report (Note: To be completed after the completion of the public consultation)

Stakeholder	Comment	Response

Sustainable harvesting criteria 29(6)	
The country in which forest biomass was harvested has national or sub-national laws applicable in the area of harvest as well as monitoring and enforcement systems in place ensuring:	
(i) The legality of harvesting operations	
Step 1: Identification of applicable laws	
Have the applicable law(s) been identified?	☒ Yes ☐ No, Level B route is required
List of applicable law(s)	▪ Multiple-Use Sustained Yield Act of 1960 ▪ National Environmental Policy Act (NEPA) of 1969 ▪ Clean Water Act of 1972 ▪ Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974 ▪ National Forest Management Act (NFMA) of 1976 ▪ Code of Federal Regulations Title 36, Part 220 - National Environmental Policy Act Compliance ▪ Code of Federal Regulations Title 36, Section 223.30 - Consistency with plans, environmental standards, and other management requirements ▪ Code of Federal Regulations Title 40, Parts 1500 – 1508 ▪ 2012 USFS Planning Rule (36 CFR Part 219) ▪ Convention on International Trade in Endangered Species (CITES) *Also, refer to Annex 3, Applicable Laws and Regulations*
Sources	▪ Forest Service Manual 1000 – Laws Regulations and Orders ▪ Grand Mesa, Uncompahgre, and Gunnison (GMUG) NF Revised Land Management Plan, Appendix 5. June 2024 ▪ Chequamegon-Nicolet National Forest, Land and Resource Management Plan. Appendix AA. April 2004.
Step 2: Description of enforcement and monitoring	
Description of the practical implementation of the law(s)	All forest management plans must be developed and approved in accordance with MUSYA, NEPA, NFMA, the 2012 Planning Rule and other applicable laws. All applicable laws and regulations are listed within each US Forest Service (USFS) manual and handbook, which provide the operational guidance and instruction for USFS staff to implement all aspects of their work. NEPA requires public consultation as a fundamental component of scoping and developing management plans and significant management activities. According to FSM 1000, Section 1011, USFS supervisors are required to make sure "employees are aware of the provisions of law applicable to their responsibilities and that Forest Service programs and operations are administered in compliance with applicable laws." All position descriptions include a section on laws, regulations and policies. Further, the USFS Director of Legislative Affairs is responsible for ensuring operational units within the Forest Service are informed of the relevant content of major laws relating to Forest Service activities, including notification of newly approved statutes. The primary federal statutes guiding the sale of timber from Forest Service lands are listed in FSM 2400, section 2401. Timber sale contracts and permits are legal agreements used to transact all timber purchases from USFS-managed lands. Timber sale administrators regularly conduct site inspections to ensure compliance with contract provisions. Procedures are in place for suspension or termination of timber sale contracts in the event of breach of terms. Timber sale records, including inspection reports, are filed in one of several modules maintained within the USFS Natural Resource Manager (NRM) program including the Forest Activity Tracking System (FACTS), Timber Information Manager (TIM), and the Forest Products Financial System (FPFS). Timber and Log Accountability

	Audits are conducted at minimum once every three years on each NF. The USFS operates a Law Enforcement and Investigations (LEI) Division, which works alongside resource management staff to uphold federal laws and regulations on National Forests. All incidents and violations are recorded in Law Enforcement Management Attainment System (LEIMARS) from discovery through case closure. There are no tree species endemic, introduced, or commercially harvested on, US National Forests (NFs).
Sources	▪ Forest Service Manual 2400 – Timber Management ▪ Forest Service Manual 5300 – Law Enforcement ▪ Forest Service Handbook 2409.12b – Timber and Forest Products Trespass/Theft Procedures ▪ Forest Service Handbook 2409.15 – Timber Sale Administration ▪ Forest Service Handbook 2309.18a – Debarment and suspension Procedures ▪ Forest Service Handbook 5309.11 – Law Enforcement ▪ National Forest Timber and Log Accountability Audit, Chequamegon-Nicolet National Forest, Medford-Park Falls Ranger District. April 18-20, 2017.
Is the enforcement and monitoring ensured for the identified law(s)?	☒ Yes ☐ No, Level B route is required
Step 3: Evaluation of the effectiveness of the legal framework on the legality of timber harvesting	
Evaluation of the practical implementation of the law(s) and explanation for the evaluation	Overall, the USFS possess a well-defined framework with clearly established responsibilities and lines of authority that ensure laws and regulations are monitored and enforced on National Forests. The USFS is subject to a comprehensive suite of laws and regulations that govern all aspects of their operations. Manuals and handbooks contain detailed protocols that direct the USFS in implementing day-to-day responsibilities. Robust public engagement, including participation by local regional and national advocacy groups, effectively provides external oversight of agency decisions.
Sources	▪ LEI Reports ▪ Timber Sale Inspection Reports ▪ Interviews with USFS Staff
Is legal framework effective?	☒ Yes, National Forests administered by the USDA Forest Service located in the contiguous US. ☐ No, Level B route is required for wood sourced from private woodlots not under the provincial assistance program
Sustainable harvesting criteria 29(6)	
(ii) Forest regeneration of harvested areas	
Step 1: Identification of applicable laws	
Have the applicable law(s) been identified?	☒ Yes ☐ No, Level B route is required
List of applicable law(s)	▪ Organic Administration Act ▪ Knutson-Vandenberg (K-V) Act ▪ Bankhead-Jones Farm Tenant Act ▪ Anderson-Mansfield Reforestation and Revegetation Act ▪ Multiple-Use Sustained-Yield Act (MUSYA) ▪ National Environmental Policy Act (NEPA) ▪ Forest and Rangeland Renewable Resources Planning Act (RPA) ▪ National Forest Management Act (NFMA) ▪ Reforestation Trust Fund, Title III - Recreational Boating Safety and Facilities Improvement Act ▪ Repairing Existing Public Land by Adding Necessary Trees (REPLANT) Act ▪ 2012 USFS Planning Rule (36 CFR Part 219)
Sources	▪ Forest Service Manual 1000 – Laws Regulations and Orders ▪ Grand Mesa, Uncompahgre, and Gunnison (GMUG) NF Revised Land

