DRAFT D1-0

FSC National Risk Assessment

For the US States of Alaska and Hawaii

DEVELOPED ACCORDING TO PROCEDURE FSC-PRO-60-002 V 3-0

Version	V 1-0
Code	FSC-NRA-USA-PART 2 V1-0
National approval	National decision body: FSC US Board of Directors Date: XXX
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International contact	Name: Amy Clark Eagle Email address: a.eagle@us.fsc.org
Period of validity	Date of approval: XXX Valid until: (date of approval + 5 years)
Body responsible for NRA maintenance	FSC US – Amy Clark Eagle, Director of Science & Certification, a.eagle@us.fsc.org

Contents

Risk designations in finalized risk assessments for Alaska and Hawaii, US

NOTE: *Part 2 of the US NRA covers all portions of the states of Alaska and Hawaii, for all types of forests, and excludes the remainder of the US states and territories.*

Indicator	**Risk designation** (including functional scale when relevant)
Controlled wood category 1: Illegally harvested wood	
1.1	Low Risk
1.2	Low Risk
1.3	Low Risk
1.4	Low Risk
1.5	Low Risk
1.6	Low Risk
1.7	Low Risk
1.8	Low Risk
1.9	Low Risk
1.10	Low Risk
1.11	Low Risk
1.12	Low Risk
1.13	Low Risk
1.14	Low Risk
1.15	Low Risk
1.16	Low Risk
1.17	Low Risk
1.18	Low Risk
1.19	Low Risk
1.20	Low Risk
1.21	Low Risk
Controlled wood category 2: Wood harvested in violation of traditional and human rights	
2.1	Low Risk
2.2	Low Risk
2.3	Low Risk
Controlled wood category 3: Wood from forests where high conservation values are threatened by management activities	
3.0	Low Risk
3.1	Specified Risk for identified portions of Critical Biodiversity Areas in Alaska and Hawaii; Low Risk for the remainder of the assessment area
3.2	Specified Risk for lands in Hawaii identified as having a higher probability of presence of HCV 2 forests and that are not effectively protected; Low Risk for the remainder of the assessment area
3.3	Specified Risk for lands in Alaska identified as having a higher probability of presence of Old Growth forest and that are not effectively protected; Specified Risk for identified portions of Hawaii with native forest that is not effectively protected; Low Risk for the remainder of the assessment area
3.4	Low Risk
3.5	Low Risk

3.6	Specified Risk for forested lands in Hawaii that are not within a Conservation District; Low Risk for the remainder of the assessment area
Controlled wood category 4: Wood from forests being converted to plantations or non-forest use	
4.1	Specified Risk for forests in Hawaii that are designated as Rural, Agricultrual or Urban Districts; Low Risk for the remainder of the assessment area
Controlled wood category 5: Wood from forests in which genetically modified trees are planted	
5.1	Low Risk

Background information

FSC US began development of a National Risk Assessment for the conterminous United States in 2012. More information on the NRA development process can be found in Part 1 of the US National Risk Assessment (FSC-NRA-USA V1-0), which was approved on April 5, 2019.

The FSC US Board's Policy and Standards Committee (PSC) served as the working group to guide the development of a first draft of Part 2 of the US National Risk Assessment. This document was developed following FSC-PRO-60-002 V3-0.

This document references the approved US National Risk Assessment, Part 1 in the assessments for all five categories as it applies to Alaska and Hawaii. This document includes information and assessments that are specific to Alaska and Hawaii and generally not applicable to the conterminous US.

The Policy and Standards Committee members in 2019 were:

- Tim Beyer – Minnesota Department of Natural Resources – Economic Chamber
- Sarah Billig – Mendocino Redwood Company, LLC – Economic Chamber
- Luke Dillinger – Domtar Paper Company – Economic Chamber
- John Fenderson – Individual Member – Social Chamber
- Jason Grant – Sierra Club – Environmental Chamber
- Cece Headley – Northwest Forest Workers Center – Social Chamber
- Shoana Humphries – Green Value – Social Chamber
- Rolf Skar – Greenpeace USA – Environmental Chamber

The public consultation was held from October 24 through December 23, 2019.

List of experts involved in the risk assessment and their contact details

Mahealani Cypher	Non-member	Board member of the Ko'olau Foundation, active community member. Knowledgeable of matters concerning Native Hawaiian peoples.	Ko'olau Foundation	Categories 2 & 3
Moses K. Haia III	Non-member	Executive director of NHLC. Knowledgeable	Native Hawaiian Legal Corporation	Categories 2 & 3

		of legal matters concerning Native Hawaiian peoples.		
[Name withheld pending approval for inclusion]	Non-member	Tribal liaison, years of research with Alaska Native communities.	US Forest Service	Categories 2 & 3
Tanya Rubenstein	Non-member	Cooperative Resource Management Forester. Knowledgeable of forestry issues and conversion in Hawaii.	Hawaii Division of Forestry and Wildlife	Category 4
[Name withheld pending approval for inclusion]	Non-member	Forestry Manager with knowledge of Alaska Native peoples' rights and forest management activities	An Alaska Native corporation	Categories 2 & 3

National Risk Assessment maintenance

The FSC US National Office is responsible for maintaining the Controlled Wood National Risk Assessment. It is our intention that the National Risk Assessment is a living document that will be updated to incorporate new information as it becomes available. Updates will be made as needed, based on the importance of the information and will be completed with chamber-balanced consultation. Outside of these updates, we will follow the procedures for review and revision as specified in FSC-PRO-60-002 v3 and other FSC normative documents.

Complaints and disputes regarding the approved National Risk Assessment

Stakeholder input and complaints related to a certificate holder's DDS will be addressed using the process described in FSC-STD-40-005. If a dispute is related to a lack of conformity to an FSC standard, the issue should be brought to the certification body and follow the formal FSC Dispute Resolution System.

If the dispute is around the risk designations and control measures of this risk assessment, a complainant should contact the FSC US Director of Science & Certification, who will then address the issue in consultation with the FSC US Board of Directors. These complaints should be in written format and may be sent either electronically via email, or in hardcopy.

List of key stakeholders for consultation

FSC US maintains a list of stakeholders to keep involved on all policy and standards developments in the United States, including public consultations. This Policy and Standards Forum, with over 200 stakeholders,

is comprised of economic, environmental and social interests ranging from certificate holders, certification bodies, forest managers, environmental groups, academics, and other self-selected interested parties. A full list of stakeholders on the Forum can be provided upon request.

There is currently a very low level of engagement between FSC US and stakeholders in Alaska and Hawaii. To ensure that stakeholders in these states are appropriately informed and provided with the opportunity to provide comments and feedback, FSC US has identified a separate list of stakeholders, included below. In addition to the Policy and Standards Forum, the following stakeholders will be notified of opportunities to provide feedback on this risk assessment and otherwise inform its development.

Organization	**Geography**
Alaska Department of Natural Resources – Division of Forestry	Alaska
Tongass National Forest	Alaska
Chugach National Forest	Alaska
Ahtna, Incorporated	Alaska
Alaska Federation of Natives	Alaska
Aluet Corporation	Alaska
Arctic Slope Regional Corporation	Alaska
Bering Straits Native Corporation	Alaska
Bristol Bay Native Corporation	Alaska
Calista Corporation	Alaska
Chugach Alaska Corporation	Alaska
Cook Inlet Region, Incorporated	Alaska
Doyon, Limited	Alaska
Koniag, Incorporated	Alaska
NANA Regional Corporation	Alaska
Sealaska Corporation	Alaska
Alaska Forest Association	Alaska
Alaska Society of American Foresters	Alaska
The Nature Conservancy Alaska	Alaska
Alaska Wildlife Alliance	Alaska
Audubon Alaska	Alaska
Sierra Club of Alaska	Alaska
Southeast Alaska Conservation Council	Alaska
Alaska Conservation Foundation	Alaska
Great Land Trust	Alaska
Alaska Wilderness League	Alaska
University of Alaska Fairbanks	Alaska
University of Alaska Anchorage	Alaska
Hawaii Division of Forestry and Wildlife	Hawaii
US Forest Service, Pacific Southwest Research Station	Hawaii
US Fish and Wildlife Service	Hawaii
The Nature Conservancy Hawaii	Hawaii
Hawaii Forest Industry Association	Hawaii
Hawaii Forest Institute	Hawaii
Native Hawaiian Organizations Association	Hawaii
Council for Native Hawaiian Advancement	Hawaii
University of Hawaii, Department of Natural Resources and Environmental Management	Hawaii
Hawaii Conservation Alliance	Hawaii
Conservation Council Hawaii	Hawaii
Hawaiian Islands Land Trust	Hawaii
Sierra Club of Hawaii	Hawaii
Pacific Birds	Hawaii
Hawaiian Legacy Reforestation Initiative	Hawaii

Risk assessments

Controlled wood category 1: Illegally harvested wood

NOTE: *Part 2 of the US NRA covers all portions of the states of Alaska and Hawaii, for all types of forests, and excludes the remainder of the US states and territories.*

Overview

The Category 1 risk assessment for Part 1 of the US NRA (for the conterminous US) was completed by a consultant on behalf of FSC International. It was approved following a public consultation, then formally published as part of a Centralized National Risk Assessment (CNRA) for the entire United States (including Categories 1 and 5). The approved CNRA was then incorporated into the National Risk Assessment Part 1 (FSC-NRA-USA V1-0) that was published in April 2019.

Development of Part 2 of the US NRA (for Alaska and Hawaii), included a review of the published US NRA Part 1 Category 1 content to assess its applicability to these two states. Because the content is based on sources of information that apply to the entire United States, not only the conterminous US, the Low Risk conclusions for Category 1 in the published National Risk Assessment Part 1 (FSC-NRA-USA V1-0) also apply to Alaska and Hawaii.

Sources of legal timber in the US States of Alaska and Hawaii

Forest classification type	Permit/license type	Main license requirements (forest management plan, harvest plan or similar?)	Clarification
Public and private lands (Alaska)	Permission of landowner plus notice given to state	Harvest with permission of land owner; in accordance with forest practices laws and any other laws that might apply (e.g., fire prevention); after plan of operations given to state.*	In Alaska, timber harvesting on state, private, and municipal land is governed by the Alaska Forest Resources and Practices Act (FRPA, AS 41.17). This Act does not include a permit process, but it does include a process by which landowners notify the state prior to commercial timber operations. Additionally, BMPs in Alaska are regulatory.
Public lands (Hawaii)	Approved management plan or permit	Harvest in accordance with contract, which conforms to the timber sale plans of the land management agency, which in turn conform to the agency's land management plans, and all in accord with governing statutes and regulations.*	The exact requirements depend on the type of public land. For example, in timber management areas, harvest must follow a state-approved management plan. On public land within a Forest Reserve, a commercial harvest permit must be obtained.

Private lands (Hawaii)	Permission of landowner, sometimes with state notice or a permit (dependent on the state land use designation, or other special designations)	Harvest with permission of landowner, in accordance with any laws that might apply (e.g., fire prevention laws, seed tree laws, wetlands protection laws); after notice is given to the state for private lands within or with certain designations; after a permit is received for private lands within or with certain designations; voluntary best management practices for water quality (BMPs). *	The exact requirements depend on any special designation assigned to the private land. For example, on private land within a Forest Reserve, a commercial harvest permit must be obtained. Hawaii has non-regulatory BMPs.

*Harvests on all categories of land are subject to some federal regulations. For example, the Endangered Species Act prevents disturbance or harm to threatened or endangered species. The Clean Water Act regulates movement of soil (dredging and filling) in wetland areas. Also, businesses are subject to tax, employment, workplace safety, and other laws. Safety laws in particular may be specific to logging.

Category 1 Risk assessment

Indicator	Applicable laws and regulations, legal Authority, & legally required documents or records	Sources of Information	Risk designation and determination
Legal rights to harvest			
1.1 Land tenure and management rights	See the US NRA Part 1 for details.		**Low risk** *Low risk Threshold 1 applies: Identified laws are upheld. Cases where law/regulations are violated are efficiently followed up via preventive actions taken by the authorities and/or by the relevant entities.* See the US NRA Part 1 for details. Based on the available information, the risk is assessed as low.
1.2 Concession licenses			**Low risk** *Low risk Threshold 1 applies: Identified laws are upheld. Cases where law/regulations are violated are efficiently followed up via preventive actions taken by the authorities and/or by the relevant entities.* See the US NRA Part 1 for details. Based on the available information, the risk is assessed as low.
1.3 Management and harvesting planning			**Low risk** *Low risk Threshold 1 applies: Identified laws are upheld. Cases where law/regulations are violated are efficiently followed up via preventive actions taken by the authorities and/or by the relevant entities.* See the US NRA Part 1 for details. Based on the available information, the risk is assessed as low.
1.4 Harvesting permits			**Low risk** *Low risk Threshold 1 applies: Identified laws are upheld. Cases where law/regulations are violated are*

Indicator	Applicable laws and regulations, legal Authority, & legally required documents or records	Sources of Information	Risk designation and determination
			efficiently followed up via preventive actions taken by the authorities and/or by the relevant entities. See the US NRA Part 1 for details. Based on the available information, the risk is assessed as low.
Taxes and fees			
1.5 Payment of royalties and harvesting fees	See the US NRA Part 1 for details.		**Low risk** *Low risk Threshold 1 applies: Identified laws are upheld. Cases where law/regulations are violated are efficiently followed up via preventive actions taken by the authorities and/or by the relevant entities.* See the US NRA Part 1 for details. Based on the available information, the risk is assessed as low.
1.6 Value added taxes and other sales taxes			**Low risk** *Low risk Threshold 1 applies: Identified laws are upheld. Cases where law/regulations are violated are efficiently followed up via preventive actions taken by the authorities and/or by the relevant entities.* See the US NRA Part 1 for details. Based on the available information, the risk is assessed as low.
1.7 Income and profit taxes			**Low risk** *Low risk Threshold 1 applies: Identified laws are upheld. Cases where law/regulations are violated are efficiently followed up via preventive actions taken by the authorities and/or by the relevant entities.* See the US NRA Part 1 for details. Based on the available information, the risk is assessed as low.
Timber harvesting activities			
1.8 Timber harvesting regulations	See the US NRA Part 1 for details.		**Low risk** *Low risk Threshold 1 applies: Identified laws are upheld. Cases where law/regulations are violated are efficiently followed up via preventive actions taken by the authorities and/or by the relevant entities.* See the US NRA Part 1 for details. Based on the available information, the risk is assessed as low.
1.9 Protected sites and species			**Low risk** *Low risk Threshold 1 applies: Identified laws are upheld. Cases where law/regulations are violated are efficiently followed up via preventive actions taken by the authorities and/or by the relevant entities.*

