Supply Base Report: Amite BioEnergy, LLC

Re-assessment

www.sbp-cert.org

Completed in accordance with the Supply Base Report Template Version 1.3

For further information on the SBP Framework and to view the full set of documentation see www.sbp-cert.org

Document history

Version 1.0: published 26 March 2015

Version 1.1 published 22 February 2016

Version 1.2 published 23 June 2016

Version 1.3 published 14 January 2019; re-published 3 April 2020

Contents

1 Overview

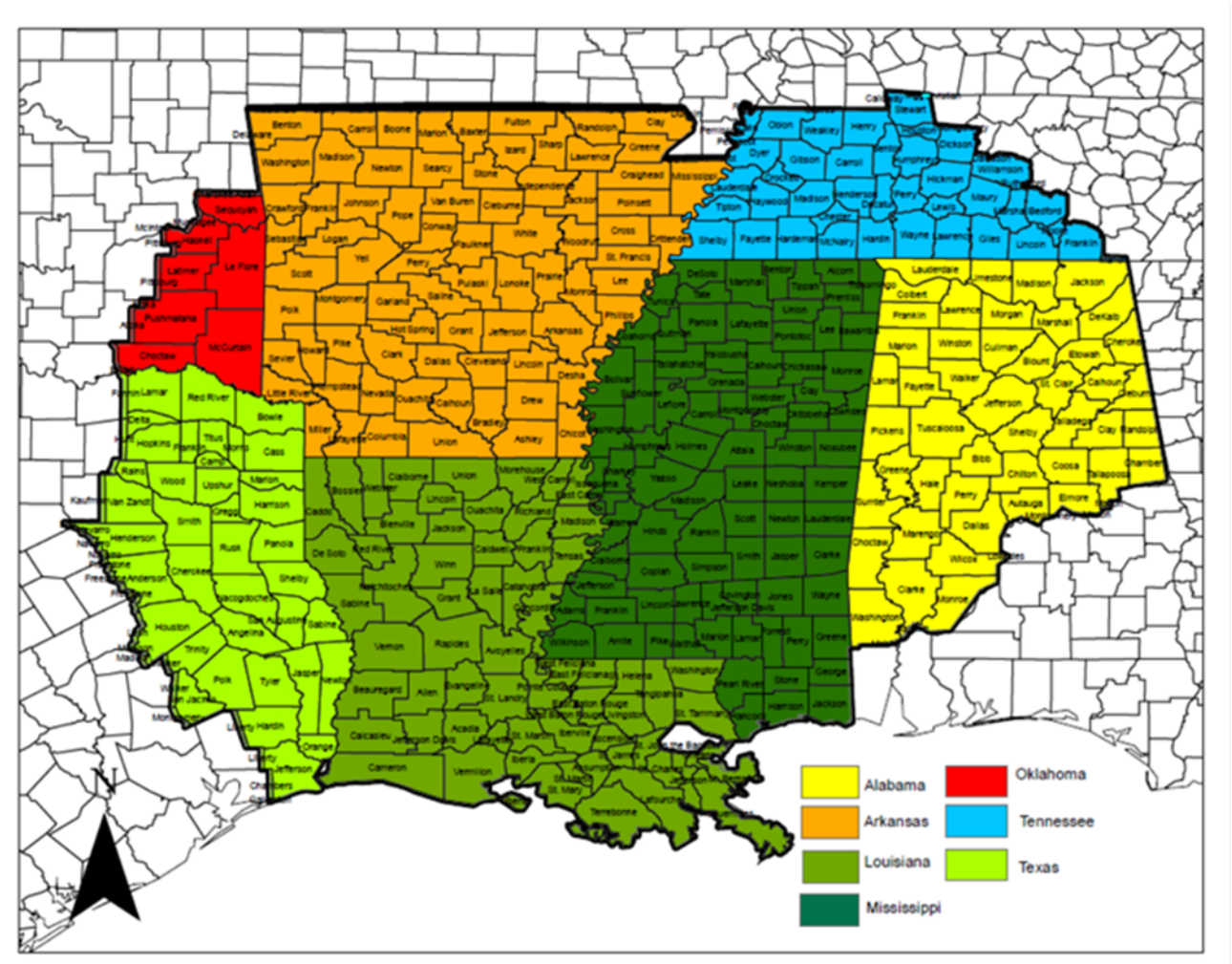
Producer name:	Drax Biomass, Inc. (DBI) • Amite BioEnergy, LLC (ABE)
Producer location:	DBI Corporate: 1500 19th St., Suite 501, Monroe, LA 71201 ABE: Old Hwy 24, Gloster, MS 39638
Geographic position:	DBI: 32.525870, -92.110582 ABE: 31.185676, -91.034485
Primary contact:	Kyla Cheynet 1500 19th St., Suite 501, Monroe, LA 71201 +1 404 229-8847 kyla.cheynet@draxbiomass.com
Company website:	www.draxbiomass.com
Date report finalised:	15/Aug/2020
Close of last CB audit:	23/Oct/2020
Name of CB:	SCS Global Services
Translations from English:	No
SBP Standard(s) used:	Standard 1-5, version 1, March 2015
Weblink to Standard(s) used:	https://sbp-cert.org/documents/standards-documents/standards
SBP Endorsed Regional Risk Assessment:	N/A
Weblink to SBE on Company website:	http://www.draxbiomass.com/sustainability/#certifications

Indicate how the current evaluation fits within the cycle of Supply Base Evaluations				
Re-assessment	**First Surveillance**	**Second Surveillance**	**Third Surveillance**	**Fourth Surveillance**
X	☐	☐	☐	☐

2 Description of the Supply Base

2.1 General description

Drax Biomass Inc's ("DBI" or "Company") fiber procurement catchment spans Arkansas, Louisiana, Mississippi, and portions of Alabama (47 counties), Texas (37 counties), Oklahoma (7 counties), and Tennessee (37 counties) (see map of supply area below). DBI owns and operates three pellet plants: Amite BioEnergy, LLC ("Amite BioEnergy" or "ABE") in Gloster, MS; Morehouse BioEnergy, LLC ("Morehouse BioEnergy" or "MBE") near Beekman, LA; and LaSalle BioEnergy, LLC ("LaSalle BioEnergy" or "LBE") near Urania, LA. Fiber sourced directly from the forest is generally within a 60 mile radius of the plant. However, residuals produced by wood manufactures are usually procured from 150 miles or less radius. In response to market pressures and/or weather events, DBI reserves the ability to source fiber from any of the risk assessed counties shown on map below.



DBI purchases the majority of its in-woods fiber indirectly from private landowners via a fiber supplier network, with negligible amounts originating from public ownership. About half of the in-woods fiber originates from institutionally owned private forests while the other half is derived from family-owned private forests.

Amite BioEnergy

Facility is designed to consume just over 1 million green metric tons of biomass material per annum. The sourced material is comprised of mainly southern yellow pine with a potential *de minimis* quantity of mixed

southern hardwoods. The material arrives in the form of low grade roundwood, thinnings, tops, logging and mill residues.

According to TimberMart-South's mill database from June 2019 there were 44 mills within a 160-kilometer radius of ABE with a total production capacity of 21.6 million tonnes of wood per year. This puts into perspective the ability of the sourcing area to supply the fiber necessary to maintaining a thriving forest products industry. The Amite facility represents 5% of the total industry wood demand.

Table 12. Number of Mills, Total Mill Capacity, & Catchment Area Allocated Mill Capacity (2019)

Mill Type	No. Mills	Total Capacity (Tons*)	Catchment Area Allocation (Tons*)
Lumber	26	8,216,820	3,451,272
Pulp / Paper	5	9,412,980	789,985
Plywood / OSB	5	2,755,969	201,398
Chip	6	740,250	295,838
Pellet	2	2,700,000	1,100,000
Total	**44**	**23,826,019**	**5,838,493**

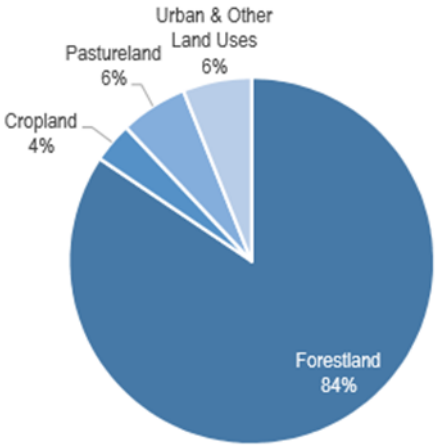
*Roundwood equivalent volume
Source: TimberMart-South; Hood Consulting

The location for this bioenergy facility was carefully chosen based on the balance of available fiber and the presence of markets for woody fiber. Senescence of the US pulp and paper industry had resulted in the closure or curtailment of several large pulp mills in or adjacent to the catchment that collectively consumed over 4 million tonnes of feedstock each year.

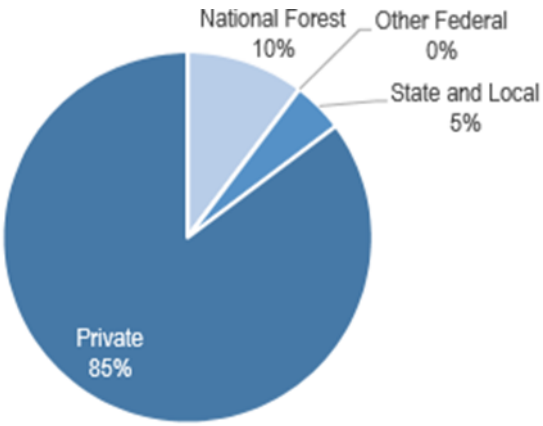
The most significant recent change in the wood basin has been the closure of a Georgia Pacific's paper mill facility in Port Hudson, LA in March of 2019. The Georgia Pacific mill closing resulted in an approximately 725,000 tonnes of wood demand loss. The Georgia Pacific facility sourced a greater percentage of hardwood fiber than pine fiber, but the loss of this market has raised concern among forest landowners and had detrimental effects on the logging force in the region. Without adequate markets for forest products landowners may choose to convert land out of forest management into more lucrative non-forest uses

Land Use and Ownership patterns

ABE's "catchment area", or the area where fiber has been directly acquired from the forest, extends approximately 50 miles from the plant. This area contains approximately 659,979 ha, of which 84% is classified as forestland. Forestry is the dominant land use, with the remaining area 16% split between pastureland, cropland, and urban/other land uses.



Over 80% of the forests surrounding ABE are privately owned, with most held by non-corporate private family forest owners. Corporate forest owners, who must produce shareholder returns, generally practice more intensive silviculture and land management than the smaller family forest landowners who typically manage to achieve more diverse objectives. ABE's catchment area has a greater component of non-corporate forest owners than DBI's other two other pellet plants, and DBI actively engages with landowners and the suppliers to support and encourage sustainable forestry and improved forest management.



While forest coverage has stayed steady in these areas during the past 40-50 years, the forests have become increasingly productive in that time. Forest Inventory Analyses data shows that growth per acre per year has doubled in the US South since the 1950's, and it continues to increase as healthy markets provide incentives for owners to invest in forest management. Put simply, landowners' access to markets helps to ensure that their forests remain as working forests[1].

[1] F2M Report: Historic Perspective on the Relationship between Demand and Forest Productivity in the US South: At A Glance.

Softwood (Pine)	Growth (million ft3)	Removals (million ft3)	G:R Ratio
Pine Pulpwood	53.7	29.9	1.80
Pine Chip-n-saw	43.6	17.4	2.50
Pine Sawtimber	45.9	23.4	1.96
Softwood (Pine) Total	143.2	70.7	2.02

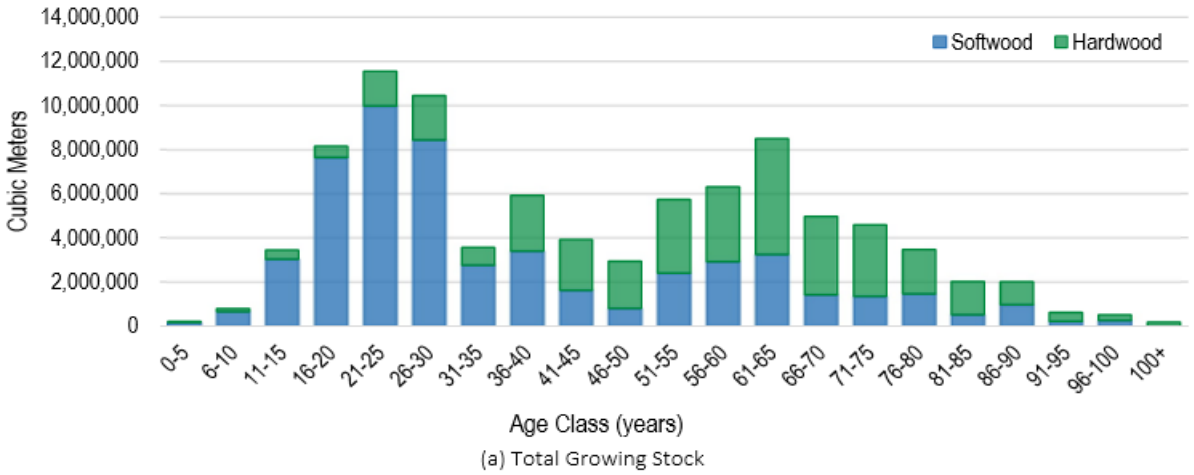
Hardwood	Growth (million ft3)	Removals (million ft3)	G:R Ratio
Hardwood Pulpwood	18.0	3.4	5.32
Hardwood Sawtimber	19.2	11.0	1.74
Hardwood Total	37.2	14.4	2.58

Product	Growth (million ft3)	Removals (million ft3)	G:R Ratio
Pulpwood	71.7	33.3	2.16
Sawtimber	108.7	51.9	2.10
Total	**180.4**	**85.1**	**2.12**

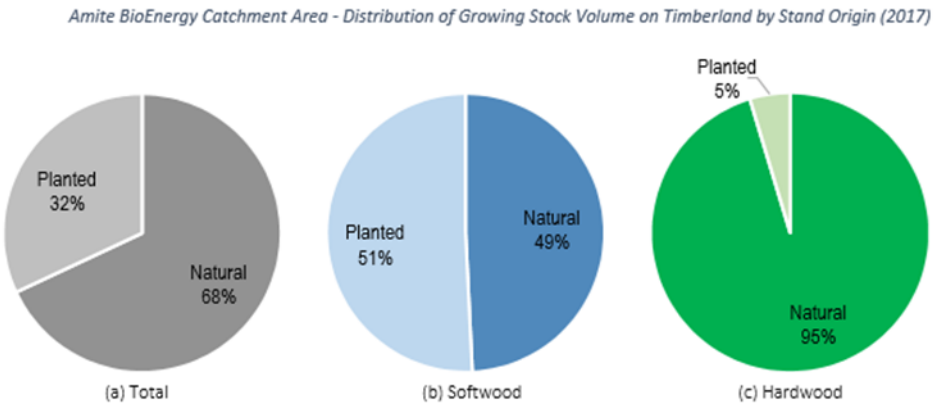
Source: USDA - US Forest Service

Forest Composition

State forestry websites feature detailed descriptions of forests and include noteworthy facts about each state's forests. Forest Inventory Analyses data is also publicly available, and provide many important parameters, including changes over time, in the states that supply ABE. A summary table of the forest type (hardwood or softwood) and age class distribution for the Amite area as well a figure illustrating the distribution of growing stock by forest type is shown below.



(a) Total Growing Stock



*Natural, in regards to the graphs above, is a tract of land that was cut, but allowed to regenerate from the already existing seed bed.\

Forestry and Land Management Practices

There is a mature and well-developed forest sector in this geography. Described as a "wood basket to the world", the US South has grown, harvested and sold many hundreds of millions of cubic meters per year for many decades, while seeing both its forest inventories and productivity levels increase. In the US South, as in ABE's catchment, annual growth exceeds annual drain by a significant margin (USDA Forest Service, 2010).[2]

The main reasons for this include a productive land base that benefits from long growing seasons, sufficient precipitation, and healthy soils, as well as the longstanding engagement of experts and professionals from across industry, academia and public agencies in helping to advance sound forest management practices. Species selection is another important factor, as most landowners grow trees that are indigenous to the area, which creates environmental and economic benefits, such as maintenance of habitats for local flora and fauna, as well as establishing a resilient native growing stock with improved pest and disease resistance. Federal and state governments also provide effective oversight to ensure that forest activities comply with relevant laws and regulations and minimise environmental harm. Moreover, each state employs long-established "Best Management Practices", with programs to promote logger training and audits that demonstrate high compliance rates.

Though the region also possesses a vigorous and productive hardwood forest, ABE primarily uses Southern Yellow Pine (SYP). SYP is a term used to describe an abundant and highly productive group of native pine species, of which loblolly pine (*Pinus taeda*) is the most prevalent in this region. Production and sale of sawlogs remains the main economic driver for landowners, with SYP rotation lengths typically ranging from 20-40 years. The shorter rotations are for the most productive trees on the best sites, while the longer rotations typically apply to trees grown on lower quality sites.

Thinning is an important forest management strategy for growing sawlog-quality SYP. Stands are typically thinned at 12 years old and again at 18 years old to promote faster growth of the remaining trees. Thinning also allows more light, moisture and nutrients to reach the forest floor, which increases the vitality of the forest and offers recreational benefits. Forest thinnings make up a significant proportion of the feedstock for ABE.

Rotation harvest of SYP is typically conducted through clearcutting. SYP is not tolerant of shade, so the next rotation of young trees requires abundant access to light to grow well. DBI accepts material from final

[2] USDA Forest Service Forest Inventory Analysis Program. 2010 data assessed and critiqued by consultancy for procurement region. Accessed May, 2012. Database accessible at http://www.fia.fs.fed.us/.

rotation harvests, although the material received is limited to residuals and roundwood that are not sold into higher paying markets. The vast majority of material from rotation harvests are completed for and sold into sawlog markets.

The next rotation may be re-established through natural regeneration, or the planting of seedlings, or a combination of both. Reforestation often involves some ground preparation to control competing vegetation.

Looking to the future, further increases in pine forest productivity can be achieved through simple measures such as planting with improved seedlings and implementing diligent forest establishment practices. We will seek to engage with and support this process through the sharing of information and supporting sensible partnerships that promote forest certification through direct landowner contact. In areas with strong markets for forest products, we should expect forests to stay as working forests, whereas other areas may cycle out of forestry into row crops or husbandry, and other agricultural areas may cycle back into forestry. Urban expansion remains the biggest threat to the forest area. Private ownership is expected to remain the main form of forest ownership, but there may be fragmentation as land is split into smaller parcels as it is passed down through generations, thereby creating challenges to implement good forest management practices.

Market effects on Forest Composition and Forest Management

The overall market downturn, subsequent housing market crash of 2008, and the slow recovery in residential construction resulted in supressed levels of demand for sawtimber. Although the market for solid wood products is now improving, lack of market caused an increase in stocks of larger-diameter trees, with a corresponding reduction in felling and replanting. These market dynamics have long-term consequences for the structure of the forest.

In some cases, pine forests that were harvested and left to regrow naturally are exhibiting supressed growth due to competing vegetation and stocking issues. As a market for low-value small diameter material from in-woods chipping operations, some landowners in the catchment area are starting to proactively manage these stands through early thinnings and stand reestablishment harvesting. In-woods chipping operations can also help reduced site preparation costs for reforestation and improve aesthetics. DBI is hoping to continue to play a role in forest restoration and forest stand improvement, increasing in-woods chip purchases to 25% of the total volume consumed annually.

Presence of CITES or IUCN species

There is no Convention on International Trade in Endangered Species of Wild Flora and Fauna (“CITES”) listed species in the catchment that are threatened or otherwise impacted by forest management activities.

There are six species on the IUCN Red List that occur within the states DBI sources from. Quercus oglethorpensis (oglethorpe oak), Fraxinus profunda (pumpkin ash), Fraxinus caroliniana (carolina ash), maple-leaved oak (uercus acerifolia), Quercus boyntonii, and Pinus palustris (longleaf pine). Longleaf pine is the only species which may be materially impacted by DBI’s sourcing, with the other species, occurring in wetlands or extreme remote locations where southern yellow pine, DBI’s primary feedstock, is not found. Longleaf pine is far less common than it once was, and efforts are underway to promote longleaf pine coverage in the region. The intent of listing species to the Red List is not to promote prohibition of its use but rather to heighten priority setting for conservation of the species http://www.iucnredlist.org/documents/RedListGuidelines.pdf). Critical to the recovery of the species is continued access to markets for longleaf pine. If landowners do not expect to be able to sell this wood, then they will not plant the tree in the first place. This position is captured in a statement from a USDA researcher and supported by the conservation group the Longleaf Alliance:

“Strong markets for forest products provide incentives for private landowners to keep their lands in forest cover (Wear 2013). This is particularly important across the longleaf range where recent forecasts of human population and income

growth point toward increasing pressure in some locations to convert forest land to other uses (Wear 2013)[3]. Strong markets also enable landowners to invest in the management practices required to establish longleaf pine forests and implement practices such as prescribed fire and thinning which are crucial restoration activities[4]."

Recognising the risk associated with longleaf pine, DBI has procedures in place to monitor if longleaf is offered as feedstock and has checks in place to ensure against conversion away from longleaf.

SBP Feedstock Product Groups& Supplier Make-Up[5]

All Primary and Secondary feedstock used by ABE is SBP Compliant.[6]

ABE's supplier base is made up of timber dealers, logger-dealers and managers of corporately owned timberland providing primary feedstocks in addition to wood manufacturing suppliers who provide secondary feedstocks. Specific supplier list and related volumes by feedstock type is maintained and stringently reviewed by an external auditor.

2.2 Actions taken to promote certification amongst feedstock supplier

DBI implemented Sustainable Forest Management programs, many of which require participant companies to promote certified forest management amongst feedstock suppliers. This includes extensive reporting and contractually required training, as well as other components that are necessary for the certifications. DBI's procurement staff are trained to assist suppliers and landowners to achieve these certifications through direct and/or collaborative efforts.

DBI continually monitors the amount of certified fiber that it purchases and will pursue opportunities to increase the area of certified forests within its catchments.

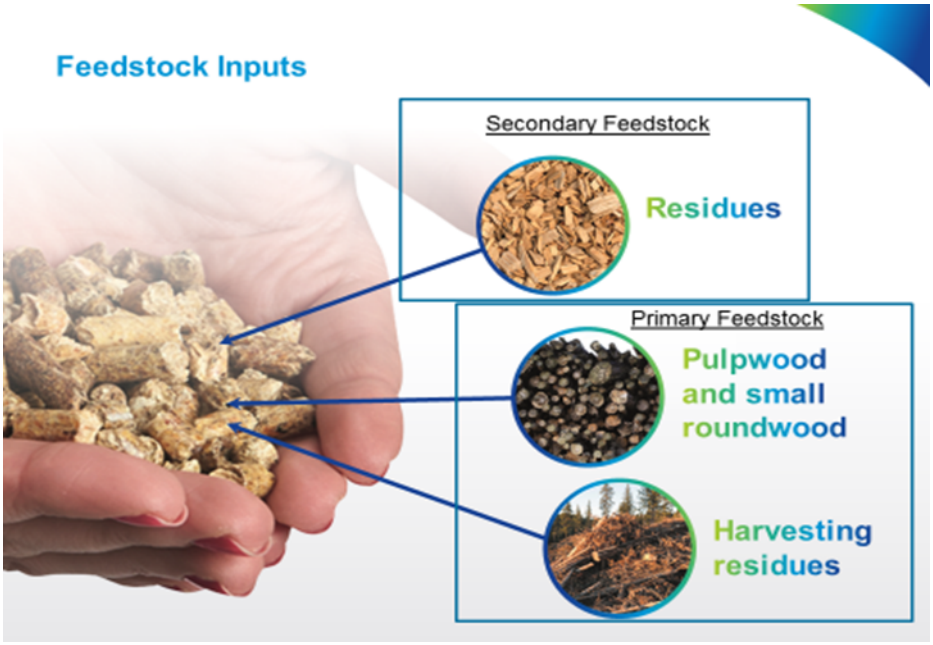
In 2018 DBI published a document "The Southern Working Forest – a Guide to Sustainable Management". Chapter 2 of this document outlines the benefits of certification, and contact details are provided for those who want to explore further.

2.3 Final harvest sampling programme

The average rotation length for SYP in ABE's catchment is approximately 35 years or less. This is below the 40 years rotation length stipulated for the final harvest sampling as required by SBP Standard 5 and the proposed Dutch regulations.

[3] Wear, D. N. 2013. "Forecasts of Land Uses." Chapter 4 in Southern Forest Futures Project Technical Report. http://www.srs.fs.usda.gov/futures/reports/draft/Frame.htm.
[4] Longleaf Alliance and NCASI. 2014 "Longleaf Pine: Sustainable Forest Management and the Restoration of a Species" brochure.
[5] Commercial sensitivity: Specific identifiers and volumes omitted. Divulging current or forecasted supplier types and numbers may be used by third parties to gain a competitive advantage in the catchment. These figures are subject to change.
[6] SBP Compliant Primary, Secondary and Tertiary feedstocks are defined in the "SBP Glossary of Terms and Definition" and described further in "SBP Standard 1, section 6, indicator 1.1.3."

2.4 Flow diagram of feedstock inputs showing feedstock type



2.5 Quantification of the Supply Base

Amite BioEnergy, LLC Supply Base of 60 Air Miles

a. Total Supply Base area (ha): For Primary feedstocks, an area of 659,979 ha (area of all forest types) within the immediate 50-mile Supply Base.
b. Tenure by type (ha):
   Privately owned c. 85% (c. 75% private, c. 10% large corporates, investment-institutional)
   Public 15%
   Community concession de minimis
c. Forest by type (ha): boreal/temperate/tropical
d. Forest by management type (ha):
   - Plantation 199,122 ha (c. half the softwood area)
   - Managed Natural c. 309,499 ha (remainder of the pine, mixed forests, hardwood areas)
   - Natural Less than 50,000 ha
e. Certified forest by scheme (ha): (e.g. hectares of FSC® or Programme for the Endorsement of Forest Certification™ (PEFC) certified forest) Not known in detail for catchment. *PEFC-endorsed forest management schemes: SFI® and American Tree Farm™ are the predominant schemes, with minor areas of FSC® certified forest. DBI expects the feedstock supply to generally mimic the certified percentage offerings statewide. DBI estimates the ability to procure a conservative 30-40% of feedstock from certified sources.

Feedstock

Assuming steady state operations for production of 400,000 – 600,000 tonnes of pellets

f. Total volume of Feedstock: >1,000, 000 tonnes
g. Volume of primary feedstock: 400,000 – 600,000 tonnes
h. List percentage of primary feedstock (g), by the following categories. –

a. 40% to 59% certified to an SBP-approved Forest Management Scheme broken down as:
    i. *FSC®: c. 0% to 19%*
    ii. *PEFC-endorsed forest management schemes: c. 80% to 100%*
        1. *SFI®: c. 60% to 79%*
        2. *ATFS™: c. 0% to 19%*
    iii. 40% to 599% not certified to an SBP-approved Forest Management Scheme

i. List all species in primary feedstock, including scientific name
Predominantly Southern Yellow Pine – Majority Loblolly Pine (Pinus taeda), smaller quantities of other pines – Slash pine (Pinus elliotii), Shortleaf pine (Pinus echinata), Spruce pine (Pinus glabra), Virginia pine (Pinus virginiana) and de minimis volumes of Longleaf Pine (Pinus palustris)-see comments in the Presence of CITES or IUCN species section. Minimal component of mixed southern hardwoods, various varieties of oak, maple, hickory, ash and others. Full list of 56 hardwood species available.

Many components of these wide range of species may appear when primary feedstocks are furnished from in-woods chipping operations or the occasional pine-hardwood mixed pulpwood load is accepted from a traditional harvest. Most of the species mix in this feedstock type would be comprised of Southern Yellow Pine with understory and/or stand improvement treatments including mixed southern hardwoods making up a minute amount of the diverse species mix.

j. Volume of primary feedstock from primary forest: none

k. List percentage of primary feedstock from primary forest (j), by the following categories. Subdivide by SBP-approved Forest Management Schemes:
    b. Primary feedstock from primary forest certified to an SBP-approved Forest Management Scheme
    c. Primary feedstock from primary forest not certified to an SBP-approved Forest Management Scheme

l. Volume of secondary feedstock: 200,000 – 400,000 tonnes

m. Volume of tertiary feedstock: 0 – 200,000 tonnes or m^3

3 Requirement for a Supply Base Evaluation

SBE completed	SBE not completed
X	☐

A Supply Base Evaluation is required because a significant proportion of the forest surrounding the pellet mills is not certified. This evaluation will determine the legality and sustainability of fiber delivered to ABE.

4 Supply Base Evaluation

4.1 Scope

The scope of the evaluation covered the entire supply area for all three pellet mills, which considered all existing and potential sources of primary and secondary feedstocks (residuals), as well as the feedstocks' point of origination. The evaluation covered all three pellet mills and is consistent with the areas covered by DBI's due diligence processes and risk assessment for PEFC™ Controlled Sources and FSC® Controlled Wood. The intent of the supply base evaluation was to discern the risk level when compared to the indicators of SBP Standard 1. There were no omissions or sub-scopes within the evaluation.

4.2 Justification

The majority of supply comes from private lands, and although there are some larger holdings which are certified, there are many smaller forests that are not. It was therefore deemed prudent to evaluate the entire area without exclusions. The supply area for all pellet mills in the Gulf Coast Cluster is included in one assessment, as the applicable legal requirements across the supply base are sufficiently similar, and the forest practices are also sufficiently similar.

This review and analysis was completed by comparing the existence, effectiveness, and applicability of statutes/regulations, established forestry best management practices and recognized research from reputable sources to determine compliance and risk rating in relation to Criteria 1 & 2 of the SBP Standard 1.

4.3 Results of Risk Assessment

The Risk Assessment concluded that most aspects are "Low Risk" in the catchment area for the feedstock being used. This is predominantly due to sufficient and effective legal requirements in this geography, supported by a mature forest industry with well-established practices, including Best Management Practices promoted by states and the use of trained loggers support by industry.

This sound framework is supplemented by DBI's procurement procedures and third-party audits for FSC® Chain of Custody (CoC), PEFC™ CoC, and SFI® CoC and Certified Fiber Sourcing. The Fiber Sourcing Standard is held by a large number of operators in our catchment, meaning the vast majority of harvests will fall under the auspices of this procurement standard. In addition, the growth management and harvesting of SYP is less complex than for other forest types, and typically has fewer environmental sensitivities.

For indicators 2.1.2, 2.2.3, 2.2.4 and 2.4.1, there is now a determination of "Specified Risk". This follows analysis of information included in the recently concluded US FSC® Controlled Wood National Risk Assessment (US NRA). These specified risks are detailed in Annex 1. DBI staff attend FSC® meetings to understand and implement mitigations and to gather views on how effective those mitigations are.

Though FSC® identified "conversion to non-forest" as a potential risk in some areas (which would pertain to indicator 2.1.3), none of the identified counties fall into DBI's catchment.

Mitigation measures are discussed in detail in section 9 below. They sit next to the raft of diligent procurement processes that have been developed, implemented, and monitored over the past 3 years.

4.4 Results of Supplier Verification Programme

Risk assessment did not find any assignment of “unspecified risk” therefore no supplier verification program is required at this time.

4.5 Conclusion

There is “low risk” for most indicators of the SBP Standard 1 based on the evidence provided of sound forestry practices, existing effective legislation and diligent procurement processes that guide industry and landowners on the sustainable management of forests. For the four indicators where “specified risk” has been concluded, mitigating actions derived from multi-stakeholder processes will be implemented and monitored for effectiveness.

Forest inventories are steadily increasing, and carbon stocks remain stable in ABE’s catchment. Local communities benefit from the economic impact resulting from
ABE’s operations.

In conclusion, with diligent procurement processes and implementation of mitigation measures where required, the raw material supply and resulting production of pellets meets the requirements for “SBP compliant” pellets.

DBI is constantly engaged with stakeholders to ensure any changes are evaluated.

5 Supply Base Evaluation Process

DBI utilized both internal and external resources to complete the Supply Base Evaluation (SBE). The SBE was produced by DBI employees with experience in forest certification and sustainability. A highly qualified consultant with external auditing expertise helped collect and collate initial supporting evidence and stakeholder responses. Other DBI employees, particularly those on the procurement team and those associated with company systems, also contributed to the SBE.