	Management Plan, Appendix 5. June 2024 ▪ Chequamegon-Nicolet National Forest, Land and Resource Management Plan. Appendix AA. April 2004.
Step 2: Description of enforcement and monitoring	
Description of the practical implementation of the law(s)	The NFMA requires that forest areas subject to timber production must be capable of being adequately restocked within five years of harvest. The NFMA further requires that harvested areas be inspected after the first and third years after harvest to ensure adequate stocking has occurred. Harvested areas that are not sufficenctly resocked are required to be promptly rescheduted for supplemental reforestation. The K-V Act allows the USFS to direct a percetage of timber revenues toward reforestation needs, providing a continuous source of funding for regneration of harvested forest areas. In 1980, the US Congress inserted a 'rider' in the Recreational Boating Safety and Facilites Improvement Act to establish the Reforestation Trust Fund and allocate up to $30 million annually from tariffs collected on imported wood products to address reforestation needs on NFs. In 2021, the REPLANT Act lifted the $30 million cap established in 1980 and has significantly increased funding for reforestation projects, primarily in response to backlogs created by overall reductions in timber harvest volume from NFs, and increased reforestation needs caused by large-scale natural disasters, particularly wildfire. Forest Service Manual (FSM) 2400, Chapter 2470 provides policies guidance and authorities for implementing and monitoring silvicultural practices employed on NFs, including regeneration and associated activities. Forest Service Handbook. Forest Service Handbook (FSH) 2409.17 provides detailed instructions for The USFS developed a national reforestation strategy in 2022 to address increasing urgency in reforestation needs on NFs resulting from wildfire and other natural disasters. The USFS found that 10% of the agency's reforestation needs result from timber harvesting, and 1% from failed reforestation efforts. Fully 81% of reforestation needs are caused by wildfire, putting increased stress on the USFS overall reforestation program. The USFS is currently developing plans with specific objectives and actions for implementation of the REPLANT Act at the national and regional scale. Reforestation and Timber Stand Improvement reports are posted annually. Annual accomplishments are provided for tree planting, seeding, site-preparation for natural regeneration and other activities associated with establishing and enhancing reforestation stocking on NFs. Annual reports are also produced summarizing reforestation needs according to causal agents. In FY2023, the USFS reported completion of tree planting on 94,262 acres, seeding on 7,526 acres, site preparation for 30,468 of natural regeneration, and 77,515 acres of natural regeneration without site preparation for a sum total of 209,771 acres of reforestation activities.
Sources	▪ National Forest System Reforestation Strategy. FS-1198. July 2022 ▪ REPLANT Act National Summary for Fiscal Year 2022 ▪ Annual Reforestation and Timber Stand Improvement Report, Fiscal Year 2023 ▪ Grand Mesa, Uncompahgre, and Gunnison (GMUG) NF Revised Land Management Plan, Appendix 5. June 2024 ▪ Forest Service Manual 2400, Chapter 2470 – Silvicultural Practices ▪ Forest Service Handbook ▪ Forest Service Handbook (FSH) 1909.12 Chapter 60 Forest Vegetation Resource Management ▪ Forest Service Handbook (FSH) 2409.13 Timber Resource Planning ▪ Forest Service Handbook (FSH) 2409.14 Timber Management Information System ▪ Forest Service Handbook (FSH) 2409.17 Silvicultural Practices ▪ Forest Service Handbook (FSH) 2409.19 Renewable Resources
Is enforcement and monitoring ensured for the	☒ Yes ☐ No, Level B route is required

identified law(s)?	
Step 3: Evaluation of the effectiveness of the legal framework on the legality of timber harvesting	
Sources	▪ REPLANT Act National Summary for Fiscal Year 2022 ▪ Annual Reforestation and Timber Stand Improvement Report, Fiscal Year 2023 ▪ Annual Reforestation and Timber Stand Improvement Report, Fiscal Year 2022 ▪ Appendix B: Reforestation Needs, 2023 National Summary ▪ Appendix B: Reforestation Needs, 2022 National Summary ▪ U.S. Department of the Interior and U.S. Department of Agriculture: Reforestation Goals and Assessments, and a Climate-Informed Plan to Increase Federal Seed and Nursery Capacity. April 2023
Evaluation of the practical implementation of the law and explanation for the evaluation	An April 2023 assessment of reforestation needs and associated targets on NFs indicates a backlog of 3.6 million acres, mostly resulting from recent wildfires (more than 2.5 million acres burned with high severity in 2020 and 2021). The report identified average annual reforestation accomplishments of 190,000 acres, and a target of completing 1.8 million acres of reforestation by 2030 based on projected staffing and funding levels. As previously noted, the USFS produces annual accomplishment reports detailing completion of various activities associated with reforestation, e.g., tree planting, seeding, and site prep for natural regeneration. The 2023 report indicates a total of 209,771 acres of reforestation activities completed. A companion annual report summarizing indicates a total of 178,919 acres of reforestation needs associated with timber harvesting in 2023. Information was not provided for the annual area (acres) treated with regeneration activities associated with timber harvests, preventing an assessment of whether the USFS is completing reforestation needs caused by timber harvesting. The most recent REPLANT Act National Summary reports a total of 179,858 acres reforested in FY2022. Fire, insects, disease and weather events accounted for 98,623 acres (54.8%), harvesting led to 72,441 acres (40.2%), and failed earlier reforestation activities resulted in 3,344 acres (1.9%). Reforestation needs attributed to harvest activities in 2022 were reported to be 157,192 acres (Appendix B: Reforestation Needs, 2023 National Summary). These data are taken from two separate reports, and it is not clear whether they can be appropriately compared to each other to assess whether the USFS is keeping up with reforestation needs generated by timber harvesting. Additionally, because the USFS mandate is to sufficiently reforest areas treated with regeneration harvests within five years of harvest, there is no need or requirement to reforest an area equivalent to harvested acres on an annual basis. It is clear that the USFS as an organization has been significantly burdened by increases in the area impacted by catastrophic natural disturbances, predominantly wildfire, including challenges in both triaging areas with the greatest risks to further ecosystem damage (e.g., flooding, landslides, degraded water quality, invasive species), as well as reforesting areas that are below established target stocking levels. The USFS National Reforestation Strategy, and increased allocation of resources for reforestation activities resulting from the REPLANT Act, are both indicative of the high priority the USFS has placed on closing the gap on the backlog of reforestation needs which are driven mostly (over 80%) by wildfire. From 2021 to 2022, the agency increased funding for reforestation activities in the field by over 300%. Additionally, the USFS continually harvests substantially less than annual net growth.
Is legal framework effective?	☒ Yes, for National Forests administered by the USDA Forest Service located in the contiguous US ☐ No, Level B route is required for wood sourced from private woodlots not under the provincial assistance program
Sustainable harvesting criteria 29(6)	