Indicator	Applicable laws and regulations, legal Authority, & legally required documents or records	Sources of Information	Risk designation and determination
			See the US NRA Part 1 for details. Based on the available information, the risk is assessed as low.
1.10 Environmental requirements			**Low risk** *Low risk Threshold 1 applies: Identified laws are upheld. Cases where law/regulations are violated are efficiently followed up via preventive actions taken by the authorities and/or by the relevant entities.* See the US NRA Part 1 for details. Based on the available information, the risk is assessed as low.
1.11 Health and safety			**Low risk** *Low risk Threshold 1 applies: Identified laws are upheld. Cases where law/regulations are violated are efficiently followed up via preventive actions taken by the authorities and/or by the relevant entities.* See the US NRA Part 1 for details. Based on the available information, the risk is assessed as low.
1.12 Legal employment			**Low risk** *Low risk Threshold 1 applies: Identified laws are upheld. Cases where law/regulations are violated are efficiently followed up via preventive actions taken by the authorities and/or by the relevant entities.* See the US NRA Part 1 for details. Based on the available information, the risk is assessed as low.
Third parties' rights			
1.13 Customary rights	See the US NRA Part 1 for details.		**Low risk** *Low risk Threshold 1 applies: Identified laws are upheld. Cases where law/regulations are violated are efficiently followed up via preventive actions taken by the authorities and/or by the relevant entities.* See the US NRA Part 1 for details. Based on the available information, the risk is assessed as low.
1.14 Free prior and informed consent			N/A
1.15 Indigenous peoples rights			**Low risk** *Low risk Threshold 1 applies: Identified laws are upheld. Cases where law/regulations are violated are efficiently followed up via preventive actions taken by the authorities and/or by the relevant entities.*

Indicator	Applicable laws and regulations, legal Authority, & legally required documents or records	Sources of Information	Risk designation and determination
			See the US NRA Part 1 for details. Based on the available information, the risk is assessed as low.
Trade and transport			
1.16 Classification of species, quantities, qualities	See the US NRA Part 1 for details.		**Low risk** *Low risk Threshold 1 applies: Identified laws are upheld. Cases where law/regulations are violated are efficiently followed up via preventive actions taken by the authorities and/or by the relevant entities.* See the US NRA Part 1 for details. Based on the available information, the risk is assessed as low.
1.17 Trade and transport			**Low risk** *Low risk Threshold 1 applies: Identified laws are upheld. Cases where law/regulations are violated are efficiently followed up via preventive actions taken by the authorities and/or by the relevant entities.* See the US NRA Part 1 for details. Based on the available information, the risk is assessed as low.
1.18 Offshore trading and transfer pricing			**Low risk** *Low risk Threshold 1 applies: Identified laws are upheld. Cases where law/regulations are violated are efficiently followed up via preventive actions taken by the authorities and/or by the relevant entities.* See the US NRA Part 1 for details. Based on the available information, the risk is assessed as low.
1.19 Custom regulations			**Low risk** *Low risk Threshold 1 applies: Identified laws are upheld. Cases where law/regulations are violated are efficiently followed up via preventive actions taken by the authorities and/or by the relevant entities.* See the US NRA Part 1 for details. Based on the available information, the risk is assessed as low.
1.20 CITES			**Low risk** *Low risk Threshold 1 applies: Identified laws are upheld. Cases where law/regulations are violated are efficiently followed up via preventive actions taken by the authorities and/or by the relevant entities.* See the US NRA Part 1 for details. Based on the available information, the risk is assessed as low.

Diligence/due care procedures		
1.21 Legislation requiring due diligence/due care procedures	See the US NRA Part 1 for details.	**Low risk** *Low risk Threshold 1 applies: Identified laws are upheld. Cases where law/regulations are violated are efficiently followed up via preventive actions taken by the authorities and/or by the relevant entities.* See the US NRA Part 1 for details. Based on the available information, the risk is assessed as low.

Category 1 Control measures

Indicator	Control measures (M – mandatory / R – recommended)
1.1 Land tenure and management rights	Not Applicable
1.2 Concession licenses	
1.3 Management and harvesting planning	
1.4 Harvesting permits	
1.5 Payment of royalties and harvesting fees	
1.6 Value added taxes and other sales taxes	
1.7 Income and profit taxes	
1.8 Timber harvesting regulations	
1.9 Protected sites and species	
1.10 Environmental requirements	
1.11 Health and safety	
1.12 Legal employment	
1.13 Customary rights	
1.14 Free prior and informed consent	
1.15 Indigenous peoples rights	
1.16 Classification of species, quantities, qualities	
1.17 Trade and transport	
1.18 Offshore trading and transfer pricing	
1.19 Custom regulations	
1.20 CITES	
1.21 Legislation requiring due diligence/due care procedures	

Controlled wood category 2: Wood harvested in violation of traditional and human rights

NOTE: *Part 2 of the US NRA covers all portions of the states of Alaska and Hawaii, for all types of forests, and excludes the remainder of the US states and territories.*

Risk Assessment Summary

Indicator	Sources of Information	Functional Scale	Risk Designation and Determination
2.1 The forestry sector is not associated with violent armed conflict, including that which threatens national or regional security and/or linked to military control.	See detailed analysis below	Entire Assessment Area (Alaska and Hawaii)	**Low risk** All low risk thresholds (1, 2, 3, 4, 5) are met and no additional evidence of specified risk has been found. None of the specified risk thresholds are met.
2.2 Labor rights are respected including rights as specified in ILO Fundamental Principles and Rights at Work	See detailed analysis below	Entire Assessment Area (Alaska and Hawaii)	**Low risk** Low risk thresholds 10, 12 are met and no additional evidence of specified risk has been found. None of the specified risk thresholds are met.
2.3 The rights of Indigenous and Traditional Peoples are upheld	See detailed analysis below	Entire Assessment Area (Alaska and Hawaii)	**Low risk** Low risk thresholds 17, 19 and 21 are met. None of the specified risk thresholds are met.

Category 2 Risk Assessment

Indicator	Sources of Information	Risk Assessment	Functional Scale	Risk Designation and Determination
2.1	1, 2, 20	The US NRA Part 1 (NRA for the conterminous United States) information is up to date, accurate and relevant for Alaska and Hawaii. The United States is not included in a list of countries experiencing violence in forested regions [1]. The United States is not covered by any international ban on timber export, based on US NRA Part 1 findings and lack of additional evidence. No evidence of supply or trade of conflict timber was found in the United States based on US NRA Part 1 findings and lack of additional evidence. There are no individuals or entities involved in the forest sector in the United States that are facing UN Sanctions [2, 20].	Entire Assessment Area (Alaska and Hawaii)	Low Risk The following low risk thresholds apply: **Threshold 1** (The area under assessment is not a source of conflict timber), **Threshold 2** (The country is not covered by a

				UN security ban on exporting timber), **Threshold 3** (The country is not covered by any other international ban on timber export), **Threshold 4** (Operators in the area under assessment are not involved in conflict timber supply/trade), and **Threshold 5** (Other available evidence does not challenge a 'low risk' designation)
2.2	2-19	*General Social Rights* The findings in Category 2.2 of the US NRA Part 1 apply to Alaska and Hawaii. Many original sources had published updated information following the completion of the US NRA Part 1, and these were referenced to ensure findings are up-to-date and relevant for Alaska and Hawaii. Additional sources specifically related to Alaska and Hawaii were sought where necessary. The Declaration on Fundamental Principles and Rights at Work reads: "All ILO Members, even if they have not ratified the Conventions in question, have an obligation arising from the very fact of membership in the Organization to respect, to promote and to realize, in good faith and in accordance with the Constitution, the principles concerning the fundamental rights which are the subject of those Conventions, namely: a) freedom of association and the effective recognition of the right to collective bargaining; b) the elimination of all forms of forced or compulsory labour; c) the effective abolition of child labour; and d) the elimination of discrimination in respect of employment and occupation." This indicator addresses specifically whether the country being assessed upholds the ILO Fundamental Principles and Rights at Work which may be demonstrated by ratification of the 8 relevant ILO Core Conventions, or using other evidence. The United States has not ratified all 8 core Conventions. According to the ILO at the time of writing, 2 of the 8 fundamental Conventions, 1 of the 4 governance Conventions, and	Entire Assessment Area (Alaska and Hawaii)	Low Risk The following low risk thresholds apply: **Threshold 10** (Applicable legislation for the area under assessment covers all ILO Fundamental Principles and Rights at Work, AND the risk assessment for the relevant indicators of Category 1 confirms enforcement of

		11 of the 177 technical Conventions have been ratified. The United States has not denounced or ratified any new Conventions in the past year [6]. Lack of ratification does not necessitate a specified risk designation, as other mechanisms may be in place to enforce and uphold the principles covered by the Conventions. Based on the most recent ILO review, the United States has fulfilled annual reporting obligations. The ILO finds the United States in compliance, citing the fact that the United States recognizes the principle and right of non-discrimination in the Equal Protection Clause of the 14th Amendment and the Due Process Clause of the 5th Amendment. Other relevant Federal policies that the ILO cites as consistent with the principles of the ILO Conventions can be found in the US NRA Part 1 [2, 10]. It is notable that recently, following the publishing of the US NRA Part 1, a new Human Rights Watch World Report was published in 2019 [7]. In the report, concern is expressed regarding rollbacks of steps toward improved human rights by past administrations, including the elimination of an equal pay initiative that was to go into effect in 2018. Other concerns regarding revoked executive orders which required federal contractors to comply with fair pay measures and a ban on forced arbitration of sexual harassment and discrimination claims are highlighted. Militarized use of force against recent peaceful protests, concerns surrounding the criminal justice system, failures in rights to health, rights for women and girls, rights for elders, border conflicts and rights of minorities are also cited in the report. Despite these concerns, relevant federal legislation remains in place to support social rights. Certain States were highlighted in the report with respect to specific concerns, but Alaska and Hawaii were not mentioned nor was the forestry sector mentioned. *Freedom of Association and Collective Bargaining* Relevant legislation and a robust system for enforcement of these rights is detailed in the US NRA Part 1 [2]. This information is relevant to the State of Alaska and Hawaii and remains up to date. The United States remains subject to annual ILO review, reporting processes and a complaint process. Details regarding these processes and findings in the US NRA Part 1 remain accurate. The most recent follow ups to freedom of association cases brought against the United States through the Committee on Freedom of Association were requested in 2015 [3] indicating that updates to US NRA Part 1 findings are not necessary. Despite recent backward movement by the current administration in weakening protections for the freedom of association and collective bargaining, the National Labor Relations Board guarantees these rights on a National level and the NLRB continues to enforce the National Labor Relations Act [4]. *Compulsory or Forced Labor* According to the ILO, forced labor is understood as any work that is performed involuntarily and under the menace of any penalty. This can include the use of violence or intimidation, or subtle means such as manipulated debt, retention of identity papers or threats of denunciation to immigration authorities.		applicable legislation ('low risk')) and **Threshold 12** (Other available evidence do not challenge a 'low risk' designation)

		Traditional practices of forced labor, such as slavery or debt bondage, as well as new forms of forced labor such as human trafficking, or so-called "modern slavery" are included in this definition [5]. The United States has ratified the Abolition of Forced Labour Convention, but has not yet ratified the Forced Labor Convention [6]. A Trafficking in Persons Report was published in 2018, following completion of the US NRA Part 1. Information provided in the US NRA Part 1 is still relevant, however. Compulsory labor of trafficked Burmese persons is mentioned within the forestry sector, but the United States is not mentioned. Other nationally relevant information from the US NRA Part 1 is up to date and accurate for Alaska and Hawaii [2, 22]. Based on a recent report published in 2019 on forced labor in Oregon, the State has been found to provide opportunity for labor trafficking of foreign-born workers in the agricultural and forestry sectors [8]). No evidence of similar reports or concerns has been found for Alaska or Hawaii. According to the Human Trafficking Hotline, Hawaii accounted for 0.3% of all calls in 2015, and Alaska accounted for 0.2% of all calls in the same year. Most calls in Hawaii relate to sex trafficking, with less than 3 calls related to labor trafficking reported in 2018. In Alaska, sex trafficking also makes up the largest portion of all calls, with less than 3 labor trafficking cases reported in 2018. The forestry sector is not referenced specifically [9, 10]. *Child Labor* The United States has ratified the Worst Forms of Child Labor Convention, and this Convention is in force (ILO). The Minimum Age Convention has not been ratified, but Federal legislation exists to protect minors in non-agricultural sectors, as detailed in the US NRA Part 1. The United States Department of Labor considers work in the forestry sector to be hazardous, and no minors from the ages of 16 to 18 are employed in forestry occupations [2]. Other relevant information regarding the United States, as specified in the US NRA Part 1, remains relevant and accurate. Specific additional protections exist for minors in the States of Alaska and Hawaii, further reducing the risk of minors being employed along the timber supply chain [12, 13]. *Discrimination* The United States has not ratified either of the associated Core Conventions, however, as described in the US NRA Part 1, a suite of protections is afforded by federal legislation. Other information provided in the US NRA Part 1 regarding discrimination at a national scale is relevant for Alaska and Hawaii and remains accurate. A new Global Gender Gap Report was published in 2018, but the United States only fell from a rank of 49 out of 144 countries to a rank of 51 out of 149 countries from 2017 to 2018, indicating that conclusions in the US NRA Part 1 remain accurate [14]. The 2017 Social Progress Index listed the United States as 24th out of 128		