Evidence collected as part of achieving and maintaining pre-existing certification programs was used in the SBE. Remaining shortfalls were completed by using reputable sources of information provided by public agencies, conservation and forestry organizations from within the region.

Contractual requirements with feedstock suppliers provided the baseline by which compliance with SBP indicators is achieved, supported by recognized good governance and the effective rule of law at State and Federal level.

DBI operates a supplier internal audit process in which suppliers are reviewed on a periodic basis depending on a risk level (i.e. certified vs non-certified). The external auditor has a view of the sampling rates and results of those reviews.

6 Stakeholder Consultation

DBI conducted an initial stakeholder consultation in 2015, followed by consultations related to supply base expansion in 2017, 2018, and 2019. This year (2020) a stakeholder consultation was conducted as a part of the SBP recertification process for ABE and MBE.

To properly identify interested stakeholders, DBI staff solicited a wide range of potential stakeholders for the initial and recertification consultation. Invitations were sent out to c. 200 stakeholders representing a cross-section of interests and expertise, including local, state and federal agencies, local forest industry participants, research institutions, forestry/landowner associations, NGOs, indigenous peoples and others (Appendix A).

Stakeholders were administered questions via online survey in 2015, 2017, and 2018 and were provided the full SBE to review in 2019 and 2020. The on-line survey presented verifiers for each indicator and consultees were asked to rate the evidence used to conclude each indicator's risk level. Consultees were also solicited to provide additional verifiers and to comment on the quality of the verifiers presented for each indicator. In the initial stakeholder survey DBI received 29 direct responses from 8 participants and subsequently re-visited 13 indicators to assure verifiers were complete.

The certifying body held a follow-up consultation immediately after conclusion of DBI's initial consultation and 2020 consultation. Results of consultations appear in the certifying body's public audit reports for each biomass producer.

Following close of the initial consultation, DBI continued a dialogue with an inquiring stakeholder that missed the open comment period. This dialogue did not reveal any previously unknown risks, but local contact emphasised some concerns, particularly in respect of valuable ecosystems in the region. DBI has responded to those concerns and continues the dialogue outside of the formal stakeholder consultation process[7].

6.1 Response to stakeholder comments

Results of previous stakeholder consultations are available in the respective Supply Base Reports posted on the SBP Website https://sbp-cert.org/certificate-holders/lasalle-bioenergy-llc-sbp-04-23/. A list of consulting entities is included in Appendix A. In 2020 172 stakeholders were contacted as well as all direct DBI suppliers. Stakeholders received a request for comment via email which provided a direct link to the Supply Base Evaluation. Two Stakeholders formally responded, although one comment was addressed to SCS in response to their survey, with DBI copied in for context.

Comment 1 – Was from another BP. The content of the comment provided very helpful comments related to SBE format as well as specific questions and comments to 16 criteria within the SBE.

Response 1 - The comments were constructive but suggested no short-coming in DBIs approach to risk rating or mitigation. DBI responded with a note of thanks and a phone call to discuss the detailed comments provided. Minor adjustments were made to improve the content of DBI's SBE.

Comment 2 – Was from an NGO whose mission is to promote conservation of wildlife in LA. It was generally supportive but offered up two of the memberships concerns related to forest management in the state, and that is (1) the concern over detrimental effects of pine monoculture and (2) the forest health issues in the US

[7] Press release highlighting the collaboration with interested stakeholder, Atchafalaya Basinkeeper. http://draxbiomass.com/news/drax-biomass-collaborates-with-atchafalaya-basinkeeper-to-protect-louisianas-valuable-wetlands/

National Forest. The second concern offered a suggestion that DBI might be able to assist the USFS via its market for diseased and damaged timber.

Response 2 – Although the letter was a direct response to SCS parallel consultation, DBI responded via email thanking the organization for their thoughtful comment. DBI acknowledged the organization's concerns and is planning to continue a dialogue with them around pine management, biodiversity, and how DBI's presence in the region may offer conservation opportunities.

7 Overview of Initial Assessment of Risk

The initial risk assessment for DBI determined that most indicators are Low Risk for areas from which ABE procures biomass. The risk ratings were determined by studying a large volume of evidence previously collected to conduct DBI's company-level Controlled Wood Risk Assessment and Due Diligence Processes, and to determine compliance with the European Union Timber Regulation and the UK Department of Energy and Climate Change's Timber Standard for Heat and Electricity. The Low Risk ratings were supported by DBI's conclusion that the United States and the relevant states have well-established systems of laws and regulations that satisfy all applicable SBP indicators.

The four indicators that are "specified risk" are discussed further below.

There are no sub-scopes.

Table 1. Overview of results from the risk assessment of all Indicators (prior to SVP)

Indicator	Initial Risk Rating		
	Specified	Low	Unspecified
1.1.1		X	
1.1.2		X	
1.1.3		X	
1.2.1		X	
1.3.1		X	
1.4.1		X	
1.5.1		X	
1.6.1		X	
2.1.1		X	
2.1.2	X		
2.1.3		X	
2.2.1		X	
2.2.2		X	
2.2.3	X		
2.2.4	X		
2.2.5		X	

Indicator	Initial Risk Rating		
	Specified	Low	Unspecified
2.3.1		X	
2.3.2		X	
2.3.3		X	
2.4.1	X		
2.4.2		X	
2.4.3		X	
2.5.1		X	
2.5.2		X	
2.6.1		X	
2.7.1		X	
2.7.2		X	
2.7.3		X	
2.7.4		X	
2.7.5		X	
2.8.1		X	
2.9.1		X	

2.2.6		X	
2.2.7		X	
2.2.8		X	
2.2.9		x	

2.9.2		X	
2.10.1		X	

8 Supplier Verification Programme

8.1 Description of the Supplier Verification Programme

No Supplier Verification Program required due no “unspecified risk” determinations.

8.2 Site visits

N/A

8.3 Conclusions from the Supplier Verification Programme

N/A

9 Mitigation Measures

9.1 Mitigation measures

Specific mitigation measures, beyond diligent procurement processes, were identified for 4 indicators – 2.1.2, 2.2.3, 2.2.4, and 2.4.1. These are all related, and the same mitigations are appropriate to make the risk of non-compliance with the indicators “low”.

2.1.2 - The Biomass Producer has implemented appropriate control systems and procedures to identify and address potential threats to forests and other areas with high conservation values from forest management activities.

2.2.3 - The Biomass Producer has implemented appropriate control systems and procedures to ensure that key ecosystems and habitats are conserved or set aside in their natural state

2.2.4 - The Biomass Producer has implemented appropriate control systems and procedures to ensure that biodiversity is protected

2.4.1 - The Biomass Producer has implemented appropriate control systems and procedures for verifying that the health, vitality and other services provided by forest ecosystems are maintained or improved.

DBI has taken note of work done in producing Guidance for Assessment of Risk, Means of Verification and Mitigation Measures in the SE US, carried in Q3 2018. DBI undertakes risk profiling of suppliers.

Beyond established due diligence procedures, including knowledge of location of primary tracts, access to NatureServe information, prevalence of trained loggers, monitoring, state and federal legislation, contractual requirements, (detailed in Annex 1), the following mitigation measures have been identified for these indicators – the text is per Annex 1, DBI's supply base evaluation:

FSC US has identified, and developed mitigation measures, for four key ecosystems and one species of concern found in ABE's catchment, Late Successional Bottomland Hardwoods, Native Longleaf Pine Systems, Southern Appalachian Critical Biodiversity Area, the Central Appalachian Critical Biodiversity Areas, and the Dusky Gopher Frog.

DBI has integrated the FSC HCV maps into its GIS system and screens all suppliers for their intersection with the Specified Risks identified by FSC. Mitigation for primary feedstock includes controls embedded in DBI's internal processes which are subject to monitoring and internal audit. DBI does not have line of sight to individual tracts that provide fiber to secondary and tertiary feedstock suppliers, so other mitigations are appropriate. The following provides an overview of mitigations chosen for each FSC Specified risk:

Late Successional Bottomland Hardwoods (LSBH)
As DBI primarily sources Southern Yellow Pine, Late Successional Bottomland Hardwoods are mainly an issue for residual suppliers who process hardwoods and are proximate to LSBH areas. The areas that potentially have LSBH have been mapped by FSC and integrated into DBI's GIS system. For residual suppliers, outreach and education will be the choice mitigation tool. Educational materials have been developed to engage landowners, foresters, and loggers in conservation of this forest system. DBI also actively supports workshops and learning exchanges focused on improving the management of bottomland hardwoods in the supply area.

Native Longleaf Pine Systems (NLPS)
For NLPS, the areas at risk have been identified by FSC at county/parish level. These areas have been included in DBI's GIS system. Education and outreach will be the primary mitigation for residual suppliers whose sourcing area intersects FSC identified risk areas. The desired outcome of these communications is engaging landowners, foresters, and loggers in conservation of Native Longleaf Pine systems. DBI also actively supports workshops and learning exchanges focused on encouraging proactive management of longleaf pine in the supply area.

Southern and Central Appalachian Critical Biodiversity Area (CACBA and SACBA respectively)
Both the Central and Southern Appalachian Critical Biodiversity Areas will only affect DBI's residual sourcing due to the distance from existing pellet mills. Education and outreach will be the mitigation tool employed. As described for the risks above, these materials will be developed according to best available science and be adapted as new information and approaches come available (i.e. through FSC CW Regional meetings). This educational material will be aimed at increasing awareness of the sensitivities and unique nature of these CBAs in hopes of increasing conservation of these highly biodiverse areas.

Dusky Gopher Frog (DGF)
For the Dusky Gopher Frog, FSC identifies two small areas at the extreme south of our residual sourcing area. FSC has identified education and outreach as a mitigation option for the DGF. DBI will provide educational materials to the suppliers which have the potential to source from the FSC identified risk areas. Educational materials will be informed by the best available science and adapted as new information and/or approaches become available. The desired outcome of these communications is engaging landowners, foresters, and loggers in conservation of DGF populations.

If it is determined that the risk of negative impact to the HCV cannot be effectively mitigated through information flow and internal controls DBI can choose not to accept material from a region or a supplier.

DBI's existing programmatic procedures combined with the mitigations described above are sufficient to bring the risk of non-compliance with this requirement to "low".

9.2 Monitoring and outcomes

Monitoring will include continuing attendance at regional FSC® meetings, a forum which should provide insight into effectiveness of FSC mitigation implementation at a regional level. DBI also monitors residual supplier uptake and use of mitigation materials. Thus far information from suppliers indicates that they do have a better understanding of the specified risks in their operational area and no issues pertaining to the protection of these ecosystems or critical biodiversity areas (and species) have been raised as a concern. DBI's in-house BMP and HCV assessments have identified no issues related to protection of species or ecosystems of concern and they continue to serve as a valuable communication tool for continuous improvement in harvest implementation.

10 Detailed Findings for Indicators

Detailed findings for each Indicator are given in Annex 1.

11 Review of Report

11.1 Peer review

The Supply Base Report was peer-reviewed by an experienced consultant and another pellet producer.

2015/16

- Doug Patterson – Renewable Strategies
- Barry Parish – Georgia Biomass

2016/17

- Via Annual Internal Audit: Mike Ferrucci – Interforest

2018/19

- No external review but completed to include learning from multi-stakeholder meetings concerning SBR's and the SBP Risk Assessment process.

2019/20

- Via Annual Internal Audit: Mike Ferrucci, R. S. Berg & Associates, Inc

11.2 Public or additional reviews

Further review was undertaken during the audit process.

12 Approval of Report

Approval of Supply Base Report by senior management			
Report Prepared by:		*Director of Sustainability*	*8-15-20*
	Name	**Title**	**Date**
The undersigned persons confirm that I/we are members of the organization's senior management and do hereby affirm that the contents of this evaluation report were duly acknowledged by senior management as being accurate prior to approval and finalization of the report.			
Report approved by:		*Sr. VP, Drax Biomass*	*8-17-20*
	Name	**Title**	**Date**
Report approved by:	***[name]***	***[title]***	***[date]***

	Name	Title	Date
Report approved by:	***[name]***	***[title]***	***[date]***
	Name	**Title**	**Date**

13 Updates

2016/17

Some minor updates have been included in this report. In particular, additions and changes were included in sections 2.1 and 2.5 with updates on progress and reviews of information in sections 4.5 and 6.

Section 2.1: Statements included to address expected changes in feedstock type availability and wood manufacturing ownership in MBE's catchment.

Section 2.5: Updated feedstock proportions to reflect capabilities of what catchment has to offer and changes to MBE's feedstock type intake capabilities.

Section 4.5: Noted that no significant changes have occurred in the catchment to challenge the previous conclusion.

Section 6: Relations with stakeholders continue to evolve and challenges and successes will be noted as they are identified.

Section 11: Noted review of SBR by internal auditor.

Section 13: Section updated with required information to comply with the passing of an additional audit year.

2017/18

Updates to capture emergence of "specified risk" for 4 indicators.

2018/19

Updates to capture information on recent catchment area analysis by Hood Consulting and expanded enterprise-wide supply base.

2019/2020

Updated to capture updates in mitigations and current wood basin dynamics.

13.1 Significant changes in the Supply Base

As discussed in Section 2.1 above, the most significant recent change in the wood basin has been the closure of a Georgia Pacific's paper mill facility in Port Hudson, LA in March of 2019. The loss of this market for low-grade fiber has raised concern among forest landowners and had detrimental effects on the logging force in the region.

13.2 Effectiveness of previous mitigation measures

Diligent procurement practices and mitigation measures and have been effective.

13.3 New risk ratings and mitigation measures

Risk ratings “specified risk” for 2.1.2, 2.2.3, 2.2.4 and 2.4.1 remain the same as identified in 2019. Mitigation measures identified are described in section 9 above.

13.4 Actual figures for feedstock over the previous 12 months

Based on 12 months of production and steady state of operations: 400,000 – 600,000 tonnes of pellets:

a. Total volume of Feedstock: 800,000 – 1,000,000 tonnes
b. Volume of primary feedstock: 600,000 – 800,000 tonnes
c. List percentage of primary feedstock (g), by the following categories. Subdivide by SBP-approved Forest Management Schemes.
Our expectation for SBP-approved certified primary feedstocks in steady state operation would be in ranges shown below

- 40% to 59% certified to an SBP-approved Forest Management Scheme broken down as:
    i. *FSC®: c. 0% to 19%*
    ii. *PEFC-endorsed forest management schemes: c. 100%*
        1. *SFI®: c. 60% to 79%*
        2. *ATFS™: c. 0% to 19%*
- 40% to 59% not certified to an SBP-approved Forest Management Scheme

d. List all species in primary feedstock, including scientific name

Predominantly Southern Yellow Pine – Majority Loblolly Pine (*Pinus taeda*), smaller quantities of other pines – Slash pine (*Pinus elliotii*), Shortleaf pine (*Pinus echinata*), Spruce pine (*Pinus glabra*), Virginia pine (*Pinus virginiana*) and de minimis volumes of Longleaf Pine (*Pinus palustris*)-see comments in the Presence of CITES or IUCN species section. Minimal component of mixed southern hardwoods, various varieties of oak, maple, hickory, ash and others. Full list of 56 hardwood species available.

Many components of these wide range of species may appear when primary feedstocks are furnished from in-woods chipping operations or the occasional pine-hardwood mixed pulpwood load is accepted from a traditional harvest. At present, in-woods chips comprise 30% of LBE’s feedstock and expected to increase in the next 12-months. Pine-hardwood pulpwood mixed loads are *de minimus*. However, the hardwood component of primary feedstocks is estimated to represent <10% of total pellet feedstocks. Most of the species mix in this feedstock type would be comprised of Southern Yellow Pine with understory and/or stand improvement treatments including mixed southern hardwoods making up a minute amount of the diverse species mix.

e. Volume of primary feedstock from primary forest - *Nil*

List percentage of primary feedstock from primary forest (i), by the following categories. Subdivide by SBP-approved Forest Management Schemes

- Primary feedstock from primary forest certified to an SBP-approved Forest Management Scheme

- Primary feedstock from primary forest not certified to an SBP-approved Forest Management Scheme

f. Volume of secondary feedstock: 200,000 – 400,000 tonnes
g. Volume of tertiary feedstock: 0 – 200,000 tonnes

13.5 Projected figures for feedstock over the next 12 months

Assuming steady state operations for production of 400,000 – 600,000 tonnes of pellets[8]:

a. Total volume of Feedstock: > 1.0M green metric tonnes
b. Volume of primary feedstock: *c.* 50% to 69% of pellet feedstocks

List percentage of primary feedstock (g), by the following categories. Subdivide by SBP-approved Forest Management Schemes.

Our expectation for SBP-approved certified primary feedstocks in steady state operation would be in ranges shown below

- 40% to 59% certified to an SBP-approved Forest Management Scheme
    i. *FSC®: c. 0% to 19%*
    ii. *PEFC-endorsed forest management schemes: c. 80% to 100%*
        1. *SFI®: c. 80% to 100%*
        2. *ATFS™: c. 0% to 19%*
- 40% to 59% not certified to an SBP-approved Forest Management Scheme

c. List all species in primary feedstock, including scientific name

Predominantly Southern Yellow Pine – Majority Loblolly Pine (*Pinus taeda*), smaller quantities of other pines – Slash pine (*Pinus elliotii*), Shortleaf pine (*Pinus echinata*), Spruce pine (*Pinus glabra*), Virginia pine (*Pinus virginiana*) and de minimis volumes of Longleaf Pine (*Pinus palustris*)-see comments in the Presence of CITES or IUCN species section. Minimal component of mixed southern hardwoods, various varieties of oak, maple, hickory, ash and others. Full list of 56 hardwood species available.

Many components of these wide range of species may appear when primary feedstocks are furnished from in-woods chipping operations or the occasional pine-hardwood mixed pulpwood load is accepted from a traditional harvest. At present, in-woods chips comprise 30% of ABE's feedstock and expected to increase in the next 12-months. Pine-hardwood pulpwood mixed loads are *de minimus*. However, the hardwood component of primary feedstocks is estimated to represent <10% of total pellet feedstocks. Most of the species mix in this feedstock type would be comprised of Southern Yellow Pine with understory and/or stand improvement treatments including mixed southern hardwoods making up a minute amount of the diverse species mix.

d. Volume of primary feedstock from primary forest - *Nil*

List percentage of primary feedstock from primary forest (i), by the following categories. Subdivide by SBP-approved Forest Management Schemes

- Primary feedstock from primary forest certified to an SBP-approved Forest Management Scheme
- Primary feedstock from primary forest not certified to an SBP-approved Forest Management Scheme

e. Volume of secondary feedstock: 200,000 – 400,000 tonnes
f. Volume of tertiary feedstock: 0 – 200,000 tonnes

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[8] *Based on commercial forecast*

Appendix A

List of Consulting Entities

Certification Standards				
Sustainable Forestry Initiative®	Forest Stewardship Council®	American Tree Farm System™	International Standards Organization	
Certification Bodies				
Advanced Certification	BM TRADA Cert NA, Inc	Bureau Veritas	Rainforest Alliance	Price Waterhouse Cooper
SCS Global Services	QMI - SAI Global	NSF		
Natural Resources Agencies				
Bayou Cocodrie National Wildlife Refuge	Catahoula National Wildlife Refuge	D'Arbonne National Wildlife Refuge	Grand Cote National Wildlife Refuge	Handy Brake National Wildlife Refuge
Holt Collier National Wildlife Refuge	Lake Ophelia National Wildlife Refuge	Louisiana Wetland Management District	Overflow National Wildlife Refuge	St. Catherine Creek National Wildlife Refuge
Tensas River National Wildlife Refuge	Upper Ouachita National Wildlife Refuge	Yazoo National Wildlife Refuge	USFWS Endangered Species Program	Mississippi Forestry Commission
Louisiana Agriculture & Forestry	Arkansas Forestry Commission	Texas A&M Forest Service	Homochitto National Forest	USFS Southern Research Station
Alabama Forestry Commission	Kisatchie NF	Oklahoma Forestry Service	AL National Heritage Program	OK NRCS
Ouachita National Forest	Natural Resource Conservation Service-Local Offices	Hot Springs National Park	Big Lake Wilderness	Black Fork Wilderness
Buffalo National River Wilderness	Caney Creek Wilderness	Dry Creek Wilderness	East Fork Wilderness	Flatside Wilderness
Hurricane Creek Wilderness	Leatherwood Wilderness	Poteau Mountain Wilderness	Richland Creek Wilderness	Upper Buffalo Wilderness
Cane Creek State Park	Lake Chicot State Park	Moro Bay State Park	AR Natural Heritage Program	Breton Wilderness
Felsenthal Wildlife Refuge	Kisatchie Hills Wilderness	Lacassine Wilderness	Chemin-A-Haut State Park	Lake D'Arbonne State Park
Chemanihaut State Park	Poverty Point World Heritage Site	Lake Claiborne State Park	Jimmie Davis State Park	Winter Quarters State Historic Site
Lake Bruin State Park	LA Natural Heritage Program	Black Creek Wilderness	Gulf Islands Wilderness	Leaf Wilderness
Choctaw NWR	Talladega NF	Sipsey Wilderness	Blandon Springs SP	Cedar Creek SP
Rolan Cooper SP	Boykin WMA	Kinterbush WMA	Demopolis WMA	Little River SF
Clark Creek Nature Area	Percy Quin State Park	Natchez State Park	Lake Lincoln State Park	Mississippi Natural Heritage Program
Kitsatchie Hills Wilderness	Caddo Lake State Park	Martin Creek Lake State Park	Atlanta State Park	Texas Natural Heritage Program
TN Division of Forestry	TN Wildlife Resources Agency			
Professional Organizations				
Southern Group of State Foresters	Louisiana Forestry Association	Mississippi Forestry Association	Arkansas Forestry Association	Texas Forestry Association
Forest Resources Association	The Forest Guild	American Forest & Paper Association	US Industrial Pellet Association	Composite Panel Association

Association of Consulting Foresters-Local Chapters	Society of American Foresters-Local Chapters	The Wildlife Society	Sustainable Forestry Initiative Implementation Committees	State Tree Farm Committees
National Association of Forest Owners	Forest Landowners Association	Four States Timber Association	National Woodland Owners Association-Local Chapters	East Texas and Southeast Texas Timberland Owners Associations
Mississippi County Forestry Associations-Local Chapters	Alabama Forest Landowner Assoc.	Alabama Forestry Assn	SFI SICs and Tree Farm Committees	Oklahoma Forestry Association
Tennessee Forestry Association	Tennessee SIC			
Nongovernmental Organizations				
Atchafalaya Basin keeper	Gulf Coast Restoration Network	Sierra Club-Delta Chapter	Dogwood Alliance	Natural Resource Defence Council
The Nature Conservancy-Local Chapters	Bat Conservation International	National Wildlife Federation-Local Chapters	Longleaf Alliance	State Wildlife Federations
Ducks Unlimited-Local Chapters	Quail Forever	National Wild Turkey Federation	Quality Deer Management Association	
Indigenous Peoples (Federal and State Recognized)				
Coushatta	Chitimacha	Jena,Tunica-Biloxi	Caddo	Biloxi-Chitamimacha
Choctaw	Clifton-Choctaw	Four Winds	Louisiana Choctaw	Point-Au-Chien
Cherokees of SE AL	Cherokee	Ma-Chris Lower Creek Indiana Tribe	Piqua Shawnee	Star Clan
United Houma	Mississippi Band of Choctaw	Cher-O-Creek Intra Tribal Indiana	Coushatta	Four Winds Tribe
Creeks	Cherokee Tribe of Alabama	MOWA Choctaw Indians		
Local Government				
LaSalle Parish, LA Police Jury	Amite County	Morehouse Parish, LA Police Jury		
Economic Development Organizations				
Bastrop-Morehouse Chamber of Commerce	Louisiana Economic Development (LED)			
Forest Worker Associations/Programs				
American Logging Council	Arkansas Timber Producers Organization	Texas Logging Council	Mississippi Board of Registration for Foresters	Arkansas Board of Registration for Foresters
Louisiana Logging Council-Regional Chapters	American Wood Council	Alabama Board of Registration for Foresters	Alabama Logging Council	

Annex 1: Detailed Findings for Supply Base Evaluation Indicators

Entirety of Supply Base Evaluation (SBE) applicable to Amite, LaSalle, Morehouse Bioenergy unless notated otherwise.

Preamble

Leading means of verification applicable to most indicators:

The existence of, and effective application of, state and federal legislation is a key verifier. Suppliers and forest landowners located within the defined fiber catchments operate in a social system upheld by the "rule of law". The effectiveness of the rule of law in the US is verified by such indices as the Worldwide Governance Indicators, overseen by the World Bank. The US is in the 89th percentile for rule of law, giving confidence to the rule of law as a control.

Third party certifications are further evidence that Drax Biomass Inc. (DBI) complies with applicable legislation, regulations and/or accepted practices. In addition to the Sustainable Biomass Program (SBP), DBI participates in three other certification programs: FSC® Chain of Custody and Controlled Wood, SFI® Chain of Custody and Fiber Sourcing, and PEFC™ Chain of Custody. DBI's management system, internal processes and policies are reviewed as part of the external third-party audits associated with the certifications listed.

The Sustainability section of the Drax Biomass webpage contains additional resources: https://www.draxbiomass.com/sustainability/

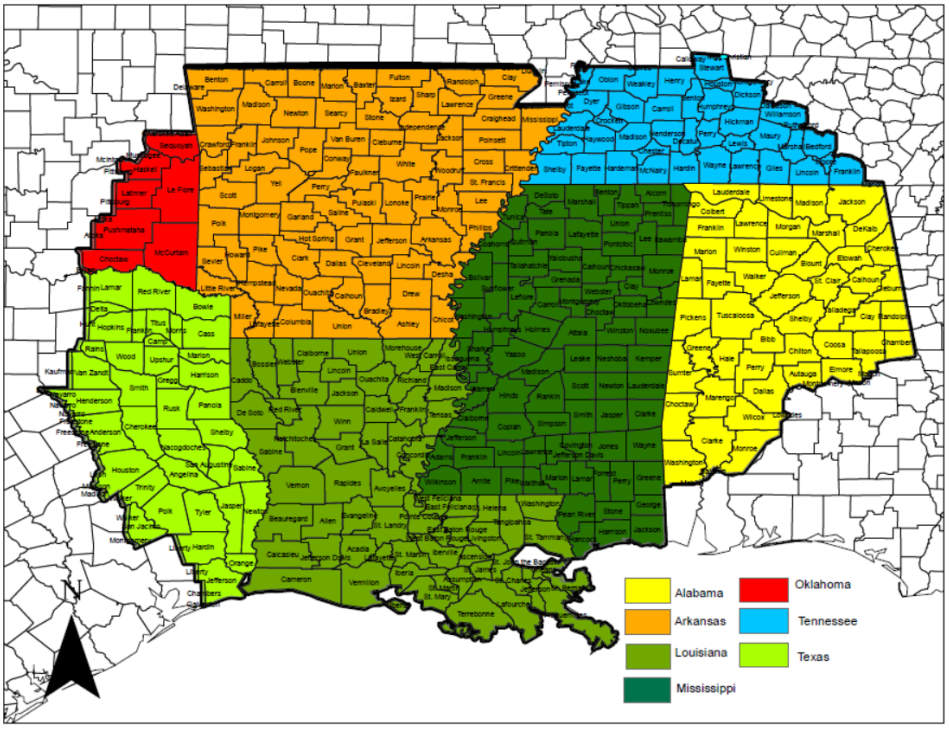
Landscape Level Risk Assessments:

- FSC® US National Controlled Wood Risk Assessment (US NRA)
- Global Forest Registry (discontinued but valuable for initial evaluation process – reference retained)
- FSC® Controlled Wood Risk Assessments (CWRA) of other forest products users in DBI's fiber procurement catchments
- SBP Supply Base Reports of other forest products users in DBI's fiber procurement catchments
- DBI's Due Diligence System (DDS) for fiber procurement

Supporting Company Policies and Procedures:

- Drax Environmental Policy
- Drax Sustainability Policy
- Drax Health and Safety Policy
- DBI's Biomass Sustainability Programs (BSPs) Contracts, Procedures and Records

This revision of the Supply Base Evaluation incorporates the final FSC US Controlled Wood Risk Assessment. The US NRA has identified some "specified risks" in relation to high conservation value forests and conversion, and has mapped these. There are no regions of DBI's sourcing area identified by FSC to be at risk for conversion, however, specified risks related to other high conservation values have been identified. The specified risks identified pertain to SBP indicators 2.1.2, 2.2.3, 2.2.4 and 2.4.1. DBI implements suitable mitigations for these risks by utilizing FSC approved mitigations as well as internal controls.

	Indicator
1.1.1	The Biomass Producer's Supply Base is defined and mapped.
Finding	Drax Biomass Inc's (DBI) fiber procurement catchment includes Arkansas, Louisiana, Mississippi, and portions of Alabama (47 counties), Texas (37 counties), Oklahoma (7 counties), and Tennessee (37 counties) See map of supply area below. The Company owns and operates three pellet plants: Amite BioEnergy (ABE) in Gloster, MS; Morehouse BioEnergy (MBE) near Beekman, LA and LaSalle BioEnergy (LBE) in Urania, LA. Each plant typically draws feedstock from within a 70-mile radius but maintains the ability to procure out to a 100-mile radius to obtain primary feedstock in response to market pressures and weather events. However, secondary feedstocks produced by forest product manufactures could be procured from as far away as 200 miles. ABE, under most circumstances, procures fiber from Mississippi, Louisiana and west-central Alabama; LBE from southern Arkansas, Louisiana and potentially east Texas; and MBE from southern Arkansas, northwest Mississippi, and northern Louisiana, with the potential for lesser volumes from east Texas/Oklahoma and western Tennessee. A map of DBI's sourcing area forms part of DBI's contract with suppliers. 
Means of Verification	• Map is provided
Evidence Reviewed	• All means of verification reviewed
Risk Rating	x **Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**

Comment or Mitigation Measure	None

	Indicator
1.1.2	Feedstock can be traced back to the defined Supply Base.

Finding	A map of DBI's sourcing area forms part of DBI's contract with suppliers.
	
	• Binding contractual requirements stipulate that suppliers disclose the source's origination information (lat/long) to establish a gate pass before loads of roundwood or in-woods chips enter mill sites.
	• Robust transaction accounting system captures sustainability characteristics about the source upon establishment and assigns relational information to each load registered upon delivery.
	  ○ Transaction accounting system captures location, type of cut and species groups and other information.
	  ○ Control points are established, and training is completed to ensure only sources of known origin enter mill sites.
	  ○ Monitoring by procurement and sustainability staff verify accuracy of records and locations of tracts.
	• DBI holds verified SFI®, PEFC™ and FSC® CoC Certificates substantiating that all feedstock is assessed for risk via a Due Diligence System (DDS).
	• Majority of feedstock inputs are from primary sources with a growing proportion from secondary sources.
	Suppliers of secondary and tertiary feedstocks have contractual requirements to confirm that their feedstock originates within DBI's defined catchment. This is checked through internal procedures at DBI, including logical haul radius regular communication with secondary and tertiary suppliers, and internal audit

Means of Verification	• Transactional accounting system hold details of volumes, species and locations. • Professional fiber procurement and sustainability personnel • Third party audits of sustainability program evidence the presence of a functioning supply chain management system that complies with the legal requirements to track and trace raw material. • Administrative processes and fiduciary responsibilities to tax law have been defined and implemented. These require business to identify and capture the district of origin of fiber that enable states to assign and collect severance taxes. • See Preamble citations, including Worldwide Governance Indicators • Forest Property Taxation Systems in the United States: Each jurisdiction has its own version of record retention and/or payment periods for timber purchases.
Evidence Reviewed	• All means of verification reviewed
Risk Rating	x **Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**
Comment or Mitigation Measure	None

	Indicator
1.1.3	The feedstock input profile is described and categorised by the mix of inputs.