(iii) That areas designated by international or national law or by the relevant competent authority for nature protection purposes, including in wetlands and peatlands, are protected unless evidence is provided that the harvesting of that raw material does not interfere with those nature protection purposes	
Step 1: Identification of applicable laws	
Have the applicable law(s) been identified?	☒ Yes ☐ No, Level B route is required
List of applicable law(s)	▪ Wilderness Act ▪ National Environmental Policy Act (NEPA) ▪ Endangered Species Act (ESA) ▪ Clean Water Act (CWA) ▪ National Forest Management Act (NFMA) ▪ 2012 Forest Service Planning Rule (36 CFR Part 219) ▪ Code of Federal Regulations Title 40, Parts 1500 – 1508 ▪ Code of Federal Regulations Title 36, Part 220 ▪ 2001 Roadless Area Conservation Rule
Sources	▪ Forest Service Manual 1900, Chapter 1950, Environmental Policy, and Procedures ▪ Forest Service Manual 2000, Chapter 2020 Ecosystem Restoration ▪ Forest Service Manual 2600, Chapter 2670 - Threatened, Endangered and Sensitive Plants and Animals ▪ Forest Service Handbook 1509.12 Appeals Handbook ▪ Forest Service Handbook 1909.12 Chapter 30 Monitoring ▪ Forest Service Handbook 1909.12 Land Management Planning Handbook ▪ Forest Service Handbook 1909.14 Resource Inventory Handbook ▪ Forest Service Handbook 2090.11 Ecological Classification And Inventory Handbook ▪ Forest Service Handbook 1909.15 National Environmental Policy Act Handbook ▪ Forest Service Handbook 2409.15 – Timber Sale Administration Handbook ▪ Final Environmental Impact Statement for the Land and Resource Management Plan, National Forests in Mississippi. R8-MB 144 B. USDAA Forest Service. August 2014.
Step 2: Description of enforcement and monitoring	
Description of the practical implementation of the law(s)	The Forest Service uses special land designations to ensure key species, habitats, ecosystems, and other areas of high conservation value pertaining to biodiversity are protected in perpetuity. Currently more than 400 distinct Wilderness Areas representing nearly 32 million acres have been formally designated on National Forests by acts of the US Congress. Similarly, the Wild and Scenic Rivers Act of 1968 provides protection for water quality, habitat, and recreation on nearly 5,000 river miles on National Forests. Formal designation as a Wilderness Area or a Wild and Scenic River segment clearly addresses HCV 1 Species Diversity, HCV 2 Landscape Level Ecosystems, HCV 3 Ecosystems and Habitats and HCV 4 Ecosystem Services. In addition, the USFS has designate 58.5 million acres as roadless areas, representing 31% of the NFS lands. These designations were made under the Roadless Area Conservation Rule, which prohibits roadbuilding and timber harvesting with defined exceptions. The USFS is legally obligated by numerous federal laws (listed above) that prohibit degradation of forests, wetlands, grasslands and other native ecosystems. The USFS is mandated by these laws to manage the NFS "to sustain the multiple use of its renewable resources in perpetuity while maintaining the long-term health and productivity of the land" (36 CFR 219.1(b) & (c)). The NFMA, NEPA, CWA, and the 2012 Planning Rule all include requirements that effectively limit conversion of forests, wetlands, and native grasslands to other uses. As a result of the regulatory framework that mandates the USFS to consistently emphasize ecosystem health and integrity in the development of LRMPs and project level activities, any conversion of natural ecosystems to other uses would need to be justified and managed to limit environmental impacts to the extent feasible. The cumulative effect of these laws and directives effectively discourages land conversion away

	from natural ecosystems. Each NF develops a monitoring and evaluation strategy as part of the Forest Plan. When developing a monitoring strategy, the regional forester is required to coordinate with the relevant responsible officials, Forest Service State, Private and Tribal Forestry and Research and Development, partners, and the public. Detailed biodiversity and HCV descriptions are found in specialists reports divided by topic such as aquatic resources, watershed, rare plants, potential wilderness areas, recreation, wildlife, roadless areas and heritage. Once identified, an Environmental Impact Statement (EIS) or Environmental Assessment (EA) describes how the proposal and action alternatives can impact biodiversity. Stand biodiversity characteristics are restored, maintained, improved via silvicultural prescriptions, following BMPs, and implementation of specific conservation measures outlined in the Forest plan and identified at the project level through NEPA processes. Prescribed fire, commercial timber harvesting, and precommercial thinning are typical management actions taken on many NFs to maintain or enhance key biodiversity attributes and resources Forest Plans, NEPA documents (e.g., environmental impact statements, environmental assessments), project level planning and assessment documents (e.g., LSR assessment, biological assessments), and readily available tools and resources (e.g., IPaC, ECOS, State Heritage Programs) provide evidence that laws, regulations and best practices for identifying key species, habitats, ecosystems and biological HCVs are consistently implemented. All forest management plans and significant management activities such as timber harvesting are subjected to formal and comprehensive environmental review as required of NEPA. Consistent with the 2012 Planning Rule, all forest management plans must include provisions for identification, maintenance and restoration of water resources, specifically including wetlands. Peatlands are a type of wetland. Further, forest plans are required to maintain or restore the ecological integrity of all terrestrial ecosystems, and therefore forest degradation and forest conversion to other uses is not consistent with Forest Service mandates. These requirements are stipulated in the National Forest Management Act, the 2012 USFS Planning Rule (36 CFR Part 219, section 219.11) and FSH 1909.12 Chapter 60 - Forest Vegetation Resource Management. All project-level activities occurring in National Forests are verified as consistent with the approved forest plan through the NEPA process, as described in the corresponding NEPA approval document (36 CR 219.15). NEPA is enforced through a variety of reviews and approvals beginning with the agency-designated Responsible Official (decision-maker). Primary responsibility for ensuring proper implementation of NEPA is vested in the Council on Environmental Quality (CEQ), which was established by Congress through the enactment of NEPA. CEQ is located in the Executive office of the President of the United States. All timber harvesting operations that place forest products on the commercial marketplace timber sales on lands administered by the USDA Forest Service are transacted through formal contracts or permits. These timber sale contracts/permits are comprehensive documents that address a wide range of issues. NEPA processes and associated specialists reports (e.g., wildlife report, water resources report, soils report, etc.) identify protection measures that serve as integrated design features which are subsequently incorporated into silvicultural prescriptions and timber sale contracts/permits. Site protection measures are reflected in standard contract provisions (applicable to all contracts), and special provisions (specific to a particular contract). Conducting regular site inspections of timber sale operations is standard operating procedure for all timber sales occurring on NFs. These inspections review and evaluate all aspects of the logging operations. Inspections are conducted "as often as is necessary" to ensure compliance with timber sale contract provisions. Contract terms allow for suspension or termination of the contract for Timber sale inspections are documented and incorporated into the contract file.