		countries, and the more recent 2018 Social Progress Index listed the US as 25th out of 146 [15]. The lack of significant change in this index indicates, additionally, that the US NRA Part 1 conclusions remain accurate. New information has not become available for the Migrant Integration Policy Index, indicating that the United States still has favorable standing [17]. Other reports and highlighted legislation remain relevant. As aforementioned, there are renewed concerns with the current administration rolling back protections against discrimination. Additionally, with respect to the forestry sector, there have been widespread complaints about sexual harassment, attempted sexual assaults, gender discrimination and whistleblower retaliation against women in Region 5 of the Forest Service [18]. These findings necessitated further research into discrimination complaints in the forestry sector in Alaska and Hawaii. Based on the 2018 Annual Report by the Alaska State Commission for Human Rights, one notable complaint was filed by a man claiming discrimination based on disability. No other notable complaints within the forestry sector or forest products industry was identified and no other evidence of widespread discrimination allegations within the forestry sector in Alaska was found [19]. The Hawaiian Civil Rights Commission Annual Report from fiscal year 2016-2017 contains no specific references to concerns regarding the forestry sector. Additionally, within the report it is mentioned that State law in Hawaii provides greater protections against pregnancy discrimination and sexual harassment in employment than Federal legislation affords based on a strong civil rights mandate in the Hawaii State Constitution [20]. It is possible to conclude from the information presented that the US respects the fundamental rights of the elimination of discrimination in respect of employment and occupation, including in the forest sector.		
2.3	21-45	**Background Relevant to Hawaii and Alaska** The main document governing International Law regarding the minimum standards for the rights of indigenous peoples is the UN Declaration on the Rights of Indigenous Peoples (UNDRIP). Rights considered within the document include but are not limited to the right to self-government in matters relating to internal affairs, rights to practice cultural traditions and customs and rights to mechanisms of redress and prevention of acts which deprive indigenous peoples of cultural values, integrity, or dispossession of lands and resources, rights to security in subsistence, rights to traditional territories and legal protection of rights to those territories, rights to maintain and strengthen spiritual relationships with traditionally owned or occupied lands, rights to informed and prior consent and just compensation for loss of lands, rights to participate in decisions that would impact internal affairs, and rights to have the relevant State issue, in conjunction with indigenous peoples, a fair, transparent process which gives due recognition to indigenous people's laws, traditions, tenure systems, and rights to traditional territories and resources.	Entire Assessment Area (Alaska and Hawaii) <u>Hawaii</u>: Native Hawaiian peoples are present throughout the Hawaiian High Islands	<u>Low risk</u> The following low risk thresholds apply: **Threshold 17** (The presence of indigenous and/or traditional peoples is confirmed or likely within the area under assessment. The applicable legislation for the area under

		ILO Convention 169 similarly recognizes indigenous people's rights to self-determination, including but not limited to maintenance of identities, languages and religions, control over institutions and ways of life and economic development, participation in decision-making on activities that will impact those indigenous peoples including meaningful consultation, special measures appropriate for safeguarding the indigenous persons, institutions, cultures and environments, rights to traditionally owned or occupied lands, and rights to resources associated with those lands in use, management and conservation. ILO Convention 169 establishes procedures for how relevant States are expected to uphold rights detailed in the Convention. For example, the relevant State shall have the responsibility for developing, with participation of indigenous peoples concerned, measures and systematic action to protect the rights of these peoples, including ensuring equal benefits to all citizens of the State, promotion of the full realization of social, economic and cultural rights, and relevant assistance to eliminate socioeconomic gaps. The United States has not ratified ILO Convention 169 and did not vote for UNDRIP when it was adopted in 2007 [2]. In 2010, the United States endorsed the Declaration [2], but it has not been ratified by the Senate. As a result, the US State Department does not regard the Declaration as binding law but as having moral and political force [24]. Because neither of these international standards are binding law in the United States, the suite of other relevant policies and actions taken by the US must be taken into consideration for the risk assessment. Both Native Hawaiian and Alaska Native peoples have a very different relationship and history with the Federal and State governments than Federally-recognized tribes in the conterminous United States. As a result, only portions of the information provided in the US NRA Part 1 are relevant. Relevant information regarding each State must be analyzed. **Hawaii** Native Hawaiian status is substantially different from Alaska Natives and Tribes in the conterminous United States, requiring careful consideration of their rights as Native Peoples, particularly their right to self-determination and right to forest management. *Historical Context* Native Hawaiian peoples have historically lacked the formal government-to-government relationship afforded to Tribal Nations in the Conterminous United States. Prior to the overthrow and subsequent annexation of the Kingdom of Hawaii in 1898, the United States recognized the sovereignty of the monarchy, signing treaties with the Kingdom regarding the governance of commerce and navigation [36]. Native Hawaiian peoples, historically self-identified as the Kanaka Maoli, were leading a highly organized, self-sufficient social system and economy based on communal land tenure, agriculture, fishing and a rich artistic and religious life prior to European arrival at the end of the 18th century. The Mahele of 1848, wherein a private property system was adopted in Hawaii, which was intended to protect Hawaiian lands from further	(world population) and these are the traditional homelands of the Kanaka Maoli. Alaska: Alaska Native peoples are present throughout Alaska, and the entirety of the State constitutes traditional homelands of Alaska Native groups and peoples (Alaska Native).	assessment covers the basic principles of ILO governing the identification and rights of indigenous and traditional peoples15 and UNDRIP AND risk assessment for relevant indicators of Category 1 confirms enforcement of applicable legislation ('low risk')), **Threshold 19** (There is no evidence of conflict(s) of substantial magnitude pertaining to rights of indigenous and/or traditional peoples) and **Threshold 21** (Other available evidence do not challenge a 'low risk' designation)

		loss to foreign powers, but alienated Native Hawaiian peoples from their land further, as the concept of private property was not an aspect of Hawaiian culture prior to contact. By the end of the 19th century, with the arrival of Europeans and imposition of Western ideals and diseases, the Hawaiian population had plummeted, and the traditional practices and communal land tenure structures had been replaced by Western models [35]. The Organic Act of 1900 led to the cession of 1.8 million acres of crown and government lands to the United States. These lands are now referred to as "ceded lands" or the "public lands trust." [36] The Hawaiian Homes Commission Act (HHCA) of 1920 set aside 200,000 acres of these lands to provide residences and farm lots for Native Hawaiians. Few benefits to Native Hawaiians were initially actualized, but this was the first time a formal relationship with Native Hawaiian peoples was acknowledged by the Federal government [36]. The Admission Act of 1959 granted Statehood to Hawaii and tasked the new State government to accept responsibility for the HHCA, establishing a trust responsibility on the part of the State to Native Hawaiian peoples [36]. Another 1.2 million acres of ceded lands were conveyed and the betterment of Native Hawaiians was listed as one of five uses for revenues generated by trust lands. Again, few benefits were initially realized [36]. Hawaii's Constitutional Convention of 1978 resulted in Amendments which sought to establish preferential programs, affirming that the State holds the ceded lands as a Public Lands Trust, with Native Hawaiians as one of two beneficiaries [35]. Other amendments created the Office of Hawaiian Affairs (OHA) to establish and administer benefits to Native Hawaiians. It was later determined that the OHA should receive 20% of revenues generated from trust lands [35]. The suite of historical actions on the part of the Federal and State governments raises concerns regarding rights afforded under UNDRIP and ILO Convention 169. Following the forceful annexation of Hawaii and subsequent cessions of traditional homelands, a Federal and State trust responsibility was established, and lands were set aside for Native Hawaiian benefit. However, Native Hawaiian peoples were not able to participate in this process and were not afforded self-determination. Eligibility for access to the benefits of the programs was determined by the State without the participation of Native Hawaiian peoples. *Current/Recent Context* The OHA is not a formal Native Hawaiian government, but it is an important entity by which Native Hawaiian peoples interact with the State government, combining features of a public trust and government agency [47]. Those who legislated the HHCA determined without meaningful consultation of Native Hawaiian peoples who is eligible for benefits, and peoples of Native Hawaiian ancestry no longer have exclusive right to determine who leads the Hawaiian Homes Commission. This calls into question whether adequate self-determination has been afforded, considering the importance of self-governance and determination of membership to self-determination [39]. The Federal government has not undertaken a systematic land claims process with the Kanaka Maoli causes concern, given that dispossession of land is directly linked to socioeconomic challenges faced by indigenous peoples [39]. In recent years, there has been a strong		

		revitalization of language, culture, traditions and aspirations for self-determination by Native Hawaiian peoples through cultural programs, the restoration of traditional cultivation, the creation of new social institutions and a sovereignty movement, but an adequate land base is needed for access to culturally significant resources. Native Hawaiians have made clear their desire for control of Native Hawaiian affairs, resources and lands [40]. Conflicts within the Native Hawaiian community exist regarding the correct process by which to reclaim control over internal affairs, resources and traditional lands. The OHA supports the establishment of a government for self-determination and is working on outreach to better involve the Native Hawaiian community in that process. The OHA is also working towards establishing what it deems a necessary land base to support that future government [42]. In 2017 a draft Constitution was created, a first step in establishing a Native Hawaiian government [43]. It should be noted, however, that court decisions *Rice v. Cayetano* and *Arakaki v. State,* which held that having exclusive right to vote on members of OHA by peoples of Native Hawaiian ancestry is unconstitutional, provide potential roadblocks on the path to self-government [50]. On the other hand, there are arguments that Native Hawaiian peoples should seek true sovereignty with the UN in acknowledgement of illegal annexation and occupation of the Hawaiian Islands. In 2018 the "Independent and Sovereign Nation State of Hawaii" submitted a document to the UN establishing intent to develop a sovereign and independent land base and economy, citing the Apology Resolution as proof of illegal overthrow and land cessions. This entity highlights the integral importance of a land base to cultural and physical well-being of Hawaiian peoples and argues that Hawaiians have been denied inclusion in a process that would lead to redress of outstanding land claims [41]. *Recent Federal Government Efforts* The State and Federal governments have taken recent steps to attempt to address historic wrongdoings. Following a Federal-State Task Force Report concerning the Native Hawaiian Homelands, published in 1983, found problems with the implementation of the Hawaiian Homelands Trust during the territorial period and following statehood, including inadequate inventory and administration of ceded lands, and inappropriate removal of lands from the trust, the State of Hawaii enacted legislation in 1995 that required the State to pay monetary compensation for claims [40]. Additionally, the Hawaiian Homelands Recovery Act of 1995 sought to establish procedures for the Secretary of the Interior to settle Native Hawaiian land claims against the Federal Government [25]. In 1993 an Apology Resolution was passed, wherein the United States government formally acknowledged the illegal and wrongful annexation and overthrow of the rightful Kingdom and acknowledged that self-determination had not been afforded to Native Hawaiians [36]. The same year, the Hawaiian State legislature recognized Native Hawaiians as a distinct and uniquely indigenous people whose lands and sovereignty were illegal taken [35]. These formal recognitions establish the foundation for a reconciliation process.		

		In 2004 Congress sought to clarify its relationship to Native Hawaiian peoples by establishing the Office of Native Hawaiian Relations in the Office of the Secretary of the Interior, tasked with continued reconciliation [36]. In 2016 the Department of the Interior published procedures for establishment of a formal government-to-government relationship with the Native Hawaiian community, which does not seek to establish that governing body, but does establish procedures for the recognition of a governing body when it is organized [45]. Even so, Native Hawaiian people, despite being one of the largest groups of indigenous peoples in the United States, stand alone in never having been granted adequate settlement or access to a land claims commission [36]. Although there have been instances where lands have been returned, thanks to dedicated protest as part of the Sovereignty movement with Kahoolawe being an example, the return of land and resources to Native Hawaiian peoples remains unfinished business [47] and a formal government-to-government relationship is still unclear [36]. It is also notable that, although Kahoolawe was returned to the State following a history of military bombing, as of 2003 only a small percentage of the land had been cleaned of bombing debris [40] illustrating underlying concerns about the process of redress. At the Federal level, Acts have been passed that seek to address poor socioeconomic, health and education standards among the Native Hawaiian community: • 20 U.S.C sec. 7920 (Every Student Succeeds Act) provides funding to Native Hawaiian health care providers for preventative healthcare within the community • The Native Hawaiian Health Care Improvement Act provides funding to Native Hawaiian health care providers for preventative health care within the community <u>*Resolution of Disputes*</u> Positive steps towards affirmation of a State trust relationship were established in *Nelson v. Hawaiian Homes Commission,* wherein the Hawaii Supreme Court held that the State of Hawaii must provide adequate general funds to the Department of Hawaiian Homelands for administrative expenses, to achieve intended goals of the benefit of Native Hawaiian peoples and to return jurisdiction over land to Native Hawaiian peoples. Similarly, in *Napeahi v. Paty,* The Ninth Circuit Court of Appeal ruled that the State was obliged to obtain just compensation for the use of ceded trust lands, and that a portion of the revenues from those lands must be used to better the conditions of Native Hawaiians. Most recently, in 2018, an Oahu Circuit Judge ruled that State officials had breached their trust duties by allowing live fire training and other military activities to occur in an area on the Island of Hawaii where they posed a threat to ceded trust lands, in breach of the terms of lease of the lands. These court decisions demonstrate the willingness of State courts to address disputes concerning the enforcement of trust responsibilities to Native Hawaiian peoples. [37] While disputes are ongoing (e.g., *Pele Defense Fund v. Department of Land and Natural Resources* (2012)), State and Federal legal systems provide methods for dispute resolution. <u>*Forest Management By and For Native Hawaiian Peoples*</u>		