Finding	• DBI's Biomass Producers consume biomass feedstock comprised of low value roundwood, thinnings, tops, logging residues and mill residues from southern yellow pine (SYP) species, with minority components of mixed southern hardwoods.
	• Binding contractual requirements stipulate that suppliers disclose the source's origination information to establish a gate pass before loads enter mill sites. Compulsory requirements to follow all applicable laws and regulations along with upholding the intent of DBI's commitment to sustainable forestry, are included in contracts.
	• Robust transaction accounting system captures sustainability characteristics about the source upon establishment and assigns relational information to each load registered upon delivery.
	  ○ Transaction accounting system captures designation of the inputs and species groups.
	  ○ Control points are established, and training is completed to ensure only sources of known origin enter mill sites.
	• DBI holds verified SFI®, PEFC™ and FSC® CoC Certificates substantiating that all feedstock is assessed for risk via a Due Diligence System (DDS).
	• Majority of feedstock inputs at LBE, MBE, and ABE are from primary sources with a growing proportion from secondary sources.
	• Suppliers of secondary and tertiary feedstocks have contractual requirements to confirm that their feedstock originates within DBI's defined catchment. This is checked through internal procedures at DBI, including logical haul radius and regular communication with secondary and tertiary suppliers. Communication includes inspection where required.
	• Monitoring and internal audit is carried out to verify the accuracy and completeness of information gathered.

Means of Verification	• Transactional accounting system records of feedstock inputs • Monitoring records • Administrative responsibilities. Third party audits of sustainability programs evidence the presence of a functioning supply chain management system that complies with the legal requirements to track and trace raw material. Third party audits provide assurance that accurate material inputs are defined and captured (i.e. species, fiber type, harvest method), and derived from sources within the boundaries of the defined risk assessed region. Additional Citations: • Preamble citations including Worldwide Governance Indicators • Professional fiber procurement and sustainability personnel
Evidence Reviewed	• All means of verification reviewed
Risk Rating	x **Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**
Comment or Mitigation Measure	None

<table>
<tr><th></th><th>Indicator</th></tr>
<tr><td>1.4.1</td><td>The Biomass Producer has implemented appropriate control systems and procedures to verify that payments for harvest rights and timber, including duties, relevant royalties and taxes related to timber harvesting, are complete and up to date.</td></tr>
<tr><td>Finding</td><td>

FSC US National Risk Assessment has determined there is a “low risk” of illegally harvested wood through examination of 21 indicators including payment of taxes, royalties and duty (indicators 1.2, 1.4-1.7, 1.17, 1.19).
Each jurisdiction has its own version of record provisions and/or payment periods for timber purchases. DBI is compliant with the most stringent record retention policies.
Severance tax records
No export taxes or duties are required for sale of pellets.

</td></tr>
<tr><td>Means of Verification</td><td>

Effective application of State and Federal legislation in respect of customs and duties, especially dealing with assessments and collections. Strong contractual law drives compliance. Management systems, internal processes, and company policies are reviewed as part of third party certifications.
See Preamble citations including Worldwide Governance Indicators.
All states DBI purchases fiber from have severance tax requirements: Timber severance tax by state.

<table>
<tr><th>Mississippi:</th><th>Louisiana</th><th>Arkansas</th><th>Alabama</th><th>Oklahoma</th><th>Tennessee</th><th>Texas</th></tr>
<tr><td>Payment window and access to load tickets</td><td>Provide load tickets and loader logs</td><td>Payment window</td><td>Forestry Records Law</td><td>Oklahoma Forestry Code</td><td>TN Timber Tax Information</td><td>Texas Taxation Information</td></tr>
</table>

Severance taxes are paid on behalf of the supplier by DBI allowing the landowner to produce the filing/return with the proper tax authority.
Sec of State Certificate of good standing and no tax liens exists for Amite BioEnergy LLC, Morehouse BioEnergy LLC, LaSalle BioEnergy LLS or Baton Rouge Transit LLC .Operational Control Procedures for Wood Procurement states "establishment of account includes the payment of severance taxes to the appropriate authority."
Load receipts and vendor statements are issued to suppliers for reconciliation with landowners
DBI’s Certificates of Good Standing (Ex: Louisiana Sec of State, Mississippi Sec of State)

</td></tr>
<tr><td>Evidence Reviewed</td><td>

All means of verification reviewed

</td></tr>
<tr><td>Risk Rating</td><td>x Low Risk ☐ Specified Risk ☐ Unspecified Risk at RA</td></tr>
<tr><td>Comment or Mitigation Measure</td><td>None</td></tr>
</table>

<table>
<tr><th></th><th>Indicator</th></tr>
<tr><td>1.6.1</td><td>The Biomass Producer has implemented appropriate control systems and procedures to ensure that feedstock is not sourced from areas where there are violations of traditional or civil rights.</td></tr>
</table>

Finding	• The recent FSC Controlled Wood National Risk Assessment for the US has determined that there is a “Low Risk” of “wood harvested in violation of traditional and human rights” in the conterminous US (Category 2). • Recognized and equitable processes are in place to resolve conflicts of substantial magnitude pertaining to traditional rights. • Though not ratified, the United States is in overall compliance with the ILO Convention 169, which addresses customs and beliefs, education and training, health services, land rights, social security, protection of language and culture, and pay and working conditions. • The legal system in the United States is generally considered fair and efficient in resolving conflicts pertaining to traditional rights including use rights, cultural interests or traditional cultural identity. There are different mechanisms or processes that allow Native American tribes, as well as any private citizen, to deal with disagreement and conflict related to decisions affecting natural resources, and forests that are considered to be equitable. Note the list of Federal Acts Below • Intra-tribal councils and the Bureau of Indian Affairs resources provide information concerning consultations, actions and resolutions. https://www.bia.gov/sites/bia.gov/files/assets/public/webteam/pdf/idc1-028635.pdf https://biamaps.doi.gov/ https://www.choctaw.org/government/development/forestry.html http://www.koasatiheritage.org/pages/tribal-history/ http://www.jenachoctaw.org/content/epa https://www.tunicabiloxi.org/tribal-info/departments/land-office/ https://itec.cherokee.org/ http://www.shawnee-tribe.com/Environmental.html
Means of Verification	• Existence and effective application of federal and state legislation and conventions. These aspects provide protection and recourse if breached. Programs available to contribute to improved circumstances for indigenous tribes. Management systems, internal processes and company policies are reviewed as part of third party certifications. • USFS Tribal Relations • Preamble citations including Worldwide Governance Indicators • Regional and National controls and evidence (e.g. FSC determination of “Low Risk”) apply to all suppliers. DBI undertakes regular assessment of supplier performance. • There are a number of laws which ensure protection of traditional and civil rights: o American Indian Religious Freedom Act of 1978 (amended 1994) o Indian Child Welfare Act of 1978 o Indian Citizenship Act of 1924 o Indian Self-Determination and Education Assistance Act of 1975 o Native American Languages Act of 1990 o Tribal Law and Order Act of 2010 o ILO Convention 169 • US Dept of Interior-Indiana Affairs • Inter-Tribal Councils of +the region o Inter-Tribal Council – Houma, LA o Inter-Tribal Council - Baton Rouge, LA o Inter-Tribal Council – Philadelphia, MS o Inter-Tribal Council of AL, Inc o Inter-Tribal Community Council of Texas o Inter-Tribal Council of NE OK • FSC Chain of Custody requires acknowledgements relating to health, safety and labour issues that are based on ILO Declaration on Fundamental Principles and Rights at Work, 1998 • Through the Stakeholder Consultation process DBI has attempted to communicate with tribes located in procurement region. There has been no return communication
Evidence Reviewed	• All means of verification reviewed
Risk Rating	x **Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**

	Indicator
1.2.1	The Biomass Producer has implemented appropriate control systems and procedures to ensure that legality of ownership and land use can be demonstrated for the Supply Base.
Finding	• FSC US National Risk Assessment has determined there is a "low risk" of illegally harvested wood through examination of 21 indicators including ownership and land use. • The World Bank has awarded the US a Global Governance Index rating that is in the 89th percentile for rule of law. • Annual review of the DDS is completed to substantiate and reverify the "low risk" determination. • Per the preamble, the Worldwide Governance Indicators provides assurance that the rule of law is effective in this geography. This further assures performance of suppliers of secondary and tertiary feedstocks.
Means of Verification	• Property law is well established and policed through effective courts (see Global Governance index). DBI has implemented DDS presenting the laws utilized in the US and each state sourced from to showcase the rule of law and public agency governance. • Risk assessments listed in preamble, which range from company to landscape level, have captured the existence and effectiveness of statutory, contractual, property, and civil law in the defined supply base. • Land use challenges are absent and legal processes are present to establish and challenge land ownership in the wood procurement region. • Preamble citations including Worldwide Governance Indicators • DBI has implemented a procedure to ensure a defined response of preferred actions to handle identified non-compliant material in relation to compliance with the Timber Standard and EUTR. • DBI has written contracts for all suppliers. • Suppliers are required to abide by all laws and regulations in a Fiber Purchase Agreement. • Monitoring, as well as internal and external audit, act as checks for completeness and accuracy of records. • Stakeholder Consultation • Transactional accounting system records • DBI conducted a comprehensive stakeholder consultation to capture feedback regarding legality issues in the procurement regions. ○ One stakeholder voiced their concern about the level of law enforcement and effectiveness of existing legal controls as they relate to logging. However, DBI continues to support FSC assessment of "low-risk," and through continued monitoring of their catchment finds that the level of enforcement is effective, and that timber trespass is not systemic in procurement region.
Evidence Reviewed	• All means of verification reviewed
Risk Rating	x **Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**
Comment or Mitigation Measure	None

<table>
<tr><th></th><th>Indicator</th></tr>
<tr><td>1.3.1</td><td>The BP has implemented appropriate control systems and procedures to ensure that feedstock is legally harvested and supplied and is in compliance with EUTR legality requirements.</td></tr>
<tr><td>Finding</td><td>

EUTR requires that timber is harvested in accordance with applicable legislation in the country of harvest. Information in 1.2.1 above and bullet points below are indicators of low risk of non-compliance for all categories of feedstock.
The FSC US National Risk Assessment has determined there is a “Low Risk” of “illegally harvested wood”.
Each state DBI sources from has timber trespass and theft legislation governing public agencies and enforcement bodies.
Each state sourced from has established rule of law and public agency governance.
Level of enforcement and effectiveness is evident in news reports and timber trespass is not systemic in procurement catchments. (See evidence table presented in Means of Verification).

</td></tr>
<tr><td>Means of Verification</td><td>

FSC US National Risk Assessment has determined there is a “low risk” of illegally harvested wood through examination of 21 indicators including payment of taxes, royalties and duty (indicators 1.2, 1.4-1.7, 1.17, 1.19).
Timber trespass and theft legislation, governing public agencies and enforcement bodies are existent and effective.

<table>
<tr><th>Texas</th><th>Tennessee</th><th>Mississippi</th><th>Louisiana</th><th>Arkansas</th><th>Alabama</th><th>Oklahoma</th><th>Federal</th></tr>
<tr><td>State Timber Theft Law</td><td>State Timber Theft Law</td><td>State Timber Theft Law</td><td>State Timber Theft Law</td><td>Arkansas Timber Theft</td><td>AL Timber Theft Law</td><td>OK Forestry Code</td><td>US: Lacey Act</td></tr>
<tr><td>Publication explaining timber theft law.</td><td>UT Extension Fact sheet</td><td>MS Agricultural and Livestock Theft Bureau</td><td>Timber theft cases and litigation discloser via search engine.</td><td>Timber Theft Fact Sheet</td><td>AL Change in Enforcement Agency</td><td>No reports returned by web crawler</td><td>Enforcement Action: Article summarizing recent cases.</td></tr>
<tr><td>Enforcement action example.</td><td>Enforcement Action Example</td><td>Article presenting enforcement action stats for past two years.

MS Enforcement Action Example</td><td>LA Timber Theft Brochure

LA Enforcement Action Example</td><td>Arkansas AG Law Enforcement News Report</td><td>AL Enforcement Example</td><td>Article that includes OK Timber Theft Rates</td><td>Third party review of effectiveness of laws: Environmental Investigation Agency</td></tr>
</table>

EIA website only cites the United States with regards to US based companies operating in other countries concerning the Lacey Act.
Thesis by Timothy Hicks and compendium by Defenders of Wildlife provides a list of forestry laws regarding illegal trespass. This publication provides a listing of applicable State laws for forestry within each State.
See list of state forestry laws at: https://defenders.org/sites/default/files/publications/state_forestry_laws.pdf

</td></tr>
</table>

Table 5.1: US Forest Service Law Enforcement and Investigations, Incidents and Case Statistics, 2009–2013

	2009	2010	2011	2012	2013
Cases	2,730	2,668	2,712	2,489	1,657
Incidents	202,200	177,189	138,971	124,571	103,333

Source: US Forest Service presentation to Interpol. Available at: file:///C:/Users/Test%20Account/Downloads/David%20Ferrell,%20USDA%20Forest%20Service%20-%20Law%20Enforcement%20Investigations%20(2).pdf

- Preamble citations including Worldwide Governance Indicators
- Timber theft resources by state, Forest 2 Market
- "Illegal Logging and Global Wood Markets", Seneca Creek Assoc and World Resources Institute
- The American Hardwood Export Council (AHEC) examined legality and found that while timber theft is a significant and consequential problem for affected landowners, the volume of US hardwood production that may be illegally obtained is very low relative to production. See Assessment of Lawful Harvesting and Sustainability of US Hardwood Exports, American Hardwood Export Council
- See Chatham House Illegal logging portal for analysis and review of forest governance and legality.
- A Nationwide Survey of Timber Trespass Legislation.by Hicks (MS Thesis) presents a comprehensive list of timber trespass legislation (Timothy Hicks, 2005 PSU School of Forest Resources).
- State Forestry Laws. Defenders of Wildlife, October 2000.
- According to the UCR, property crime offenses declined by 2.6 percent in 2015 compared with 2014, and by 20.2 percent when compared with the 2006 data
- Since 2008, several other states have also acted to strengthen timber theft laws by expanding enforcement and/or increasing penalties (for example, Missouri, Louisiana, and Arkansas). In Louisiana, the rate of occurrence of timber theft is reportedly less than in past years due to changes in the law that imposed higher penalties.
- http://cofe.org/files/2018_Proceedings/Grove%20and%20Conrad.pdf
  http://www.mdac.ms.gov/wp-content/uploads/mdac_annualrpt2019.pdf
- http://www.ldaf.state.la.us/forestry/enforcement/
- https://tfsweb.tamu.edu/lawenforcement/reporttimbertheft/w of timber security news feeds
- DBI conducted a comprehensive stakeholder consultation to capture feedback about legality issues in the procurement regions.
  - One stakeholder voiced their concern about the level of law enforcement and effectiveness of existing legal controls as they relate to logging. However, DBI continues to support FSC assessment of "low-risk" and through continued monitoring of their catchment, finds that the level of enforcement is effective, and that timber trespass is not systemic in procurement region
- DBI collects information is collected through the transactional system of record regarding, species, volumes, region of origin, and supplier, all required within EUTR.
- DBI has implemented a procedure to ensure a defined response of preferred actions to handle identified non-compliant material in relation to compliance with the Timber Standard and EUTR.
- DBI has due diligence system that including checks for illegal activities prior to contract commencing. System is referred to internally as "Know Your Vendor" or KYV process.
- DBI's chain-of-custody and FSC CW Due Diligence System houses a comprehensive list of relevant US laws for reference.
- Right to sell material is clearly established as part of legal contract. Management systems, internal processes and company policies reviewed as part of third-party certifications
- Suppliers are obligated to abide by all laws and regulations by signatory of the Fiber Purchase Agreement.

Evidence Reviewed	• All means of verification reviewed
Risk Rating	x **Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**

Comment or Mitigation Measure	None

	Indicator
1.4.1	The Biomass Producer has implemented appropriate control systems and procedures to verify that payments for harvest rights and timber, including duties, relevant royalties and taxes related to timber harvesting, are complete and up to date.
Finding	• FSC US National Risk Assessment has determined there is a "low risk" of illegally harvested wood through examination of 21 indicators including payment of taxes, royalties and duty (indicators 1.2, 1.4-1.7, 1.17, 1.19). • Each jurisdiction has its own version of record provisions and/or payment periods for timber purchases. DBI is compliant with the most stringent record retention policies. • Severance tax records • No export taxes or duties are required for sale of pellets.
Means of Verification	• Effective application of State and Federal legislation in respect of customs and duties, especially dealing with assessments and collections. Strong contractual law drives compliance. Management systems, internal processes, and company policies are reviewed as part of third party certifications. • See Preamble citations including Worldwide Governance Indicators. • All states DBI purchases fiber from have severance tax requirements: Timber severance tax by state.

Mississippi:	Louisiana	Arkansas	Alabama	Oklahoma	Tennessee	Texas
Payment window and access to load tickets	Provide load tickets and loader logs	Payment window	Forestry Records Law	Oklahoma Forestry Code	TN Timber Tax Information	Texas Taxation Information

	• Severance taxes are paid on behalf of the supplier by DBI allowing the landowner to produce the filing/return with the proper tax authority. • Sec of State Certificate of good standing and no tax liens exists for Amite BioEnergy LLC, Morehouse BioEnergy LLC, LaSalle BioEnergy LLS or Baton Rouge Transit LLC .Operational Control Procedures for Wood Procurement states "establishment of account includes the payment of severance taxes to the appropriate authority." • Load receipts and vendor statements are issued to suppliers for reconciliation with landowners • DBI's Certificates of Good Standing (Ex: Louisiana Sec of State, Mississippi Sec of State)
Evidence Reviewed	• All means of verification reviewed
Risk Rating	x **Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**
Comment or Mitigation Measure	None

	Indicator
1.5.1	The Biomass Producer has implemented appropriate control systems and procedures to verify that feedstock is supplied in compliance with the requirements of CITES.
Finding	• FSC US National Controlled Wood Risk Assessment has determined there is "Low Risk" of illegally harvested wood through examination of 21 indicators including compliance with CITES requirements (indicator 1.20). • The US ratified CITES in 1974 and no trade suspensions with the US exists. • No production pine or hardwood species are listed by CITES.
Means of Verification	• CITES is administered enforced by public agencies with robust governance. • In the US CITES enforcement is a Federal responsibility and is shared between US Customs and Border Protection (Customs), the Animal and Plant Health Inspection Service (APHIS) and the US Fish and Wildlife Service (USFWS). USFWS is the official US CITES management authority. • Preamble citations including Worldwide Governance Indicators • CITES list is available and reviewed periodically https://www.speciesplus.net/. • DBI does not procure any species that are currently listed in CITES. Reviewed CITES website to determine. • Fiber Purchase Agreement obligates suppliers to abide by all laws and regulations as a signatory. • Supply chain management system that assures accurate material inputs are defined and captured (i.e. species and fiber type), transactional system records this information.
Evidence Reviewed	• All means of verification reviewed
Risk Rating	x **Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**
Comment or Mitigation Measure	None

	Indicator
1.6.1	The Biomass Producer has implemented appropriate control systems and procedures to ensure that feedstock is not sourced from areas where there are violations of traditional or civil rights.
Finding	• The recent FSC Controlled Wood National Risk Assessment for the US has determined that there is a "Low Risk" of "wood harvested in violation of traditional and human rights" in the conterminous US (Category 2). • Recognized and equitable processes are in place to resolve conflicts of substantial magnitude pertaining to traditional rights. • Though not ratified, the United States is in overall compliance with the ILO Convention 169, which addresses customs and beliefs, education and training, health services, land rights, social security, protection of language and culture, and pay and working conditions.

	• The legal system in the United States is generally considered fair and efficient in resolving conflicts pertaining to traditional rights including use rights, cultural interests or traditional cultural identity. There are different mechanisms or processes that allow Native American tribes, as well as any private citizen, to deal with disagreement and conflict related to decisions affecting natural resources, and forests that are considered to be equitable. Note the list of Federal Acts Below • Intra-tribal councils and the Bureau of Indian Affairs resources provide information concerning consultations, actions and resolutions. https://www.bia.gov/sites/bia.gov/files/assets/public/webteam/pdf/idc1-028635.pdf https://biamaps.doi.gov/ https://www.choctaw.org/government/development/forestry.html http://www.koasatiheritage.org/pages/tribal-history/ http://www.jenachoctaw.org/content/epa https://www.tunicabiloxi.org/tribal-info/departments/land-office/ https://itec.cherokee.org/ http://www.shawnee-tribe.com/Environmental.html

Means of Verification	• Existence and effective application of federal and state legislation and conventions. These aspects provide protection and recourse if breached. Programs available to contribute to improved circumstances for indigenous tribes. Management systems, internal processes and company policies are reviewed as part of third party certifications.
	• USFS Tribal Relations
	• Preamble citations including Worldwide Governance Indicators
	• Regional and National controls and evidence (e.g. FSC determination of "Low Risk") apply to all suppliers. DBI undertakes regular assessment of supplier performance.
	• There are a number of laws which ensure protection of traditional and civil rights:
	  ○ American Indian Religious Freedom Act of 1978 (amended 1994)
	  ○ Indian Child Welfare Act of 1978
	  ○ Indian Citizenship Act of 1924
	  ○ Indian Self-Determination and Education Assistance Act of 1975
	  ○ Native American Languages Act of 1990
	  ○ Tribal Law and Order Act of 2010
	  ○ ILO Convention 169
	• US Dept of Interior-Indiana Affairs
	• Inter-Tribal Councils of +the region
	  ○ Inter-Tribal Council – Houma, LA
	  ○ Inter-Tribal Council - Baton Rouge, LA
	  ○ Inter-Tribal Council – Philadelphia, MS
	  ○ Inter-Tribal Council of AL, Inc
	  ○ Inter-Tribal Community Council of Texas
	  ○ Inter-Tribal Council of NE OK
	• FSC Chain of Custody requires acknowledgements relating to health, safety and labour issues that are based on ILO Declaration on Fundamental Principles and Rights at Work, 1998
	• Through the Stakeholder Consultation process DBI has attempted to communicate with tribes located in procurement region. There has been no return communication

Evidence Reviewed	• All means of verification reviewed
Risk Rating	**x Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**
Comment or Mitigation Measure	**None**

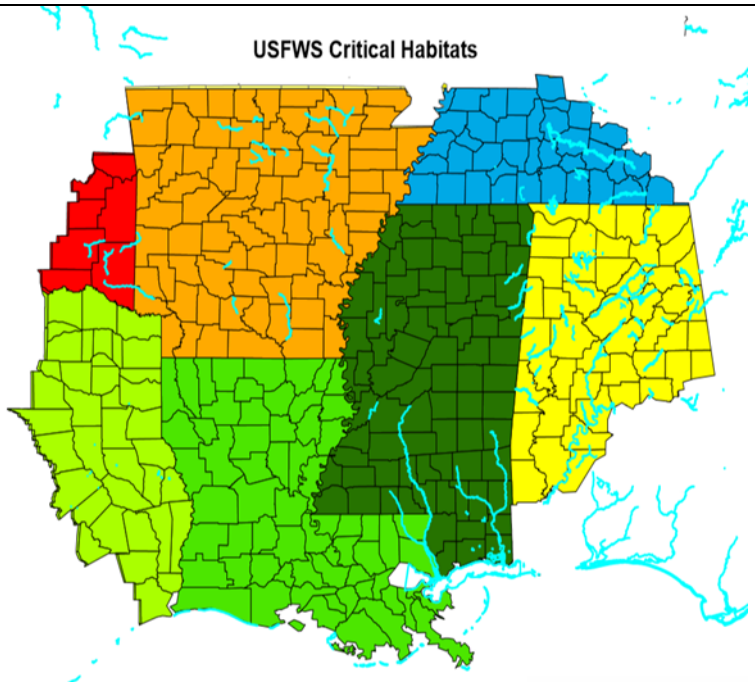
	Indicator
2.1.1	The Biomass Producer has implemented appropriate control systems and procedures for verifying that forests and other areas with high conservation values are identified and mapped.
Finding	• DBI has access to maps identifying forests and other areas of high conservation value These include: ○ FSC US Controlled Wood National Risk Assessment ○ NatureServe – via license agreement which allows access to species occurrence data for G1-G2 and federally threatened and endangered species ○ USGS Protected Area Database (PAD) ○ Other publicly available maps/sources detailed in Means of Verification below.
Means of Verification	• DBI has a procedure to utilize internal GIS mapping resources to geographically reference risks relative to sourcing and assure adequate protection. • The FSC NRA was used as a primary reference for HCV review. Maps of Specified Risks were incorporated into DBI's GIS system and Rapid Risk Assessment procedure. Mitigation measures have been developed to address sourcing from the following Specified Risks 1. Native Longleaf Pine Systems 2. Late Successional Bottomland Hardwoods 3. Dusky Gopher Frog 4. Southern Appalachian Critical Biodiversity Area 5. Central Appalachian Biodiversity Area https://us.fsc.org/en-us/certification/controlled-wood/fsc-us-controlled-wood-national-risk-assessment-us-nra • Federally threatened and endangered species and species/natural communities ranked G1 and G2 do occur within the sourcing area and known locations within DBI's primary sourcing area are mapped using NatureServe and Natural Heritage data. • RAMSAR sites: there are three named sites within DBI's sourcing area, all are protected by state, federal, and NGO ownership and involvement. Any harvesting within these areas would be under direct supervision of the state and federal agencies. These areas include: Catahoula Lake, LA, Caddo Lake, TX/LA, and Cache-Lower White Rivers, AR. https://www.ramsar.org/ • There is one Conservation International Biodiversity hotspot within the sourcing area, the "North American Coastal Plain". This is a broad region, reaching from northern Mexico along the Gulf of Mexico and up the East Coast to south-eastern Massachusetts. The concerns in this Global 200 region have been reviewed and crosschecked with the specified risks identified in the FSC NRA and are appropriately identified and addressed. https://www.cepf.net/our-work/biodiversity-hotspots • There are two WWF Global 200 ecoregions in the sourcing area, the temperate coniferous and broadleaf forest (#75) and the Appalachian and mixed mesophytic forests (#69). These Global 200 regions represent aggregations of WWF continental ecoregions (described below) to a scale which is assistive to global prioritization. In theory, conservation within these global ecoregions would help conserve the most outstanding and representative habitats for biodiversity in the world. • There are ten WWF terrestrial ecoregions identified in the supply area, nine are considered "critical/endangered" by WWF and one is considered "vulnerable". WWF ecoregions are only one ecoregion classification method. The WWF ecoregions focus narrowly on regional concerns which WWF has identified to help direct their conservation efforts. To inform management and conservation initiatives DBI has chosen EPA ecoregion III and IV classifications, which provide more detailed ecological information relevant to forest management than the WWF ecoregions. The

issues identified in these WWF ecoregions have been considered by FSC National Risk Assessment, a multi-stakeholder review, and have been incorporated, as appropriate, into their specified HCV risks. DBI has reviewed the WWF ecoregions and crosschecked them with the identified risks in the FSC NRA as well and the proprietary HCV mapping tools developed in partnership with Nature Serve, to assure they have been adequately identified and addressed. WWF ecoregions reviewed include:

1. NA0404 Central US Hardwood Forests - Critical/Endangered
2. NA0409 Mississippi Lowland Forests - Critical/Endangered
3. NA0412 Ozark Mountain Forests - Critical/Endangered
4. NA0413 Southeastern Mixed Forests - Critical/Endangered
5. NA0523 Piney Woods forests, - Critical/Endangered
6. NA0529 Southeastern Conifer Forests - Critical/Endangered
7. NA0701 Western Gulf Coastal Grasslands – Critical/Endangered
8. NA0804 Central forest-grasslands transition – Critical/Endangered
9. NA0402 Appalachian mixed mesophytic forests – Critical/ Endangered
10. NA0403 Appalachian-Blue Ridge Forests – Vulnerable

- There is one WWF aquatic region concern that falls within DBI's sourcing area, the Southeastern Rivers and Streams ecosystem. Streams and rivers associated with known HCVs have been flagged by Nature Serve and are incorporated into DBI's mapping systems.
- There are several Key Biodiversity Areas (KBA) and Alliance for Zero Extinction areas (AZE) within the sourcing area. These areas are under federal/state/and NGO protection and no sourcing from them can occur without appropriate oversight of these entities. http://www.keybiodiversityareas.org/site/mapsearch
- https://zeroextinction.org/site-identification/2018-global-aze-map/
    - Homochitto (MS)
    - Mississippi Sandhill Crane National Wildlife Refuge (MS)
    - Mid-south DeSoto - also AZE site (MS)
    - Warren Prairie - MS
    - Cache-Lower White Rivers – also a Ramsar site (MS)
    - Talladega (AL)
    - Lacon Eit Cave and association hydrobasin – and AZE site(AL)
    - Wheeler National Wildlife Refuge
    - Fort Chaffee (AR)
    - Ozark National Forest (AR)
    - Cypress Creek and associated hydrobasin – also AZE site (TN)
    - Sand Creek and associated hydrobasin – AZE site only
    - Walter B. Jacobs Memorial Nature Park – AZE only
    - Kisatchie (LA)
    - Chenier Plain (LA)
    - and Coastal Prairie (LA)
    - Catahoula-Dewy Wills-three Rivers (LA)
    - The USFWS has designated 41 federally threatened and endangered species in their critical habitat areas within DBI's Supply Base.

      See link to critical habitat map:
      https://www.arcgis.com/home/item.html?id=9d8de5e265ad4fe09893cf75b8dbfb77

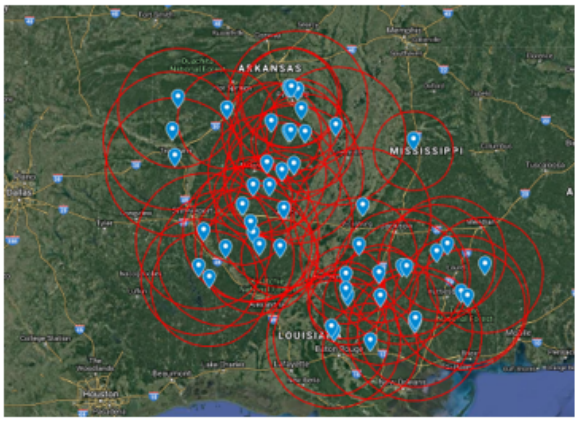
	 • In partnership with the Atchafalaya Basin Keeper, DBI has recognized and mapped the Atchafalaya Basin as a high conservation area. • There are no "Intact Forest Landscapes" (collaborative effort including among others Greenpeace, WRI, WWF) http://www.intactforests.org/world.webmap.html • There are no High Biodiversity Wilderness Areas per Conservation International https://www.worldheritagesite.org/connection/High-Biodiversity+Wilderness+Area • There are 6 species on the IUCN Red List that occur within the states DBI sources from. Quercus oglethorpensis (oglethorpe oak), Fraxinus profunda (pumpkin ash), Fraxinus caroliniana (carolina ash), Quercus acerifolia (maple-leaved oak) , and Quercus boyntonii, Pinus palustris (longleaf pine). Longleaf pine is the only species which may be materially impacted by DBI's sourcing, with the other species occurring in wetlands or extreme remote locations where southern yellow pine, DBI's primary feedstock, is not found. • There are no regions identified by the World Resources Institute as a Frontier Forest https://databasin.org/datasets/303c7eaabda34c5881553d29cfb01015
Evidence Reviewed	• All means of verification reviewed
Risk Rating	x **Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**
Comment or Mitigation Measure	Based on the evidence presented above, the risk specifically related to DBI's ability to identify and "map" known areas of high conservation value is low. There are excellent tools and resources available and DBI has invested in GIS programs and customized NatureServe datasets to improve efficiency of use.

	Indicator
2.1.2	The Biomass Producer has implemented appropriate control systems and procedures to identify and address potential threats to forests and other areas with high conservation values from forest management activities.