Sources	▪ Forest Service Manual (FSM) 1900, Chapter 1950, Environmental Policy, and Procedures ▪ FSM 2000, Chapter 2020 Ecosystem Restoration ▪ FSM 2400 Timber Sales ▪ FSM 2520 Watershed Protection and Management ▪ FSM 2600, Chapter 2670 - Threatened, Endangered and Sensitive Plants and Animals ▪ Forest Service Handbook 1909.12 Land Management Planning Handbook ▪ FSH 1909.15 NEPA Handbook ▪ FSH 2409.13 Timber Resource Land Suitability Process ▪ FSH 1909.14 Resource Inventory Handbook ▪ FSH 2090.11 Ecological Classification And Inventory Handbook ▪ FSH 2409.18 Timber Sale Preparation Handbook ▪ Watershed Condition Framework, USDA Forest Service. FS-977. May 2011. ▪ USDA Forest Service Minerals Program Policy ▪ U.S. Department of Agriculture, Forest Service. 2023. Future of America's Forest and Rangelands: Forest Service 2020 Resources Planning Act Assessment. Gen. Tech. Rep. WO-102. Washington, DC. ▪ Personal communication, Brett Butler, Research Forester, USDA Forest Service Northern Research Station, Forest Inventory and Analysis. September 10, 2024.
Is enforcement and monitoring ensured for the identified law(s)?	☒ Yes, for National Forests administered by the USDA Forest Service located in the contiguous US ☐ No, Level B route is required
Step 3: Evaluation of the effectiveness of the legal framework on the legality of timber harvesting	
Evaluation of the practical implementation of the law(s) and explanation for the evaluation	The majority of lands administered by the three NFs sampled for RRA Indicator 2.1.3 (Shoshone, Modoc, Mississippi) have been formally designated as not suited for timber production, either having been legally withdrawn as a result of congressional or administrative decree (e.g. Wilderness Area, Roadless Area, etc.), or as a result of NF-level analysis. These designations are documented in the LRMPs for each NF. When combined, the three NFs have designated 70% of the NFS land base as unsuitable for timber production, ranging from 95% unsuitable for the Shoshone NF, to 19% unsuitable for NFs in MS (Table 14). The designations for these three NFs indicate both the regional variability in the characteristics of National Forest lands, as well as the application of a consistent methodology for protecting lands that support sensitive resources or otherwise are dedicated to management objectives that could be threatened by commercial timber production. Although there are no laws explicitly prohibiting conversion of NFS lands to other uses, in practice, natural ecosystems occurring on NFS lands are rarely converted to other uses. FIA data shows that forest conversion is extremely rare on the NFS lands, representing 0.41% of the forested land base over the past decade. It is clear that the risk of sourcing biomass feedstock harvested from sites converted from forests, wetlands or biodiverse grasslands to other uses is quite low. The assessment found no evidence that conversion of forests, wetlands, peatlands or highly diverse native grasslands to other uses is either directly or indirectly driven by commercial timber harvesting interests or objectives.
Sources	▪ Land and Resource Management Plan, National Forests in Mississippi. USDA Forest Service. August 2014. ▪ Land Management Plan, 2015 Revision, Shoshone National Forest. May 2015. ▪ Land and Resource Management Plan, Modoc National Forest. 1991. ▪ Biennial Monitoring Evaluation Report, Francis Marion National Forest, Reporting Years 2019 and 2020 ▪ Bioregional Assessment of Northwest Forests. USDA Forest Service. July 2020. ▪ Supplemental Report to the Bioregional Assessment of Northwest Forests. USDA Forest Service. March 2021. ▪ Biennial Monitoring Evaluation Specialists Report for 2015-2019, National

	Forests in Mississippi ▪ Monitoring & Evaluation Specialists Report for FY2020-2023, National Forests in Mississippi ▪ Management Indicator Species Population and Habitat Trends, National Forests in Mississippi. March 2005 ▪ Forest-wide LSR Assessment, Version 1.0, Six Rivers National Forest, USFS Pacific Southwest Region, April 1999 ▪ Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl, Volume I. February 1994.
Is legal framework effective?	☒ Yes, for National Forests administered by the USDA Forest Service located in the contiguous US ☐ No, Level B route is required for wood sourced from private woodlots not under the provincial assistance program

Sustainable harvesting criteria 29(6)	
(iv) That harvesting is carried out considering the maintenance of soil quality and biodiversity with the aim of minimizing negative impacts	
Step 1: Identification of applicable laws	
Have the applicable law(s) been identified?	☒ Yes ☐ No, Level B route is required
List of applicable law(s)	▪ Organic Administration Act of 1897 ▪ Multiple-Use Sustained Yield Act of 1960 (16 U.S.C. 528-531) ▪ Wilderness Act of 1964 (Pub. L. 88-577) ▪ Wild and Scenic Rivers Act of 1968 (16 U.S.C. 1271-1287) ▪ National Environmental Policy Act (NEPA) of 1969 ▪ Endangered Species Act (ESA) of 1973 16 U.S.C. § 1531 et seq. ▪ Forest and Rangeland Renewable Resources Planning Act of 1974 ▪ National Forest Management Act (NFMA) of 1976 (P.L. 94-588) ▪ Roadless Area Conservation Rule of 2001 (36 CFR Part 294) ▪ Healthy Forests Restoration Act (HFRA) of 2003 (16 U.S.C. 6501-6591) ▪ 2012 USFS Planning Rule (36 CFR Part 219, section 219.11) ▪ Code of Federal Regulations Title 40, Parts 1500 – 1508 ▪ Code of Federal Regulations Title 36 Part 219 Planning ▪ Code of Federal Regulations Title 36, Part 220 - National Environmental Policy Act Compliance ▪ Presidential Executive Order 14072. April 22, 2022.
Sources	▪ Forest Service Manual (FSM) 1900, Chapter 1950, Environmental Policy, and Procedures ▪ FSH 1909.15 National Environmental Policy Act Handbook ▪ FSH 1909.12 Land Management Planning Handbook ▪ Policy and Procedures for the Review of Major Federal Actions with Environmental Impacts, U.S. Environmental Protection Agency. September 26, 2023
Step 2: Description of enforcement and monitoring	
Description of the practical implementation of the law(s)	For forest or project level decisions NEPA is enforced through a variety of checks and balances beginning with the agency-designated Responsible Official (decision-maker). Primary responsibility for ensuring proper implementation of NEPA is vested in the Council on Environmental Quality (CEQ), which was established by Congress through the enactment of NEPA. CEQ is located in the Executive office of the President of the United States. The Environmental Protection Agency's (EPA) Office of Federal Activities is required to review Environmental Impact Statements and provide comments on the adequacy of the analysis and the impact to the environment. If EPA determines that the action is environmentally unsatisfactory, it is required by law to refer the matter to CEQ.