		The Hawaiian Homes Commission Act of 1920 establishes a land base by which Native Hawaiian peoples are supported to develop farms and ranches. Language surrounding forest management is not included in the Act [27]. As mentioned above, one way by which Native Hawaiian organizations and groups have attempted to establish greater control over resources is by purchasing a land base. A means by which Native Hawaiian peoples have been consulted in the management of forest resources is through the establishment of the Aha Moku Advisory committee (AMAC). The AMAC was created by the Legislature in 2012 via Ct 288. The Committee may advise the Department of Land and Natural Resources on issues related to resource management through the Aha Moku system of best management practices, based upon indigenous resources management practices within moku (island) boundaries. According to the AMAC executive director, Aha Moku recognizes the natural contours of the land, the specific resources located within the ahupua'a (traditional management units) and the methodology necessary for sustainable management of those resources and communities reliant upon them [26]. Expert consultation indicates that the Advisory Committee does not typically lead to changes in management decisions. *Consultation with Native Hawaiians and Experts* Mahealani Cypher, the representative of the Koolau Foundation, expressed concern over the current management of terrestrial and marine resources. She highlighted a lack of traditional education of spiritual and cultural relationships to the land and resources in schools and by cultural practitioners, leading to overharvesting. She expressed concern over military and recreational access to forested areas, along with the continuing development of roads, highways and other facilities, leading to endangerment of natural resources. She emphasized the need for improved education highlighting the balancing of human needs and the needs of natural communities, and she emphasized the need for greater investment in managing access to hiking trails. She expressed the need for greater funding for education of recreationalists and other users in order to protect resources, including plants that were used by ancient Hawaiians for medicinal and cultural purposes. Although commercial harvesting was not explicitly mentioned, it is important to analyze State management of forested areas in general, which include management of timber areas and areas where commercial harvest is allowed. Mahealani Cypher's concerns are important to note, given the fact that current management practices, lack of funding and education, in her well-informed view, are leading to the endangerment of culturally significant and otherwise significant resources. Additional concerns voiced by Ms. Cypher are relevant for and included in sections relating to HCV 5 and HCV 6. HCV 6 concerns include evidence of gross violations. Moses Haia at the Native Hawaiian Legal Corporation, in their expert opinion, does not feel that Native Hawaiian peoples have been afforded adequate self-determination. They maintain that the forest sector does not meaningfully communicate with and consult Native Hawaiian peoples, and what consultation does		

		occur does not actually affect management decisions. They maintain that for the most part, Native Hawaiian peoples are not afforded administrative control over programs created for their benefit. They also maintain that the only formal land claims process that ever occurred, the Mahele of 1848 and the subsequent Kuleana Act, actually disadvantaged Native Hawaiian peoples and further alienated them from their lands *Summary* Two fundamental native peoples' rights are lacking in the case of Native Hawaiians: the right to self-determination, and lack of forest management control over public lands with a stated objective to better Native Hawaiians. Native Hawaiian peoples are present throughout the assessment area, and although State and Federal legislation exists to protect and uphold rights under ILO Convention 169 and UNDRIP, Native Hawaiian peoples have not been afforded self-determination as a governing body has not been established to represent Native Hawaiian people in a government-to-government relationship with State and Federal governments. Native Hawaiian peoples disagree internally about processes by which to establish self-determination. Although timber harvesting is not a specified concern in relation to this, the State government is a major terrestrial resource manager in Hawaii, and lack of an adequate government-to-government relationship indicates that there is no guarantee that timber harvesting on State lands will not violate afforded rights. Native Hawaiian peoples have yet not been party to a land claims process with the US Federal Government and were not included in determination of lands that would be set aside, in part, for their benefit. Thus, there is no way to guarantee that timber harvesting on lands in Hawaii is not occurring on lands to which Native Hawaiian peoples have a rightful claim, which would potentially be in violation of their rights. However, both the State of Hawaii and the Federal governments have paths for Native Hawaiians to gain formal recognition akin to that afforded to Tribes and Alaska Natives. The OHA supports the establishment of a government for self-determination, and is working towards that objective, and is also working towards establishing a necessary land base to support that future government [42]. Furthermore, Native Hawaiians have begun to pursue recognition; in 2017 a draft Constitution was created as a first step in establishing a Native Hawaiian government [43]. While the status of Native Hawaiians is substantially lesser than that of Tribes in the conterminous United States or Alaska Natives, Native Hawaiians do have certain acknowledgments and rights as a distinct indigenous group, and the opportunity for self-governance leading to greater control over forest management decisions is available. Therefore, considering these findings in combination with those articulated in the US NRA Part 1, we conclude that forest management actions have a low risk of violating Native Hawaiians' rights as Indigenous and Traditional Peoples as defined by FSC.		

		Alaska Native Alaska peoples have a significantly different formal relationship with the United States than Tribal Nations in the conterminous United States. No formal treaties were signed with Native Alaska groups, and the rights of Native Alaska peoples were largely ignored until the passage of the Alaska Native Claims Settlement Act in 1971. Once congress began enacting preferential and separate programs for Alaska Natives, however, the courts immediately recognized that it was appropriate to evaluate these programs under the same rational basis standard of judicial review that applied to programs for American Indians in the conterminous United States [51]. *Historical Context* Eleven distinct cultures can be described geographically in Alaska: The Eyak, Tlingit, Haida and Tsimshian peoples in the Southeast, the Inupiaq and St. Lawrence Island Yupik in the north and northwest, Yup'ik and Cup'ik Alaska Native peoples in the southwest, the Athabascan peoples in the interior, and the Alutiiq (Sugpiaq) and Unagax peoples in south-central Alaska and the Aleutian Islands [32]. These peoples held sovereignty over their lands and maintained traditional forms of government prior to contact. Alaska Native peoples were excluded from land disputes and transactions from European contact in the 1700s through the 1867 purchased of the land from Russia by the United States through the Treaty of Cession. Alaska Native peoples were not included in negotiations as part of this process and many physically fought to defend their rightful homelands. In 1905 the Nelson Act was passed and established 150 reserves for the education, economic development, community development and health of Native Alaska peoples. This Act paved the way for future land settlements. Disputes over land worsened in the 1880s between Alaska Native peoples, miners and resource developers, with several Acts that allowed non-Natives to acquire land. [33, 34] In 1906 and 1926 Congress adopted the Alaska Native Allotment Act and the Alaska Native Townsite Act, respectively. These grants entitled Alaska Native peoples to 160 acres of unappropriated, non-mineral land individually, and established Alaska Native townsites. Today there are 13,000 to 15,000 Native allotments in Alaska, primarily around hunting and fishing sites and most of the 229 federally recognized tribes in Alaska are located on a townsite. These allotments establish the legally recognized Indian Country that exists in Alaska today, but did not constitute a formal land claims process. Both of these Acts were terminated in the 1970s. The Alaska Statehood Act of 1959 included provisions which recognized the right to title of land and resources "held by Indians, Eskimos or Aleuts," but the State still began selecting prime land around hunting and fishing sites through project proposals. Alaska Native peoples increasingly protested and organized to demand their land claims be recognized, and in 1971 the Alaska Native Claims Settlement Act (ANCSA) was passed. ANCSA extinguished aboriginal land and resources claims, placing the land under the ownership of Alaska Native corporations and Alaska Native shareholders. Twelve regional profit-making corporations were		

		created, subject to Federal and State laws. Additionally, over 200 village groups and urban corporations were established. Generally, village corporations own the surface estate to their lands while the regional corporation owns the sub-surface of the village corporation lands. ANCSA is the largest land claims settlement in history, but the result is a complex and sometimes controversial settlement, and ANCSA did not establish protections for traditional subsistence activities, unlike reserved rights established in formal treaties with tribes in the conterminous United States. All reservations, with exception of Metlakatla, were extinguished, and tribes had the option of becoming shareholders or receiving a cash settlement. Amendments to ANCSA allow Native Alaska corporations to determine for themselves whether they admit new shareholders [34]. *Current/Recent Context* Some federal policies relevant to federally recognized tribes in the conterminous United States are relevant to Alaska Native peoples, while others have little effect in the State. A third of all 229 recognized Alaska Tribes are organized under the Indian Reorganization Act of 1934, which had the stated purpose of supporting tribal self-governing powers and was extended to Alaska Native villages in 1936. Most of the remaining tribes also have constitutions, adopted via internal tribal processes. On the other hand, P.L. 280, an Act which was extended State jurisdiction into Indian country during the Termination Era of Federal Indian policy, had relatively little effect in Alaska because of the relatively small amount of Indian country compared to other Native ownerships. Within the small pockets of Indian country present, both the State and Tribal Nation share jurisdiction over internal affairs, despite tribal dissent over the undermining of tribal sovereignty without consent or consultation. A specific concerning effect of Public Law 280 in Alaska is the policy by the Bureau of Indian Affairs to not fund the operation of tribal courts in States where it applies. The result in Alaska is a reduction of tribal access to judicial services. The Indian Self Determination and Education Assistance Act of 1975 applied to Alaska Natives, delegating authority to Indian tribes to provide their own services by assuming administrative responsibility, intended to support self-determination. The Indian Child Welfare Act, which responded to alarming numbers of American Indian and Alaska Native children removed from Native families and placed in non-Native homes, also applies to Alaska Native peoples. The Act established minimum standards for the removal of American Indian children and support for tribal jurisdiction over relevant cases. Although the State of Alaska initially failed to fully adhere to ICWA, in 2001 it was recognized that the Alaska State Courts are required by law to fully follow ICWA. [34] Today, Alaska tribes have clear jurisdiction over membership, to determine their own form of government and justice system, and over internal affairs. Tribal jurisdiction in Alaska tends to be member based, rather than being based on territory such as a reservation, so tribal courts can hear cases involving tribal members even without the ownership of "Indian country." State and Tribal governments are recognized to have concurrent jurisdiction, so whichever court hears a case first assumes jurisdiction. Rules regarding dual citizenship of Alaska Native peoples with the State and one or more tribes is determined by each tribe internally [34].		

		Recent concerns have been raised by the National Congress of American Indians regarding violence against Alaska Native women. NCAI has highlighted the lack of service by local trained State law enforcement in many rural Alaska Native villages, the disproportionate suffering of Alaska Native villages by crime of all kinds and domestic violence, and the disproportionate rates of sexual assault among Alaska Native women. NCAI recognized the Alaska Safe Families and Villages Act, as well as a "Special Rule for the State of Alaska" in Section 910 of the Violence Against Women Reauthorization Act of 2013, but also recognized a continued heightened risk for Alaska Native women and urged Congress to develop legislation to restore Alaska Native village lands as "Indian Country" or, at minimum, to restore the authority of Alaska tribes to address domestic violence and sexual assault within village lands [31]. *Recent Federal Efforts specific to Alaska Native Peoples* In recognition of historic lack of clarity regarding the government-to-government relationship between Alaska Native tribes and the Federal government, in 1994 Congress reaffirmed recognition of 229 Alaska Native tribes through the Federally Recognized Tribal List Act. Additionally, in 2017 the State of Alaska promulgated the Alaska Tribal Welfare Compact, establishing a government-to-government agreement and framework for tribes to provide child welfare services on behalf of the State, and recognizing inherent sovereignty of tribes over citizens. [34] *Resolution of Tribal Disputes* Information regarding the Native Dispute Resolution Network provided in the US NRA Part 1 is relevant. Experts consulted could not think of any major ongoing disputes related to the forest sector. However, one expert noted that of the lands allotted to Alaska Native peoples under the Alaska Native Claims Settlement Act have not all been allotted, and that it is taking Congress a long time to convey these lands. *Forest Management by and For Tribes* According to the Resource Development Council, a growing number of Alaska Native Regional Corporations are fulfilling ANCSA's economic goals by partnering with resource industries in development projects across the State. Most commercial forestry activities in Alaska take place on Federal or Alaska Native corporation land [52]. ANCSA contains a natural resource revenue-sharing provision, with Section 7 mandating that when mineral or timber resources are developed on Native Corporation lands, ANCSA Native shareholders benefit. As a result, the management of timber and other resources have been distributed to Regional and Village corporations for the benefit of relevant Alaska Native peoples [29]. According to the Forest Service, ANCSA transferred 550,000 acres of the Tongass National Forest to Alaska Native corporations, and some 24% of coastal Alaska timberland is owned by Alaska Native corporations [30]. Access of Alaska Native corporations to significant land bases and timber resources where relevant indicates a high level of self-determination over the management of forest resources.		

		Concerns do exist over access to cultural and physical subsistence resources but they do not amount to a specified risk. The Section for HCV 5 covers these in more detail. *Consultation with Tribes and Experts* Discussions with a tribal liaison for the US Forest Service, indicate good relationships between the forest sector and Alaska Native groups within the area surrounding Region 10 of the Forest Service. The expert had no knowledge of ongoing major disputes between Alaska Native peoples or groups and the forestry sector. Additionally, Linda highlighted efforts by the Forest Service to meaningfully consult and include Alaska Native groups in management decisions through the establishment of the Alaska Tribal Leaders Committee in the Tongass and Chugach areas. The Committee provides a process by which concerns can be voiced, but Linda also emphasized that lines of communication exist at a more local scale between USFS and Alaska Native groups as well. Discussions with a forestry manager for an Alaska Native corporation, indicate that with regards to self-determination, non-profit organizations are given federal funding to provide services relating to self-determination. The expert also mentions that Native corporations have notable jurisdiction over their lands, as landowners who can make decisions surrounding how the land is managed for their stakeholders within the confines of State regulations. Finally, the expert mentions that the majority of forestry activities in Alaska takes place on Alaska Native corporation lands, and highlights that Alaska Native Corporations are beholden to their stakeholders financially and in terms of conservation measures, which are voluntarily enacted to protect resources for their shareholders and descendants into the future. However, the expert also mentions that the lands allotted to Alaska Native peoples under the Alaska Native Claims Settlement Act have not all been allotted, and that it is taking Congress a long time to convey these lands. He provides an example of ongoing conflicts regarding land allotments: the Chugach Corporation is currently unable to access valuable coal and timber resources on allotted land near Carbon Mountain due to disagreements with the Forest Service.		

Category 2 Control measures

Indicator	Control measures (M – mandatory / R – recommended)
2.1	Not Applicable
2.2	
2.3	

Category 2 Sources

No	Source of Information	Relevant Indicator
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Category 2 Experts Consulted

Name	Organization	Area of Expertise
1. Mahealani Cypher	Ko'olau Foundation	Board member of the Ko'olau Foundation, active community member. Knowledgeable of matters concerning Native Hawaiian peoples.
2. Moses K. Haia III	Native Hawaiian Legal Corporation	Executive director of NHLC. Knowledgeable of legal matters concerning Native Hawaiian peoples.
3. [Name withheld pending approval for inclusion]	US Forest Service	Tribal liaison, years of research with Alaska Native communities.
4. [Name withheld pending approval for inclusion]	An Alaska Native corporation	Forestry Manager. Knowledgeable of Alaska Native peoples' rights and forest management activities.