Finding	• The FSC US National Risk assessment has identified that there are five "specified risks" within DBI's sourcing area. They include Late Successional Bottomland Hardwoods, Native Longleaf Pine Systems, the Dusky Gopher Frog, Southern Appalachian Critical Biodiversity Area, and Central Appalachian Biodiversity Area. DBI recognizes this multi-stakeholder effort to identify "specified risks" related to forest sourcing and has therefore accepted these risks as such. • DBI also recognizes that there are additional species and natural community types which FSC did not elevate to the level of "Specified Risks" but which still warrant protection. DBI has thoroughly assessed and reviewed these species and community types (see Indicator 2.1.1 for a detail review of sources checked and HCVs identified). • The existing mechanisms in place to protect these additional species and natural community was reviewed by DBI and is detailed in *Means of Verification* below. Following this review DBI concurs with the FSC US NRA and has selected no additional "specified risks", other than those listed above which would require additional mitigations outside of standard operating procedures.
Means of Verification	• State agencies have a number of controls in place to identify and protect species and natural communities. These state agencies work in concert with the Natural Heritage Programs in their respective states (a part of the NatureServe network) to continuously monitor and inventory natural diversity in the states. State Wildlife Actions Plans as well as state Forest Action Plans are required for states to receive federal funding. These plans, drafted through multi-stakeholder participation, identify key wildlife and forestry concerns within the state and provide detailed plans on how to achieve conservation of these resources. Links to State Wildlife Action Plan and state Natural Heritage programs are provided below: • Link to all State Wildlife Action Plans: https://www.fishwildlife.org/afwa-informs/state-wildlife-action-plans • Links to all Forest Action Plans: https://www.stateforesters.org/forest-action-plans/ • Links to State Natural Heritage information in the states DBI sources: ○ Louisiana http://www.wlf.louisiana.gov/species-by-parish?tid=Allandtype_1=All ○ Mississippi http://www.mdwfp.com/seek-study/heritage-program.aspx ○ Alabama http://www.alnhp.org/ Forestry considerations: http://www.aces.edu/natural-resources/wildlife/endangeredspecies.php ○ Arkansas http://www.naturalheritage.com/research-data/rarespecies-search.aspx ○ Texas http://www.tpwd.state.tx.us/huntwild/wild/wildlife_diversity/nongame/ ○ Oklahoma https://www.wildlifedepartment.com/wildlife/wildlife-diversity/threatened-and-endangered https://efotg.sc.egov.usda.gov/references/public/OK/ThreatenedEndangeredSpeciesbyCounty.pdf ○ Tennessee http://www.tnswap.com/ • The forest products industry participates directly in the development of the State Wildlife Action Plans as well as efforts to protect and identify species and communities of concern. For example, DBI purchases a data license from NatureServe annually. NatureServe then provides DBI with shapefiles for all known species and communities of concern. This data is integrated into DBI's mapping system which is used to screen all harvests where DBI is receiving fiber directly from the woods. The use of NatureServe data, and the protection of species and communities deemed globally critically imperilled (G1) or globally

imperilled (G2), is required by all participants of the Sustainable Forestry Initiative (SFI). DBI sources from landowners certified to the SFI Forest Management Standard and from sawmills that are certified to the SFI Fiber Sourcing Standard, both of which require consideration of G1, G2, and T&E species. DBI is also certified to the SFI FS Standard.

Map depicting coverage of SFI FS mill sourcing areas within DBI supply area:



- In addition to State Wildlife Action Plans and Natural Heritage Data, the federal Endangered Species Act (ESA) and federal Clean Water Act are very strong regulatory mechanisms which are in place to reduce the risk of further biodiversity loss. These regulations bring with them significant civil and criminal penalties (i.e. up to 1 year imprisonment for ESA violation and $54,000/day for CWA violation). The ESA prohibits not only direct “take” but can also deem habitat alteration as a “taking”. The ESA can restrict forest management on both private and public lands. Habitat Conservation Agreements (HCPs), Safe Harbor Agreements, and Candidate Conservation Agreements are among the tools provided to a landowner who wishes to actively manage their forest in areas where threatened or endangered species, highly sensitive to forest alteration, exist. The red-cockaded woodpecker, and the Louisiana pine snake are two species currently being managed with these mechanisms in DBI’s sourcing area. For some species Critical Habitat has been designated, a further assurance that federally listed species are protected (i.e. gopher frog in DBI sourcing area).

- Clean Water Act protections are extremely relevant to the protection of biodiversity. States have been granted the authority to develop programs to address nonpoint source pollution from forestry operations. These state “Best Management Programs” have been recognized by the USFWS in recent listing rules as a means of ensuring species protection. For example, the Pearl darter listing rule described positive effects of BMPs as follows: “Nonpoint source pollution is a localized threat to the pearl darter within the drainage and is more prevalent in areas where certified best management practices (BMPs) are not utilized. The use of certified BMPs during land-altering activities can greatly reduce impacts to water quality. Certified BMPs, currently implemented by the forestry industry (e.g., Sustainable Forestry Initiative, Forest Stewardship Council, and American Tree Farm System), are helping to minimize or eliminate non-point source pollution during the course of forestry activities. The Mississippi Forestry Commission (2016, entire) reports certified BMP implementation rates to be high in Mississippi for forestry activities, primarily due to the efforts of State forestry agencies and forest certification programs (Schilling and Wigley 2015, pp 3–7)” (82 Fed Reg 43889).

  In the southeastern US, the Southern Group of State Foresters has introduced a framework to standardize BMP monitoring efforts among the 13 southern states. According to a 2018 report summarizing rates of BMP implementation, all states in the region were in conformance with the framework. Furthermore, 67 state-wide monitoring surveys had been conducted since its initial development in

	1997 and 23 surveys were conducted in the last six years. Combining all BMP categories in all states and using only the most recent state survey data reported, average overall BMP implementation for the region was 93.6%, up from 92% in 2012. (https://www.southernforests.org/resources/publications/SGSF%20Water%20BMP%20Report%20FINAL.pdf/view). BMP implementation rates in the states that DBI sources from are as follows: MS- Overall 95% Mississippi 2019 BMP Implementation Survey LA- Overall 89% (according to 2015 survey data reported in SGSF report, 2009 is most recent state-level report publicly available.) Louisiana 2009 BMP Implementation Survey AR- Overall 93 % Arkansas 2017-2018 BMP Implementation Survey AL- Overall 98.2% Alabama 2019 BMP Implementation Survey TN- Overall 88.5% Tennessee 2017 BMP Implementation Survey OK- Overall 92.1% Oklahoma 2010 BMP Implementation Survey TX- Overall 91.6% Texas 2018 BMP Implementation Survey • As described above, a structured BMP program has been in place in the southern US for over two decades. In this same time period the forest industry has embraced SFI (est. 1994) which has championed BMP implementation through its trained logger requirements as well as the protection of biodiversity. See research by Dwivedi et al. on increased BMP implementation within the supply area of SFI FS mills - http://sficonference.org/wp-content/uploads/2018/12/Puneet-Dwivedi.pdfee). Furthermore, the State Wildlife Action Planning Process is now in its 15th year and Forest Action Plans have been in place since 2010. These industry-wide initiatives in place for protection of biological diversity can be considered standard practice as well as an industry expectation. DBI, as a responsible member of the industry, has developed a program to verify the implementation of BMPs and the protection of known species of concern for its own in-woods sourcing. DBI's individual actions to verify BMP usage and protection of species of concern when sourcing directly from the forest simultaneously meet the industry expectations for environmental protection and may also be considered a mitigation, by SBP definition, to control the risk of sourcing material not in compliance with this indicator.
Evidence Reviewed	• All means of verification reviewed
Risk Rating	☐ **Low Risk** x **Specified Risk RA** ☐ **Unspecified Risk at**
Comment or Mitigation Measure	FSC US has identified and developed mitigation measures for five specified risks which are relevant to residual fiber suppliers - Late Successional Bottomland Hardwoods (LSBH), Native Longleaf Pine Systems (NLPS), Southern Appalachian Critical Biodiversity Area (SACBA), Central Appalachian Critical Biodiversity Area (CACBA), and the Dusky Gopher Frog (DGF). DBI utilizes the FSC approved mitigation measures for addressing these specified risks. The specified risks and mitigation measures are described below: Dusky Gopher Frog (DGF) For the Dusky Gopher Frog, FSC identifies two small areas at the extreme south of our residual sourcing area. FSC has identified education and outreach as a mitigation option for the DGF. DBI will provide educational materials to the suppliers which have the potential to source from the FSC identified risk areas.

Educational materials will be informed by the best available science and adapted as new information and/or approaches become available. The desired outcome of these communications is engaging landowners, foresters, and loggers in conservation of DGF populations.

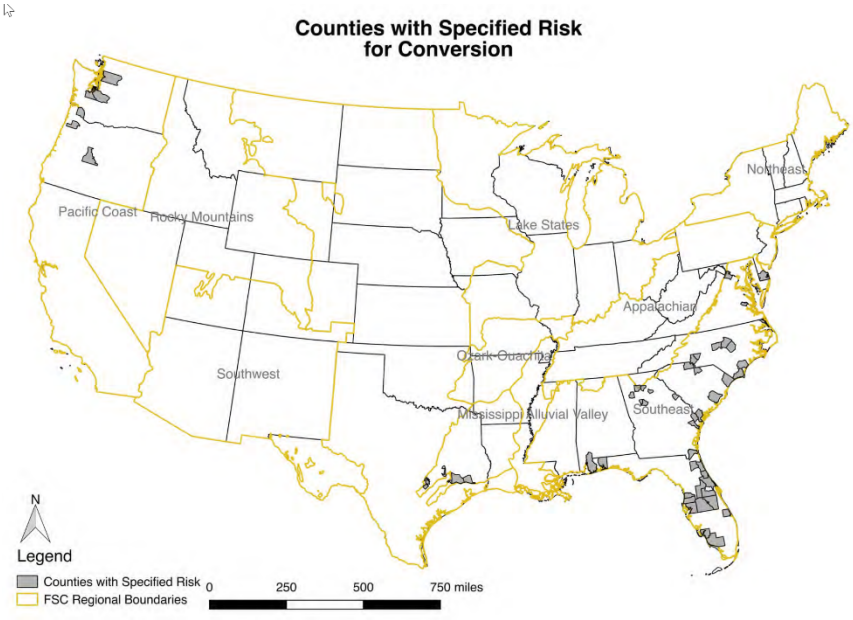
Late Successional Bottomland Hardwoods (LSBH)
As DBI primarily sources Southern Yellow Pine, Late Successional Bottomland Hardwoods are mainly an issue for residual suppliers who process hardwoods and are proximate to LSBH areas. The areas that potentially have LSBH have been mapped by FSC and integrated into DBI's GIS system. For residual suppliers, outreach and education will be the choice mitigation tool. Educational materials have been developed to engage landowners, foresters, and loggers in conservation of this forest system. DBI also actively supports workshops and learning exchanges focused on improving the management of bottomland hardwoods in the supply area.

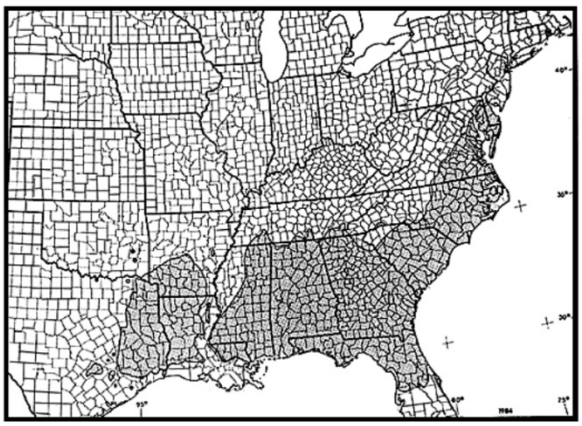
Native Longleaf Pine Systems (NLPS)
For NLPS, the areas at risk have been identified by FSC at county/parish level. These areas have been included in DBI's GIS system. Education and outreach will be the primary mitigation for residual suppliers whose sourcing area intersects FSC identified risk areas. The desired outcome of these communications is engaging landowners, foresters, and loggers in conservation of Native Longleaf Pine systems. DBI also actively supports workshops and learning exchanges focused on encouraging proactive management of longleaf pine in the supply area.

Southern and Central Appalachian Critical Biodiversity Area (CACBA and SACBA respectively)
Both the Central and Southern Appalachian Critical Biodiversity Areas will only affect DBI's residual sourcing due to the distance from existing pellet mills. Education and outreach will be the mitigation tool employed. As described for the risks above, these materials will be developed according to best available science and be adapted as new information and approaches come available (i.e. through FSC CW Regional meetings). This educational material will be aimed at increasing awareness of the sensitivities and unique nature of these CBAs in hopes of increasing conservation of these highly biodiverse areas.

Mitigation for primary feedstock includes DBI's program to verify BMP usage and protection of species of concern when sourcing directly from the forest. DBI has integrated the FSC HCV maps into its GIS system and "**Rapid Risk Assessment**" process which also includes all known species and natural communities of concern (NatureServe data). FSC US has identified two specified risks which are relevant to primary fiber suppliers - Late Successional Bottomland Hardwoods (LSBH), and Native Longleaf Pine Systems (NLPS). DBI actively screens all in-woods fiber tracts for species of concern and FSC Specified Risks prior to accepting any fiber. DBI also records the cover type and species of stand from which fiber is sourced. In this way receipt of longleaf pine and harvesting associated with hardwood systems is monitored to ensure that there is no conversion or degradation of high conservation forests on tracts from which we receive roundwood or in-woods chips. If it is determined that the risk of negative impact to the HCV cannot be effectively mitigated through information flow and internal controls DBI can choose not to accept material from a region or a supplier.

The mitigations described above are sufficient to bring the risk of non-compliance with this requirement to "low".

	Indicator
2.1.3	The Biomass Producer has implemented appropriate control systems and procedures for verifying that feedstock is not sourced from forests converted to production plantation forest or non-forest lands after January 2008.
Finding	• FSC Controlled Wood National Risk Assessment does not identify conversion to non-forest as a specified risk in DBI's sourcing area. • FIA data indicates stable and/or increasing forest inventory and forest area in DBI's sourcing area. • Absence of SBP defined "production plantation forests" in wood procurement region. • Historical evidence that healthy markets keep forests as forests. • Review of WWF Ecoregions, and associated concerns about conversion, indicate that these are not significant. • Recent analysis of DBI catchment area analysis (2019 and 2020) using FIA data, market data, and remote sensing tools has not revealed conversion to be a risk. • CWA provides protections against conversion of wetland forests
Means of Verification	• FSC Risk assessment conducted a thorough multi-stakeholder analysis and found that there was no risk of conversion for DBI sourcing area (see map below). In their review FSC considered the WWF ecoregions, along with the concerns cited for conversion, but ultimately focused their conversion concern on areas that are under threat for conversion to urban areas.  • SBP defines "production plantation forests" as "Forests of *exotic species* that have been planted or seeded by human intervention and that are under intensive stand management, are fast growing, and *subject to short rotations (e.g. Poplar, Acacia or Eucalyptus plantations*)". The threat of conversion to production plantation in DBI's sourcing area is low for two primary reasons: ○ The planted pine forests in the area where DBI sources from is composed primarily of loblolly pine which is a species native to this region (see figure below).



The native range of loblolly pine. (From Little, 1971.)

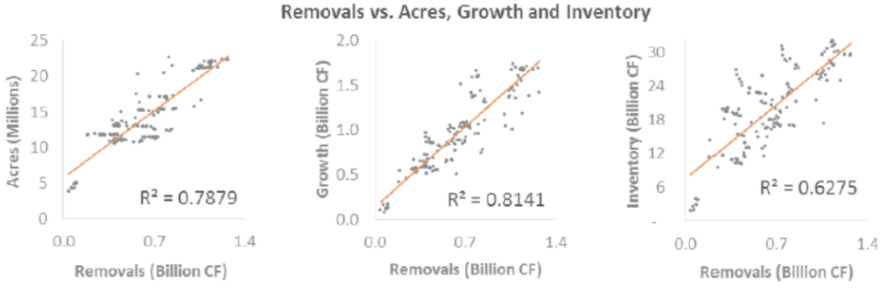
- The forests are not intensively managed on short rotations but rather managed for sawtimber. Under good growing conditions, pine forests planted with improved genetics (through standard breeding), and whose density is managed through thinning and early competition control, can achieve sawtimber size in as little as 25 years. Forisk Consulting conducted a survey of southern silviculture in 2016 and 2018 which included assessment of practices on 6.9 and 9.7 million acres, respectively. This survey found that the average clearcut age for pine in the Gulf South was 36 years old (see table below), indicating that the region is neither managed to a high intensity nor is it managed for short fiber rotations.

Figure 8. Silviculture Practices by Region

	Gulf Region	South (2016)	Upper Coastal Plain	South (2018)
Advanced Genetic Stock (% hectares)	46%	65%	49%	56%
Seedling Survival	85%	90%	89%	89%
Woody Competition Control*	5.3%	3.5%	58%	45%
Fertilization (% respondents)	57%	55%	58%	60%
Clearcut age	36	32	30	28
Avg. Clearcut Revenue (hectare)	$3,744	$3,988	$3,776	$3,862

*Question changed from 2016 to 2018 from total % hectares treated in a given year to total % receiving treatment i
rotation.
Source: Forisk Consulting

- A 2017 analysis by Forest2Market concurs with this outcome stating, “The biggest threat to forests is urbanization, not the forest products industry”. In fact, they found that markets for timber products encourage landowners to keep forest as forests and not convert them to other, more lucrative, landuses. In their retrospective examiniation they found that increases in demand encouraged landowners to invest in forests, with forest acres increasing as removals increased (see figure below). https://www.forest2market.com/hubfs/2016_Website/Documents/20170726_Forest2Market_Historical_Perspective_US_South.pdf

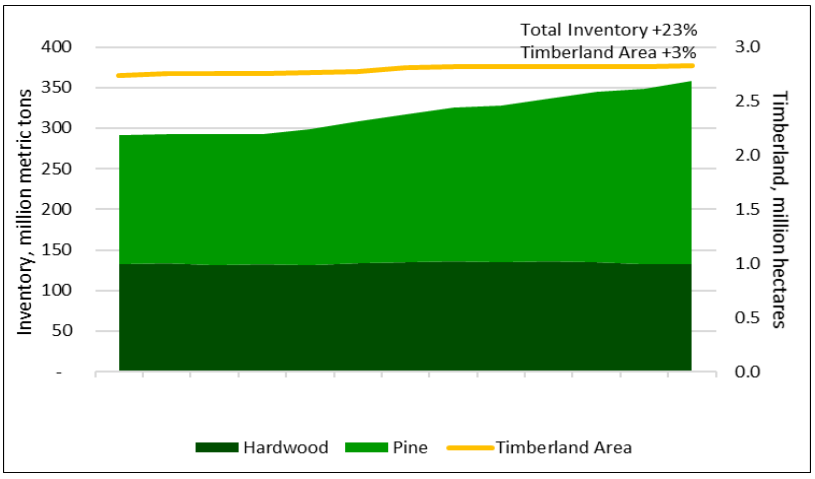


- The American Forest Foundation states that “Markets encourage landowners to invest in forests, helping keep forests as forests. Strong markets signal that buying

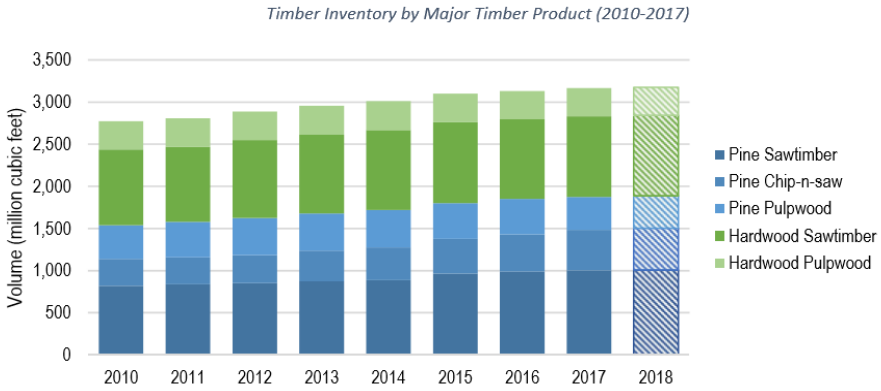
forestland, retaining forestland, or investing in forest management, is a good use of an individual or family's hard earned income. https://www.forestfoundation.org/markets-for-family-forest-wood-products

- Forest Inventory and Analysis (FIA) data show a stable forest inventory indicating that conversion of forestland to non-forestland is a low risk in our catchment area. See figures below which were generated through recent analysis of FIA data (2019/2020).

Morehouse bioenergy primary catchment area:



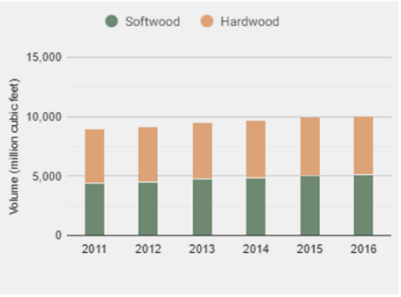
Amite Bioenergy primary catchment area:



LaSalle Bioenergy primary catchment area:

Volume of all live trees on privately-owned timberland in LA, MS within 75 miles of the point of interest

Year	Softwood	Hardwood	All Species
2011	4,411.1	4,610.1	9,021.1
2012	4,494.0	4,659.9	9,153.8
2013	4,721.1	4,757.9	9,479.0
2014	4,844.3	4,861.5	9,705.7
2015	5,037.5	4,958.1	9,995.7
2016	5,086.4	4,942.3	10,028.7



Volume in million cubic feet

- Field audit two years post-harvest has identified no concerns with regeneration on sites from which primary fiber was sourced.
- Drax is exploring remote sensing tools to evaluate regeneration and forest loss/gain at regional level. Global Forest Change https://earthenginepartners.appspot.com/science-2013-global-forest was reviewed and DBI catchment areas all appear as actively growing forests with harvests losses offset by gains and maintenance of forest extent. The same Hanson data was used in a catchment area analysis conducted by Interfor. Drax is also exploring the use of satellite imagery (i.e. Landsat 5) and Lidar to test the ability of remote sensing tools to identify forest loss as well as regeneration.
- Section 404 of the CWA addresses the discharge of dredge and fill into waterways. There is an exemption for on-going silviculture practices, however, the Recapture Provision does not allow conversion of wetland forest to upland. See exemption to the CWA section 404 (f), Recapture Provision "Recapture Provision. Section 404(f) exemptions DO NOT APPLY where any discharge of dredged and/or fill material into "waters of the US", including wetlands, IF 1] the activity would convert an area of waters of the into a new use (e.g. wetland to upland, wetland to open water, etc.).
  According to a report commissioned by the American Hardwood Council in 2017 titled *Assessment of Lawful Harvesting and Sustainability of US Hardwood Exports*, "Available data suggest that CWA404 violations are aggressively prosecuted by the regulatory agencies. According to the Corps of Engineers, about 6,000 alleged violations of the Clean Water Act that falls under the Corps' jurisdiction are processed in district offices each year. Of these, over 60 percent relate to Section 404 permitting (although only a very small number involve silvicultural activities in wetlands). See overview at: http://www.usace.army.mil/cw/cecwo/reg/oceover.htm." Link to report: https://www.americanhardwood.org/index.php/en/latest/news/seneca-creek-study
- Regarding WWF's ecoregions, many of which have been labelled "critical/endangered" citing conversion as a concern, it is important to remember that these ecoregions were created by WWF for the purpose of prioritizing conservation initiatives. Upon closer examination it was determined that landscape level forest conversion was not the specific driver for conservation need. Instead, very specific issues are identified. For example:
  - The primary concern in the NA0523-Piney Woods forests ecoregion is maintenance of the sandhill pine forest communities, where long-leaf pine (Pinus palustris) shares dominance with shortleaf pine (Pinus echinata) and loblolly pine (Pinus taeda) and pine densities are low. This community type can be likened to the "open forest" type that is a high priority in State Wildlife Action Plans (see Criteria 2.1.2) and as a Specified Risk in FSC's HCV 3 designation, i.e. Native Longleaf Pine Systems (NLPS), which DBI recognizes as a Specified Risk for indicators 2.1.2, 2.2.3, 2.2.4, and 2.4.1.
  - Another WWF ecosystem in the region is NA0409-Mississippi Lowland Forests. The protection focus in this ecosystem is bottomland hardwood forests. Past conversion, mainly into cultivation, degraded these forests and reduced them to a point where "there is very little to conserve". Again, FSC has recognized the primary threat to the system, but categorized it as a more specific HCV3 risk, " Late Successional Bottomland Hardwoods",

	which DBI also recognizes as a Specified Risk in the supply area for indicators 2.1.2, 2.2.3, 2.2.4, and 2.4.1. ○ The NA0412-Ozark Mountains Forests, with its well-developed-oak hickory forests, are recognized for the distinctness of their freshwater communities. The remaining blocks of habitat are the Boston Mountains and the Ouachita Mountains themselves, with no significant intact habitats existing in the lowlands. The biggest threat is development of the mountains to support second homes and resorts but conversion to pine and fire suppression is also mentioned as risk. FSC initially considered the Ozark Mountain region as a specified risk, citing the threat to aquatic species as a key driver. However, based on review of forestry BMP implementation data, this area was removed from the list of Specified Risks. DBI also considers its fiber sourcing practices to have a low risk of endangering the recognized biological distinctness of this ecoregion and sources less than 5% of fiber from this area. AR BMP implementation data is available here: https://www.aad.arkansas.gov/Websites/aad/files/Content/5944993/Bioassessment_of_Silviculture_Best_Management_Practices_in_Arkansas_.pdf ○ The East Central Texas Forests ecoregion is one of WWF's smallest ecoregions within the Temperate Broadleaf and Mixed Forests biome. The ecoregion is characterized by open forests of oak and hickory with an herbaceous component dominated by bluestem. Common oaks species are post oak, scarlet, and blackjack oak, all species that are generally undesirable timber species due to their growth forms. The primary threat is from conversion of forests for ranching and farming. Based on the species mix (naturally stunted oaks and hickories), the characteristic sparse tree cover, and the identified threat being conversion to agriculture, DBI does not consider there to be a specified risk related to this criterion. Less than 1% of DBI's fiber is received from eastern Texas.
Evidence Reviewed	• All means of verification reviewed
Risk Rating	x **Low Risk** ☐ **Specified Risk RA** ☐ **Unspecified Risk at**
Comment or Mitigation Measure	**None**

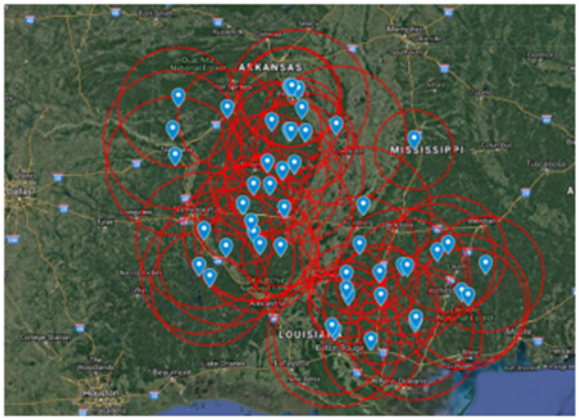
	Indicator
2.2.1	The Biomass Producer has implemented appropriate control systems and procedures to verify that feedstock is sourced from forests where there is appropriate assessment of impacts, and planning, implementation and monitoring to minimise them.
Finding	• BMPs are in place for all States that Drax sources wood. In addition, SFI committees operate in all these states who partner with state forestry agencies and associations to deliver logger training. • Federal cost-share assistance programs require detailed management plans. Federal cost-share programs for forestry and wildlife projects include the Forestry Incentive Program, the Conservation Reserve Program, the Wetlands Reserve Program, the Stewardship Incentives Program, the Environmental Quality Incentives Program, and others administered by the NRCS. • Tax incentive programs in place which encourage forest management planning. Cost-share programs are designed to help NIPF landowners by reducing their initial costs for reforestation and improving rates of return.

	• Arkansas, Louisiana, Mississippi, Alabama, Texas, Oklahoma, and Tennessee all have some variant of current use laws in place for forestry activities. • Federal Endangered Species Act results in critical habitat designations, cost share programs for private landowners, and other structured management planning processes designed to help recover species and/or prevent them from being listed. • State Wildlife Action Plans (SWAPS) are in place for all states from which DBI sources. • States have developed Pesticide General Permits to meet the CWA requirements which require appropriate planning and documentation of forest herbicide use. • Supply base includes a significant portion of land certified to the SFI and ATFS standards which require the presence of a forest management plan. • Supply base includes a significant number of facilities certified to the SFI FS Standard. SFI FS requires the use of trained loggers, BMP adherence, distribution of materials pertinent to harvest planning, general awareness and protection of species and ecosystems of concern, and field verification of compliance.
Means of Verification	• State BMP Manuals provide detailed advice on the proper installation of BMPs to maintain water quality. See links to state BMP manuals below: ○ AL - http://www.forestry.alabama.gov/Pages/Management/Forms/2007_BMP_Manual.pdf ○ AR - https://www.aad.arkansas.gov/Websites/aad/files/Content/5944986/BMPs.pdf ○ LA - http://www.ldaf.state.la.us/wp-content/uploads/2014/04/BMP.pdf ○ MS - https://www.mfc.ms.gov/sites/default/files/Entire_bmp_2008-7-24_2.pdf ○ TX - https://tfsweb.tamu.edu/BestManagementPractices/ ○ OK - http://www.forestry.ok.gov/Websites/forestry/images/documents/WaterQuality/Forestry%20BMP-3-16.pdf ○ TN - https://www.tn.gov/content/dam/tn/agriculture/documents/forestry/AgForBMPs.pdf In the southeastern US, the Southern Group of State Foresters has introduced a framework to standardize BMP monitoring efforts among the 13 states. According to a 2018 report summarizing rates of BMP implementation, all states in the region were in conformance with the framework. Furthermore, 67 state-wide monitoring surveys had been conducted since its initial development in 1997 and 23 surveys were conducted in the last six years. Combining all BMP categories in all states and using only the most recent state survey data reported, average overall BMP implementation for the region was 93.6%, up from 92% in 2012. https://www.southernforests.org/resources/publications/SGSF%20Water%20BMP%20Report%20FINAL.pdf/view). BMP implementation rates in the states that DBI sources from are as follows: MS- Overall 95% Mississippi 2019 BMP Implementation Survey LA- Overall 89% (according to 2015 survey data reported in SGSF report, 2009 is most recent state-level report publicly available.) Louisiana 2009 BMP Implementation Survey AR- Overall 93 % Arkansas 2017-2018 BMP Implementation Survey AL- Overall 98.2% Alabama 2019 BMP Implementation Survey TN- Overall 88.5% Tennessee 2017 BMP Implementation Survey OK- Overall 92.1% Oklahoma 2010 BMP Implementation Survey TX- Overall 91.6% Texas 2018 BMP Implementation Survey The USFWS recently recognized the use of BMPs and the role certification systems (and associated training requirements) play in them in the Pearl darter listing rule "Certified BMPs, currently implemented by the forestry industry (e.g., Sustainable Forestry Initiative, Forest Stewardship Council, and American Tree Farm System), are helping to minimize or eliminate non-point source pollution during the course of forestry

activities. The Mississippi Forestry Commission (2016, entire) reports certified BMP implementation rates to be high in Mississippi for forestry activities, primarily due to the efforts of State forestry agencies and forest certification programs (Schilling and Wigley 2015, pp 3–7)" (82 Fed Reg 43889).
Implementation of Forestry Best Management Practices: 2018 Southern Region Report: https://www.southernforests.org/resources/publications/SGSF%20Water%20BMP%20Report%20FINAL.pdf/view.

DBI, and other wood using facilities certified to the SFI Fiber Sourcing Standard, ensure a significant proportion of the forest landscape is implementing BMPs and properly planning harvests through a structured on-the-ground verification program which is third-party audited. A study conducted by Dwivedi et al. in 2018 found that BMP implementation rate was 2% higher in sites located within 65 miles of mills certified to the SFI Fiber Sourcing standard (https://www.sciencedirect.com/science/article/abs/pii/S1389934118300807).

Map depicting coverage of SFI FS mill sourcing areas within DBI supply area:



- Logger Training programs, providing training for loggers in cooperation with state forestry associations and forestry commissions. Training includes direction on harvest planning, implementation of forestry BMPs, and protection of sensitive species and ecosystems.
    - Alabama Professional Logging Managers
    - Ark Pro Logger
    - LA Master Logger Program
    - MS Professional Logging Manager Program
    - TX Pro Logger Program
    - Oklahoma Pro Logger
    - TN Master Logger Program
- SFI Fiber Sourcing participants are required to share forest management information with the landowners This information is often developed by State SFI Committees. Link to the landowner information brochure provided by TN is provided as an example,http://www.tnforestry.com/PROGRAMS/Sustainable_Forestry_Initiative_Publications/
- Landowners that choose to certify their lands to the SFI and American Tree Farm system (ATFS) are required to have detailed plans in place that address an array of sustainability objectives. Forty percent of DBI's fiber is delivered through these certifications Details on these standards can be found at:
    - SFI - https://www.sfiprogram.org/
    - ATFS - https://www.treefarmsystem.org/

- The 2008 Farm Bill includes several forestry cost-share and assistance programs for landowners to help them improve soil and water quality on their land through enhancing forest health, sustainability, and by providing multiple environmental benefits through the long-term growth of their forests. These Farm Bill programs are available through

cooperative partnerships of state forestry agencies, the USDA Natural Resources Conservation Service (NRCS), and the USDA Farm Services Agency.