	The Collaborative Forest Landscape Restoration Program (CFLRP) operated by the USDA Forest Service is a national initiative to encourage collaborative restoration of ecosystems in priority landscapes. The CFLRP has representatives in all USFS Regions. Multi-regional planning initiatives such as the Northwest Forest Plan (NWFP) and the Sierra Nevada Framework enhance protections at the NF level through administrative obligations for NFs to amend LRMPs by adopting applicable standards and designations. The NWFP impacted the management on 17 NFs in CA, OR and WA by establishing reserves for protection of riparian areas. Forest plans, project-level NEPA documents, regional initiatives, specialist reports, and other related documents and protocols provide reasonable assurance that measures to maintain and enhance the health, vitality and function of native ecosystems are consistently implemented across the NFS. Responsibilities and lines of authority are clearly established, ensuring that appropriate review and approval occurs before project implementation. NFs implement Monitoring Programs in accordance with their Land and Resource Management Plans. Soils Inventory data such as USGS Soil Surveys, Forest Soil Disturbance Monitoring Protocol, and other resources such as the Terrestrial Ecological Unit Inventory (TEUI) system are used to classify soil and ecosystem types and map ecological units at different spatial scales. Mitigation measures or Integrated Design Features (IDF) are determined to prevent detrimental soil disturbance of the proposed actions. IDFs are carried over into timber sale prescriptions and timber sale contracts. Timber harvesting operations are regularly monitored by USFS staff to ensure contract provisions are fully met.
Sources	▪ Forest Service Manual (FSM) 1900, Chapter 1950, Environmental Policy, and Procedures ▪ FSM 2000, Chapter 2020 Ecosystem Restoration ▪ FSM 2400 Timber Sales ▪ FSM 2520 Watershed Protection and Management ▪ Forest Service Manual (FSM) 2550 Soil Management ▪ FSM 2600, Chapter 2670 - Threatened, Endangered and Sensitive Plants and Animals ▪ Forest Service Handbook (FSH) 1909.12 Chapter 60 - Forest Vegetation Resource Management ▪ FSH 1909.14 Resource Inventory Handbook ▪ FSH 1909.15 National Environmental Policy Act Handbook ▪ FSH 2090.11 Ecological Classification And Inventory Handbook ▪ FSH 1909.12 Land Management Planning Handbook ▪ FSH 2409.13 Timber Resource Land Suitability Process ▪ FSH 2409.18 Timber Sale Preparation Handbook ▪ FSH 2436 - Brush Disposal Plan ▪ FSH 2509.25 - Watershed Conservation Practices ▪ National Best Management Practices for Water Quality Management on National Forest System Lands; Volume 1: National Core BMP Technical Guide. FS-990a. USDA Forest Service. April 2012 ▪ Policy and Procedures for The Review of Major Federal Actions with Environmental Impacts, U.S. Environmental Protection Agency. September 26, 2023 ▪ Land and Resource Management Plan, National Forests in Mississippi. USDA Forest Service. August 2014. ▪ Final Environmental Impact Statement for the Land and Resource Management Plan, National Forests in Mississippi. R8-MB 144 B. USDAA Forest Service. August 2014. ▪ Biological Assessment for the Land and Resource Management Plan, National Forests in Mississippi. September 2013. ▪ Land and Resource Management Plan, Six Rivers National Forest. USDA Forest Service. 1995 ▪ Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl, Volume I. February 1994. ▪ Revised Land Management Plan, Grand Mesa, Uncompahgre, and Gunnison (GMUG) National Forests. USDA Forest Service. June 2024.

	▪ Biological Assessment for the Grand Mesa, Uncompahgre, and Gunnison (GMUG) National Forests Revised Land Management Plan. USDA Forest Service. July 10, 2023.
Is enforcement and monitoring ensured for the identified law(s)?	☒ Yes ☐ No, Level B route is required
Step 3: Evaluation of the effectiveness of the legal framework on the legality of timber harvesting	
Evaluation of the practical implementation of the law(s) and explanation for the evaluation	It is clear that ecosystem management is central to the management philosophy of the US Forest Service as evidenced by Forest plans, Biological Assessments, LRMPs, BAs, FEIS's, and regional initiatives. USFS staff interviewed during the assessment process described means of implementation and provided documented examples of methods used to identify and manage native ecosystems. USFS manuals and handbooks provide comprehensive guidance and instruction for USFS staff to conduct day-to-day operations in accordance with agency mandates and policies, as well as forest-level objectives and timber harvest project level objectives. Timber harvest project-level NEPA documents, monitoring reports, specialist reports, timber sale contracts, timber harvest inspection reports, and other related documents and protocols provide reasonable assurance that measures to maintain and enhance the health, vitality and function of native ecosystems are consistently implemented across the NFS. Responsibilities and lines of authority are clearly established, ensuring that appropriate review and approval occurs before project implementation. Well established processes for public notification and appeal provide added measures of assurance that laws, regulations and best practices are employed.
Sources	▪ Monitoring & Evaluation Specialists Report for FY2020-2023, National Forests in Mississippi ▪ Management Indicator Species Population and Habitat Trends, National Forests in Mississippi. March 2005 ▪ Analysis of the Management Situation. Shoshone National Forest. USDA Forest Service. February 2012. ▪ Biennial Monitoring Evaluation Report, Francis Marion National Forest, Reporting Years 2019 and 2020 ▪ Forest-wide LSR Assessment, Version 1.0, Six Rivers National Forest, USFS Pacific Southwest Region, April 1999 ▪ Timber Sale Administration Reports No. 5 - No. 7. Thousand Springs Timber Sale, Hat Creek District, Lassen National Forest.
Is legal framework effective?	☒ Yes, for National Forests administered by the USDA Forest Service located in the contiguous US ☐ No, Level B route is required for wood sourced from private woodlots not under the provincial assistance program