Controlled wood category 3: Wood from forests in which high conservation values are threatened by management activities

NOTE: *Part 2 of the US NRA covers all portions of the states of Alaska and Hawaii, for all types of forests, and excludes the remainder of the US states and territories.*

Overview

General Assessment Process

Identification of HCVs was based primarily on the on the definitions in the FSC-US Forest Management Standard and additional guidance in the 'FSC-US Draft HCVF Assessment Framework,' with significant consideration of definitions in the NRA Framework (FSC-PRO-60-002a) and guidance in the 'Common Guidance for the Identification of HCV.' While the using the FSC-US standard definitions and FSC-US assessment framework results in some differences from other global frameworks, it is reflective of the national context.

Ecological Context (Natural and Semi-Natural Forests)

Forests dominate a majority of the land area of both Alaska and Hawaii. Alaska has experienced an active timber industry for the last century, but loss of forest is relatively minor since forests naturally regenerate and urban development is limited and localized, particularly in relation to the globally significant expanse of forest habitat in Alaska.

Hawaii, by contrast, has suffered substantial loss of acreage and quality of forest over the last two centuries of wood product trading. In the 1800s, sandalwoods (*Santalum* spp.) were rapaciously harvested until the market collapsed from an exhausted resource base. Conversion of forests to sugar plantations in the late 1800s and 1900s, and urban development in the second half of the 20th century led to permanent conversion of forest to non-forest land uses. Invasive species ranging from rats, pigs, invertebrates, and fungi have further damaged forested ecosystems over the last century. Federal and state lands protect substantial areas of forest, but forest managers face increasing challenges from these invasive agents.

Forested regions covered in the Risk Assessment include three areas in Alaska and two in Hawaii.

The *southeast Alaska forested region* contains primarily Sitka spruce (*Picea sitchensis*) and western hemlock (*Tsuga heterophylla*). These temperate rainforests and coastline ecosystems are recognized for their size and pristineness. At low elevations, the southeast is dominated by conifers. Streams, lakes, bogs, and wetlands abound in the region. Eight-five percent of the forested land in the southeast region is contained in the Tongass National Forest, which boasts large segments of old-growth western redcedar *(Thuja plicata)* and spruce.

The *south-central Alaskan forested region* includes the Chugach National Forest and contains predominately boreal conifer stands consisting of Sitka spruce, black spruce *(Picea mariana)*, and white spruce *(Picea glauca),* as well as western hemlock [4]. Small pockets of hardwood stands are also found in the region. Spruce bark beetle infestations have been an issue in the region [3].

The *Interior Alaskan forested region* contains much of the remaining Alaskan boreal forest. Slope, aspect, soil type and disturbance history shape the vegetation in the interior. Forests are dominated by black spruce on permafrost, lowlands, and on northern facing slopes. Deciduous stands containing Alaska paper birch *(Betula neoalaskana)* and quaking aspen *(Populus tremuloides)* are interspersed with pure white spruce or mixed stands at higher elevations and southern aspects. The higher elevation ecosystems are characterized by drier soils and exposed bedrock while the lowland ecosystems are wet, allowing Sphagnum moss to proliferate on the forest floor [5].

Hawaiian dry forests are found on the leeward side of the main Hawaiian islands, and are diverse mix of deciduous trees including koa (Acacia koa), akoko (*Euphorbia spp.),* lonomea (*Sapindus oahuensis),* māmane *(Sophora chrysophylla*)and ohia *(Metrosideros polymorpha)* (5). The dry forests of Hawaii are home to several endangered bird species. Non-native ungulates grazing and non-native plant proliferation has caused degradation of this ecosystem and efforts have been made to restore it [6].

Hawaiian mesic forests are dominated by Ohia (*Metrosideros* spp.) and Koa (*Acacia* spp.). The high rainfall results in a lush understory of shrubs, ferns, epiphytes and orchids [7]. The mesic forests of Hawaii are similarly degraded and restoration efforts have been undertaken.

Management

In Hawaii, non-native plantations consisting primarily of eucalyptus are clearcut; in native hardwoods, a selection system is used. These systems are described in more detail below. Hawaii's forestry sector is limited to low-volumes of high-value koa and a few other native hardwoods (including ʻiliahi (*Santalum* spp.), milo (*Thespesia populnea*), kamani (*Calophyllum inophyllum*), and kou (*Cordia subcordata*)), and a small land base of non-native plantation forests of primarily eucalyptus (approximately 970,000 acres, or 0.03% of the land area of Hawaii). Commercial timber harvest is approximately 1,000,000 board feet (1 MMBF) per year. By comparison, a single average-size lumber mill in the Pacific Northwest will process more than 250 MMBF per year. However, high-grading of native hardwoods on private land is difficult to quantify and regulate, and often leads to degraded woodland or non-forest conditions.

Alaska has a higher-volume timber industry that is focused heavily on production; the dominant silvicultural system in Alaska is clearcutting. Alaska's statewide timber harvest average approximately 150 MMBF. Alaska timber harvest primarily occurs on private land and faces similar issues to Hawaii with regards to regulation.

- Clearcutting takes place when all trees in a stand are harvested in one cut to create a new, even-aged stand. Regeneration can happen in a variety of ways, including through direct seeding or planting, natural seeding, or sprouting of trees that were under the cut [16].
- Selection systems involve removing either individual trees or groups of trees at intervals to maintain an uneven-aged stand with continuous regeneration. Individual tree selection is the removal of individual trees to favor more shade-tolerant species. Group selection is used to maintain a higher proportion of less shade-tolerant species [16].

All US States have developed forestry best management practices that are intended to ensure that management practices do not result in violations of the Federal Clean Water Act. Implementation methodology for these practices varies by state, but overall are recognized to have a positive effect on environmental values [see the HCV 4 section for more details].

Biodiversity and Protections

Alaska is unique in the US in that it contains large sections of intact forest land and undisturbed old-growth, as well as rainforests bursting with species richness. The Tongass National Forest is home to caribou, bears, and endemic birds. Dry areas on the artic plain known as pingos provide habitat for numerous rare plants, birds, and mammals. Much of Alaska's valuable forest land is privately owned and outside protected areas, creating the potential for risk from commercial harvest.

Hawaii was created from molten rock under the ocean floor called the Hawaii hotspot [9]. The hotspot fuels the Big Island's four active volcanoes and contributes to the changing landscape of the islands. The entirety of Hawaii is identified below as a critical biodiversity area. The islands contain a high proportion of native endemic species due to its isolation. Two-thirds of native Hawaiian birds are endangered; more birds have gone extinct on the islands than anywhere else in the world [10]. Adjacent forest can differ in characteristics and species composition because of topography and the large volcanoes and leeward exposure which creates dry, mesic and wet forest at varying elevations with some similarities in transition zones but mainly distinctly different dominant vegetation.

Alaska and Hawaii are subject to the same Federal regulations described in the US NRA Part 1, and have the same protections required under those laws. Both states have additional forestry-specific regulations to further protect critical ecosystem services, particularly water resources. However, lack of regulation on private lands is can be an issue for forest management.

As detailed in Category 1, the US has a broad and comprehensive legal structure that addresses the protection of socially and ecologically important sites, administered at both the federal and state level. The risks of non-compliance with these laws on public lands is generally low. The risk on private lands is also low, but attention should be given to areas known to be important to listed species.

Protective Designations

FSC US used the Protected Areas Database of the United States (PAD-US) to assess whether or not land was under protection for Category 3 HCVs. This database is the official inventory of protected areas in the United States, published by the U.S. Geological Survey Gap Analysis Program (GAP). The database compiles public parks, designated areas, conservation easements, and Marine Protected Areas, and is continuously updated. The database includes conservation rankings for both GAP Status Codes 1-4 and International Union for the Conservation of Nature (IUCN) categories. As is common practice, the following assessment considers an area as permanently protected if it has a GAP Status of 1 or 2:

• *Status 1:* An area having permanent protection from conversion of natural land cover and a mandated management plan in operation to maintain a natural state within which disturbance events (of natural type, frequency, intensity, and legacy) are allowed to proceed without interference or are mimicked through management. Example: Federal Wilderness Area.

• *Status 2:* An area having permanent protection from conversion of natural land cover and a mandated management plan in operation to maintain a primarily natural state, but which may receive uses or management practices that degrade the quality of existing natural communities, including suppression of natural disturbance. Examples: National Park, National Wildlife Refuge, National Natural Landmark.

PAD-US data is used to inform the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) World Database on Protected Areas (WDPA). [11] The WDPA is used to report on progress towards the Aichi Biodiversity Targets, by the United Nations

to track progress towards Sustainable Development Goals, and for other international assessments and reports. [12] Other non-governmental organizations that partner to help develop PAD-US include The Nature Conservancy, The Trust for Public Lands, NatureServe, and the Commission for Environmental Cooperation. [13] These uses of the data indicate that this is a highly trusted source of information.

While there haven't been any studies that looked specifically at the effectiveness of protective designations in the US, there are studies that assess the network of protected lands in the US (as classified by the PAD-US) and whether they represent ecological systems accurately. The use of the PAD-US dataset in this way indicates that it is recognized and respected as a valid source for information about areas that are effectively protected. One of these studies even explicitly recognizes this by stating, "the protected areas network within the continental US is often viewed as one of our best conservation tools for securing vegetation communities and the species they support into the future." [14]

Additionally, most of the GAP Status 1 and 2 designations are written into federal law [15] and the US is typically rated well or very well on global indices and indicators for legality, governance and law enforcement (see Category 1 and Category 2 assessments).

One additional form of protected designation in the US are conservation easements. These are legal agreements between a landowner and another entity (the holder of the easement) by which the landowner agrees to sell or donate certain rights associated with their property so that it will continue to achieve conservation objectives. The easement holder holds these rights (and may legally enforce them) and is typically either a non-governmental conservation organization, or a governmental natural resources agency (federal, state or local). As they are legally binding agreements and the US is typically rated well or very well on global indices and indicators for legality, governance and law enforcement (see Category 1 and Category 2 assessments), conservation easements may be viewed as effective protection. There is a national database of conservation easements maintained by the US Natural Resources Conservation Service.

Category 3 Experts Consulted

	Name	Organization	Area of Expertise (category/sub-category)
No	Name	Organization	Expert on forest management
1	[Name withheld pending approval for inclusion]	US Forest Service	Many years of research with Alaska Native tribal communities, tribal liaison for the research station
2	Mahealani Cypher	The Koolau Foundation	Board member at the Koolau Foundation, active community member and has extensive experience working with the Native Hawaiian community
3	Moses K. Haia III	The Native Hawaiian Legal Corporation	Executive director of the Native Hawaiian Legal Corporation, years of experience working in native rights law
4	[Name withheld pending approval for inclusion]	An Alaska Native corporation	Forestry manager with knowledge of Alaska Native peoples' rights and forest management activities.

Summary of Category 3 Risk Designations by US State

This table provides a summary of risk designation decisions by state. A 'Specified' notation below indicates that there is specified risk designated within the state, but not for the entire state. This table is for general reference only – the normative risk designations are provided below associated with each indicator for each HCV.

State	Category 3: High Conservation Values					
	HCV1: Species Diversity	HCV2: Landscape-Level Forests	HCV3: Rare Ecosystems	HCV4: Critical Ecosystem Services	HCV5: Community Needs	HCV6: Cultural Resources
Alaska	Specified[1]	Low	Specified[4]	Low	Low	Low
Hawaii	Specified[2]	Specified[3]	Specified[5]	Low	Low	Specified[6]

1 Critical Biodiversity Area: Interior Alaska, Southeast Alaska
2 Critical Biodiversity Area: Hawaiian Islands
3 Landscape Level Forest
4 Old Growth/Primary Forest
5 Native Forest
6 Forested lands not within Conservation Districts

NOTE: Static PDF maps of specified risk designations are available on the FSC US web site and a spatial data layer is available upon request.

Category 3 Risk Assessment

Indicator	Sources of Information	HCV Occurrence and Threat Assessment	Geographical/ Functional Scale	Risk Designation and Determination
3.0	See below	As identified below, data are available and sufficient for determination of HCV presence, distribution and threats	Geographical Scale: Entire Assessment Area (Alaska and Hawaii)	Low Risk: *Low Risk* ***Thresholds 1 & 2*** *apply: Data available are sufficient for determining HCV presence within the area under assessment, and for assessing threats to HCVs caused by forest management activities*