  - Cooperative Conservation Partnership Initiative (CCPI)
    - http://www.nrcs.usda.gov/PROGRAMS/ccpi/
  - Healthy Forests Reserve Program
    - (HFRP)http://www.nrcs.usda.gov/programs/HFRP/ProgInfo/Index.html
  - Conservation Stewardship Program (CSP)
    - http://www.nrcs.usda.gov/new_csp/
  - Environmental Quality Incentives Program (EQUIP)
    - http://www.nrcs.usda.gov/programs/eqip/index.html#intro
  - Wildlife Habitat Incentives Program (WHIP)
    - http://www.nrcs.usda.gov/programs/whip/
  - Wetlands Reserve Program (WRP)
    - http://www.nrcs.usda.gov/programs/wrp/
  - Conservation Reserve Program
    - http://www.fsa.usda.gov/FSA/webapp?area=homeandsubject=coprandtopic=crp
  - Conservation Reserve Enhancement Program
    - http://www.fsa.usda.gov/FSA/webapp?area=homeandsubject=coprandtopic=cep
  - USFWS Partners for Fish and Wildlife
    - http://www.fws.gov/partners/
  - USFWS Safe Harbor Program
    - http://www.fws.gov/endangered/

- Louisiana, Mississippi, Alabama, Texas, Ok, and Tennessee all have established state level forestry cost-share programs. Arkansas does not currently have a tax program in place. However, Arkansas does have a Wetland and Riparian Zone Tax Credit as well as other incentives for forestry and agriculture.

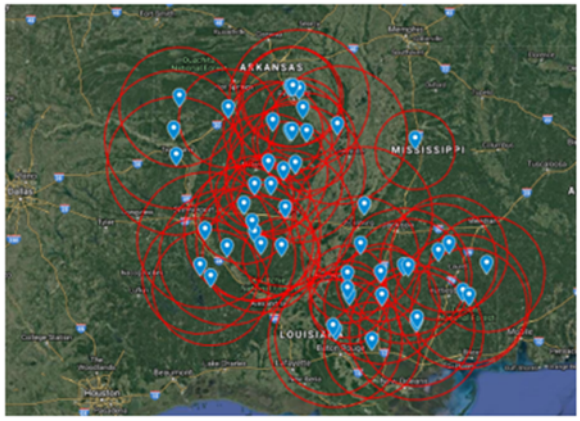
- All states in DBI's sourcing area utilize a current use valuation on forestland that is much lower than fair market value. As described on the Taxfoundation.org website, if owners of forested land had to pay a percentage of the land's fair market value, their payments would be much higher because potential buyers considering other uses for the land would drive up the fair market value. This fair market value system would then increase pressure on landowners to make profitable use of their land or sell it to someone who would. Details on the taxes imposed on timberland for all 50 states can be found at: https://taxfoundation.org/states-use-gentle-hand-taxing-timberland/

- Federal lands are managed through the National Environmental Policy Act (NEPA) process assures that proper management occurs on federal lands. The NEPA process requires federal agencies to assess the environmental effects of their proposed actions prior to making decisions.

- Habitat Conservation Agreements (HCPs), Safe Harbor Agreements, and Candidate Conservation Agreements are among the tools provided to a landowner who wishes to actively manage their forest in areas where threatened or endangered species, highly sensitive to forest alteration, exist. The red-cockaded woodpecker, and the Louisiana pine snake are two species currently being managed with these mechanisms in DBI's sourcing area. For some species Critical Habitat has been designated, a further assurance that federally listed species are protected (i.e. gopher frog in DBI sourcing area).
- Many lands are also placed under conservation easements which require structured management plans. See link to the National Conservation Easement Database: http://conservationeasement.us/

- State Wildlife Action Plans (SWAPs) are administered by the state wildlife agencies in cooperation with a diverse stakeholder group representing other state agencies, federal agencies, private conservation organizations, and industry partners. They identify key natural habitats and sensitive species to cooperatively address protection. Federal dollars, available to states with active SWAPs allow states to actively seek out areas to

	protect through purchase and/or conservation easement. Link to all State Wildlife Action Plans: https://www.fishwildlife.org/afwa-informs/state-wildlife-action-plans • States have developed Pesticide General Permits (PGP) to meet the CWA requirements. A Pesticide Discharge Management Plan is a requirement of the PGP when applications meet certain criteria. In all cases proper documentation and recordkeeping of herbicide applications is a requirement and herbicides must be applied by certified applicators. This permit applies to private entities applying forest pesticides (i.e. herbicides) and provides an additional level of assurance that chemical use is carefully planned to minimize harm to the environment. • Available information on known location of HCVs is reviewed for all fiber received directly from in-woods operations per company sustainability policy. This provides additional assurance that impact to species or habitats of concern are avoided during sourcing. • External audit, internal audit, and programmatic monitoring all provide checks on the effectiveness of internal and external planning processes.
Evidence Reviewed	• All Means of verification reviewed
Risk Rating	x **Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**
Comment or mitigation	**None**

	Indicator
2.2.2	The Biomass Producer has implemented appropriate control systems and procedures for verifying that feedstock is sourced from forests where management maintains or improves soil quality (CPET S5b).
Finding	• A literature review of the effects of forestry operations on soil quality indicates that heavy equipment and harvesting practices do have the ability to impact soils in both negative and positive ways. The exact cause of these effects is often difficult to parse out due to the number of variables at play (i.e. soil characteristics and climate). However, research has been informative to the development of best practices to control negative effects related to forest management and harvesting. • All five States that Drax sources wood from have BMP guidelines. These BMPs are in place for water quality and include recommendations for protecting site productivity by limiting soil disturbance. MS has developed BMPs for biomass harvesting that attempt to anticipate the issues that may arise with the greater use of forest residuals. • It is an industry norm to implement and evaluate the use of BMPs in programs which source fiber directly from the forest. SFI certification requires verification of BMPs and associated logger training.
Means of Verification	• Best Management Practices for forestry are established in each jurisdiction and monitored to achieve compliance to the Clean Water Act. Company sustainability programs include internal BMP audit protocol verified by external 3rd party certification audits. DBI, and other wood using facilities certified to the SFI Fiber Sourcing Standard, ensure a significant proportion of the forest landscape is implementing BMPs and properly planning harvests through a structured on-the-ground verification program which is third-party audited. According to a 2018 report, overall BMP implementation for the region was 93.6%, up from 92% in 2012. (https://www.southernforests.org/resources/publications/SGSF%20Water%20BMP%20Report%20FINAL.pdf/view). For BMP implementation rates in the states that DBI sources from as see Means of Verification for Indicator 2.1.2 and 2.2.1. • DBI, along with other SFI Fiber Sourcing participants have programs to implement BMPs and verify trained loggers. This network of trained loggers and SFI companies requiring the use of BMPs and conducting verification (i.e. DBI's inclusion of BMPs in fiber contracts and internal BMP audit program) provides assurances the regional soil protection is in place. Map depicting coverage of SFI FS mill sourcing areas within DBI supply area:  • A Long-Term Soil Productivity (LTSP) study was installed in the 1980's to evaluate the effects of harvest related compaction and various levels of biomass removal on forest soils and productivity. Study sites in Mississippi, Louisiana, and Texas provide interesting data on the Gulf coastal plains of the southern United States. Results thus far have found that compaction from forestry equipment has not caused long-term negative effects on productivity. In fact, growth on coarse, sandy soils showed positive gains after trafficking. This may be due to the increase in water holding capacity of the soil. They also found that on productive sites even extreme experimental levels of biomass removal did not affect future productivity, however, removal of additional organic matter from low-fertility sites may have an impact. They have suggested that response to

harvesting and biomass removal is very site-specific and cautioned against blanket specifications imposed to protect productivity
https://www.fs.usda.gov/treesearch/pubs/50269

- A literature review conducted by NCASI in 2014 provides a comprehensive review of the impact forest harvesting has on soil properties and subsequent tree growth. This review highlights the complexities involved "Heavy machinery for yarding felled trees or logs can create visible patterns of soil disturbance. Within harvested areas, trees planted on skid trails and landings are subjected to the most disturbed soil in the mosaic of soil conditions. Altered soil properties, however, do not always result in poorer tree growth (Greacen and Sands 1980; Miller, Scott, and Hazard 1996; Miller et al. 1989; Powers and Fiddler 1997). At some locations, the favorable influence of disturbance on other growth-determining factors can counter the generalization that soil compaction reduces subsequent tree and stand growth.
  Effects of Heavy Equipment on Physical Properties of Soils and on Long-term Productivity: A Review of Literature and Current Research. Technical Bulletin No. 887 October 2004
  https://www.ncasi.org/wp-content/uploads/2019/02/tb887.pdf
- A Study by Eisenbies et al. discusses the limited effects of soil disturbance and residue removal on a 5 year old pine plantation in South Carolina.
  Eisenbies, Mark and Burger, J. and Aust, W. and Patterson, Steve. (2005). Soil Physical Disturbance and Logging Residue Effects on Changes in Soil Productivity in Five-Year-Old Pine Plantations. Soil Science Society of America Journal - SSSAJ. 69. 10.2136/sssaj2004.0334.
  https://www.researchgate.net/publication/242244803_Soil_Physical_Disturbance_and_Logging_Residue_Effects_on_Changes_in_Soil_Productivity_in_Five-Year-Old_Pine_Plantations
- A study by Richter et al. found that forests increased the carbon in the top mineral soils of previously cropped land demonstrating that forests are important to rebuilding soils on previously cropped lands. Much of the southeastern US has been cleared for agriculture at some point and most of the managed pine forests are found on previously cropped soils. The choice to maintain land in forest or convert from agriculture to forestry is influenced by the availability of markets for forest products. In this sense, the biomass market, which utilizes low-value fiber, can be considered to help incentivise landowners to manage forests important to building and maintaining soil which will help rebuild soil carbon and, potentially, help reduce the chances of conversion into cropland which causes significant soil C losses.
  Richter, D., Markewitz, D., Trumbore, S. et al. Rapid accumulation and turnover of soil carbon in a re-establishing forest. Nature 400, 56–58 (1999).
  https://www.sciencedirect.com/science/article/abs/pii/S0378112700002826
- Several studies have investigated the response of soil carbon to harvesting and biomass removal. In most instances there is little, if any, change in mineral soil carbon. Changes in surface carbon are variable, with harvest often increasing carbon in the top organic layer initially, likewise, different (experimental) residual biomass removal levels being reflecting in the carbon content of surface soil layers. These findings point out that there are several variables at play, including climate and decomposition rates.
  - Jang, Woongsoon; Page-Dumroese, Deborah S.; Keyes, Christopher R. 2016. Long-term soil changes from forest harvesting and residue management in the northern Rocky Mountains. Soil Science Society of America Journal. 80: 727-741. https://www.fs.usda.gov/treesearch/pubs/51073
  - Clarke, Nicholas and Gundersen, Per and Jönsson-Belyazid, Ulrika and Kjønaas, O Janne and Persson, Tryggve and Sigurdsson, Bjarni and Stupak, Inge and Vesterdal, Lars. (2015). Influence of different tree-harvesting intensities on forest soil carbon stocks in boreal and northern temperate forest ecosystems. Forest Ecology and Management. 351. 10.1016/j.foreco.2015.04.034 https://www.sciencedirect.com/science/article/abs/pii/S037811271500256X
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	in a highly productive Andisol. Soil Science Society of America Journal 81(4):970-978. https://doi.org/10.2136/sssaj2016.09.0305 ○ Neaves, C.M. III, W.M. Aust, M.C. Bolding, S.M. Barrett, C.C. Trettin, E. Vance. 2017. Soil properties in site prepared loblolly pine (Pinus taeda L.) stands 25 years after wet weather harvesting in the lower Atlantic coastal plain. Forest Ecology and Management 404:344–353. https://doi.org/10.1016/j.foreco.2017.08.015 ○ Lang, A.J., R. Cristan, W.M. Aust, M.C. Bolding, B.D. Strahm, E.D. Vance, and E.T. Roberts Jr. 2016. Long-term effects of wet and dry site harvesting on soil physical properties mitigated by mechanical site preparation in coastal plain loblolly pine (Pinus taeda) plantations. Forest Ecology and Management 359:162–173. http://dx.doi.org/10.1016/j.foreco.2015.09.034 ○ Vance, E.D., W.M. Aust, B.D. Strahm R.E. Froese, R.B. Harrison, and L.A. Morris. 2014. Biomass harvesting and soil productivity: Is the science meeting our policy needs? Soil Science Society of America Journal 78:S95-S104. http://dx.doi.org/10.2136/sssaj2013.08.0323nafsc ○ Johnson, D and Knoepp, J. and Swank, W and Shan, J and Morris, L.A and Lear, D and Kapeluck, P. (2002). Effects of forest management on soil carbon: Results of some long-term resampling studies. Environmental pollution (Barking, Essex : 1987). 116 Suppl 1. S201-8. 10.1016/S0269-7491(01)00252-4. https://www.sciencedirect.com/science/article/pii/S0269749101002524 ○ Johnson, Dale and Curtis, Peter. (2001). Johnson DW, Curtis PS.. Effects of forest management on soil C and N storage: meta analysis. Forest Ecol Manag 140: 227-238. Forest Ecology and Management. 140. 227-238. 10.1016/S0378-1127(00)00282-6. https://www.researchgate.net/publication/222680961_Johnson_DW_Curtis_PS_Effects_of_forest_management_on_soil_C_and_N_storage_meta_analysis_Forest_Ecol_Manag_140_227-238/citation/download ○ Hoover CM. Management Impacts on Forest Floor and Soil Organic Carbon in Northern Temperate Forests of the US. *Carbon Balance Manag*. 2011;6(1):17. Published 2011 Dec 29. doi:10.1186/1750-0680-6-17 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3276426/
Evidence Reviewed	• All means of verification reviewed
Risk Rating	x **Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**
Comment or Mitigation Measure	**None**

	Indicator
2.2.3	The Biomass Producer has implemented appropriate control systems and procedures to ensure that key ecosystems and habitats are conserved or set aside in their natural state (CPET S8b).
Finding	• The FSC US Controlled Wood Risk Assessment has identified 4 ecosystems that appear within DBI's supply area, Late Successional Bottomland Hardwoods, Native Longleaf Pine Systems, Southern Appalachian Critical Biodiversity Area, and Central Appalachian Critical Biodiversity Area, that have been designated as "Specified Risk". This designation gives rise to mitigations as stated in 2.1.2 and in the Mitigation/Comments section of this indicator. DBI has integrated the shapefiles from the FSC NRA into its GIS mapping system and the data sits behind the Rapid Risk Assessment tool. • Federal and state agencies along with non-governmental conservation organizations have identified key ecosystems and habitats which should be protected from

	development and damaging resource extraction. The Protected Area Database (PAD-US) is America's official national inventory of US terrestrial and marine protected areas (List of National Geospatial Data Assets) that are dedicated to the preservation of biological diversity and other natural, recreation and cultural areas. Identification of these areas ensures their consideration in forest management activities on state and federal lands as well as private lands (through conservation easement plans). DBI has integrated the shapefiles from PAD-US into its GIS mapping system and the data sits behind the Rapid Risk Assessment tool. • Comprehensive wildlife action plans have been established for each state, further identifying key ecosystems which occur on both public and private land. Arkansas has provided shapefiles for key biodiversity management areas outlined in their State Wildlife Action Plan. DBI has integrated the shapefiles into its GIS mapping system.
Means of Verification	• Protected Area Database(PAD-US) details all the federal, state, municipal, and private conservation areas on record (National Conservation Easement Database). Management of these lands is governed by comprehensive planning processes intended to protect key biological resources. Forest harvesting may be utilized as a tool to manage these areas, but oversight from the public agencies and conservation groups have oversight. • States programs to protect key ecosystems. For example, in Mississippi these include the Mississippi Scenic Streams Stewardship Program (SSSP), the State Wildlife Grants Program (SWG), The Mississippi Natural Heritage Program (MNHP),Mississippi Forest Legacy Program, the Mississippi Wildlife Heritage Fund, and the Mississippi Partners for Fish and Wildlife Program (MPFW). • An extensive search of conservation organization resources and databases was conducted, findings of which are described in Indicator 2.1.1 of this document. All key ecosystems and biodiversity areas identified have been reviewed to assess relevance to DBI's sourcing. Most of these areas are under federal and state management (and identified in PAD-US). FSC and WWF have identified larger "critical biodiversity areas" and "critical/endangered" ecoregions which have been considered relevant to DBI sourcing. The WWF ecoregions risks relevant to DBI are addressed by the FSC Specified Risk areas which DBI has accepted. Therefore, discussion will focus on FSC NRA's treatment of these risks (see Indicator 2.1.3 for review of WWF ecoregion risks). • FSC NRA: The following resources were reviewed to determine the relevance of Specified Risks identified in the FSC NRA: o FSC US Controlled Wood Risk Assessment o Static maps of areas with specified risks o Static map of all HCV1 Critical Biodiversity Areas FSC Risks that DBI have identified in the supply base are four key ecosystems: Late Successional Bottomland Hardwoods, Native Longleaf Pine Systems, Southern Appalachian Critical Biodiversity Area, and the Central Appalachian Critical Biodiversity Areas. Mitigation for these Specified Risks include monitoring, internal audit, education and outreach. Further details of the Specified Risk and the Mitigations developed for them are listed below.Note that DBI, as a responsible member of the industry, has developed a program to verify the implementation of BMPs and the protection of known species of concern, for its own in-woods sourcing. DBI's individual actions to verify BMP usage and protection of species of concern when sourcing directly from the forest simultaneously meets the industry expectations for environmental protection and, according to the SBP definitions, may be considered a mitigation to control the risk of non-compliance with this indicator.
Evidence Reviewed	• All means of verification reviewed
Risk Rating	☐ **Low Risk** x **Specified Risk** ☐ **Unspecified Risk at RA**

Comment or Mitigation Measure	FSC US has identified and developed mitigation measures for four key ecosystems: Late Successional Bottomland Hardwoods, Native Longleaf Pine Systems, Southern Appalachian Critical Biodiversity Area, and the Central Appalachian Critical Biodiversity Areas. DBI has integrated the FSC HCV maps into its GIS system and screens all suppliers for their intersection with these Specified Risks identified by FSC. Mitigation for primary feedstock includes controls embedded in DBI's internal processes which are subject to monitoring and internal audit. DBI does not have line of sight to individual tracts that provide fiber to secondary and tertiary feedstock suppliers, so other mitigations are appropriate. The following provides an overview of mitigations chosen for each FSC Specified risk: . <u>Late Successional Bottomland Hardwoods (LSBH)</u> As DBI primarily sources Southern Yellow Pine, Late Successional Bottomland Hardwoods are mainly an issue for residual suppliers who process hardwoods and are proximate to LSBH areas. The areas that potentially have LSBH have been mapped by FSC and integrated into DBI's GIS system. For residual suppliers, outreach and education will be the choice mitigation tool. Educational materials have been developed to engage landowners, foresters, and loggers in conservation of this forest system. DBI also actively supports workshops and learning exchanges focused on improving the management of bottomland hardwoods in the supply area. <u>Native Longleaf Pine Systems (NLPS)</u> For NLPS, the areas at risk have been identified by FSC at county/parish level. These areas have been included in DBI's GIS system. Education and outreach will be the primary mitigation for residual suppliers who's sourcing area intersects FSC identified risk areas. The desired outcome of these communications is engaging landowners, foresters, and loggers in conservation of Native Longleaf Pine systems. DBI also actively supports workshops and learning exchanges focused on encouraging proactive management of longleaf pine in the supply area. <u>Southern and Central Appalachian Critical Biodiversity Area (CACBA and SACBA respectively)</u> Both the Central and Southern Appalachian Critical Biodiversity Areas will only affect DBI's residual sourcing due to the distance from existing pellet mills. Education and outreach will be the mitigation tool employed. As described for the risks above, these materials will be developed according to best available science and be adapted as new information and approaches come available (i.e. through FSC CW Regional meetings). This educational material will be aimed at increasing awareness of the sensitivities and unique nature of these CBAs in hopes of increasing conservation of these highly biodiverse areas. Mitigation for primary feedstock includes DBI's program to verify BMP usage and protection of species of concern when sourcing directly from the forest. DBI has integrated the FSC HCV maps into its GIS system and "Rapid Risk Assessment" process which also includes all known species and natural communities of concern (NatureServe data). FSC US has identified two specified risks which are relevant to primary fiber suppliers - Late Successional Bottomland Hardwoods (LSBH), and Native Longleaf Pine Systems (NLPS). DBI actively screens all in-woods fiber tracts for species of concern and FSC Specified Risks prior to accepting any fiber. DBI also records the cover type and species of stand from which fiber is sourced. In this way receipt of longleaf pine and harvesting associated with hardwood systems is monitored to ensure that there is no conversion or degradation of high conservation forests on tracts from which we receive roundwood or in-woods chips.

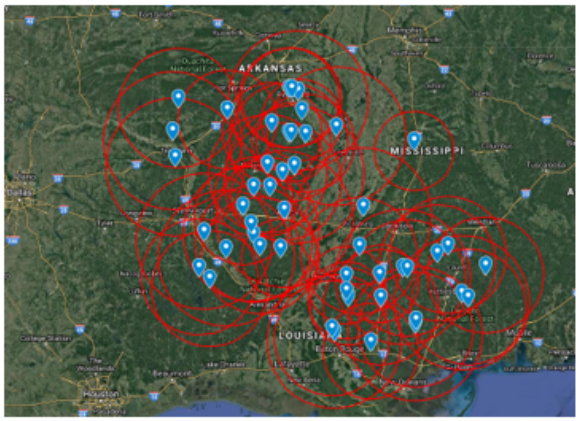
	If it is determined that the risk of negative impact to the HCV cannot be effectively mitigated through information flow and internal controls DBI can choose not to accept material from a region or a supplier. *DBI's existing programmatic procedures combined with the mitigations described above are sufficient to bring the risk of non-compliance with this requirement to "low".*

	Indicator
2.2.4	The Biomass Producer has implemented appropriate control systems and procedures to ensure that biodiversity is protected (CPET S5b).
Finding	• The FSC US National Risk assessment has identified that there are five "specified risks" related to biodiversity within DBI's sourcing area. They include Late Successional Bottomland Hardwoods, Native Longleaf Pine Systems, the Dusky Gopher Frog, Southern Appalachian Critical Biodiversity Area, and Central Appalachian Biodiversity Area. DBI recognizes this multi-stakeholder effort to identify "specified risks" relevant to forest sourcing and has therefore accepted these risks as such. • DBI recognizes that there are additional species and natural communities, not elevated to FSC "specified risk" classification, which must be considered when reviewing the robustness of regional biodiversity protections. A review of the existing mechanisms in place to protect these additional species and natural community was conducted by DBI and is detailed in *Means of Verification* section below. • State wildlife and forestry agencies have state level action plans in place to guide conservation of biodiversity. • Every state DBI sources from has an established Natural Heritage program responsible for collecting data on species occurrence within the state. These species records feed up into the NatureServe system. Natural Heritage and Nature Serve data is used by the forest industry to guide protection of species and natural communities of concern. • There are established "best practices" which are utilized to maintain and improve wildlife habitat in the southern US. These techniques are promoted by state wildlife and forestry agencies, forestry and wildlife extension programs, federal cost share programs, and forest certification standards (I.e. SFI and ATFS).
Means of Verification	• State agencies have a number of controls in place to identify and protect species and natural communities. These state agencies work in concert with the Natural Heritage Programs in their respective states (a part of the NatureServe network) to continuously monitor and inventory natural diversity in the states. Both State Wildlife Actions Plans as well as state Forest Action Plans are required for states to receive Federal Funding. These plans, drafted through multi-stakeholder participation, identify key wildlife and forestry concerns within the state and provide detailed plans on how to approach them. Natural Heritage data, as well as State Wildlife Action Plans, are available for private use. Links to State Wildlife Action Plan and state Natural Heritage programs are provided below: Link to all State Wildlife Action Plans: https://www.fishwildlife.org/afwa-informs/state-wildlife-action-plans Links to all Forest Action Plans: https://www.stateforesters.org/forest-action-plans/

Links to State Natural Heritage information in the states DBI sources:
Louisiana
http://www.wlf.louisiana.gov/species-by-parish?tid=Allandtype_1=All
Mississippi
http://www.mdwfp.com/seek-study/heritage-program.aspx
Alabama
http://www.alnhp.org/
Forestry considerations: http://www.aces.edu/natural-resources/wildlife/endangeredspecies.php
Arkansas
http://www.naturalheritage.com/research-data/rarespecies-search.aspx
Texas
http://www.tpwd.state.tx.us/huntwild/wild/wildlife_diversity/nongame/
Oklahoma
https://www.wildlifedepartment.com/wildlife/wildlife-diversity/threatened-and-endangered
https://efotg.sc.egov.usda.gov/references/public/OK/ThreatenedEndangeredSpeciesbyCounty.pdf
Tennessee
http://www.tnswap.com/

- Established best practices are promoted by state agencies, forest certification standards, and in forest plans required for federal cost share. Some examples of best practices include, but are not limited to, protection of:
    - Stand level diversity through retention of Streamside Management Zones (SMZs), snags, coarse and fine woody debris/brush piles, irregular stand boundaries, development and enhancement of forest “edges”, protection of nesting trees, protection of isolated wetlands and springs etc.
    - Landscape level diversity by promoting a mosaic of stand ages and types, considering the timing and juxtaposition of harvests for hardwood management
- The forest products industry participates directly in the development of the State Wildlife Action Plans, and state efforts to protect and identify species and communities of concern. For example, DBI purchases a data license from NatureServe annually. NatureServe then provides DBI with shapefiles for all known species and communities of concern. This data is integrated into DBI’s mapping system which is used to screen all harvests where DBI is receiving fiber directly from the woods. The use of NatureServe data, and the protection of species and communities deemed globally critically imperilled (G1) or globally imperilled (G2), is required by all participants of the Sustainable Forestry Initiative (SFI). DBI sources from landowners certified to the SFI Forest Management Standard and from sawmills that are certified to the SFI Fiber Sourcing Standard (note DBI is certified to this Standard as well). The map below illustrates the influence of the SFI Fiber Sourcing Program on the protection of biological diversity during sourcing.

Map depicting coverage of SFI FS mill sourcing areas within DBI supply area:



- In addition to State Wildlife Action Plans and Natural Heritage Data, the federal Endangered Species Act (ESA) and Federal Clean Water Act are very strong regulatory mechanisms which are in place to reduce the risk of further biodiversity loss. These regulations bring with them significant civil and criminal penalties (i.e. up to 1 year imprisonment for ESA violation and $54,000/day for CWA violation).
    - The ESA prohibits not only direct "take" but can also deem habitat alteration as a "taking". The ESA can restrict forest management on both private and public lands. Habitat Conservation Agreements (HCPs), Safe Harbor Agreements, and Candidate Conservation Agreements are among the tools provided to a landowner who wishes to actively manage their forest in areas where threatened or endangered species, highly sensitive to forest alteration, exist. The red-cockaded woodpecker, and the Louisiana pine snake are two species currently being managed with these mechanisms in DBI's sourcing area. For some species Critical Habitat has been designated, a further assurance that federally listed species are protected (i.e. gopher frog in DBI sourcing area).
    - Clean Water Act protections are extremely relevant to the protection of biodiversity. States have been granted the authority to develop programs to address nonpoint source pollution from forestry operations. These state "Best Management Programs" have been recognized by the USFWS in recent listing rules as a means of ensuring species protection. For example, the Pearl darter listing rule described positive effects of BMPs as follows: "Nonpoint source pollution is a localized threat to the pearl darter within the drainage and is more prevalent in areas where certified best management practices (BMPs) are not utilized. The use of certified BMPs during land-altering activities can greatly reduce impacts to water quality. Certified BMPs, currently implemented by the forestry industry (e.g., Sustainable Forestry Initiative, Forest Stewardship Council, and American Tree Farm System), are helping to minimize or eliminate non-point source pollution during forestry activities. The Mississippi Forestry Commission (2016, entire) reports certified BMP implementation rates to be high in Mississippi for forestry activities, primarily due to the efforts of State forestry agencies and forest certification programs (Schilling and Wigley 2015, pp 3–7)" (82 Fed Reg 43889).
        - In the southeastern US, the Southern Group of State Foresters has introduced a framework to standardize BMP monitoring efforts among the 13 states. According to a 2018 report summarizing rates of BMP implementation, all states in the region were in conformance with the framework. Furthermore, 67 state-wide monitoring surveys have been conducted since its initial development in 1997 and 23 surveys were conducted in the last six years. Combining all BMP categories in all states and using only the most recent state survey data reported, average overall BMP implementation for the region was 93.6%, up from 92% in 2012. (https://www.southernforests.org/resources/publications/SGSF%20Water%20BMP%20Report%20FINAL.pdf/view).
            - BMP implementation rates in the states that DBI sources from are as follows:
            - MS- Overall 95%
            - Mississippi 2019 BMP Implementation Survey
            - LA- Overall 89% (according to 2015 survey data reported in SGSF report, 2009 is most recent state-level report publicly available.)
            - Louisiana 2009 BMP Implementation Survey
            - AR- Overall 93 %
            - Arkansas 2017-2018 BMP Implementation Survey
            - AL- Overall 98.2%
            - Alabama 2019 BMP Implementation Survey
            - TN- Overall 88.5%
            - Tennessee 2017 BMP Implementation Survey
            - OK- Overall 92.1%
            - Oklahoma 2010 BMP Implementation Survey
            - TX- Overall 91.6%
            - Texas 2018 BMP Implementation Survey

	▪ As described above, a structured BMP program has been in place in the southern US for over two decades. In this same time period, the forest industry has embraced the Sustainable Forestry Initiative (est. 1994) which has championed BMP implementation through its trained logger requirements as well as the protection of biodiversity, requiring protection of G1 and G2 species (many of which are not federally listed). Furthermore, the State Wildlife Action Planning Process is now in its 15th year (State Wildlife Action Plans in place since 2005, Forest Action Plans in place since 2010). These industry-wide protections in place for protection of biological diversity can be considered standard practice as well as an industry expectation. DBI contractually requires implementation of BMPs and has a program to verify implementation of BMPs as well as biodiversity protections. • In addition to the Endangered Species Act and Federal Clean Water Act, there are other international treaties and conventions to which the US is a signatory. These include the Convention on Nature Protection and Wild Life Preservation in the Western Hemisphere (Washington, DC, 1940), Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar, Iran, 2 Feb 1971), Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (Washington DC, 1973), International Plant Protection Convention (IPPC) (1979 Revised Text) (Rome, Italy, 1979), Convention on the Conservation of Migratory Species of Wild Animals (Bonn, Germany, 23 Jun 1979). These high-level treaties provide biodiversity protections and direct conservation efforts (i.e. identification of Ramsar sites detailed in Indicator 2.1.1).
Evidence Reviewed	• All means of verification reviewed
Risk Rating	☐ **Low Risk** **x Specified Risk** ☐ **Unspecified Risk at RA**
Comment or Mitigation Measure	FSC US has identified, and developed mitigation measures, for five specified risks which are relevant to residual fiber suppliers - Late Successional Bottomland Hardwoods (LSBH), Native Longleaf Pine Systems (NLPS), Southern Appalachian Critical Biodiversity Area (SACBA), Central Appalachian Critical Biodiversity Area (CACBA), and the Dusky Gopher Frog (DGF). DBI utilizes the FSC approved mitigation measures for addressing these specified risks. The specified risks and mitigation measures are described below: <u>Dusky Gopher Frog (DGF)</u> For the Dusky Gopher Frog, FSC identifies two small areas at the extreme south of our residual sourcing area. FSC has identified education and outreach as a mitigation option for the DGF. DBI will provide educational materials to the suppliers which have the potential to source from the FSC identified risk areas. Educational materials will be informed by the best available science and adapted as new information and/or approaches become available. The desired outcome of these communications is engaging landowners, foresters, and loggers in conservation of DGF populations. <u>Late Successional Bottomland Hardwoods (LSBH)</u> As DBI primarily sources Southern Yellow Pine, Late Successional Bottomland Hardwoods are mainly an issue for residual suppliers who process hardwoods and are proximate to LSBH areas. The areas that potentially have LSBH have been mapped by FSC and integrated into DBI's GIS system. For residual suppliers, outreach and education will be the choice mitigation tool. Educational materials have been developed to engage landowners, foresters, and loggers in conservation of this forest system. DBI also actively supports workshops and learning exchanges focused on improving the management of bottomland hardwoods in the supply area.