Sustainable harvesting criteria 29(6)	
(v) That harvesting maintains or improves the long-term production capacity of the forest	
Step 1: Identification of applicable laws	
Have the applicable law(s) been identified?	☒ Yes ☐ No, Level B route is required
List of applicable law(s)	▪ Organic Administration Act of 1897 ▪ Multiple-Use Sustained Yield Act of 1960 (16 U.S.C. 528-531) ▪ National Environmental Policy Act (NEPA) of 1969 ▪ Forest and Rangeland Renewable Resources Planning Act of 1974 ▪ National Forest Management Act (NFMA) of 1976 (P.L. 94-588) ▪ Healthy Forests Restoration Act (HFRA) of 2003 (16 U.S.C. 6501-6591) ▪ 2012 USFS Planning Rule (36 CFR Part 219, section 219.11)

	▪ Repairing Existing Public Land by Adding Necessary Trees (REPLANT) Act of 2021 ▪ Code of Federal Regulations Title 36, Part 220 - National Environmental Policy Act Compliance ▪ Code of Federal Regulations Title 36, Part 221 Timber Management Planning
Sources	▪ Forest Service Manual (FSM) 1900, Chapter 1950, Environmental Policy, and Procedures ▪ FSM 2000, Chapter 2020 Ecosystem Restoration ▪ FSM 2400 Timber Sales ▪ FSM 2410 - Timber Resource Management Planning ▪ FSM 2520 Watershed Protection and Management ▪ Forest Service Handbook (FSH) 1909.12 Land Management Planning Handbook ▪ FSH 1909.15 National Environmental Policy Act Handbook ▪ FSH 2409.13 Timber Resource Land Suitability Process ▪ National Forest System Reforestation Strategy. FS-1198. USDA Forest Service. July 2022.
Step 2: Description of enforcement and monitoring	
Description of the practical implementation of the law(s)	The Forest Service is legally obligated by numerous federal laws that prohibit degradation of native ecosystems. The Multiple-Use Sustained Yield Act (MUSYA) requires that all renewable surface resources, including non-timber uses, be given equal consideration for a range of values in the management of NFs. The MUSYA and National Forest Management Act (NFMA) both require that harvest levels on National Forest are established such that harvest quantity does not exceed levels that can be sustained in perpetuity. The NFMA and the 2012 Forest Service Planning Rule require that timber harvests on National Forests include design features to protect natural resources that could be negatively impacted by harvesting and associated activities. The Forest and Rangeland Renewable Resources Planning Act (RPA) directs the Forest Service to conduct periodic inventories of present and potential forest resources, including timber, and to assess current and anticipated demand and supply of forest resources. Consistent with 36 CFR Part 221.3, management plans for National Forest LRMPs provide for a continuous supply of timber, based on sustained yield principles, in consideration of forest conditions and other uses, and establish maximum allowable harvest levels bound by time and area. As required by the NFMA, a fundamental step in the development of a NF LRMP is determination of areas that are/are not appropriate for timber production. Calculation of ASQ is completed at the Forest level for ten-year intervals during each planning period, in consideration of other resources and uses, using growth and yield modelling tools. The average annual volume of timber harvested from each National Forest is less than or equal to the quantity that can be produced on a sustained-yield basis (16 US Code Section 1611). The calculated ASQ is revised if the Forest Supervisor determines there has been significant change in forest conditions, for example widespread insect infestations or wildfire. ASQ and Planned Timber Sale Quantity (PTSQ) are documented in forest plans. ASQ is the maximum harvest level allowed, not a requirement to achieve. Harvest levels are monitored and evaluated quarterly, annually and over ten-year periods used to calculate annual sale quantity (ASQ) or Projected Timber Sale Quantity (PTSQ) in the Forest Plan. ASQ and PTSQ are similar, with PTSQ placing greater emphasis on budget and resource constraints to provide a more realistically feasible estimate of annual timber quantity sold. Both ASQ and PTSQ serve the same function of providing guidance to USFS staff and clarity to stakeholders on estimated annual timber volumes planned for commercial sales. ASQ is one of several measures used to evaluate attainment of Forest Plan objectives and is not typically prioritized relative to achieving ecosystem maintenance and restoration goals. Meeting ASQ is not a driving factor for sampled NFs in development and implementation of annual work plans, which are focused on forest health and resiliency. For example, interviews with CNNF staff indicate that in the first 10-year period following the 2004 Forest Plan, 60% of the calculated ASQ volume was sold. CNNF staff also stated that the volume sold increased to 85% of ASQ in the second decade following the Plan approval. The Forest is largely constrained by budget limitations from meeting the 10-year ASQ. Similarly, according to interviews with staff, the ASQ target does not influence the NFs of Mississippi in their project planning and implementation. The actual amount of timber offered for sale is the indirect result of timber harvesting activities conducted to