HCV 1: Concentrations of Biodiversity

Indicator	Sources of Information	HCV Occurrence and Threat Assessment	Geographical/ Functional Scale	Risk Designation and Determination
3.1 HCV 1		Two types of HCV 1 were identified and are addressed below – Critical Biodiversity Areas (CBA) and individual species' ranges	Geographical Scale: Entire Assessment Area (Alaska and Hawaii) Primary Functional Scales: Critical Biodiversity Areas, HCV 1 Species Range Secondary Functional Scales: Alaska: Sub-state Regions, GAP Status, USFS Inventoried Roadless Areas, Ownership Type Hawaii: Ecozones, Conservation Status, Ownership Type	Specified Risk: *Specified risk **Threshold 8** (HCV 1 is identified and/or its occurrence is likely in the area under assessment and it is threatened by management activities) applies to the following:* • Portions of the Southeast Alaska Critical Biodiversity Area (CBA) that are within non-Federal ownership and are not within GAP 1 or GAP 2 status areas or within conservation easements • Portions of the Interior Alaska CBA in the polygon that surrounds Fairbanks that include white spruce floodplain forest • Privately-owned forest lands in the Hawaii CBA that are within montane wet, montane mesic, and lowland mesic ecozones and outside Conservation Districts. Low Risk: *Low risk **Threshold 5** (There is no HCV 1 identified in the area under assessment and its*

				occurrence is unlikely) applies to the following: • Portions of the assessment area that are not within either a CBA or an HCV 1 Species Range *Low risk **Threshold 6** (There is low/negligible threat to HCV 1 caused by management activities in the area under assessment) applies to the following:* • The entirety of the Beaufort Sea, Bering Coast, Aleutian Islands, Bristol/Kodiak, and South Central Alaska CBAs • Interior Alaska CBA polygons not around Fairbanks and portions of the polygon around Fairbanks that do not include old-growth white spruce floodplain forest • Portions of the Southeast Alaska CBA that are within Federal ownership and/or are within GAP 1 or GAP 2 status areas • Forest lands in the Hawaii CBA that are not privately owned, or are privately-owned but not within montane wet, montane mesic, and lowland mesic ecozones, or are privately-owned and within these ecozones but

				are also within Conservation Districts. • The entirety of all HCV 1 species ranges
	HCV1-63	**Critical Biodiversity Areas (CBA)** This portion of the assessment was informed by a dataset of rarity-weighted richness for critically imperiled and imperiled species in the United States, a species richness index originally published by NatureServe and The Nature Conservancy (TNC) in 2000 that identifies areas with high concentrations of rare species[2] following the methodology used in the US NRA Part 1; see that document for description of CBA identification. The rarity-weighted richness dataset from NatureServe provided the most consistent data across the entire assessment area at a scale that was deemed most appropriate for the NRA's purpose. The following HCV 1 CBAs were identified through the process described above and then each CBA was assessed for threats from forest management activities to determine risk designations within the CBA. For Alaska, CBAs were grouped into similar biophysical "regions", though final risk assessments were made at the CBA scale. For Hawaii, this assessment uses "ecozones" as a functional scale in to subdivide this large and complex CBA. Ecozones designations and descriptions are from the Hawaiian High Islands Ecoregion Plan (HCV1-63).		
	HCV1-55 HCV1-56	Beaufort Sea: CBA polygons 1 (Elson Lagoon), 5 (North Slope Brook Range), 7 (Brooks-Gordon) This region includes three CBA polygons between the north slope of the Brooks range and the Beaufort Sea of the Arctic Ocean. This is largely non-forested Arctic tundra. Habitats contributing to the area's critical biodiversity include Arctic barrier islands and spits, Arctic tidal marshes, and Arctic pingo landforms. No forests occur that are identified as contributing to the critical biodiversity of the area. There is no commercial wood harvest in this region. The Arctic barrier island and spit habitat is found along the northern and northwestern coast of Alaska, and is made up of network of sandy and gravelly islands which are low, narrow, and long. These islands and spits are often completely devoid of vegetation but some beach grass and variety of forbs may occur in protected areas. Arctic pingos are domes of soil and vegetation with a core of ice. While more than 1,500 pingos occur in Alaska, the majority of them occur beyond the latitudinal treeline. Pingos are dominated by dwarf shrubs and are generally treeless. Due to being island	Low Risk for the entire CBA	Low Risk (Threshold 6)

		of dry areas on the arctic plain, pingos are known to support a variety of rare plant, birds, and mammal species. Arctic tidal marshes are found in protected areas along tidal river channels, inlets and deltas and within tidal lagoons estuaries and across inundated tundra. Threats to the integrity of biodiversity in this area include potential mining activity, hunting impacts on wildlife populations and fragile ecosystems, and disturbance from recreation. Small scale gold and jade mining or mineral exploration may be occurring in the ecoregion. There is no commercial wood harvest in this region. *Summary*: This region is not forested. There is a low risk of threats to the concentration of biodiversity from forest management activities as there is no commercial harvest occurring.		
	HCV1-55 HCV1-86	~~Bering Coast: CBA polygons 2 (Kotzebue Sound), 3 (Norton Bay), 4 (Yukon Delta)~~ This region includes coastline of the Bering Sea, associated drainages and floodplains, and interior plains and upland area. The Yukon River drainage is also an important feature. Habitats contributing to the area's critical biodiversity include Beringian barrier islands and spits, and Beringian tidal marshes. The barriers and spits often have rocky beaches, sandy dunes, lagoons and estuaries for a wide variety of species. Tidal marshes are critical habitat for a wide range of bird species. Very little of this region is forested, though a portion of the Norton Bay CBA is located along the Yukon River and may include *Larix laricina* wetlands and Old-growth *Picea glauca* floodplain forests. *Larix laricina* wetland, located in drainages between the Brooks and Alaska Ranges, extending west to Norton Sound. These forests are geographically widespread but biophysically isolated and lacks habitat connectivity. Other than tamark, this forest type is dominated by stunted black spruce (*Picea mariana*) and stunted understory vegetation. Total canopy cover is 10-30%. High rates of mortality can be caused by larch sawfly (*Pristiphora erichsonni*), larch casebearer (*Coleophora laricella*), and eastern larch beetle (*Dendroctonus simplex*). Undisturbed water flow is essential for the wetland and associated species. Old-growth white spruce (*Picea glauca*) floodplain forests are concentrated along major rivers including the Yukon and Tanana. These are uneven-aged stands of *Picea glauca*, which ranges in age from 130 to 350 years and in canopy cover from 30 to 50%. Tall shrub layers grow under the canopy. Early- and mid-seral stands include *Populus balsamifera*, but that species does not live as long and is targeted by beaver. In interior Alaska,	~~Low Risk~~ for the entire CBA	Low Risk (Threshold 6)

		35 stands of stands of old-growth *Picea glauca* floodplain forest have been documented. While not drivers of biodiversity for this CBA, the remote location of these forests habitats renders them effectively protected from logging, due to lack of infrastructure to reach these areas. *Summary*: Coastal non-forested habitats on the Bering Sea and the Yukon River and its delta drive biodiversity in the region, though small portion of the Yukon River may include Larix laricina wetlands and Old-growth Picea glauca floodplain forests. The remote location effectively protects these forests from management activities.		
	HCV1-55	Aleutian Islands: CBA polygons 6 (Adak Island), 8 (Atka Island) This region includes two CBA polygons on small Aleutian Islands far into the Bearing Sea. These are non-forested barrier islands that offer diverse rocky beach and gravelly dune habitats. Threats to the integrity of biodiversity in this area include disturbance from recreation as both these islands have airstrips. There is no commercial wood harvest in this region. *Summary*: These barrier islands have no forest habitat and therefore, there is no chance of the HCV being threatened by forest management activities.	Low Risk for the entire CBA	Low Risk (Threshold 6)
	HCV1-55 HCV1-86	Interior Alaska: CBA polygons 9 (Old Rampart), 10 (Fairbanks), 11 (Revelation Mountains), 12 (Upper Yukon) This region extends from the south slope of the Brooks Mountain Range to the Bering Sea to the west, the Alaska Range to the south, and the Canadian border to the east. The region includes arctic tundra, sub-arctic non-forested ecosystems, and non-forested mountain ranges. Boreal forests occur in lowlands and valley. Forests with high biological diversity include tamarak (*Larix laricina*) wetland, located in drainages between the Brooks and Alaska Ranges. These forests are geographically widespread but biophysically isolated and lacks habitat connectivity. Other than tamark, this forest type is dominated by stunted black spruce (*Picea mariana*) and stunted understory vegetation. Total canopy cover is 10-30%. High rates of mortality can be caused by larch sawfly (*Pristiphora erichsonni)*, larch casebearer (*Coleophora laricella),* and eastern larch beetle (*Dendroctonus simplex).* Undisturbed water flow is essential for the wetland and associated species [Source: 1]. Old-growth white spruce (*Picea glauca*) floodplain forests are concentrated along major rivers including the Yukon and Tanana. These are uneven-aged stands of *Picea glauca*, which ranges in age from 130 to 350 years and in canopy cover from 30 to 50%. Tall shrub layers grow under the canopy.	Specified risk for the portions of the CBA polygon surrounding Fairbanks that include white spruce floodplain forest. Low risk for the remainder of the CBA	Specified Risk (Threshold 8) Low Risk (Threshold 6)

		Early- and mid-seral stands include *Populus balsamifera*, but that species does not live as long and is targeted by beaver. In interior Alaska, 35 stands of stands of old-growth *Picea glauca* floodplain forest have been documented (2). Threats to tamarack wetlands include larch sawfly outbreaks, which have decimated the population of *Larix laricina* across Alaska and Canada, as well as eastern larch beetle, forest fire and climate change. [Source: 1]. Threats to white spruce old-growth forests include mining, timber harvest, and spruce bark beetle. Habitat degradation has occurred in populated valley bottoms along the Tanana River, which are considered the most productive areas of the ecoregion. In most of interior Alaska, only small-scale local logging is taking place that does not substantially threaten this forest type. Existing mills and road infrastructure near Fairbanks, however, allows greater accessibility to highways and railway for transporting forest products to markets in and beyond the Fairbanks area. *Summary*: Tamarack wetlands and old-growth white spruce (*Picea glauca*) floodplain forests are the drivers of forested biodiversity in this region. While tamarak wetlands are typically isolated and at risk from sawflies and bark beetles, old-growth white spruce floodplain forests are vulnerable to forest management activities where they occur close to logging infrastructure, particularly near Fairbanks.		
	HCV1-55, HCV1-85	Bristol Bay / Kodiak Island: CBA polygon 13 This region includes Bristol Bay and Kodiak Island, dividing the Bearing Sea from the Gulf of Alaska. Habitats contributing to the area's critical biodiversity include Pacific and Beringian barrier islands and spits, and Pacific and Beringian tidal marshes. The barriers and spits often have rocky beaches, sandy dunes, lagoons and estuaries for a wide variety of species. Tidal marshes are critical habitat for a wide range of bird species. Very little of this region is forested, though a portion of the assessment area is located at the southwestern end of the Kenai peninsula and includes the city of Homer and surrounding municipal and private land. This area includes the biodiverse *Picea sitchensis/Calamagrostis nutkaensis* Plant Association, which is a fringe of Sitka spruce forest along saltwater coast that is influenced by saltwater spray. A second portion of forest is located north of the town of Dillingham, largely on State land with some adjacent BLM and Native ownership. While forest occur here, they are not identified as high biodiversity ecosystems. A third area is identified as forested, but is exclusively non-forested habitat associated with Nonvianuk Lake and River. Small-scale logging exists in forests near Homer, with small-scale mills to	Low Risk for the entire CBA	Low Risk (Threshold 6)

		locally process timber. However, Alaska State forestry riparian regulations limit the risk of *Picea sitchensis/Calamagrostis nutkaensis* Plant Association from harvest due to its proximity to waterbodies. *Summary*: Limited forested habitat occurs in this CBA. *Picea sitchensis/Calamagrostis nutkaensis* Plant Association is a biologically diverse Sitka price forest habitat that grows on saltwater fringes, but is effectively protected from forest management threats by riparian buffer regulations.		
	HCV 1- 55	South Central Alaska: CBA polygons 14 (Wrangell-St Elias) The assessment area lies within and outside of Wrangell-St. Elias National Park & Preserve in southern and southeastern Alaska. The forested habitat that contributes to the area's critical biodiversity is the boreal forested glacial ablation plain ecosystem. This habitat is dominated by mature forest and understory associated with growing in a periglacial environment. The forest is dominated or co-dominated by Alaska birch (*Betula neoalaskana)* and white spruce (*Picea glauca*) and occur and rare pockets in lower elevations of the Alaskan Range, Chugach Mountains, Wrangell Mountains, and the St. Elias Mountains. The greatest threat is the warming climate which is causing glacier movement that threatens the stability of soils and vegetation. There is no evidence of commercial wood harvest in these regions; the remote location and low-value lumber makes these forests unaffected by logging. *Summary*: This boreal forest type is not threatened by forest management activities due to its remote location.	Low Risk for the entire CBA	Low Risk (Threshold 6)
	HCV1-1 to HCV1-7, HCV1-55, HCV1-81 to HCV1-84	Southeast Alaska (polygons 15, 17) These CBAs include similar ecosystems and are addressed together. This CBA is temperate rainforests and coastline ecosystems recognized for their size, pristineness and for largely remaining intact. Drivers of biodiversity include old-growth Sitka spruce (*Picea sitchensis*) - western hemlock (*Tsuga heterophylla*) temperate rainforest, and yellow cedar (*Callitropsis nootkatensis*) forested wetland ecosystems. A majority of the ecoregion lies within the Tongass National Forest, Chugach National Forest and Glacier Bay National Park, the remainder is managed by Alaska Department of Natural Resource, Native Alaskan corporations, and other private owners. These areas host yellow-cedar (*Callitropsis nootkatensis*) wetlands, a rare biophysical area. A majority of the assessment area is managed by the Tongass National Forest, followed by the Alaska Department of Natural Resources (DNR), and private land owners. The Tongass National Forest's Land and Resource Management Plan notes that yellow cedar is not well represented on the forest but is still an associated with western hemlock-	Specified risk for the portions of the CBA on non-federal lands that have a higher likelihood of old-growth and are not permanently protected or within conservation easements. Low risk for the remainder of the CBA	Specified Risk (Threshold 8) Low Risk (Threshold 6)