	Native Longleaf Pine Systems (NLPS) For NLPS, the areas at risk have been identified by FSC at county/parish level. These areas have been included in DBI's GIS system. Education and outreach will be the primary mitigation for residual suppliers whose sourcing area intersects FSC identified risk areas. The desired outcome of these communications is engaging landowners, foresters, and loggers in conservation of Native Longleaf Pine systems. DBI also actively supports workshops and learning exchanges focused on encouraging proactive management of longleaf pine in the supply area. Southern and Central Appalachian Critical Biodiversity Area (CACBA and SACBA respectively) Both the Central and Southern Appalachian Critical Biodiversity Areas will only affect DBI's residual sourcing due to the distance from existing pellet mills. Education and outreach will be the mitigation tool employed. As described for the risks above, these materials will be developed according to best available science and be adapted as new information and approaches come available (i.e. through FSC CW Regional meetings). This educational material will be aimed at increasing awareness of the sensitivities and unique nature of these CBAs in hopes of increasing conservation of these highly biodiverse areas. Mitigation for primary feedstock includes DBI's program to verify BMP usage and protection of species of concern when sourcing directly from the forest. DBI has integrated the FSC HCV maps into its GIS system and "**Rapid Risk Assessment**" process which also includes all known species and natural communities of concern (NatureServe data). FSC US has identified two specified risks which are relevant to primary fiber suppliers - Late Successional Bottomland Hardwoods (LSBH), and Native Longleaf Pine Systems (NLPS). DBI actively screens all in-woods fiber tracts for species of concern and FSC Specified Risks prior to accepting any fiber. DBI also records the cover type and species of stand from which fiber is sourced. In this way receipt of longleaf pine and harvesting associated with hardwood systems is monitored to ensure that there is no conversion or degradation of high conservation forests on tracts from which we receive roundwood or in-woods chips. If it is determined that the risk of negative impact to the HCV cannot be effectively mitigated through information flow and internal controls DBI can choose not to accept material from a region or a supplier. *The mitigations described above are sufficient to bring the risk of non-compliance with this requirement to "low".*

	Indicator
2.2.5	The Biomass Producer has implemented appropriate control systems and procedures for verifying that the process of residue removal minimises harm to ecosystems.
Finding	• State BMPs encourage the use and distribution of logging slash across sites for nutrient distribution and to prevent soil erosion. Biomass retention happens naturally due to this beneficial reuse of slash. • Several states have developed biomass harvesting guidelines which are precautionary and based on assumptions of potential impacts. However, current research suggests that there are not significant negative impacts to biodiversity or soils from experimental levels of forest residual removal. Pilot studies have also not shown operational residual removal levels to the same scale as those used in some experimental designs.

	• much smaller than the experimental changes involved in the studies we analysed". https://www.sciencedirect.com/science/article/abs/pii/S0378112710007243?via%3Dihub
	• An experimental study conducted in loblolly pine plantations in Georgia and North Carolina purposefully manipulated levels of forest residuals left on site and found minimal effects on biodiversity.
	  ○ In his research thesis, Farrell found that biomass harvests appear to have limited effect on small mammal abundance. https://research.cnr.ncsu.edu/best/documents/Farrell_Christopher_B_201308_ms.pdf
	• Woody biomass harvest also had limited effects on the early-successional, breeding bird community . The successional trajectory of vegetation structure, rather than availability of harvest residues, primarily drove avian use of regenerating stands.
	  ○ Grodsky SM, Moorman CE, Fritts SR, Castleberry SB, Wigley TB (2016) Breeding, Early-Successional Bird Response to Forest Harvests for Bioenergy. PLoS ONE 11(10): e0165070. https://doi.org/10.1371/journal.pone.0165070 https://faculty.cnr.ncsu.edu/christophermoorman/wp-content/uploads/sites/9/2017/01/Grodsky_et_al._2016_BB.pdf
	• Several studies have investigated the response of soil carbon to harvesting and biomass removal. In most instances there is little, if any, change in mineral soil carbon. Changes in surface carbon are variable, with harvest often increasing carbon in the top organic layer initially and differing (experimental) levels of residual biomass removal levels being reflected in changing carbon content of surface soil layers. These findings also demonstrate that there are several variables at play including climate and decomposition rates. See Indicator 2.2.2 for list of applicable references.
	• DBI has a program to evaluate harvest of primary feedstock to assure BMPs are followed and biodiversity is protected. Evaluation of forest residual levels to assure site protection is a part of this procedure.

Means of Verification	• Best Management Practices for forestry are established in each jurisdiction and contain guidance encouraging retention of slash for erosion control and forest productivity (high level of BMP implementation). See below for a few examples:
	  ○ Louisiana – "Where accelerated erosion is likely, use methods which leave logging debris and other natural forest litter scattered over the site." http://www.ldaf.state.la.us/wp-content/uploads/2014/04/BMP.pdf
	  ○ Arkansas - Waterbars are recommended for stabilizing inactive roads, firelines, and trails. Logging slash may also be effective. When harvesting is completed, disperse water from landings and skid trails using water bars, logging slash, or vegetative cover" http://www.aad.arkansas.gov/Websites/aad/files/Content/5944986/BMPs.pdf
	  ○ Mississippi – "SLASH DISPERSAL Slash is the debris such as unmerchantable limbs and tree tops created in the process of a normal logging operation. Slash dispersal is probably the most immediate solution for prevention of soil movement on an active logging site. Wherever possible slash should be scattered back over exposed soil on skid trails and evenly dispersed across logging sets. Slash has also been used successfully to build water bars on skid trails." http://www.mfc.ms.gov/sites/default/files/Entire_bmp_2008-7-24_2.pdf
	• MS Biomass BMPs - These guidelines focus on protecting sensitive sites based on soils characteristics. They provide a map of the state shaded to indicate the relative operability as it relates to harvesting operations utilizing forest residuals. The focus is on maintaining adequate residual material so that no bare soil is exposed. These guidelines, along with those developed in other states, are precautionary and based on assumptions of potential impacts. https://www.mfc.ms.gov/sites/default/files/Biomass%20Brochure%20Web%20reduced%20file%20size.pdf
	• NCASI conducted a review of biofuel harvests on coarse woody debris and biodiversity. In the review they stated, "Pilot biomass harvests report post-harvest changes in CWD levels much smaller than the experimental changes involved in the studies we analysed".

	https://www.sciencedirect.com/science/article/abs/pii/S0378112710007243?via%3Dihub
	• An experimental study conducted in loblolly pine plantations in Georgia and North Carolina purposefully manipulated levels of forest residuals left on site and found minimal effects on biodiversity.
	  ○ In his research thesis, Farrell found that biomass harvests appear to have limited effect on small mammal abundance. https://research.cnr.ncsu.edu/best/documents/Farrell_Christopher_B_201308_ms.pdf
	  ○ Woody biomass harvest also had limited effects on the early-successional, breeding bird community . The successional trajectory of vegetation structure, rather than availability of harvest residues, primarily drove avian use of regenerating stands.
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	• Several studies have investigated the response of soil carbon to harvesting and biomass removal. In most instances there is little, if any, change in mineral soil carbon. Changes in surface carbon are variable, with harvest often increasing carbon in the top organic layer initially and differing (experimental) levels of residual biomass removal levels being reflected in changing carbon content of surface soil layers. These findings also demonstrate that there are several variables at play including climate and decomposition rates. See Indicator 2.2.2 for list of applicable references.
	• DBI has a program to evaluate harvest of primary feedstock to assure BMPs are followed and biodiversity is protected. Evaluation of forest residual levels to assure site protection is a part of this procedure.

Evidence Reviewed	• All means of verification reviewed
Risk Rating	**x Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**
Comment or Mitigation Measure	**None**

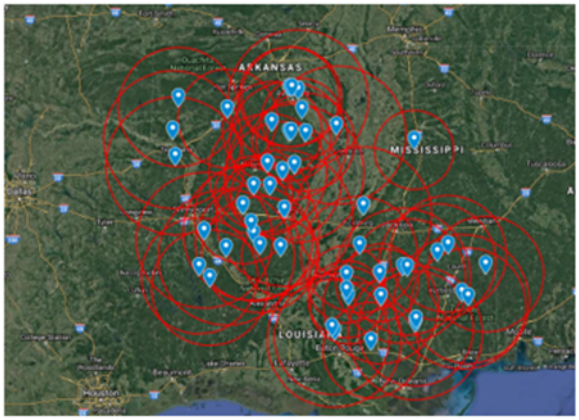
	Indicator
2.2.6	The Biomass Producer has implemented appropriate control systems and procedures to verify that negative impacts on ground water, surface water and water downstream from forest management are minimised (CPET S5b).
Finding	• The Clean Water Act (CWA) is the primary federal law in the United States governing water pollution. Its objective is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. The CWA provisions that are most significant to forestry are section 319 addressing non-point pollution and section 404 addressing discharge of dredge and fill into waterways and wetlands. States have developed Best Management Programs (BMPs) to meet the CWA. EPA has recently reviewed state oversight and effectiveness of BMP programs and found them to be successful in controlling non-point pollution. The EPA has direct oversight over section dredge and fill violations (section 404). • Forest certification makes BMP compliance mandatory for program participants (SFI, ATFS, FSC). DBI sources a significant proportion of fiber from certified lands and is

	certified to the SFI Fiber Sourcing program that requires all loggers delivering fiber to the pellet plant to be trained and comply with all BMPs. • SFI partners with state forestry commissions to conduct logger training on BMP's. Trained loggers help ensure that water quality is maintained and protected on certified and non-certified lands. • SFI's State Implementation Committees (SICs) regularly review and investigate public BMP complaints received via their inconsistent practices procedure and alert consuming mills of bad performers. • Many studies have been conducted on BMP effectiveness to reduce non-point pollution from Forestry operations
Means of Verification	• States use CWA section 319 funds to implement Best Management Practices for forestry established in each jurisdiction and monitored to achieve compliance to the federal Clean Water Act. Forestry is considered a non-point source of pollution under the federal Clean Water Act (CWA). Under the CWA states are directed to develop programs to minimize and avoid non-point source pollution. States have developed Best Management Practice, or "BMP" programs to achieve this. BMP programs are generally administered by the state forestry commission in partnership with the state department of environmental quality (which generally acts as the enforcement agency). States are allowed to develop independent approaches, but in the south, the Southern Group of State Foresters (SGSF) has introduced a framework to standardize BMP monitoring efforts among the 13 states. According to a 2018 SGSF report, which summarized rates of BMP implementation, all states in DBI's region were in conformance with the framework. Combining all BMP categories in all states and using only the most recent state survey data reported, average overall BMP implementation for the region was 93.6%, up from 92% in2012.(https://www.southernforests.org/resources/publications/SGSF%20Water%20BMP%20Report%20FINAL.pdf/view). BMP implementation rates in the states that DBI sources from are as follows: MS- Overall 95% Mississippi 2019 BMP Implementation Survey LA- Overall 89% (according to 2015 survey data reported in SGSF report, 2009 is most recent state-level report publicly available.) LA BMP implementation - SGSF 2018 BMP Report AR- Overall 93 % Arkansas 2017-2018 BMP Implementation Survey AL- Overall 98.2% Alabama 2019 BMP Implementation Survey TN- Overall 88.5% Tennessee 2017 BMP Implementation Survey OK- Overall 92.1% Oklahoma 2010 BMP Implementation Survey TX- Overall 91.6% Texas 2018 BMP Implementation Survey • A structured BMP program has been in place in the southern US for over two decades, with 67 state-wide monitoring surveys conducted since 1997. The Sustainable Forestry Initiative (established 1994) has championed BMP implementation, making compliance mandatory for continued certification. Logger training curriculums are developed and administered jointly by SFI Implementation Committees, state forestry commissions, and state forestry associations. See links to state BMP training programs below. ○ Alabama Professional Logging Managers ○ Ark Pro Logger ○ LA Master Logger Program ○ MS Professional Logging Manager Program ○ TX Pro Logger Program ○ Oklahoma Pro Logger ○ TN Master Logger Program • SFI State Implementation Committees have active Inconsistent Practices Committees that deal with reported BMP violations. This SIC involvement is extremely effective because mills certified to the SFI Fiber Sourcing Standard can immediately stop

purchasing fiber from an offending supplier until the issue is remedied. This direct action taken by receiving mills generally addresses the problem so there is not a need to elevate to the regulatory agency. In 2019 MS had 13 issues investigated through the Inconsistent Practices Committee, LA had 6 and AR had 13. No issues were elevated to the regulatory agency (Department of Environmental Quality: MDEQ, LDEQ, ADEQ respectively).

- The EPA has a framework for imposing penalties. See the following link related to section 404: https://www.epa.gov/sites/production/files/2015-07/documents/2001_sec_404_penalty_policy.pdf
  DBI, and other wood using facilities certified to the SFI Standard, ensure a significant proportion of the forest landscape is implementing BMPs to protect water quality. DBI contractually requires the implementation of state BMPs and has a program to verify BMP implementation. A study conducted by Dwivedi et al. in 2018 found that BMP implementation rate was 2% higher in sites located within 65 miles of mills certified to the SFI Fiber Sourcing standard (https://www.sciencedirect.com/science/article/abs/pii/S1389934118300807)

Map depicting coverage of SFI FS mill sourcing areas within DBI supply area:



- A literature review by Cristan et al. in 2016 reviewed the effectiveness of forestry BMPs in the United States – "The literature indicates that forestry BMPs protect water quality when constructed correctly and in adequate numbers. Forestry BMP effectiveness studies allow state forestry BMP programs to evaluate progress in reducing non-point source pollution and achieving water quality goals established under the Clean Water Act (CWA)." The following link provides a good description of how forestry is regulated under the CWA:
  https://www.sciencedirect.com/science/article/abs/pii/S0378112715005824
  Effectiveness of forestry best management practices in the United States: Literature review. Forest Ecology and Management. 360. 133-151. 10.1016/j.foreco.2015.10.025.
- Technical Bulletin 966 (September 2009) issued by the National Council for Air and Stream Improvement (NCASI) reported high levels of compliance with water quality laws and BMP requirements across the U.S https://www.ncasi.org/wp-content/uploads/2019/02/tb966.pdf
- In 2016 the EPA was forced to re-evaluate the efficacy of state BMP programs in a response to a lawsuit challenging BMP effectiveness at controlling sedimentation and runoff from forest roads. Following an evaluation of state BMP programs, the EPA decided it was still not necessary to regulate discharges from forest roads under the CWA Section 402 (NPDES) point source regulatory provisions. The EPA found that state BMP programs adequately addressed forest roads and that monitoring efforts were highly effective, therefore there was no need to enforcing a new federal regulatory program. https://www.epa.gov/npdes/forest-roads

Evidence Reviewed	• All means of verification reviewed
Risk Rating	x **Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**
Comment or Mitigation Measure	**None**

	Indicator
2.2.7	The Biomass Producer has implemented appropriate control systems and procedures for verifying that air quality is not adversely affected by forest management activities.
Finding	• The Clean Air Act sets standards for air quality in order to protect public health and welfare. • States develop State Implementation Plans (SIPs) describing how they will implement the requirements of the Clean Air Act. • The Clean Air Act also charges the U. S. Forest Service as a Federal Land Manager of Class I areas, to protect air quality related values in the wilderness areas of a specified size. The Forest Service must ensure that its activities, or activities it permits, comply with these national standards and any State and local requirements for air pollution control. • All states DBI sources from have environmental compliance and monitoring agencies that are responsible for enforcement of air quality regulations. • Market provision for biomass provides a reduction in forest fire risk a reduction in fuel load. • Burn permits and licenced prescribed fire applicators are required in all states DBI procures biomass. • Smoke management guidelines are provided by forestry commissions. • Active forest management, and the markets that underpin it, help ensure forests remain forests and continue to help filter our air.

Means of Verification	• Department of Environmental Quality in each jurisdiction with State Implementation Plans for air quality in place:
	  ○ LA - https://www.epa.gov/sips-la
	  ○ MS - https://www.epa.gov/sips-ms
	  ○ AR - https://www.epa.gov/sips-ar
	  ○ TX - https://www.epa.gov/sips-tx
	  ○ OK - https://www.epa.gov/sips-ok
	  ○ AL - https://www.epa.gov/sips-al
	  ○ TN - https://www.epa.gov/sips-tn
	• Prescribed burning permits and smoke management plans are required for all prescribed burning operations in the forest. See links to the permit requirements by state: LA Burn Permit, MS Burn Permit, AR Burn Permit, AL Burn Permit, TX Burn Permit, OK Burn Permit
	• The Clean Air Act charges the U. S. Forest Service as a Federal Land Manager of Class I areas, to protect air quality related values in the wilderness areas of a specified size. https://www.fs.fed.us/air/respon.htm
	• Interagency Fire Prevention Strategy: This strategy follows on the successes guided by the 2000 Southern Wildfire Prevention Strategy that focused on debris burning and homeowner safety in the wildland urban interface.

Evidence Reviewed	• All means of verification reviewed
Risk Rating	x **Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**

<table>
<tr><th></th><th>Indicator</th></tr>
<tr><td>2.2.8</td><td>The Biomass Producer has implemented appropriate control systems and procedures for verifying that there is controlled and appropriate use of chemicals, and that Integrated Pest Management (IPM) is implemented wherever possible in forest management activities (CPET S5c).</td></tr>
<tr><td>Finding</td><td>

Chemical use in forest stands, whether for insect control or for vegetation management, is regulated under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). The US Environmental Protection Agency (EPA) has responsibility for implementing and enforcing FIFRA. All forest-use chemicals must be EPA-registered and forest land operators must follow application guidelines prescribed for each chemical.
States have developed Pesticide General Permits to meet the CWA. Applicators and Landowners must follow Permit guidance, further ensuring the proper application of forest pesticides.
State forestry BMPs contain guidelines for proper chemical applications.
Forest certification assures compliance with regulations and minimized, targeted use of forest chemicals.
Federal cost share programs operate in accordance with an Integrated Pest Management strategy.

</td></tr>
<tr><td>Means of Verification</td><td>

Forest certification assures compliance with regulations and minimized, targeted, use of forest chemicals. For example, see excerpt from the SFI Standard:

SFI Objective2 - Forest Health and Productivity - To ensure long-term forest productivity, carbon storage and conservation of forest resources through prompt reforestation, afforestation, minimized chemical use, soil conservation, and protecting forests from damaging agents.
Indicator 2.2.4: The World Health Organization (WHO) type 1A and 1B pesticides shall be prohibited, except where no other viable alternative is available.
Indicator 2.2.5: Use of pesticides banned under the Stockholm Convention on Persistent Organic Pollutants (2001) shall be prohibited.
Indicator 2.2.6: Use of integrated pest management where feasible

State-level BMPs typically restrict application to non-riparian zones. SMZs act as filters to reduce chance silvicultural chemicals will reach the water – MS BMP guide “Streamside Management Zones (SMZs) are vegetated areas adjacent to streams and watercourses that help protect them from these pollutants. This residual vegetation acts as a filter to trap sediments, chemicals, and nutrients before they reach the water.” See also the following excerpts from the BMP guide:

<table>
<tr><th colspan="2">SMZ Guidelines for Perennial Streams</th></tr>
<tr><th>Allowed</th><th>Not Allowed</th></tr>
<tr><td>▪ Select Harvest: Must leave 50% crown cover
▪ Individual stem treatment with herbicides to release desirable regeneration</td><td>▪ Roads (except perpendicular to stream crossings)
▪ Excessive rutting
▪ Damage to stream bank
▪ Any broadcast chemical application
▪ Any fertilizer application
▪ High intensity fire, such as those associated with site prep burns.
▪ Mechanical site preparation
▪ Log decks or landings
▪ Excessive residual tree damage</td></tr>
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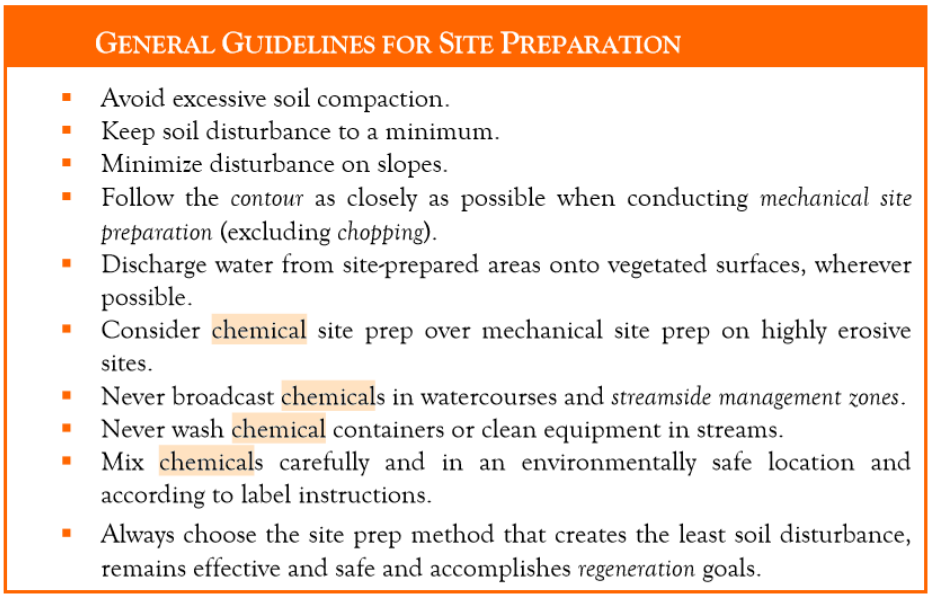
<tr><td></td><td>


The use of class 1A and 1B pesticides, as drafted by the World Health Organisation, and of chlorinated hydrocarbons are not used in the DBI procurement area.
State Applicator License Programs
NRCS, who oversees the allocation of funding for conservation practices on private lands, has Integrated Pest Management (IPM) defined as Conservation Practice Standard.
https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1044470.pdf
https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1044470.pdf
Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) - provides for federal regulation of pesticide distribution, sale, and use. All pesticides distributed or sold in the United States must be registered (licensed) by EPA. See the following link for details on the Act and its enforcement: https://www.epa.gov/enforcement/federal-insecticide-fungicide-and-rodenticide-act-fifra-and-federal-facilities

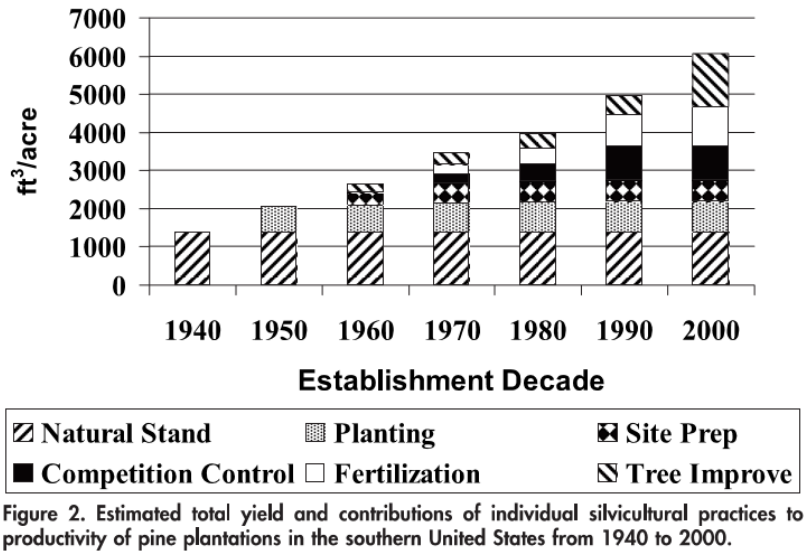
Application of forest herbicides is regulated as a “point source” pollutant under section 402 of the Clean Water Act. To address this states have developed Pesticide General Permits (PGPs) https://www.epa.gov/npdes/pesticide-permitting. State permits are unique but in general they require the development of application plans, accurate record keeping, and conformance with a set of criteria for “All Operators”. See AR PGP for reference: https://www.adeq.state.ar.us/water/permits/npdes/nonstormwater/pdfs/arg870000/fact-sheet.pdf</td></tr>
<tr><td>Evidence Reviewed</td><td>All means of verification reviewed</td></tr>
<tr><td>Risk Rating</td><td>x Low Risk ☐ Specified Risk ☐ Unspecified Risk at RA</td></tr>
<tr><td>Comment or Mitigation Measure</td><td>None</td></tr>
</table>

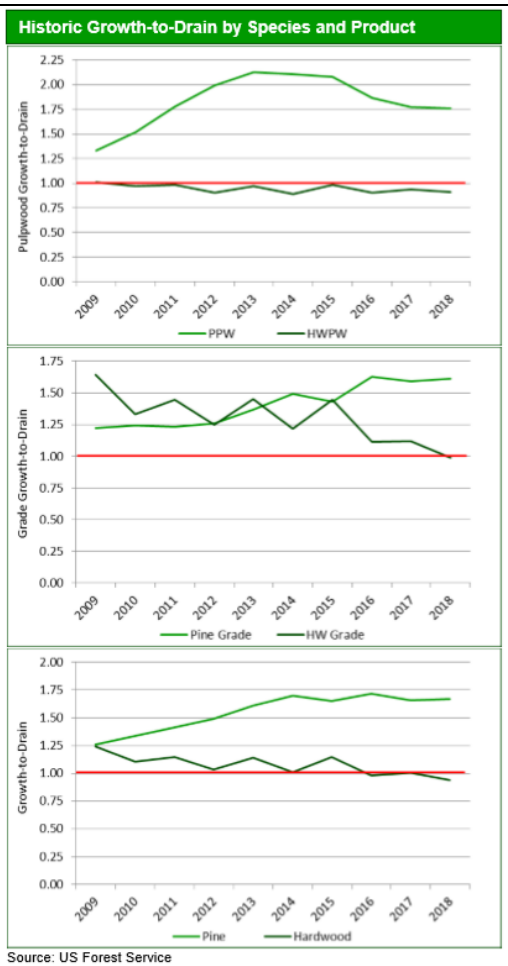
	Indicator
2.2.9	The Biomass Producer has implemented appropriate control systems and procedures for verifying that methods of waste disposal minimise negative impacts on forest ecosystems (CPET S5d).
Finding	• The US Environmental Protection Agency (EPA) established federal requirements for reporting hazardous substance spills, including those associated with logging waste (I.e. oil/hydraulic fluid). • The department of environmental quality in the states where DBI operates all maintain guidance on spill thresholds and reporting requirements. • Solid Waste Disposal Act of 1986: Persons or organizations violating compliance orders for management of hazardous wastes are subject to civil and criminal penalties ranging from maximums of $25,000 to $1,000,000 and from two to 15 years imprisonment. State forestry BMPs address waste management that may contribute to contamination of state waters.

Means of Verification	• The US Environmental Protection Agency (EPA) established federal requirements for reporting the release of oil and hazardous substances. States usually follow the federal minimum standards, but many have stricter requirements.
	  ○ List of reportable quantities of hazardous substances can be found here: http://www.ecfr.gov/cgi-bin/text-idx?SID=d2ae7b1ab544a4e1838d37793c971dc6andmc=trueandnode=se40.28.302_14andrgn=div8
	  ○ EPA also publishes a "list of lists" that provides a consolidated list of chemicals that are subject to reporting under the Emergency Planning and Community Right-to-Know Act (EPCRA), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and the Clean Water Act (CWA) https://www.epa.gov/epcra/consolidated-list-lists
	• The Department of Environmental Quality in all states in which DBI sources have established thresholds for spills and published phone numbers for reporting spills. This table compiled by The Retail Compliance Center provides this information for all US States: https://www.rila.org/retail-compliance-center/spill-reporting. Petroleum spills of 25 gallons or more or any petroleum spill that causes a sheen on water is reportable.
	• State BMPs all address waste and associated hazardous spills as do SIC Logger Training Programs (See Indicator 2.2.6)
	• DBI contractually requires contractors to properly dispose of waste and has a program to evaluate BMP implementation.

Evidence Reviewed	• All means of verification reviewed
Risk Rating	x **Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**
Comment or Mitigation Measure	**None**

	Indicator
2.3.1	Analysis shows that feedstock harvesting does not exceed the long-term production capacity of the forest, avoids significant negative impacts on forest productivity and ensures long-term economic viability. Harvest levels are justified by inventory and growth data.
Finding	A healthy forest products industry drives investment in silviculture which can improve forest productivity. • The biomass market provides markets for thinnings which can increase stand productivity. Additional income from harvest of low-grade fiber allows for further investment in practices which can improve forest productivity. • Data provided through the USFS Forest Inventory and Analysis (FIA) Program shows positive growth to drain ratios in the DBI catchment area.

Means of Verification	• Investment in silviculture has improved forest productivity.
	  ○ F2M's Historical Perspective on the Relationship between Demand and Forest Productivity in the US South
	  ○ Programs to improve seedling quality (through standard breeding techniques), targeted fertilization, and competition control have resulted in significant increases in managed pine forest productivity. See table below from Fox, T.R., E.J. Jokela and H.L. Allen. 2007. The development of pine plantation silviculture in the southern United States. J. Forestry 105:337-3
	 
	
	Figure 2. Estimated total yield and contributions of individual silvicultural practices to productivity of pine plantations in the southern United States from 1940 to 2000.
	• Forest thinning improves forest growth, health, and wildlife habitat. See the following University of Florida Extension article: http://edis.ifas.ufl.edu/pdffiles/FR/FR15900.pdf
	• The Forest Inventory and Analysis (FIA) Program of the US Forest Service provides valuable information on forest growth through a long-term sampling program. Combined with industry removals data provides the information needed to assess America's forests can be accurately obtained
	  ○ According to 2014 USFS report (FS 1035), growth exceeds removals in southern forests (US Forest Resource Facts and Historical Trends)
	  ○ Analysis of growth to drain dynamics immediately surrounding DBI's plants provides evidence that harvest levels are justified by inventory.
	  ▪ Morehouse Bioenergy catchment (analysis and table provided by Forisk Consulting)



Source: US Forest Service

- Amite Bioenergy catchment (analysis and table provided by Hood Consulting).

Amite BioEnergy Catchment Area - Annual Growth, Removals, & Growth-to-Removal Ratios by Major Timber Product (2017)

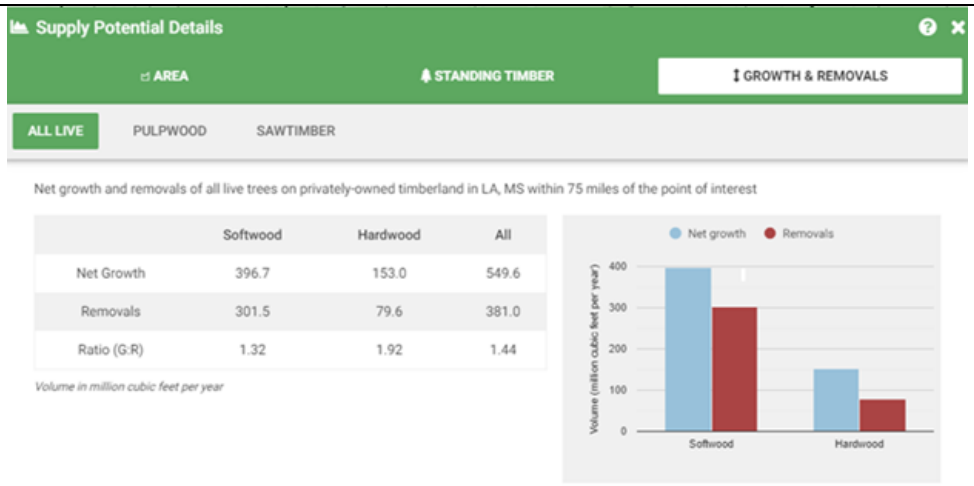
Softwood (Pine)	Growth (million ft3)	Removals (million ft3)	G:R Ratio
Pine Pulpwood	53.7	29.9	1.80
Pine Chip-n-saw	43.6	17.4	2.50
Pine Sawtimber	45.9	23.4	1.96
Softwood (Pine) Total	143.2	70.7	2.02

Hardwood	Growth (million ft3)	Removals (million ft3)	G:R Ratio
Hardwood Pulpwood	18.0	3.4	5.32
Hardwood Sawtimber	19.2	11.0	1.74
Hardwood Total	37.2	14.4	2.58

Product	Growth (million ft3)	Removals (million ft3)	G:R Ratio
Pulpwood	71.7	33.3	2.16
Sawtimber	108.7	51.9	2.10
Total	**180.4**	**85.1**	**2.12**

Source: USDA - US Forest Service

- LaSalle Bioenergy catchment (analysis and table produced by Southern Group of State Foresters Timber Analysis tool: byhttps://texasforestinfo.tamu.edu/tsa/)

<table>
<tr><td></td><td>


See links to FIA Data , Timber Production Output Reports, USDA, State Forest Fact Sheets, and the Southern Forest Future Project for further evidence of sustained productivity in the US South.
</td></tr>
<tr><td>Evidence Reviewed</td><td>All means of verification reviewed</td></tr>
<tr><td>Risk Rating</td><td>x Low Risk ☐ Specified Risk ☐ Unspecified Risk at RA</td></tr>
<tr><td>Comment or Mitigation Measure</td><td>None</td></tr>
</table>

	Indicator
2.3.2	Adequate training is provided for all personnel, including employees and contractors (CPET S6d).
Finding	• The FSC, SFI, PEFC, and ATFS standards all require periodic employee training for an organization to remain certified to the Forest Management and/or Chain of Custody Standards. • SFI requires loggers to be up-to-date in their SIC sponsored Master Logger training courses in order to harvest wood for and/or supply fiber to certified participants. • Credentialing programs exist for professional foresters in the supply chain by jurisdiction and/or by employer.