	meet other objectives associated primarily with ecosystem restoration and maintenance. NFs of Mississippi have regularly met the calculated average annual ASQ in past years with the exception of recent challenges with unsold timber sales. There is no punitive consequence imposed on NFs for falling behind and not meeting ASQ targets. Successful and timely reforestation is fundamental to maintaining long-term sustainability. Wildfire accounts for about 80% of reforestation needs on NFS lands, and just 6% of post wildfire needs are met on an annual basis. The 2022 National Forest System Reforestation Strategy places renewed emphasis on ensuring that National Forests are promptly and appropriately regenerated and managed to provide the best chance of survival and foster ongoing resilience. The (REPLANT) Act provided additional funding for the USFS to address backlogs that have developed in their reforestation needs and requires that post-disturbance reforestation needs are identified and met. As mandated by the National Environmental Policy Act (NEPA), prior to approval and implementation of plans and activities on National Forests, the USFS completes a comprehensive environmental analysis to identify issues and resources that could potentially be impacted by proposed activities. The USFS uses an interdisciplinary approach to assess potential impacts, and develop alternatives that minimize direct, indirect and cumulative impacts on ecosystems and associated resources. Every proposed timber sale and every vegetation management activity on every NF, is covered by a NEPA analysis which includes current conditions, desired future conditions and how the proposed activities move stands toward or maintain the desired future condition. Identification of lands not suitable for timber production is a fundamental step in calculating sustained yield harvest levels. These lands are subtracted from the area used to calculate harvest levels for each forest and therefore excluded from commercial timber harvests. All LRMPs include designations for lands reserved for legal and conservation purposes, as well as lands deemed to be unsuitable due to low productivity or other reasons. Timber harvests for the purpose of timber production are prohibited from taking place on lands not suitable for timber production. There are instances when timber is harvested on low productivity sites as a tool for achieving other management objectives, e.g., restoration, resilience, habitat. However, timber harvest does not, in any circumstances, lead to forest degradation or diminish the long-term productivity of the forest. All activities taking place on NFs are designed to align with the forest plan as mandated by the 2012 Planning Rule. On-site evaluations are conducted in addition to other analyses to confirm that proposed harvest activities include measures to protect the affected environment from damage. A detailed silvicultural prescription is prepared and approved by a certified Silviculturist for each stand subject to timber harvesting. The forest inventory (stand exams) and other data used to produce the prescriptions include Land Class (or comparable field) which includes suitability for timber production and/or harvest. The Silviculturist certifies that the proposed treatments do not diminish long-term site productivity, and can be regenerated in accordance with USFS standards. In addition to applicable laws and regulations, maintaining and enhancing ecosystem health, vitality and function are guided by numerous agency manuals and handbooks. NEPA is enforced through a variety of checks and balances beginning with the agency-designated Responsible Official (decision-maker). Timber sale administration includes regular on-site inspections by USFS staff specialists to ensure contracts are properly executed on the ground, including protection of resources and productivity. These inspections review and evaluate all aspects of the logging operations. Inspections are conducted "as often as is necessary" to ensure compliance with timber sale contract provisions. Timber sale inspections are documented and incorporated into the contract file. All NF LRMPs include monitoring plans that identify specific issues representative of the goals and objectives established in the Forest Plan.
Sources	▪ FSM 2450 - Timber Contract Administration ▪ Forest Service Handbook 1909.12 Chapter 30 - Monitoring ▪ FSH 1909.12 Chapter 60 - Forest Vegetation Resource Management ▪ FSH 2409.15 – Timber Sale Administration Handbook ▪ FSH 2409.18 Timber Sale Preparation Handbook

	▪ FSH 2409.18 Timber sale preparation gate system ▪ FS-2400-6 Timber Sale Contracts ▪ Land Management Plan, 2015 Revision, Shoshone National Forest. May 2015. ▪ Final Revised Land Management Plan, Francis Marion National Forest. R8-MB 151 A. USDA Forest Service. 2016.January 2023 ▪ Land and Resource Management Plan, National Forests in Mississippi. USDA Forest Service. August 2014. ▪ Timber Resource Program Suitability and Sustainability Analysis, National Forests in Mississippi. June 2014. ▪ Land and Resource Management Plan, Six Rivers National Forest. USDA Forest Service. 1995 ▪ Amendment 2008-01, Land and Resource Management Plan, Six Rivers National Forest, April 2008 ▪ Revised Land Management Plan, Grand Mesa, Uncompahgre, and Gunnison (GMUG) National Forests. USDA Forest Service. June 2024. ▪ Grand Mesa, Uncompahgre, and Gunnison (GMUG) National Forests, Revised Draft Forest Assessments, Terrestrial Ecosystems: Integrity and System Drivers and Stressors. USDA Forest Service. March 2018. ▪ Land and Resource Management Plan, Modoc National Forest. 1991 ▪ Land and Resource Management Plan, Lassen National Forest. USDA Forest Service. 1992. ▪ Chequamegon-Nicolet National Forests 2004 Land and Resource Management Plan. R9-CN-FP. April 2004 ▪ Nantahala and Pisgah National Forests Final Land Management Plan. January 2023 ▪ Fiscal Year 2021 Landscape Scale Restoration Program National Guidance. USDA Forest Service. January 9, 2020. ▪ 2021 East Winds Forest Health Project, Categorical Exclusion Review, Wind River Ranger District, Shoshone National Forest. ▪ Sample Timber Sale Contract, North Fork Ranger District, Clearwater National Forest. March 2024. ▪ Sample Timber Sale Contract, Fandango Fire Salvage, Warner Mountain Ranger District, Modoc National Forest. Undated. ▪ Fandango Timber Sale Administration Report No. 2. Warner Mountain Ranger District, Modoc National Forest. June 12, 2023. ▪ Fandango Timber Sale Administration Report No. 7. Warner Mountain Ranger District, Modoc National Forest. June 23, 2023. ▪ Fandango Timber Sale Administration Report No. 10. Warner Mountain Ranger District, Modoc National Forest. July 12, 2023. ▪ Timber Sale Administration Reports No. 5 - No. 7. Thousand Springs Timber Sale, Hat Creek District, Lassen National Forest.
Is enforcement and monitoring ensured for the identified law(s)?	☒ Yes ☐ No, Level B route is required
Step 3: Evaluation of the effectiveness of the legal framework on the legality of timber harvesting	
Evaluation of the practical implementation of the law(s) and explanation for the evaluation	Approved LRMPs are in place for each of the nine forests sampled for the RRA. Thes LRMPs are all accompanied by Final Environmental Impact Statements FEIS) detailing the comprehensive assessment completed with an interdisciplinary team of resource management experts, and extensive stakeholder consultation. Similarly, every timber sale project reviewed was preceded by a NEPA analysis, with applicable documentation provided demonstrating processes implemented to identify and avoid or mitigate impacts to forest and ecosystem health and productivity. Forest level monitoring is implemented to evaluate achievement of forest-level objectives, including legal mandates. Site-level monitoring is conducted before, during and after timber sales and other resource management interventions to ensure management objectives stipulated in plans are achieved and contract provisions are met. National level reporting for FY2023 show that timber volume sold and harvested are significantly lower than calculated allowable harvest levels (ASQ, PTSQ). See Table 20 below.

Table 20: Planned, Sold and cut timber harvest summary, all NFs in the contiguous 48 states. Fiscal Year 2023.

Type of Calculation	Timber Volume (MMBF)
Total ASQ/PTSQ	7,911.780
Total Sold	3,032.780
Total Cut	2,938.930

Source: USDA Forest Service.

The majority of lands administered by the NFs sampled for this RRA have been designated as not suited for timber production, either having been formally withdrawn for legal or technical reasons or because timber production has been deemed incompatible with management objectives. These designations are documented in the LRMPs for each NF.