		Sitka Spruce forest type and therefore may be eligible for clearcuts/even-aged timber management [Sources: 1, 4]. *Picea Sitchensis* old-growth forests are located Southeast and Southcentral Alaska to Kodiak Island. In Alaska, this forest type is found at higher elevations and in coastal beaches, steep erosional slopes, outwash plains, floodplains and alluvial fans. It has s a closed multilayered canopy with an abundance of snags and down woody debris. The forests provide winter coverage for birds and mammals and anadromous fish habitat. Other tree species known to be in the floodplain are western hemlock (*Tsuga heterophylla*), red cedar (*Alnus rubra*) and black cottonwood (*Populus trichocarpa*). Spruce-dominated forests in southeastern Alaska have a history of logging practices in low elevations on floodplains and alluvial fans. These forests are recognized for their abundance of biodiversity, particularly northern flying squirrel (*Glaucomys sabinus*), marbled murrelet (*Brachyramphus marmoratus*) and other imperiled or vulnerable species. Several variations of spruce-dominated forests contribute to the region's biodiversity: floodplains, saltwater-influenced forested fringes along coastline, and forests growing on karst parent material. The Tongass National Forest's Land and Resource Management Plan notes that western hemlock – Sitka Spruce forest type are desirable for commercial wood and are treated with even-aged prescriptions to maximize volume removed [Sources: 1, 4]. Other non-forest habitats of high biodiversity occur in these CBAs (karst fens, rare shrub and forb communities) that are not likely to be affected by forest management activities. Threats to yellow cedar include climate change and timber harvest, with an estimated decline of 29% of its range due to yellow cedar decline, a phenomenon of cedar mortality thought to be due to reduced snow pack as a result of climate change. Given that climate change is the lead cause of degradation to yellow cedar wetlands, timber harvest does not substantially threaten these ecosystems. Extensive harvest of yellow-cedar is curtailed by its concentration on National Forest land, is protected from harvest by a combination of wilderness areas, national parks, and the Roadless Rule (2001). A large proportion of old-growth Sitka spruce forests are preserved in national parks, wilderness areas and roadless designations. Outside of protected areas, these old-growth forests remain in some areas where		

		timber harvest could potentially occur. State forestry regulations do not prohibit logging old-growth forests on private land, though most easily-accessible old-growth on private land has already been harvested. Old-growth on non-protected areas in national forests are eligible for harvest, and the Tongass National Forest plan does identify some areas of Old-Growth for harvest (and this is addressed as part of the HCV 3 assessment). However, as noted above, much of the Old-Growth is permanently protected, and other drivers of the concentration of biodiversity are not threatened by forest management activities. Additionally, the Tongass National Forest plan emphasizes biodiversity conservation as a top priority, while also trying to address social and economic concerns. It should be noted that the 2001 Roadless Rule's application to Alaskan national forests is undergoing assessment, with the possibility of different regulations than currently in place under an Alaska-specific version of the Roadless Rule. Changing the application of the Roadless Rule could change the protected status of large areas including old-growth forest. Cost of extracting wood from areas without roads may limit the feasibility of these logging activities, but further analysis of the risk to critically biodiverse areas would be appropriate if the roadless rules change for Alaska. A decision on whether the application of the Roadless Rule in Alaska will change is not expected until sometime in 2020 at the earliest, but due to the controversial nature of the situation, it will likely take longer. *Summary*: Yellow-cedar wetland forests and Sitka spruce-dominated old growth forests constitute the forested habitats that drive biodiversity in the area. Forest management actions are limited in both ecosystems due to protection in wilderness areas, national parks, and the roadless areas, but recent proposed old-growth harvests in the Tongass National Forest do require special consideration. This HCV 1 assessment is to consider whether forest management activities are threatening the identified concentration of biodiversity. Evidence suggests that, due to the permanently protected areas and the National Forest plan, the concentration of biodiversity will be maintained or enhanced on federal lands, and therefore the portions of this CBA on federal lands are deemed to be effectively protected (but again note that the threats to Old-Growth area assessed as part of the HCV 3 assessment). However, the portions of the CBA on non-federal lands do not have the same level of protection for the biodiversity and therefore maybe threatened by forest management activities.		
	HCV1-63 HCV1-64	**~~Hawaiian Islands CBA~~**	~~Specified Risk~~ for portions of the CBA	Specified Risk (Threshold 8)

	HCV1-66 HCV1-67 HCV1-69 HCV1-71 HCV1-73 HCV1-75 HCV1-76 HCV1-80	The CBA encompasses nearly all of the Hawaiian Islands, which is recognized globally as a conservation hot spot for its high endemism and endangered species. Adjacent forest can differ in characteristics and species composition because of topography, and leeward exposure which creates dry, mesic and wet forest at varying elevations with some similarities in transition zones but mainly distinctly different dominant vegetation. Forested land cover is mainly concentrated in the lowland wet, mesic, and dry; Montane wet, dry and mesic; coastal, and subalpine. Generally, biodiversity is considered moderate to high, with a high number of specialized and endemic species due to the archipelago's isolation. Industrial-scale forestry is a small and diminishing industry in Hawaii. State forest reserves allow timber harvest only in designated management areas, and state law limits harvest to non-native-dominated forests. However, high-value native hardwoods are legally harvested on private land and to a lesser extent state F1-designated forest land. These native hardwoods are often foundational parts of native Hawaiian forests. Forest harvest activities are concentrated at lower elevations in montane wet, montane mesic, and lowland mesic vegetation zones, all very productive forests types. Although the forestry industry is small, active harvest does take place. The most damaging actions are high-grade harvests of native hardwood. The Hawaii State Division of Forestry and Wildlife has developed management plans for some Forest Reserves. Areas of Forest Reserves have are categorized by level of timber emphasis, F1- F 4 - F1 is commercial wood harvest; F2 is limited small scale commercial harvest; F3 is personal wood harvest (non-commercial); F4 is restricted to wood extraction. There are three Forest Reserves that have area designated as F1 (large scale commercial harvest) These F1 Forest Reserves are non-native plantations that are low-biodiversity (the native forests were harvested and replanted several decades in the past). Other areas of F1 forest are scattered throughout montane wet, montane mesic or lowland mesic forests, though these are smaller scale. The more substantial threat from forest management to biodiversity comes from activities within native hardwood forests on private land (not public land), as indicated below in the individual vegetation zone descriptions. <u>Coastal Zone</u>	that are privately-owned forest lands in montane wet, montane mesic, and lowland mesic ecozones that are outside the Conservation Districts. <u>Low Risk</u> for the remaining portions of the CBA	Low Risk (Threshold 6)

		Coastal zones are located on the leeward sides of the islands and is below 500 ft of elevation in the lowland zone where sea spray and sand dunes influence vegetation. Coastal habitat is found on the main islands of Hawai'i, Maui, Moloka'i, Lāna'i, Kaho'olawe, O'ahu, Kaua'i, and Ni'ihau. The ground cover is sparse and semi-desert in character. Vegetation consists of lowland shrub type, grasslands and algaroba trees, although non-native species dominate the land cover [Source: 5]. Algrabora trees grow in areas where ground water is close to the surface and create dense stands. Biological diversity is considered low to moderate but there are specialized plants and animals such as the rare Hawaiian shrub, 'ōhai (*Sesbania tomentosa*) and nesting seabirds such as the albatross (*Diomedea spp.*), petrels (*Pterodroma spp., Bulweria bulwerii*) and shearwaters (*Puffinus spp.*) [Source: 6]. Threats to the coastal vegetation zones include conversion to residential development, introduced plant species, off road vehicles and arson. Threats to forests from conversion are addressed in the Category 4 assessment. <u>Subalpine Zone</u> The subalpine zone lies between 6000 ft and 9000 ft elevation in the highlands of Hawai'i and Maui. Biodiversity in the region is not high but there are specialized species present that are adapted to foraging and nesting in subalpine habitats, such as honeycreepers Palila (*Loxioides baileui) and* Māmane-Naio (*Sophora chrysophylla - Myoporum sandwicense*) [Source: 8]. The Palila is endemic to Hawaii and depends on Māmane trees, found in subalpine dry forest, for over 90% of its food source [Source: 9]. Threats to the subalpine vegetation zone includes foreign ungulates (sheep, pigs, goats, and cattle) that consume native species and spread non-native species. <u>Montane Wet Zone</u> The Montane Wet zone occurs between 3000 ft – 6000 ft elevation and receives more than 75 inches of annual precipitation. The Montane Wet zone is found on the islands of Hawai'i, Maui, Moloka'i, Lāna'i,O'ahu, and Kaua'i. Biological diversity is moderate to high, with specialized plants and animals occurring, such as forest birds that have a portion of their concentrated habitat in montane wet zone forest [Source: 10]. Birds of conservation concern include 'Ōma'ō (*Myadestes obscurus*) and 'elepaios (*Chasiempis sandwichensis*). The forest supports important understory plants that provide food and coverage for many vulnerable species [Source: 12]. Threats to the montane wet vegetation zone include forest management		

		action, land conversion to pastureland and rooting pigs. Threats to forests from conversion are addressed in the Category 4 assessment. <u>Montane Mesic Zone</u> The Montane Mesic zone occurs between 3,000 ft – 6,000 ft elevation, receiving 50 to 75 inches of precipitation annually. The system can be found on Hawai'i, Maui, Moloka'i, and Kaua'i and best develops on the leeward side of the islands. Montane mesic area lies between subalpine zones and montane dry zones, and above the montane wet system. Biological diversity is considered moderate in the system, having some specialized plants and animals such as the Hawaiian hawk (*Buteo solitarius*) and hō'awa (*Pittosporum hosmeri*) [Source: 13]. Surveys of Hawaiian owl nest indicated that a majority of nest are built in native trees, particularly in 'ōhi'a (*Metrosideros polymorpha*). Threats to Montane mesic zones are conversion to pasture land, invasive grasses, feral goats, wildfire, and forest management action. Threats to forests from conversion are addressed in the Category 4 assessment. <u>Montane Dry Zone</u> Montane Dry system occurs between 3,000 ft – 6,000 ft elevation, receiving less than 50 inches of precipitation, otherwise bearing dry conditions. The system can be found on Hawai'i and Maui and is best developed along leeward sides of the island. Montane dry systems lie below the subalpine system and above the montane mesic. Biological diversity is moderate, comparable to lower elevations system but still harbors specialized plant and animal species. Dominant tree species include 'ōhi'a (*Metrosideros*) and other xerophytic genera in leeward forests and woodlands. Other areas of Montane dry forest are dominated by koa (*Acacia koa*) and provide essential habitat to the edemic koa bug (*Coleotichus blackburniae*). The flycatcher 'elepaio (*Chasiempis sandwichensis*) is an important insectivore in montane dry forest in Kona and Pōhakuloa - Pu'u Wa'awa'a Forest Reserves. Threats to the vegetation zone include invasive plant and grazing by feral goats, sheep and mouflon. <u>Lowland Wet Zone</u> Lowland Wet system occurs below 3,000 ft elevation, receiving more than 75 inches of precipitation annually. The system can be found on Hawai'i, Maui, Moloka'i, Lāna'i,O'ahu, and Kaua'i, and develops best on windward side of the highest islands (Hawai'i and Maui) [Source: 16]. Biodiversity is considered high, with specialized plants and animals such as the 'amakihi (*Hemignathus virens*) and endemic and vulnerable honeykeeper that forages		

		on native and nonnative flower nectar. Cleared land for agriculture has left few native-dominated lowland wet forests remaining in Hawai'i. The forest canopy is dominated by native ʻöhiʻa (*Metrosideros polymorpha*) with smaller amounts of lama (*Diospyros sandwicensis*) and bingabing (*Macaranga mappa*) dominating the understory vegetation Threats to the lowland wet zone include establishment and spread of invasive plants, especially kahili ginger and strawberry guava, and understory degradation by feral pigs. Lowland Mesic Zone The Lowland Mesic system occurs below 3,000 ft elevation, and receives between 50-75 inches of precipitation annually. This system is found on the islands of Hawaiʻi, Maui, Molokaʻi, Lānaʻi,Oʻahu, and Kauaʻi. Biodiversity is high in this system, notably the tree species diversity, and a variety of specialize plants and animals, such as the native vine nukuʻiʻiwi (*Strongylodon ruber*) and ʻŌpeʻapeʻa (*Lasiurus cinereus semotus*).The native dominate tree species in the ecological zone are Ohia (*Metrosideros*). Many species use mesic forest as important wildlife corridors despite the amount of habitat loss that's occurred [Source: 19]. Threats to the Lowland Mesic Zone include land conversion to agriculture, ranching or logging; invasive plant species, wildfire, feral and introduced game animals. Threats to forests from conversion are addressed in the Category 4 assessment. Lowland Dry Zone The Lowland Dry System occurs below 1,000 ft elevation, receiving less than 50 inches of annual precipitation. The system is found on the island of Hawaiʻi, Molokaʻi, Lānaʻi,Kahoʻolawe, Oʻahu, and Kauaʻi, and is best developed on the leeward sides of islands. Biodiversity is considered low to moderate, with the presents of some specialized animals and plants, such as Halapepe (*Pleomele spp.*). The dominant tree species is Wiliwili (Erythrina sandwichensis), which is culturally important and threaten by wildfire. Lowland Dry Forest has been fragmented and depleted due to rapid land conversion to agriculture, pasture and grazing. Lowland dry forest was habitat to forest birds, such as honeycreepers, fly catchers, flightless rails, and other flightless birds. Threats to forests from conversion are addressed in the Category 4 assessment. *Summary*: Hawaii has diverse and distinctive ecozones within the all-encompassing CBA. While most zones contain forests, the montane wet, montane mesic, and lowland mesic zones support high-diversity native forests that are also at risk of loss of function due to forest management actions. Other forested zones also have high-biodiversity forests, but risks		

		from forest management are absent, or forests are overall degraded from other factors (usually development and invasive species) such that forest management would have no impact on the diversity of the forest.		
		Priority Species Species were selected following the methods used in the NRA for the conterminous United States focused on conservation status and forest habitat dependency. 13 species matched the criteria – all endemic to Hawaii. These species were filtered by recency of confirmed occurrences – species were retained if there was a formal documented occurrence within the last 20 years. 11 species remained for assessment. Following the above filtering process, the Federal Recovery Plan for listed Hawaii forest birds and 5-year reviews, NatureServe species accounts, forest management plans, and other information sources were reviewed to determine known threats for the remaining species. Species for which identified threats did not include forest management activities or species for which there was one primary threat that was not related to forest management activities and all other threats were insignificant as a result were given 'Low Risk' designations. Species with documented threats from forest management activities and those for which it was not possible to determine threats where given 'Specified Risk' designations for specific spatial areas. For all species, the current range as designated by the ICUN red list and, when available, critical habitat as defined by U.S. Fish & Wildlife Service was used for the assessment area. Because the habitat ranges span ownerships with varying degrees of protection across state-owned parks and natural preserves, state-owned forest reserves with varying degrees of management, privately-owned forests in conservation, and privately-owned forests with no management restrictions, scale varies with each species.	Low risk for entire assessment area.	Low (Threshold 6)
	HCV 1-25, HCV 1-26, HCV 1-27, HCV 1-28, HCV 1-29, HCV 1-32	Akikiki, *Oreomystis bairdi* The Akikiki has a restricted distribution and is found on the Alakai plateau in the mountains of Kauai, Hawaiian Islands, in an area approximately 36 square kilometers. The Akikiki nests in ohia trees in elevations between 600 to 1,000 meters. *Summary:* The Akikiki's range is restricted to protected areas within the Na Pali Forest Reserve, Alakai Wilderness Preserve, and Koke's State Park. The critical habitat identified for the species spans these same protected	Low risk for the species range	Low (Threshold 6)