Means of Verification	• Forest certification and chain of custody standards require a level of competence and training. See relevant sections from the SFI and PEFC Standards for reference.
	  ○ SFI Principle 10 - Training and Education - To improve the practice of sustainable forestry through training and education programs
	  ○ PEFC - 8.5.1 Human resources/personnel
	  ▪ The organisation shall ensure and demonstrate that all personnel performing activities affecting the implementation and maintenance of the chain of custody are competent on the basis of appropriate training, education, skills and experience.
	  ▪ The organisation shall ensure and demonstrate that all personnel performing activities affecting the implementation and maintenance of the chain of custody are competent on the basis of appropriate training, education, skills and experience.
	  ▪
	• SFI logger training program is a comprehensive program that covers topics in (1) Environmental (2) Safety and (3) Business management. Loggers as well as foresters (working for SFI certified companies) are required to take the course. It generally includes an initial set of core classes followed by a continuing education requirement. See links below for more information on logger training programs:
	  ○ Alabama Professional Logging Managers
	  ○ Ark Pro Logger
	  ○ LA Master Logger Program
	  ○ MS Professional Logging Manager Program
	  ○ TX Pro Logger Program
	  ○ Oklahoma Pro Logger
	  ○ TN Master Logger Program
	  • Registered Forester programs also exist within DBI's supply area. These often have a written exam and additional training requirements to maintain registration:
	  ○ http://www.borf.ms.gov/
	  ○ http://www.arkansas.gov/abof/
	  ○ https://www.texasforestry.org/programs/texas-accredited-forester-council
	  ○ http://www.asbrf.alabama.gov/
	  ○ http://www.forestry.ok.gov/Websites/forestry/Images/FORBDROSTER-PublicVersion.pdf
	  • The Society of American Foresters offers a Certified Forester program that requires a level of education and experience as well as completion of continuing education courses. Many industry professionals maintain this certification. https://www.eforester.org/Main/Certification/Certification_Home.aspx
	  • DBI has integrated training requirements into written procedures which define employee training procedures and expectations.
	  • DBI has contractual requirements related to training in all in-woods fiber contracts.

Evidence Reviewed	• All means of verification reviewed
Risk Rating	x **Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**
Comment or Mitigation Measure	**None**

	Indicator
2.3.3	Analysis shows that feedstock harvesting and biomass production positively contribute to the local economy, including employment.
Finding	• DBI plants were built in areas with abundant forest resources that had either lost markets or markets were waning. Talented and knowledgeable employees resided in these areas and are now being utilized. • State and local economic incentives were granted to attract investment and jobs into these areas. • Provision of biomass market enables forest landowners to conduct additional forest stand treatments thereby providing an intermediate source of income and improving fiber production and associated timber revenue associated with their forestland. • Forestry Associations in each state keep track of the positive economic impact that the forestry industry has.

Means of Verification	• Location of pellet plants and infrastructure improves local economies, provides exponential effects, and contributes to employment.
	  ○ Decline in pulp and paper. Effects on backward linked forest industries and local economies. Forest Product Journal, USDA
	  ○ Pellet Plants Spur New Life in Rural South, 2015 World Biomass
	  ○ Wood Pellet Co-Firing for Electric Generation Source of Income for Forest Based Low Income Communities in Alabama
	  ○ http://www.draxbiomass.com/wood-pellets-revitalizing-community/
	• Economic profiles of areas where DBI pellet plants are located demonstrates the value of brining jobs to the area:
	  ○ LaSalle Parish, LA Economic Profile
	  ○ Amite County, MS Forestry Economic Impact Profile
	  ○ Morehouse Parish, LA Economic Profiles
	• Bioenergy presents an important market for forest landowners which has been positively received.
	  ○ Forest landowner associations support of biomass
	  ○ An assessment of nonindustrial private forest landowner willingness to harvest woody biomass in support of bioenergy production in Mississippi: A contingent rating approach. Steven R. Gruchya,Donald L. Grebnerb, Ian A. Munnb, Omkar Joshib, Anwar Hussainc
	• DBI contracted Dr. Robert Eisenstadt and Paul Nelson at the University of Louisiana Monroe (ULM) to conduct an economic impact study of all DBI operations. Their work characterized the positive economy stimulus which can be attributed to the company.
	• Drax is working with Earthworm (formerly The Forest Trust), to better understand communities and forest in which we operate. Earthworm conducted a socioeconomic study in the Amite Bioenergy catchment in 2019 which is informing DBI's community engagement.

Evidence Reviewed	• All means of verification reviewed
Risk Rating	x **Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**
Comment or Mitigation Measure	**None**

	Indicator
2.4.1	The Biomass Producer has implemented appropriate control systems and procedures for verifying that the health, vitality and other services provided by forest ecosystems are maintained or improved (CPET S7a).
Finding	• Forests are recognized as providing valuable ecosystem services. Regional programs exist to support the conservation, health, and vitality of forestlands including tax abatement programs, Forest Action plans, and cost share programs, all designed to encourage landowners to manage their forest for these intrinsic values. • Each state has a forestry agency, department, or division whose collective responsibilities include providing services, outreach, land management, and forest practices oversight. State agencies also manage state lands. • Laws and regulations exist to protect the wildlife resources, including the Endangered Species Act, state level Wildlife laws, and the Clean Water Act. • State level BMPs associated with the CWA are in place to protect water quality. • Each state also has a wildlife agency, department, or division that provides services and outreach to landowners as well as oversight and management of state lands. • Privately sponsored programs that encourage managing the health and vitality of the forest system include the Tree Farm programs coordinated by the American Forest Foundation (American Tree Farm System Web site 2011) and the Longleaf Restoration Program sponsored by The Longleaf Alliance. • Forest level certification (SFI and ATFS) is prevalent on the landscape and provides assurances of the sustainable management of the forest resource. • The FSC US Controlled Wood Risk Assessment has identified two ecosystems that appear within DBI's catchment, Late Successional Bottomland Hardwoods, and Native Longleaf Pine Systems, that have been designated as "Specified Risk". These systems are components that in part reflect the overall health and vitality of the forest. This designation gives rise to mitigations as stated in 2.1.2 above, mitigations to which are included below.

Means of Verification	• State programs - educational and technical assistance for management of wildlife habitat or riparian areas, water quality, resource conservation, and protection from invasive species is available in all states through forestry, wildlife, and cooperative extension personnel. States have developed comprehensive "Forest Action Plans" and "Wildlife Action Plans" to direct and inform natural resource management in each state.
	  ○ The Southern Group of State Foresters provide leadership in sustaining the economic, environmental, and social benefits of the South's forests. The Group is composed of State Foresters and provides direction and leadership for the southern states. Information and links to individual state programs can be found here: https://www.southernforests.org/.
	  ○ The Southeastern Association of Fish and Wildlife Agencies (SEAFWA) is an organization representing southern fish and wildlife agencies responsible for management and protection of the fish and wildlife habitat. Information on SEAFWA and individual state agencies can be found here: http://www.seafwa.org/
	• Tax abatement programs and conservation easement programs encourage forest management throughout the supply base.
	  ○ Details on the tax programs for all US States can be found here: https://taxfoundation.org/states-use-gentle-hand-taxing-timberland/
	• The Forest Legacy Program, a United States Department of Agriculture Forest Service program in partnership with States, supports State efforts to protect environmentally sensitive forest lands.https://www.fs.usda.gov/managing-land/private-land/forest-legacy.
	• Private conservation organizations hold conservation easements see LandScope America, a national conservation easement database http://www.landscope.org/focus/protected_areas/nced/
	• Cost share programs funnel federal funding to landowners through a number of different programs, all of which are intended to improve management of the forest

	resource. A description of these cost share programs and links are provided in Indicator 2.2.1 • The CWA and BMP programs are instrumental in protecting ecosystem services provided by forests. See Indicators 2.2.4 and 2.2.6 for a review of the CWA and BMPs. • The ESA is in place to help prevent further loss, and drive recovery of animal and plant species considered federally threatened and endangered. See Indicator 2.2.4, 2.2.2, and 2.2.1 for a review of the ESA. • By providing a market for fiber, DBI assists in the development of a robust and resilient forest. Thinnings assist in developing ground flora and forest structure, including helping in providing better hunting and recreation; utilizing mill residuals is assistive in encouraging sawlog production. Additional returns to landowners from the biomass market allow further investment in robust forests. • DBI's "Rapid Risk Assessment" process and internal audit protocol also provide assurances that the health, vitality, and other ecosystem services are preserved in the sourcing of in-woods fiber
Evidence Reviewed	
Risk Rating	☐ **Low Risk** **x Specified Risk** ☐ **Unspecified Risk at RA**
Comment or Mitigation Measure	FSC US has identified, and developed mitigation measures, for four specified risks which are relevant to residual fiber suppliers - Late Successional Bottomland Hardwoods (LSBH), Native Longleaf Pine Systems (NLPS), Southern Appalachian Critical Biodiversity Area (SACBA), and the Central Appalachian Critical Biodiversity Area (CACBA). DBI utilizes the FSC approved mitigation measures for addressing these specified risks. The specified risks and mitigation measures are described below: <u>Dusky Gopher Frog (DGF)</u> For the Dusky Gopher Frog, FSC identifies two small areas at the extreme south of our residual sourcing area. FSC has identified education and outreach as a mitigation option for the DGF. DBI will provide educational materials to the suppliers which have the potential to source from the FSC identified risk areas. Educational materials will be informed by the best available science and adapted as new information and/or approaches become available. The desired outcome of these communications is engaging landowners, foresters, and loggers in conservation of DGF populations. <u>Late Successional Bottomland Hardwoods (LSBH)</u> As DBI primarily sources Southern Yellow Pine, Late Successional Bottomland Hardwoods are mainly an issue for residual suppliers who process hardwoods and are proximate to LSBH areas. The areas that potentially have LSBH have been mapped by FSC and integrated into DBI's GIS system. For residual suppliers, outreach and education will be the choice mitigation tool. Educational materials have been developed to engage landowners, foresters, and loggers in conservation of this forest system. DBI also actively supports workshops and learning exchanges focused on improving the management of bottomland hardwoods in the supply area. <u>Native Longleaf Pine Systems (NLPS)</u> For NLPS, the areas at risk have been identified by FSC at county/parish level. These areas have been included in DBI's GIS system. Education and outreach will be the primary mitigation for residual suppliers who's sourcing area intersects FSC identified risk areas. The desired outcome of these communications is engaging landowners, foresters, and loggers in conservation of Native Longleaf Pine systems. DBI also actively supports workshops and learning exchanges focused on encouraging proactive management of longleaf pine in the supply area.

	Southern and Central Appalachian Critical Biodiversity Area (CACBA and SACBA respectively) Both the Central and Southern Appalachian Critical Biodiversity Areas will only affect DBI's residual sourcing due to the distance from existing pellet mills. Education and outreach will be the mitigation tool employed. As described for the risks above, these materials will be developed according to best available science and be adapted as new information and approaches come available (i.e. through FSC CW Regional meetings). This educational material will be aimed at increasing awareness of the sensitivities and unique nature of these CBAs in hopes of increasing conservation of these highly biodiverse areas. Only two of these specified risks are relevant to DBI's primary sourcing, Late Successional Bottomland Hardwoods and the Native Longleaf Pine System. Mitigation for primary feedstock includes DBI's program to verify BMP usage and protection of species of concern when sourcing directly from the forest. DBI has integrated the FSC HCV maps into its GIS system and "**Rapid Risk Assessment**" process which also includes all known species and natural communities of concern (NatureServe data). FSC US has identified two specified risks which are relevant to primary fiber suppliers - Late Successional Bottomland Hardwoods (LSBH), and Native Longleaf Pine Systems (NLPS). DBI actively screens all in-woods fiber tracts for species of concern and FSC Specified Risks prior to accepting any fiber. DBI also records the cover type and species of stand from which fiber is sourced. In this way receipt of longleaf pine and harvesting associated with hardwood systems is monitored to ensure that there is no conversion or degradation of high conservation forests on tracts from which we receive roundwood or in-woods chips. If it is determined that the risk of negative impact to the HCV cannot be effectively mitigated through information flow and internal controls DBI can choose not to accept material from a region or a supplier.

	Indicator
2.4.2	The Biomass Producer has implemented appropriate control systems and procedures for verifying that natural processes, such as fires, pests and diseases are managed appropriately (CPET S7b).
Finding	• Managing fire, pest, and disease are a primary responsibility of USDA Forest Service and state forestry agencies. • National Cohesive Wildland Fire Management Strategy • Plant pest quarantine programs and USDA-Animal and Plant Health Inspection Service (APHIS) monitor and enforce regulations pertaining to invasive species which have the potential to significantly impact forests and agricultural crops (i.e. emerald ash borer). • Federal cost-share funds through NRCS require adherence to NRCS Integrated Pest Management Plan. • Market provision for biomass provides a reduction in forest fire risk and less need to conduct prescribed burns to reduce fuel load. • Market provision for biomass enables use/removal of diseased and damaged
Means of Verification	• USFS conducts aerial surveys to monitors forest pest and disease outbreaks on National Forest and adjacent lands. • Each state has a forestry agency, department, or division whose collective responsibilities include providing services and outreach, land management, and forest practices oversight. State forestry agencies assist timber owners in forest pest management by conducting forest pest surveys and evaluations. • The National Cohesive Wildland Fire Management Strategy focuses on debris burning and homeowner safety in the wildland urban interface. It is an interagency effort, with USFS, State environmental agencies, municipal organizations, and NGOs (i.e. Nature Conservancy).

	• NRCS Integrated Pest Management Plan applies to all applicants and lands which receive federal cost share MP: Forest management standard and assistance to implement integrated pest management plan into land management objectives. • Burn permitting and licencing requirements are required in all states where DBI procures biomass and smoke management guidelines are provided by forestry commissions. • State Smoke Guidelines - https://www.mfc.ms.gov/sites/default/files/Voluntary_Smoke_Management_Guidelines_2012_2.pdf • See 2.2.8 Chemical Applicator and BMP information. • State Forest and Wildlife Action Plans – Each of these plans address invasive species, pests, wildfire, and other threats that exist within each state. They provide a strategy to help control and prevent harmful effects of these threats to the landscape. • FIA Forest Inventories – FIA inventories provide insight for each state into the amount of dead and down debris, growth, removals, and standing stock and monitors changes over time. This insight can show indicators for invasives, forest pest, as well as help calculate damage from fires and natural disasters. • Drax Company Policies • See link detailing southern region forest health evaluations and information on the forest pests in the area. In cases such as the southern pine beetle biomass harvesting • can assist in thinning operations to reduce tree density and therefore assist in the prevention of SBP outbreaks. https://www.fs.usda.gov/detail/r8/forest-grasslandhealth/insects-diseases/?cid=stelprdb5414469 • Market provision for biomass provides a reduction in forest fire risk and less need to conduct prescribed burns to reduce fuel load. See Evans et al. 2009 - From renewable energy to fire risk reduction: a synthesis of biomass harvesting and utilization case studies in US forests • Interagency Fire Prevention Strategy - This strategy provides agency with assistance, education, and monitoring to help prevent and control the spread of wildfires. • The Southern Group of State Foresters provides us with a look at the successes of having a southern wide Stewardship Strategy: https://www.southernforests.org/fire/implementing-shared-stewardship-a-collection-of-cohesive-strategy-success-stories-from-across-the-south/SGSF%20Final%20Report_FINALSharedStewardship.pdf • DBI Foresters are active on all State Forestry Associations and SICs, which provide a forum for critical information transfer from federal and state forestry agencies related to current forest health issues (pest/invasive outbreaks and fire). • Fiber Purchase Agreement language specific to preventing the spread of emerald ash borer. Drax does not accept ash from primary feedstock.
Evidence Reviewed	• All means of verification reviewed
Risk Rating	**x Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**
Comment or Mitigation Measure	**None**

	Indicator
2.4.3	The Biomass Producer has implemented appropriate control systems and procedures for verifying that there is adequate protection of the forest from unauthorised activities, such as illegal logging, mining and encroachment (CPETS7c).

<table>
<tr><td>Finding</td><td>

According to the FSC US Controlled Wood Risk assessment there is a low risk of illegal harvesting.
Enforcement actions in each state sourced from demonstrates effective application of law to protect landowners from illegal logging, unpermitted mining and encroachment.
Occurrences of timber theft and encroachment are not systemic in the states from which DBI sources. Pathways for recourse exists in each state to remedy the problem.
Federal laws ban commerce in all illegally sourced forest products.
All states from which DBI sources fiber have timber theft laws that carry civil and criminal penalties.

</td></tr>
<tr><td>Means of Verification</td><td>

Each jurisdiction has its own version of legislation with well governed agencies that enforce these elements that carry civil and criminal penalties.

<table>
<tr><th>Texas</th><th>Tennessee</th><th>Mississippi</th><th>Louisiana</th><th>Arkansas</th><th>Alabama</th><th>Oklahoma</th><th>Federal</th></tr>
<tr><td>State Timber Theft Law</td><td>State Timber Theft Law</td><td>State Timber Theft Law</td><td>State Timber Theft Law</td><td>Arkansas Timber Theft</td><td>AL Timber Theft Law</td><td>OK Forestry Code</td><td>US: Lacey Act</td></tr>
<tr><td>Publication explaining timber theft law.</td><td>UT Extension Fact sheet</td><td>MS Agricultural and Livestock Theft Bureau</td><td>Timber theft cases and litigation discloser via search engine.</td><td>Timber Theft Fact Sheet</td><td>AL Change in Enforcement Agency</td><td>No reports returned by web crawler</td><td>Enforcement Action: Article summarizing recent cases.</td></tr>
<tr><td>Enforcement action example.</td><td>Enforcement Action Example</td><td>Article presenting enforcement action stats for past two years.

MS Enforcement Action Example</td><td>LA Timber Theft Brochure

LA Enforcement Action Example</td><td>Arkansas AG Law Enforcement News Report</td><td>AL Enforcement Example</td><td>Article that includes OK Timber Theft Rates</td><td>Third party review of effectiveness of laws: Environmental Investigation Agency</td></tr>
</table>

Also see evidence provided in Indicator 1.3.1
While timber theft is a significant and consequential problem for affected landowners, the volume of US hardwood production that may be illegally obtained is very low relative to production. See Assessment of Lawful Harvesting and Sustainability of US Hardwood Exports by American Hardwood Export Council for a review of laws, regulations, and enforcement in the US as it relates to illegal logging: https://www.americanhardwood.org/index.php/en/latest/news/seneca-creek-study
Louisiana and Arkansas have recently strengthened their timber theft laws and in Louisiana the rate of occurrence of timber theft is reportedly less than in past years due to changes in the law that imposed higher penalties.
See Chatham House Illegal logging portal for analysis and review of forest governance and legality..
Masters thesis on timber theft and financial impacts on the US South: A Nationwide Survey of Timber Trespass Legislation. Hicks, Timothy. Master of Forestry Thesis March 2005 PSU School of Forest Resources
Environmental Investigation Agency: The website's only references to the United States are about US-based companies operating in other countries and regarding the Lacey Act.
SFI State Implementation Committees Inconsistent Practices committees provide the public an opportunity to make complaints related to harvest practices.
Mining - each jurisdiction has its own version of legislation governing mining, but the federal government has oversight. https://www.osmre.gov/

US Code: US Code: Title 30 - MINERAL LANDS AND MINING
Annual reports presenting mine permitting and oversight inspections.

Each jurisdiction has its own version of legislation governing land encroachment.Preamble citations including Worldwide Governance Indicators
Drax Group and DBI Policy statements related to avoidance of illegally harvested and sourced fiber http://www.drax.com/biomass/sustainability-policy/#sthash.nfaO36gM.dpuf, https://www.draxbiomass.com/sustainability/

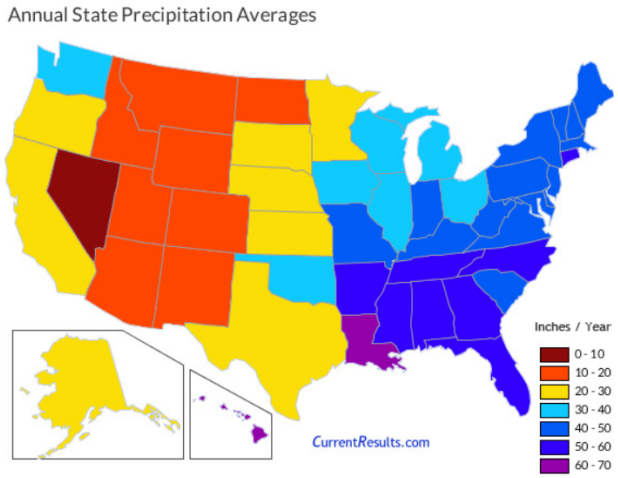
</td></tr>
</table>

	• In the EU, the organization that places material/products on the EU market "for the first time" must apply a DDS, and other supply chain actors need to maintain records so that the original supplier can be identified. • The DBI Fiber Purchase Agreement requires legal compliance, and its ongoing supplier monitoring system ensure that illegal logging is of negligible impact to the company. • DBI conducted a comprehensive stakeholder consultation to capture feedback about legality issues in the procurement regions. ○ One stakeholder voiced their concern about the level of law enforcement and the effectiveness of existing legal controls as they relate to logging. However, DBI continues to support FSC assessment of "low-risk" and through continued monitoring of their catchment finds that the level of enforcement is effective, and that timber trespass is not systemic in procurement region • DBI Severance Tax Records
Evidence Reviewed	• All means of verification reviewed
Risk Rating	x **Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**
Comment or Mitigation Measure	**None**

	Indicator
2.5.1	The Biomass Producer has implemented appropriate control systems and procedures for verifying that legal, customary and traditional tenure and use rights of indigenous people and local communities related to the forest are identified, documented and respected (CPET S9).
Finding	• The FSC Controlled Wood National Risk Assessment for the US has determined that there is a "Low Risk" of "wood harvested in violation of traditional and human rights". • US support of UN Indigenous Peoples initiative • The legal system in the United States is generally considered fair and efficient in resolving conflicts pertaining to traditional rights including use rights, cultural interests or traditional cultural identity. There are different mechanisms or processes that allow Native American tribes, as well as any private citizen, to deal with disagreement and conflict related to decisions affecting natural resources, and forests that are considered to be equitable. • Sustainable Forestry and African American Land Retention Program (SFLR) focuses on issues associated with African American land ownership. • State of America's Forest, SAF Figure 4 and 13 displaying distribution of landownership showing stable patterns between public and private ownerships. • Today, federal, state, and local governments regulate growth and development through statutory law. The majority of controls on land, however, stem from the actions of private developers and individuals. • Two major federal laws have been passed in the last half century that limit the use of land significantly. These are the National Historic Preservation Act of 1966 (today embodied in 16 USC. 461 et seq.) and the National Environmental Policy Act of 1969 (42 USC. 4321 et seq.). • Stakeholder consultation process revealed no concerns expected to affect feedstock sourcing • Preamble citations including Worldwide Governance Indicators

Means of Verification	• Announcement of US Support for the United Nations Declaration on the Rights of Indigenous Peoples • Sustainable Forestry and African American Land Retention Program (SFLR) helps to connect African American landowners with established networks of forestry support including federal and state government programs. Title issues and ownership disputes are a focus of this initiative. • Each jurisdiction has statutory law that governs these elements. Ample case law is present demonstrating path of recourse exists for all parties. Each jurisdiction, with well governed agencies, enforces these elements that carry civil and criminal penalties, and administer land use monitoring programs. See table presented in Indicator 2.4.3. • NEPA Methods provides information for communities who want to assure that their environmental justice (EJ) issues are adequately considered when there is a federal agency action that may involve environmental impacts on minority populations, low-income populations, and/or Indian tribes and indigenous communities. https://www.energy.gov/nepa/downloads/community-guide-environmental-justice-and-nepa-methods • Intra-tribal councils and the Bureau of Indiana Affairs resources provide information concerning consultations, actions and resolutions. https://www.bia.gov/sites/bia.gov/files/assets/public/webteam/pdf/idc1-028635.pdf https://biamaps.doi.gov/ https://www.choctaw.org/government/development/forestry.html http://www.koasatiheritage.org/pages/tribal-history/ http://www.jenachoctaw.org/content/epa https://www.tunicabiloxi.org/tribal-info/departments/land-office/ https://itec.cherokee.org/ http://www.shawnee-tribe.com/Environmental.html • Other publications detailing land use which are informative to understanding ownership patterns: ○ https://www.ers.usda.gov/webdocs/publications/84880/eib-178.pdf?v=0 ○ https://www.ers.usda.gov/data-products/state-fact-sheets/ ○ State of America's Forest, SAF- https://usaforests.org/ • Through the Stakeholder Consultation process DBI has attempted to communicate with tribes located in procurement region. There has been no return communication
Evidence Reviewed	• All means of varication reviewed
Risk Rating	x **Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**
Comment or Mitigation Measure	Stakeholders have commented that there are unresolved disputes in some wetland areas. These are not expected to impinge on sourcing feedstocks.

	Indicator
2.5.2	The Biomass Producer has implemented appropriate control systems and procedures for verifying that production of feedstock does not endanger food, water supply or subsistence means of communities, where the use of this specific feedstock or water is essential for the fulfilment of basic needs.
Finding	• No food related feedstock used. No subsistence living on large scale in US. • Water resources are ample in the sourcing area and working forests from which biomass are sources help maintain forest cover. • No land use change on landscape level since 1950s • No adverse commentary during stakeholder consultation process

Means of Verification	• Subsistence living levels in limited or regionalized cases supported by well governed public agencies.
	• Publications detailing land use which are informative to understanding ownership patterns:
	  ○ https://www.ers.usda.gov/webdocs/publications/84880/eib-178.pdf?v=0
	  ○ https://www.ers.usda.gov/data-products/state-fact-sheets/
	  ○ State of America's Forest, SAF- https://usaforests.org/
	• Abundant water resources in procurement region. Forests are important to protecting and maintaining water supplies. The biomass market encourages forest to remain forest by providing a market for low-value fiber.
	• Average annual rainfall by state
	 

Evidence Reviewed	• All means of verification reviewed
Risk Rating	x **Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**
Comment or Mitigation Measure	**None**

	Indicator
2.6.1	The Biomass Producer has implemented appropriate control systems and procedures for verifying that appropriate mechanisms are in place for resolving grievances and disputes, including those relating to tenure and use rights, to forest management practices and to work conditions.
Finding	• Statutory law and regulations exist and persist with the enforcement of employment, labor, health and safety law. Related management systems, internal processes and company policies are reviewed as part of third party external audits. • The Employment Standards Administration of the US Department of Labor implements and enforces US labor law. • Federal laws specific to forestry occupations including logging, operation of sawmills. • Federal laws have been passed in the last half century that require attention to land tenure and use including the National Historic Preservation Act of 1966 and the National Environmental Policy Act of 1969 • WGI indicates effective enforcement of laws in US • No adverse commentary during stakeholder consultation process.