Table 21: Area Designated as Suitable for Timber Production, Sampled NFs.

Administrative Unit	NFS Lands	Not Forested*	Suitable for Timber Production	% Suitable
GMUG NF	2,967,000		771,000	26.0%
Shoshone NF	2,438,000	50,700	127,000	5.2%
Lassen NF	1,129,585	304,450	596,341	52.8%
Modoc NF	1,663,320	505,024	518,980	31.2%
Six Rivers NF	958,480	34,160	87,700	9.1%
Francis Marion NF	259,625	8,367	194,023	74.7%
NFs in Mississippi	1,172,524	18,826	954,255	81.4%
Nantahala-Pisgah NF	1,043,636		458,037	43.9%
Chequamegon-Nicolet NF	1,522,485	203,622	864,094	56.8%
Total: All Sampled NFs	13,154,655	1,125,149	4,571,430	34.8%

Source: USDA Forest Service. Individual NF LRMPs.
Note: For GMUG and Nantahala-Pisgah NFs all non-forested areas are combined with other lands designated as unsuitable for timber production.

Forest management objectives consistently prioritize forest health and productivity, forest resilience, restoration of native ecosystems and biodiversity. Timber production is a by-product rather than a driver for USFS management actions. Interviews with staff, records provided of annual ASQ, and monitoring reports indicate that NFs typically operate below the level calculated as sustainable in perpetuity.

Sources	▪ USDA Forest Service Service-wide Cut and Sold (CUTS203S) Report, Cumulative FY2023 Q1 – Q4. November 9, 2023. ▪ USDA Forest Service Region 10 Cut and Sold (CUTS203F) Report, Cumulative FY2023 Q1 – Q4. November 9, 2023. ▪ Biennial Monitoring Evaluation Report, Francis Marion National Forest, Reporting Years 2019 and 2020 ▪ Bioregional Assessment of Northwest Forests. USDA Forest Service. July 2020. ▪ Supplemental Report to the Bioregional Assessment of Northwest Forests. USDA Forest Service. March 2021. ▪ Black Prairie Restoration Project, Environmental Assessment. Tombigbee National Forest. August 2023. ▪ Monitoring & Evaluation Specialists Report for FY2020-2023, National Forests in Mississippi ▪ Monitoring & Evaluation Specialists Report for FY2020-2023, National Forests in Mississippi ▪ Biennial Monitoring Evaluation Report, Francis Marion National Forest, Reporting Years 2019 and 2020 ▪ Biennial Monitoring Evaluation Specialists Report for 2015-2019, National Forests in Mississippi ▪ Analysis of the Management Situation. Shoshone National Forest. USDA Forest Service. February 2012. ▪ Management Indicator Species Population and Habitat Trends, National Forests in Mississippi. March 2005 ▪ ASQ and PTSQ for National Forests – 20231004.
Is the legal framework effective?	☒ Yes ☐ No, Level B route is required

LULUCF criteria 29(7)	
Paris Agreement ratified?	☒ Yes ☐ No
Submission of a relevant NDC	☒ Yes ☐ No
Sources	▪ Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974 ▪ United Nations Treaty Depository, Chapter XXVII Environment, Section 7.d. Signatories to the Paris Agreement. ▪ The United States of America, Nationally Determined Contribution. Reducing Greenhouse Cases in the United States: a 2030 Emissions Target. ▪ EPA (2024) Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2022. U.S. Environmental Protection Agency, EPA 430-R-24-004. ▪ USDA Forest Service Carbon Dashboard ▪ Forest Service Climate Change Performance Scorecard, 2010 (version 1.2) ▪ National Roadmap for Responding to Climate Change, USDA Forest Service, FS-957b February 2011 ▪ US Forest Service Strategic Framework for Responding to Climate Change
Brief description of how agriculture, forestry and land use are accounted for in NDC	The United States of America has been a Party of the Paris Agreement since 2021. The United States submitted their Nationally Determined Contribution (NDC) in line with article 4 of the Paris Agreement. The report confirms carbon uptake by standing forests, forest management and carbon storage in wood products. With more than 290 million hectares, forests play a significant role in the country's net 800 million metric tons of carbon sequestration reported in the NDC. In November 2019, the USFS published a report on the influence of disturbance, and management activities on non-soil carbon stocks of the United States National Forests for the 1990 and 2011 period. The assessment built upon previous baseline assessments of carbon stocks incorporating detailed disturbance factors such as fires, harvests, insect outbreaks, wind and non-disturbance factors such as climate, nitrogen deposition and CO2 concentrations. Results found carbon stock

	trends are increasing but at a declining rate in the eastern forests of the country mostly due to aging stands. Forests of the western United States are either increasing or decreasing depending on the effects of disturbances. Some National Forests form the Pacific Southwest Region are switching from a carbon sink to a carbon source because of natural disturbances, aging stands, increasing temperatures and droughts. The USFS Carbon Dashboard is a tool supporting NFs to assess carbon stocks in planning. The Dashboard provides regional and individual data on carbon stocks defined in seven pools including soils, effects by type of disturbance, etc. With the exception of Rocky Mountain Region (R2), carbons stocks continue to accumulate every year in all sampled Regions (R5, R8 and R9). The negative accumulation of carbon in Region 2 is explained by repetitive insect outbreaks occurring since 2005 until the end of the study period in 2012. The methods and equipment used to harvest biomass are designed for the removal of residue following timber harvest and, in the western U.S., removing small diameter trees for forest restoration and wildfire hazard reduction.
OR (this option below must be used if the previous point about NDC is not satisfied)	
The origin country has national or sub-national laws in place, in accordance with Article 5 of the Paris Agreement, applicable in the area of harvest, to conserve and enhance carbon stocks and sinks, and providing evidence that reported LULUCF-sector emissions do not exceed removals	
Step 1: Identification of applicable laws	
Have the applicable law(s) been identified?	☒ Yes ☐ No, Level B route is required
List of applicable law(s)	*N/A*
Sources	*N/A*
Step 2: Description of enforcement and monitoring	
Description of the practical implementation of the law(s)	*N/A*
Sources	*N/A*
Is the enforcement and monitoring ensured for the identified law(s)?	☒ Yes ☐ No, Level B route is required
Step 3: Evaluation of the effectiveness of the legal framework on the legality of timber harvesting	
Evaluation of the practical implementation of the law(s) and explanation for the evaluation	*N/A*
Sources	*N/A*
Is the legal framework effective?	☒ Yes ☐ No, Level B route is required