Means of Verification	• AHEC reports that: “Forest employment in the US is regulated under federal and state laws and codes, which prohibit child labor and are consistent with the ILO Fundamental Principles and Rights at work.” • Federal laws in place regarding forestry occupations including logging, operation of sawmill, lath mill, shingle mill, or cooperage stock mill abide by (Order 4). [75 FR 28453, May 20,2010] . • Statutory law and regulations exist and persist with the enforcement of employment, labor, health and safety law. Related management systems, internal processes and company policies are reviewed as part of third party external audits. • Forest fire fighting and forest fire prevention occupations, timber tract occupations, forestry service occupations, logging occupations, and occupations in the operation of any sawmill, lath mill, shingle mill, or cooperage stock mill abide by (Order 4). [75 FR 28453, May 20, 2010] • The Fair Labor Standards Act (FLSA) establishes minimum wage, overtime pay, recordkeeping, and child labor standards affecting full-time and part-time workers in the private sector and in federal, state, and local governments. • The National Labor Relations Act • Two major federal laws have been passed in the last half century that limit the use of land significantly. These are the National Historic Preservation Act of 1966 (today embodied in 16 USC. 461 et seq.) and the National Environmental Policy Act of 1969 (42 USC. 4321 et seq.). • OSHA eTool: This eTool outlines the required and recommended work practices that may reduce logging hazards. Workers have a right to a safe workplace. The law requires employers to provide their employees with working conditions that are free of known dangers. The OSHA law also prohibits employers from retaliating against employees for exercising their rights under the law (including the right to raise a health and safety concern or report an injury). For more information see www.whistleblowers.gov or worker rights. OSHA eTool • The federal government largely defers and relies on state governments to develop and implement standards for private lands and forest practices pursuant to federal law. As a general rule, land use and management tend to be under state and local jurisdiction. However, several important federal environmental laws have direct implications for forest management on private lands. They include: The Clean Water Act (CWA); the Endangered Species Act (ESA); the Clean Air Act (CAA); the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA); and, the Coastal Zone Management Act (CZMA). • Survey of violations of trade union rights by the International Trade Union Congress ITUC • Though not ratified, the United States is in overall compliance with the ILO Convention 169, which addresses customs and beliefs, education and training, health services, land rights, social security, protection of language and culture, and pay and working conditions. For monitoring of non-compliance by the ILO, see the ILO NORMLEX database. • FSC Chain of Custody requires acknowledgements relating to health, safety and labour issues that are based on ILO Declaration on Fundamental Principles and Rights at Work, 1998. • DBI has written contractual requirements requiring compliance. • Stakeholder Consultation process
Evidence Reviewed	• All means of verification reviewed
Risk Rating	x **Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**
Comment or Mitigation Measure	**None**

	Indicator
2.7.1	The Biomass Producer has implemented appropriate control systems and procedures for verifying that Freedom of Association and the effective recognition of the right to collective bargaining are respected.
Finding	• All employees in the US are allowed to unionize and gather for collective bargaining. Unions exist across the US and have for quite some time signifying their ability to operate lawfully. • ITUC and IOE: The US and some employers have direct complaints cited but none are related to forestry or the forest industry. • The link below provides a list and explanations for the Major Laws of the Department of Labor https://www.dol.gov/general/aboutdol/majorlaws • No adverse commentary during stakeholder consultation process.
Means of Verification	• Statutory labor and employment laws and regulations are protective of employees' rights, health and safety. • WGI indicates effective enforcement of laws in US • Risk management of business operations inherently drives compliance. • Equal Opportunity Employment Act – This act requires that Applicants to and employees of most private employers, state and local governments, educational institutions, employment agencies and labor organizations be protected under Federal law from discrimination. • The National Labor Relations Act - according to the National Relations Board this was enacted to protect the rights of employees and employers, to encourage collective bargaining, and to curtail certain private sector labor and management practices, which can harm the general welfare of workers, businesses and the US economy. • Drax's Chain of Custody Certifications require both internal and external auditing on the annual basis to assure standards are being met and our monitoring systems are working • FSC Chain of Custody requires acknowledgements relating to health, safety and labour issues that are based on ILO Declaration on Fundamental Principles and Rights at Work, 1998. • DBI operational control procedure "Know Your Vendor (KYV)" is conducted to ensure a supplier has not been in violation of the law.
Evidence Reviewed	• All means of verification reviewed
Risk Rating	x **Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**
Comment or Mitigation Measure	**None**

	Indicator
2.7.2	The Biomass Producer has implemented appropriate control systems and procedures for verifying that feedstock is not supplied using any form of compulsory labour.
Finding	• Sufficient laws and consequences exist in the US to deter forced labor from occurring. • WGI indicates effective enforcement of laws in US • The link below provides a list and explanations for the Major Laws of the Department of Labor https://www.dol.gov/general/aboutdol/majorlaws • No adverse commentary during stakeholder consultation process.
Means of Verification	• Statutory labor and employment laws and regulations are protective of employees' rights, health and safety. • According to the 2010 US Department of Labor's List of Goods Produced by Child or Forced Labor, forced labor has been identified in the harvesting and production of timber in Brazil, Peru, and Myanmar (Burma). • 18 US Code § 1589 - Forced labor: Whoever knowingly provides or obtain labor by force in the US is subject to be fined under this title, imprisoned not more than 20 years, or both. • Equal Opportunity Employment Act – This act requires that Applicants to and employees of most private employers, state and local governments, educational institutions, employment agencies and labor organizations be protected under Federal law from discrimination. • The National Labor Relations Act - according to the National Relations Board this was enacted to protect the rights of employees and employers, to encourage collective bargaining, and to curtail certain private sector labor and management practices, which can harm the general welfare of workers, businesses and the US economy. • The Migrant and Season Worker Protection Act has applied to forestry contract workers since 1987. The provisions provide protection for seasonal and migrant workers in the forestry sector conducting reforestation, pre-commercial thinning and other seasonal work, as well as vehicle safety, safe housing, disclosure of wages and hours and payroll record keeping. The US Department of Labor has conducted audits of reforestation contractors that serve in an independent contractor role. Landowners are required by DOL to ensure that contractors providing services are certified by the DOL and comply with the major provisions of MSPA • DBI has written contracts requiring compliance with legislation. • Drax's Chain of Custody Certifications require both internal and external auditing on an annual basis to assure standards are being met and our monitoring systems are working • DBI operational control procedure "Know Your Vendor (KYV)" is conducted to ensure a supplier has not been in violation of the law.
Evidence Reviewed	• All means of verification reviewed
Risk Rating	x **Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**
Comment or Mitigation Measure	**None**

	Indicator
2.7.3	The Biomass Producer has implemented appropriate control systems and procedures to verify that feedstock is not supplied using child labour.
Finding	• The FSC US Controlled Wood Risk Assessment (sections 1.12 and 2.2) has found that there is low risk in connection with child labor. • Strong and effective federal and state legislative controls are in place for this aspect in the wood procurement catchment. • WGI indicates effective enforcement of laws in US • The link below provides a list and explanations for the Major Laws of the Department of Labor https://www.dol.gov/general/aboutdol/majorlaws • The US has not ratified all the core ILO labor standards, however; there is sufficient evidence to suggest that the US does not violate key principles. • There is no evidence of child labor or violation of ILO Fundamental Principles and Rights at work taking place in region. • No adverse commentary during stakeholder consultation process.
Means of Verification	• Global Child labor trends 2000 to 2004. ILO (International Labour Office). Statutory labor and employment laws and regulations are protective of employees' rights, health and safety. • The Fair Labor Standards Act (FLSA) sets wage, hours worked, and safety requirements for minors (individuals under age 18) working in jobs covered by the statute. The rules vary depending upon the particular age of the minor and the particular job involved. As a general rule, the FLSA sets 14 years of age as the minimum age for employment and limits the number of hours worked by minors under the age of 16. FLSA generally prohibits the employment of a minor in work declared hazardous by the Secretary of Labor (for example, work involving excavation, driving, and the operation of many types of power-driven equipment). The FLSA contains several requirements that apply only to particular types of jobs (for example, agricultural work or the operation of motor vehicles) and many exceptions to the general rules (for example, work by a minor for his or her parents). • Each state also has its own laws relating to employment, including the employment of minors. If state law and the FLSA overlap, the law which is more protective of the minor will apply. • The National Labor Relations Act - according to the National Relations Board this was enacted to protect the rights of employees and employers, to encourage collective bargaining, and to curtail certain private sector labor and management practices, which can harm the general welfare of workers, businesses and the US economy. • DBI has written contracts requiring compliance with legislation. • DBI operational control procedure “Know Your Vendor (KYV)” is conducted to ensure a supplier has not been in violation of the law. • FSC Chain of Custody requires acknowledgements relating to health, safety and labour issues that are based on ILO Declaration on Fundamental Principles and Rights at Work, 1998.
Evidence Reviewed	• All means of verification reviewed
Risk Rating	x **Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**
Comment or Mitigation Measure	**None**

	Indicator
2.7.4	The Biomass Producer has implemented appropriate control systems and procedures for verifying that feedstock is not supplied using labour which is discriminated against in respect of employment and occupation.
Finding	• The FSC US Controlled Wood Risk Assessment (sections 1.12 and 2.2) has found that there is low risk in connection with discrimination. • Strong and effective legislation exists to prevent discrimination. • DBI employee handbook has EEO policies in place: EEO and Non-discrimination Statement, Anti-harassment Guidelines, Reasonable Accommodation • Even though the US has not ratified all the ILO conventions due to sovereignty concerns; US employers and laws comply with indicators and rule of law enforces. • No adverse commentary during stakeholder consultation process.
Means of Verification	• The link below provides a list and explanations for the Major Laws of the Department of Labor https://www.dol.gov/general/aboutdol/majorlaws • The Age Discrimination in Employment Act (ADEA): prohibits employers from discriminating on the basis of age. • Equal Opportunity Employment Act – This act requires that Applicants to and employees of most private employers, state and local governments, educational institutions, employment agencies and labor organizations be protected under Federal law from discrimination. • Statutory labor and employment laws and regulations are protective of employees' rights, health and safety. • Title VII of the Civil Rights Act of 1964: prohibits discrimination based on race, color, religion, sex or national origin • The Pregnancy Discrimination Act: specifying that unlawful sex discrimination includes discrimination based on pregnancy, childbirth, and related medical conditions • The Family and Medical Leave Act: sets requirements governing leave for pregnancy and pregnancy-related conditions • The Rehabilitation Act of 1973: prohibits employment discrimination on the basis of disability • The Bankruptcy Reform Act of 1978: prohibits employment discrimination on the basis of bankruptcy or bad debts. • The Immigration Reform and Control Act of 1986: prohibits employers with more than three employees from discriminating against anyone (except an unauthorized immigrant) on the basis of national origin or citizenship status. • The Americans with Disabilities Act of 1990 (ADA): enacted to eliminate discriminatory barriers against qualified individuals with disabilities, individuals with a record of a disability, or individuals who are regarded as having a disability. • The Migrant and Seasonal Worker Protection Act has applied to forestry contract workers since 1987. The provisions provide protection for seasonal and migrant workers in the forestry sector conducting reforestation, pre-commercial thinning and other seasonal work, as well as vehicle safety, safe housing, disclosure of wages and hours and payroll record keeping. The US Department of Labor has conducted audits of reforestation contractors that serve in an independent contractor role. Landowners are required by DOL to ensure that contractors providing services are certified by the DOL and comply with the major provisions of MSPA • Risk management of business operations inherently drives compliance. Related management systems, internal processes and company policies are reviewed as part of third party external audits. • The National Labor Relations Act - according to the National Relations Board this was enacted to protect the rights of employees and employers, to encourage collective bargaining, and to curtail certain private sector labor and management practices, which can harm the general welfare of workers, businesses and the US economy. • The link below provides a list and explanations for the Major Laws of the Department of Labor https://www.dol.gov/general/aboutdol/majorlaws

	• DBI operational control procedure “Know Your Vendor (KYV)” is conducted to ensure a supplier has not been in violation of the law. • DBI has written contracts requiring compliance with legislation. • HR materials • DBI employee handbook has EEO policies in place • FSC Chain of Custody requires acknowledgements relating to health, safety and labour issues that are based on ILO Declaration on Fundamental Principles and Rights at Work, 1998.
Evidence Reviewed	• All means of verification reviewed
Risk Rating	x **Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**
Comment or Mitigation Measure	**None**

	Indicator
2.7.5	The Biomass Producer has implemented appropriate control systems and procedures for verifying that feedstock is supplied using labour where the pay and employment conditions are fair and meet, or exceed, minimum requirements.
Finding	• Strong and effective legislation exists to for this aspect. • WGI indicates effective enforcement of laws in US • Even though the US has not ratified all the ILO conventions due to sovereignty concerns; US employers and laws comply with indicators and rule of law enforces. • No adverse commentary during stakeholder consultation process
Means of Verification	• ITUC and IOE: The US and some employers have direct complaints cited but none are related to forestry or the forest industry • The link below provides a list and explanations for the Major Laws of the Department of Labor https://www.dol.gov/general/aboutdol/majorlaws • Statutory labor and employment laws and regulations are protective of employees' rights, health and safety. • The Fair Labor Standards Act (FLSA) is a federal law which establishes minimum wage, overtime pay eligibility, recordkeeping, and child labor standards affecting full-time and part-time workers in the private sector and in federal, state, and local governments. • The Equal Pay Act amended the Fair Labor Standards Act in 1963. The Equal Pay Act prohibits employers and unions from paying different wages based on sex. • The Migrant and Seasonal Worker Protection Act has applied to forestry contract workers since 1987. The provisions provide protection for seasonal and migrant workers in the forestry sector conducting reforestation, pre-commercial thinning and other seasonal work, as well as vehicle safety, safe housing, disclosure of wages and hours and payroll record keeping. The US Department of Labor has conducted audits of reforestation contractors that serve in an independent contractor role. Landowners are required by DOL to ensure that contractors providing services are certified by the DOL and comply with the major provisions of MSPA • Equal Opportunity Employment Act – This act requires that Applicants to and employees of most private employers, state and local governments, educational institutions, employment agencies and labor organizations be protected under Federal law from discrimination. • The National Labor Relations Act - according to the National Relations Board this was enacted to protect the rights of employees and employers, to encourage collective

	bargaining, and to curtail certain private sector labor and management practices, which can harm the general welfare of workers, businesses and the US economy. • The link below provides a list and explanations for the Major Laws of the Department of Labor https://www.dol.gov/general/aboutdol/majorlaws • DBI has written contracts requiring compliance with legislation. • Risk management of business operations inherently drives compliance. • DBI operational control procedure "Know Your Vendor (KYV)" is conducted to ensure a supplier has not been in violation of the law.
Evidence Reviewed	• All means of verification reviewed
Risk Rating	x **Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**
Comment or Mitigation Measure	**None**

	Indicator
2.8.1	The Biomass Producer has implemented appropriate control systems and procedures for verifying that appropriate safeguards are put in place to protect the health and safety of forest workers (CPET S12).
Finding	• The FSC US Controlled Wood Risk Assessment has found that there is a low risk in respect of Health and safety (section 1.11) • Laws and regulations exist to establish and govern minimum standards and establish safe conditions for employees. • WGI indicates effective enforcement of laws in US • The United States has in place Federal legislation regulating employers' responsibilities for worker health and safety – Occupational Safety and Health Act (OSHA) of 1970. Within this Act there are logging-specific regulations: OSHA 1910.266 • Each of the States that DBI operates in have additional departments, legislation, and regulation regarding worker safety and health. • Forest safety and health are a primary focus of state level logger training programs jointly administered by forestry agencies, forestry associations, and SFI.
Means of Verification	• The link below provides a list and explanations for the Major Laws of the Department of Labor https://www.dol.gov/general/aboutdol/majorlaws • State level logger training programs focus on safety and forest health. Arkansas Pro Logger, Texas Master Logger, Mississippi Pro Logging Manager and Louisiana Master Logger curriculums promote health and safety of forest workers by providing OSHA training. There are High levels of trained loggers due to market requirements. ○ Link to Logger Training Report • The United States has in place Federal legislation regulating employers' responsibilities for worker health and safety – Occupational Safety and Health Act (OSHA) of 1970. Within this Act there are logging-specific regulations: OSHA 1910.266 • OSHA eTool: This eTool outlines the required and recommended work practices that may reduce logging hazards. Workers have a right to a safe workplace. The law requires employers to provide their employees with working conditions that are free of known dangers. The OSHA law also prohibits employers from retaliating against employees for exercising their rights under the law (including the right to raise a health and safety concern or report an injury). For more information see www.whistleblowers.gov for worker rights. • Each state has an active OSHA plan - https://www.osha.gov/stateplans

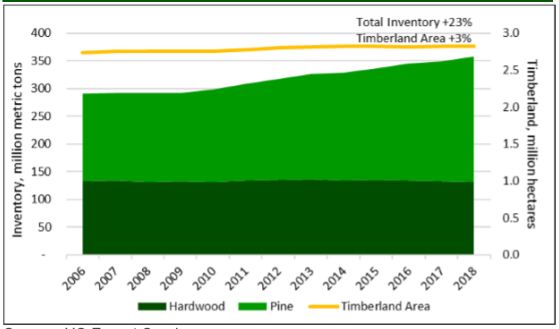
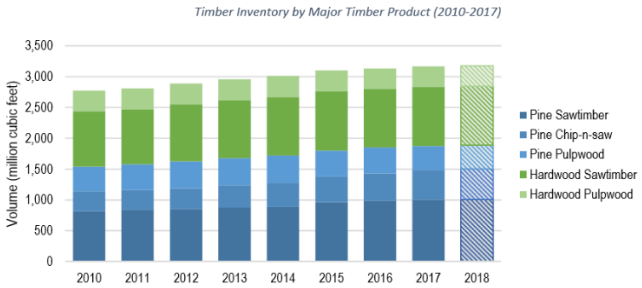
	• The Migrant and Seasonal Worker Protection Act has applied to forestry contract workers since 1987. The provisions provide protection for seasonal and migrant workers in the forestry sector conducting reforestation, pre-commercial thinning and other seasonal work, as well as vehicle safety, safe housing, disclosure of wages and hours and payroll record keeping. The US Department of Labor has conducted audits of reforestation contractors that serve in an independent contractor role. Landowners are required by DOL to ensure that contractors providing services are certified by the DOL and comply with the major provisions of MSPA • Each of the States that DBI operates in have additional departments, legislation, and regulation regarding worker safety and health: Louisiana Workforce Commission, Texas Workforce Commission (TWC), AL Dept of Labor, MS Dept of Employment Security (defers to OSHA) and the Arkansas Dept of Labor. • Fiber Purchase Agreement: Compliance with Laws, Forestry Practices and Safety Rules. Suppliers are signatory. • Drax Biomass has signed the FSC Evaluation of the organization's commitment to FSC values and occupational health and safety in the Chain of Custody FSC-PRO-20-001 V1-0 EN regarding FSC values and occupational health and safety.
Evidence Reviewed	• All means of verification reviewed
Risk Rating	x **Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**
Comment or Mitigation Measure	**None**

	Indicator
2.9.1	Biomass is not sourced from areas that had high carbon stocks in January 2008 and no longer have those high carbon stocks.

Finding	• FSC Controlled Wood National Risk Assessment does not identify conversion to non-forest as a risk in DBI's sourcing area.
	• SBP highlights wetlands and peatlands as sources of high carbon stock that should not be either drained or converted. Wetlands are defined by SBP as "Land that is covered with or saturated by water, permanently or for a significant part of the year". Peatlands are specific type of wetland ecosystem where continuous soil saturation leads to anaerobic conditions where organic matter is accumulated faster than it can be decomposed.
	  ○ Wetlands with high peat concentration are not a feature of concern on the landscape from which DBI sources.
	  ○ Wetlands with shorter periods of saturation can and do support a component of SYP. However, the risk of sourcing from areas which have been "drained or converted as of January 2008" is negligible due to CWA restrictions.
	• With the exception of a few protected areas, forests of the southern US have all been harvested at least once, often multiple times, reducing the risk of encountering high carbon forests.
	• There is a positive growth to drain ratio in the region, demonstrating the maintenance of forest carbon stocks on the landscape.

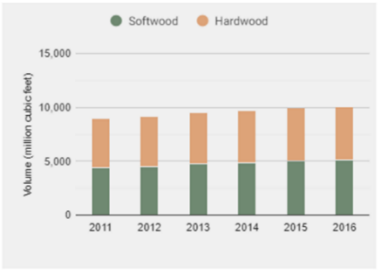
Means of Verification	• Section 404 of the CWA addresses the discharge of dredge and fill into waterways. There is an exemption for on-going silviculture practices, however, the Recapture Provision does not allow conversion of wetland forest to upland. See exemption to the CWA section 404 (f), Recapture Provision "Recapture Provision. Section 404(f) exemptions DO NOT APPLY where any discharge of dredged and/or fill material into

	"waters of the US", including wetlands, IF 1] the activity would convert an area of waters of the US into a new use (e.g. wetland to upland, wetland to open water, etc.). ○ According to a report commissioned by the American Hardwood Council in 2017 titled *Assessment of Lawful Harvesting and Sustainability of US Hardwood Exports*, "Available data suggest that CWA404 violations are aggressively prosecuted by the regulatory agencies. According to the Corps of Engineers, about 6,000 alleged violations of the Clean Water Act that falls under the Corps' jurisdiction are processed in district offices each year. Of these, over 60 percent relate to Section 404 permitting (although only a very small number involve silvicultural activities in wetlands).63 Corps of Engineers. See overview at: http://www.usace.army.mil/cw/cecwo/reg/oceover.htm." Link to report:https://www.americanhardwood.org/index.php/en/latest/news/seneca-creek-study • The Southern Forests Futures Project states "Landowners have harvested timber from southern forests for more than 300 years since European settlement, and most forests have been harvested multiple times." https://www.srs.fs.fed.us/pubs/gtr/gtr_srs168.pdf • There are no "Intact Forest Landscapes" (collaborative effort including among others Greenpeace, WRI, WWF) http://www.intactforests.org/world.webmap.html • There are no High Biodiversity Wilderness Areas per Conservation International https://www.worldheritagesite.org/connection/High-Biodiversity+Wilderness+Area • There are no regions identified by the World Resources Institute as a Frontier Forest https://databasin.org/datasets/303c7eaabda34c5881553d29cfb01015 • DBI's primary feedstock is southern yellow pine (SYP) grown on 25-30 year rotations, further reducing the risk of sourcing from "high carbon stock" forests (evidenced by internal transactional records and Fiber Purchase Agreement) • FSC Controlled Wood National Risk Assessment does not identify conversion to non-forest as a risk in DBI's sourcing area and DBI assessment, which includes consideration of WWF ecoregions, concurs (see Indicator 2.1.3 for detailed review). • Compliance with Best Management Practices ensures that areas with particular carbon sensitivities (stream sides and associated riparian habitats, and older trees) are subject to effective controls – According to F2M, states with robust harvest activity tend to have higher BMP compliance rates (i.e. MS 91%, LA 96%) F2M Blog • DBI's procurement procedures collect information on forest type. Despite sourcing primarily second growth southern yellow pine, harvests from forests identified as hardwood or hardwood/pine are evaluated to assure there will be no conversion out of high carbon stock hardwood forests. • DBI has contracted with NatureServe to develop a tool to help identify areas converted from hardwood into planted pine forests. This tool is still under development, but it will be useful to evaluate the history of pine stands planted in 2008 which are now nearing thinning age thinning age.
Evidence Reviewed	• All means of verification reviewed
Risk Rating	x **Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**
Comment or Mitigation Measure	**None**

	Indicator
2.9.2	Analysis demonstrates that feedstock harvesting does not diminish the capability of the forest to act as an effective sink or store of carbon over the long term.
Finding	• The US and the US South has a 60 plus year history of both increasing production of forest products and an increasing forest inventory resulting in increasing carbon stocks (USDA Forest Service). • Studies investigating the response of soil carbon to harvesting and biomass removal demonstrate little, if any, change in mineral soil carbon and changes in surface carbon are variable. • Recent catchment area analysis demonstrates that forest inventories continue to grow after the DBI plants were in full production. • Historic records and forest modelling, which includes the effects of market demand, indicate a positive relationship between forest markets and forest growth.
Means of Verification	• FIA data indicated carbon stocks are maintained in DBI's sourcing area. Morehouse Bioenergy Primary Catchment area: **Figure 2. Historic Inventory and Timberland Area**  Source: US Forest Service Amite Bioenergy primary catchment area:  LaSalle Bioenergy primary catchment area:

Volume of all live trees on privately-owned timberland in LA, MS within 75 miles of the point of interest

Year	Softwood	Hardwood	All Species
2011	4,411.1	4,610.1	9,021.1
2012	4,494.0	4,659.9	9,153.8
2013	4,721.1	4,757.9	9,479.0
2014	4,844.3	4,861.5	9,705.7
2015	5,037.5	4,958.1	9,995.7
2016	5,086.4	4,942.3	10,028.7



Volume in million cubic feet

- Growth to Drain data also supports a maintenance of carbon stock on the landscape:

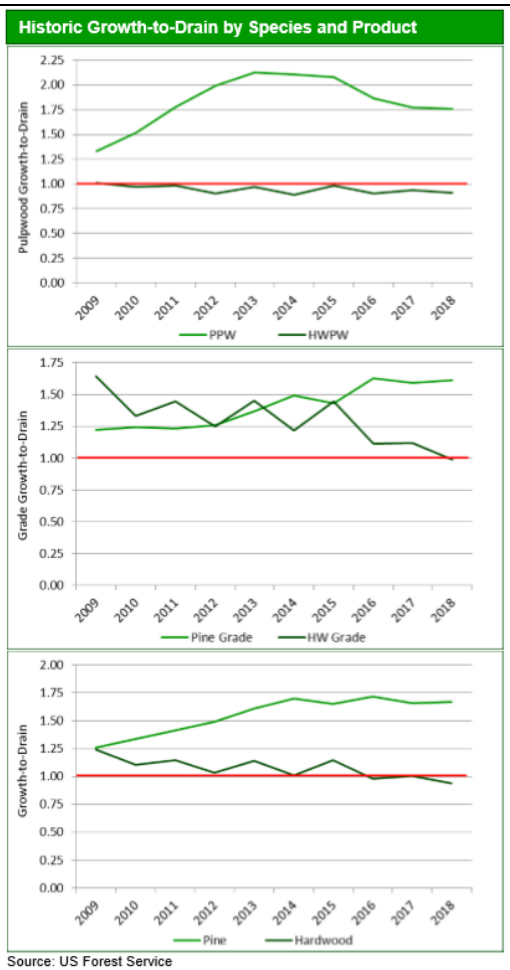
Amite BioEnergy Catchment Area - Annual Growth, Removals, & Growth-to-Removal Ratios by Major Timber Product (2017)

Softwood (Pine)	Growth (million ft3)	Removals (million ft3)	G:R Ratio
Pine Pulpwood	53.7	29.9	1.80
Pine Chip-n-saw	43.6	17.4	2.50
Pine Sawtimber	45.9	23.4	1.96
Softwood (Pine) Total	143.2	70.7	2.02

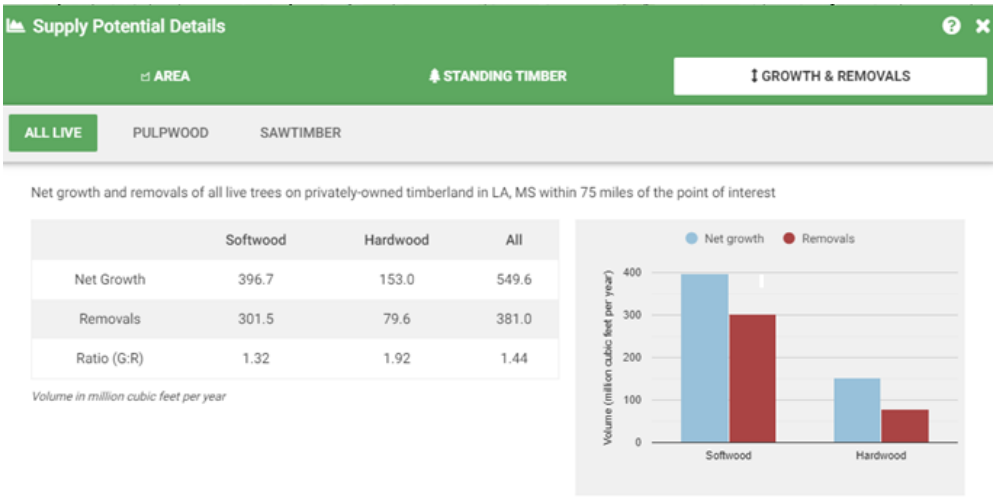
Hardwood	Growth (million ft3)	Removals (million ft3)	G:R Ratio
Hardwood Pulpwood	18.0	3.4	5.32
Hardwood Sawtimber	19.2	11.0	1.74
Hardwood Total	37.2	14.4	2.58

Product	Growth (million ft3)	Removals (million ft3)	G:R Ratio
Pulpwood	71.7	33.3	2.16
Sawtimber	108.7	51.9	2.10
Total	**180.4**	**85.1**	**2.12**

Source: USDA - US Forest Service



Source: US Forest Service



- Southern Forest Futures reports that: after accounting for harvests, forest growth, land use, and climate change, the total carbon pool represented by the South's forests is forecasted to increase slightly from 2010 to 2020/2030 and then decline, primarily due to urban encroachment. https://www.srs.fs.fed.us/futures/summary-report/
- A study by Richter et al. found that forests increased the carbon in the top mineral soils of previously cropped land - Richter, D., Markewitz, D., Trumbore, S. et al. Rapid accumulation and turnover of soil carbon in a re-establishing forest. Nature 400, 56–58 (1999). Forests are important to rebuilding soils on previously cropped lands. Much of the southeastern US has been cleared for agriculture at some point and most of the managed pine forests are found on previously cropped soils. The choice to maintain land in forest or convert from agriculture to forestry is influenced by the availability of

	markets for forest products. In this sense, the biomass market, which utilizes low-value fiber, can be considered to help incentivise landowners to manage forests important to building and maintaining soil which will help rebuild soil carbon and, potentially, help reduce the chances of conversion into cropland which causes significant soil C losses. https://www.sciencedirect.com/science/article/abs/pii/S0378112700002826 • Several studies have investigated the response of soil carbon to harvesting and biomass removal. In most instances there is little, if any, change in mineral soil carbon. Changes in surface carbon are variable, with harvest often increasing carbon in the top organic layer initially, and differing (experimental) levels of residual biomass removal levels being reflected in changing carbon content of surface soil layers. These findings also demonstrate that there are several variables at play including climate and decomposition rates. See Indicator 2.2.2 for list of applicable references. • Jang, Woongsoon; Page-Dumroese, Deborah S.; Keyes, Christopher R. 2016. Long-term soil changes from forest harvesting and residue management in the northern Rocky Mountains. Soil Science Society of America Journal. 80: 727-741. https://www.fs.usda.gov/treesearch/pubs/51073 • Clarke, Nicholas and Gundersen, Per and Jönsson-Belyazid, Ulrika and Kjønaas, O Janne and Persson, Tryggve and Sigurdsson, Bjarni and Stupak, Inge and Vesterdal, Lars. (2015). Influence of different tree-harvesting intensities on forest soil carbon stocks in boreal and northern temperate forest ecosystems. Forest Ecology and Management. 351. 10.1016/j.foreco.2015.04.034 https://www.sciencedirect.com/science/article/abs/pii/S037811271500256X • Nave, L.E.; Vance, E.D.; Swanston, C.W.; Curtis, P.S. 2010. Harvest impacts on soil carbon storage in temperate forests. Forest Ecology and Management. 259: 857-866. https://www.fs.usda.gov/treesearch/pubs/34850 Dietzen, C.A., E.R.G. Marques, J.N. James, R.H.A. Bernardi, S.M. Holub, and R.B. Harrison. 2017. Response of deep soil carbon pools to forest management in a highly productive Andisol. Soil Science Society of America Journal 81(4):970-978. https://doi.org/10.2136/sssaj2016.09.0305 Neaves, C.M. III, W.M. Aust, M.C. Bolding, S.M. Barrett, C.C. Trettin, E. Vance. 2017. Soil properties in site prepared loblolly pine (Pinus taeda L.) stands 25 years after wet weather harvesting in the lower Atlantic coastal plain. Forest Ecology and Management 404:344–353. https://doi.org/10.1016/j.foreco.2017.08.015 • Lang, A.J., R. Cristan, W.M. Aust, M.C. Bolding, B.D. Strahm, E.D. Vance, and E.T. Roberts Jr. 2016. Long-term effects of wet and dry site harvesting on soil physical properties mitigated by mechanical site preparation in coastal plain loblolly pine (Pinus taeda) plantations. Forest Ecology and Management 359:162–173. http://dx.doi.org/10.1016/j.foreco.2015.09.034 • Vance, E.D., W.M. Aust, B.D. Strahm R.E. Froese, R.B. Harrison, and L.A. Morris. 2014. Biomass harvesting and soil productivity: Is the science meeting our policy needs? Soil Science Society of America Journal 78:S95-S104. http://dx.doi.org/10.2136/sssaj2013.08.0323nafsc • Johnson, D and Knoepp, J. and Swank, W and Shan, J and Morris, L.A and Lear, D and Kapeluck, P. (2002). Effects of forest management on soil carbon: Results of some long-term resampling studies. Environmental pollution (Barking, Essex : 1987). 116 Suppl 1. S201-8. 10.1016/S0269-7491(01)00252-4. https://www.sciencedirect.com/science/article/pii/S0269749101002524 • Johnson, Dale and Curtis, Peter. (2001). Johnson DW, Curtis PS.. Effects of forest management on soil C and N storage: meta analysis. Forest Ecol Manag 140: 227-238. Forest Ecology and Management. 140. 227-238. 10.1016/S0378-1127(00)00282-6. https://www.researchgate.net/publication/222680961_Johnson_DW_Curtis_PS_Effects_of_forest_management_on_soil_C_and_N_storage_meta_analysis_Forest_Ecol_Manag_140_227-238/citation/download • Hoover CM. Management Impacts on Forest Floor and Soil Organic Carbon in Northern Temperate Forests of the US. *Carbon Balance Manag*. 2011;6(1):17. Published 2011 Dec 29. doi:10.1186/1750-0680-6-17 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3276426/ • F2M's Historical Perspective on the Relationship between Demand and Forest Productivity in the US South

	• Decline in the pulp and paper industry: Effects on backward linked forest industries and local economies, USDA • Market Response Article, Karen Apt, USDA
Evidence Reviewed	• All means of verification reviewed
Risk Rating	x **Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**
Comment or Mitigation Measure	**None**

	Indicator
2.10.1	Genetically modified trees are not used.
Finding	• The FSC US Controlled Wood Risk Assessment has found there is a "low risk" of wood from forests in which genetically modified trees are planted (Section 5.1). • At the same time, it should be noted that the United States is the most advanced country in laboratory experiments and field trials of GMO species and thus the possibility that GMO species will be commercially used in the US is realistic. If updated data becomes available about commercial usage of GMO species in the US, the US FSC Controlled Wood Risk Assessment for this category will be updated and reviewed. • No adverse commentary during stakeholder consultation process.
Means of Verification	• Forestry Department of FAO (Food and Agriculture Organization) working paper "Preliminary review of biotechnology in forestry, including genetic modification", 2004: www.fao.org/docrep/008/ae574e/ae574e00.htm • Forestry Department of FAO (Food and Agriculture Organization) working paper "Preliminary review of biotechnology in forestry, including genetic modification", 2004 Assessment of Lawful Harvesting and Sustainability of US Hardwood Exports, AHEC • DBI's commitment to sustainable forestry states to "avoid trading and sourcing wood from… e) Wood from forests in which genetically modified trees are planted." • External audit, internal audit and monitoring processes.
Evidence Reviewed	• All means of verification reviewed
Risk Rating	x **Low Risk** ☐ **Specified Risk** ☐ **Unspecified Risk at RA**
Comment or Mitigation Measure	FSC notes that this risk may increase in future. DBI will monitor through direct knowledge of its supply base and engagement with other forest actors, including FSC and SFI.