		areas as well as DOFW Forest Reserves and private lands in conservation. However, no substantive threats from forest management were identified; threats are from invasive plants and introduced animals, not forest management.		
	HCV 1-27, HCV 1-28, HCV 1-29, HCV 1-30, HCV 1-31, HCV 1-33, HCV 1-46, HCV 1-47,	Akohekohe, *Palmeria dolei* The Akohekohe is a bird species that was historically common on Maui and Molokai, now only found on the windward slope of East Maui, from Waikamoi Preserve to Kipahulu and Manawainui valleys. This species is found at elevations between 1300-2300 feet. The akohekohe occupies a territory of 80- to 120-meter radius year-round in wet / mesic montane ohia (*Metrosideros polymorpha*) forests. The species nests in native ohia trees and relies on the flowers for food. Though most of the species' remaining intact native forest habitat is protected, some areas of identified critical habitat are located in DOFW Forest Reserves with F1 or F2 designations that allow for commercial forestry. Hawaii state law limits commercial logging to non-native and highly degraded habitats in Forest Reserves, and the scale of logging is small; forest management activities are unlikely to affect the akohekohe. *Summary:* The akohekohe occupies a small territory in montane ohia forests and is effectively protected from forest management by logging regulations against cutting in native habitat.	Low risk for the species range	Low (Threshold 6)
	HCV 1-27, HCV 1-28, HCV 1-32, HCV 1-42, HCV 1-52, HCV 1-53, HCV 1-56, HCV 1-61, HCV 1-62	Hawaiian Duck, *Anas wyvilliana* The Hawaiian Duck is present naturally on Kauai and has been successfully reintroduced on Hawaii. Oahu, and to a small extent, Maui. The Hawaiian Duck utilizes a wide range of habitats from lowland marshes to mountain pools; it is found near streams and rivers adjacent to dense forests at higher elevations. This species expansive range spans the entire island of Kauai and portions of all the Hawaiian Islands. Private ranches, resorts, nature preserves, state parks, and game management areas are not at risk from forest management. Best management practices for Stream Management Zones are sufficient to protect forested habitat in DOFAW Forest Reserves. The forested areas of the Hawaiian Duck habitat are threatened by conversion and drainage of wetlands in privately owned parcels not under conservation. Private lands are abundant on Kauai and these forested parcels are at risk of being cleared for development of shoreline hotels and houses. Forests management activities, however, does not threaten this species. *Summary:* This water-dwelling species has a wide range. The primary threat to the Hawaiian Duck is hybridization with the introduced mallard. Land	Low risk for the species range.	Low (Threshold 6)

		conversion for urban development is also a threat. Threats to forests from conversion are addressed in the Category 4 assessment.		
	HCV 1-27, HCV 1-28, HCV 1-30, HCV 1-31, HCV 1-32, HCV 1-42, HCV 1-44, HCV 1-54, HCV 1-87	Oahu 'Elepaio, *Chasiempis ibidis* The Oahu ‘Elapaio occupies a 40 to 100 square mile area on Oahu. The species has been found in seven geographically isolated populations: three in the Ko'olau Mountains and four in the Wai'anae Mountains. An Oahu 'Elepaio nesting pair occupies a territory of 2 hectares of forest. The Oahu ‘Elapaio will nest in a variety of native and non-native trees but relies on foliage-dense trees and a varied understory for food. Maintenance of forest land on Oahu is essential for the continued existence of the species. While higher population densities occur in closed-canopy riparian forests, suitable habitat spans forests with a range of native and non-native species. This bird species is considered to be fairly adaptable to different forest conditions. *Summary*: While habitat maintenance will be key to the survival of the species, predation, disease and fire are identified as the primary threats, not forest management activities.	Low risk for the species range	Low (Threshold 6)
	HCV 1-27, HCV 1-28, HCV 1-30, HCV 1-31, HCV 1-32, HCV 1-43	Puaiohi, *Myadestes palmeri* The Puaiohi occupies an extremely restricted range and is found in an area less than 7 square miles in the Alakai Swamp area of Kauai. The Puaiohi nests in stream banks and cliff sides, and very rarely in tree cavities, but relies on native fruit and invertebrates for food. *Summary*: Threats to the Puaiohi are from avian disease, habitat degradation due to invasive plants and feral pigs, and predation by introduced rats, not from forest management.	Low risk for the species range.	Low (Threshold 6)
	HCV 1-22, HCV 1-27, HCV 1-28, HCV 1-30, HCV 1-31, HCV 1-32, HCV 1-44, HCV 1-63, HCV 1-88	Kiwikiu (Maui Parrotbill), *Pseudonestor xanthophrys* The Kiwikiu is found on the eastern portion of the island of Maui, in a 50 square kilometer area that spans the Wakamoi Preserve, several Forest Reserves, and private forest land. The bird occupies elevations from 1200 to 2350 m, with higher population densities found at 1670 to 2090 m. . Identified critical habitat for the Kiwikiu spans several Forest Reserve parcels across Maui and Molokai. *Summary*: The Kiwikiu relies on ohia and ohia-koa forests with open canopy and a thick understory for foraging. This species is protected under the federal Endangered Species Act and is addressed within the Recovery Plan for Hawaiian Forest Birds. Historical decline is primarily assessed to be due to habitat loss and degradation resulting from logging and ranching. Current threats are identified as being habitat damage from feral pigs, severe	Low risk for the species range.	Low (Threshold 6)

		weather events, predation, and introduced diseases. Neither the recovery plan nor the recent 5-year review identifies forest management as a current threat to the Kiwikiu.		
	HCV 1-27, HCV 1-28, HCV 1-31, HCV 1-32	Po'Ouli, *Melamprosops phaeosoma* The Po'Ouli's range is restricted to one small area in the Hanawi Natural Area Reserve on Maui. Three individuals have been recorded as of 2000. *Summary*: Historic range is in preserved natural areas (Haleakala National Park, Hanawi Natural Area Reserve, Waikamoi Preserve) and effectively protected from forest management.	Low risk for the historic species range.	Low (Threshold 6)
	HCV 1-27, HCV 1-28, HCV 1-31, HCV 1-32 HCV 1-33, HCV 1-38, HCV 1-39, HCV 1-42, HCV 1-43, HCV 1-62	Palila, *Loxioides bailleui* The range for the palila is restricted to small pockets on the upper slopes of Mauna Kea, primarily in the Puu Laau area. 96 percent of the known population occurs in an 11.5 square mile area on the southwestern slopes of the mountain. *Summary*: The species' remaining intact native forest habitat is effectively protected. Critical habitat spans protected forest reserves and private land in conservation. One small area in the Aina Mouna Legacy Program is managed for sustainable koa forestry that will not negatively affect the species.	Low risk for the species range	Low (Threshold 6)
	HCV 1-27, HCV 1-28, HCV 1-31, HCV 1-32, HCV 1-33, HCV 1-38, HCV 1-39, HCV 1-42, HCV 1-43, HCV 1-44 HCV 1-64, HCV 1-89	'Akepa, *Loxops coccineus* The 'Akepa is found in disconnected populations on the windward slopes of Mauna Loa and Mauna Kea, at elevations between 1100-2100 m. The 'Akepa relies on mature ohia or koa trees or snags with appropriate cavities for nesting. The average home range per bird is 3.94 ha, with overlap between individuals. The species occurs together in small flocks while protecting individual nesting sites. The 'Akepa range spans Nature Preserves, Forest Reserves, and forest lands under private ownership. The majority of these lands are effectively protected. While small pockets of private forest land could potentially be at risk of harvest or conversion to non-forest use, the extremely low-level of commercial harvest activities in the state of Hawaii makes it unlikely that these kinds of activities would threaten the species' survival. *Summary:* The species requires large forested areas with a sufficient number of large, decadent native trees to provide cavities for nesting. While habitat alteration is identified as a potential threat in the federal recovery plan for this species, with the exception of small pockets of privately-owned forest, the forest lands within the species range are effectively protected from timber harvest. The 2015 federal 5-year review for the species identifies	Low risk for the species range	Low (Threshold 6)

		climate change, predation and disease as the principle threats, which further supports a low risk for threats from forest management activities.		
	HCV 1-27, HCV 1-28, HCV 1-31, HCV 1-32, HCV 1-33, HCV 1-35, HCV 1-36, HCV 1-37, HCV 1-38, HCV 1-39, HCV 1-42, HCV 1-43, HCV 1-44, HCV 1-45	Akiapolaau, *Hemignathus wilsoni* The Akiapolaau range is fragmented across the island of Hawaii, in Hamakua, Upper Waiakea kipuka, Kulani-Keauhou, South Kona District, and Mauna Kea. The bird inhabits native dry, mesic, and wet forests, at elevations ranging from 1340-2700 m. Highest densities are found between 1500 and 2000 m. The home range for the Akiapolaau can be upwards of 10 hectares. The bird nests in native ohia and koa trees but has been observed in mature, mixed-species plantations of non-native trees adjacent to koa-ohia forest. High elevation koa forests within limited mosquito presence is considered critical to species survival. The primary threat to the species is predation from feral; forest management is habitat fragmentation or loss from clearing of native to koa-ohia forest. *Summary*: Much of the species range occurs in effectively protected areas; however, small pockets of the range are in privately-owned forested parcels not in conservation or DOFAW Forest Reserves with F1 designation. Hawaii state law limits commercial logging to non-native and highly degraded habitats in Forest Reserves, and the scale of logging is small; forest management activities are unlikely to affect the Akiapolaau.	Low risk for the species range.	Low (Threshold 6)
	HCV 1-27, HCV 1-28, HCV 1-31, HCV 1-32	Laysan Duck, *Anas laysanensis* The Laysan Duck is endemic to its namesake, the Laysan Islands. Fossil records indicate that the duck was formerly abundant across all of the Hawaiian Islands. The Laysan Duck is found in lagoons, tidal pools, and marshes, and uses grass and other vegetation for nesting and shelter. Habitat destruction and predation by introduced rabbits and rats are the main threats to the species, not forest management. *Summary*: This island-dwelling duck is under threat from invasive predators, not forest management.	Low risk for species range.	Low (Threshold 6)

HCV 2: Landscape Level Forests

Indicator	Sources of Information	HCV Occurrence and Threat Assessment	Geographical/ Functional Scale	Risk Designation and Determination
3.2 HCV 2	HCV 2-1, HCV 2-2,	**Alaska**	Geographic Scale:	Low Risk:

	HCV 2-3, HCV 2-4, HCV 2-7, HCV 2-8, HCV 2-9, HCV 2-10, HCV 2-11, HCV 2-12, HCV 2-13, HCV 2-14, HCV 2-16 HCV 2-18	Several datasets were consulted to identify HCV 2 forest in Alaska including the US Forest Service, National Parks Service, Bureau of Land Management, Alaska Division of Forestry, and Alaska Department of Fish and Game. All of these datasets proved either too limited by not comprising an effective portion of forest in Alaska, or too broad by potentially incorporating significant portions of non-forested land. This report utilizes the Greenpeace / WRI Intact Forest Landscapes (IFL) dataset (http://www.intactforests.org). This dataset is preferable due both the robustness and completeness of the data, and the closeness with which it aligns to the definition of HCV 2, and is therefore used to represent all HCV 2 in Alaska. The IFL dataset utilized remote sensing (data collected from satellite or aircraft) to identify large and unfragmented forested areas. The IFL dataset's minimum IFL area size is 50,000 hectares (Ha). This minimum of 50,000 Ha is consistent with HCV 2 definitions, and appropriate due to Alaska's size and remoteness. There are a total of 59 IFLs identified in Alaska, comprising 41,305,696 Ha. Including the contiguous IFL land across the Canadian border, total IFL is 57,463,304 Ha. All 59 of these IFLs were assessed for risk by assessing jurisdictional management restrictions and remoteness. Jurisdictional management restrictions were assessed by applying the management allowances of the patchwork of ownerships to each IFL. Areas which are not fully protected were assessed for remoteness by assessing road access and municipality proximity. Six IFLs cross the Canadian Border. The "FSC National Risk Assessment for Canada" deemed all of these IFLs as Low Risk due to the lack of anthropogenic risk to the forested ecoregion. None of these have permanent legislative protection within Canada. An analysis of proximity to commercial mills and transportation networks was completed to identify areas that are not too remote for forest management activities to occur, are not effectively protected from forest management activities and where loss of HCV 2 is more likely to occur. Mills are clustered in three main areas around Fairbanks, Anchorage, and throughout the Southeast region. Although there are some mills in much more remote parts of the state, these mills tend to for local consumption and operate on a small scale and part time basis. Areas identified through this analysis were then assessed against the Greenpeace / WRI IFL dataset.	State of Alaska Functional Scale: Delineated Intact Forest Land units.	**Low Risk Threshold 9** (there is no HCV 2 identified and its occurrence is unlikely in the area under assessment) applies to: • All forest that falls outside IFL units • Non-forested lands **Low Risk Threshold 10 (**there is low/negligible threat to HCV 2 caused by management activities in the area under assessment) applies to all IFL units.

		Overall in Alaska, Global Forest Watch indicates that areas identified for IFL loss are due to wildfires (and will likely regenerate), and not due to forest management activities. This pattern was found to be consistent in the finer-scale assessment of the above identified areas with higher likelihood of forest management activities. *Summary*: While this analysis identifies areas where there is a higher likelihood that HCV 2 loss could occur (due to proximity to mills and transportation networks), the Greenpeace/WRI dataset does not provide any evidence that this kind of loss is actually occurring. Most of the areas of loss highlighted by the dataset are in areas also identified as having been destroyed by wildfire – meaning the threat to the HCV is not from forest management. While low risk is designated for these areas they should be closely watched so that if removals of IFLs do begin to occur, they can be addressed more quickly.		
	HCV 2-14, HCV 2-15, HCV 2-16, HCV 2-17	**Hawaii** Although Hawaii has two contiguous units of forest over 50,000 Ha, neither qualifies as IFL per the Greenpeace / WRI dataset definition due to their fragmentation from roads, development, and other anthropogenic intrusions. Much of the forest cover, however, is considered HCV 2 for the purpose of this risk assessment due to it providing buffer and connectivity for conservation, reserve, and permanently protected land. There is a total of 564,819 Ha of forest land on the Hawaiian Islands. Despite being highly fragmented, 385,702 Ha (68%) is classified as HCV 2 due to the limited maximum possible size of the connected forest landscape (due to the small size of the islands), the critical ecosystem or habitat status of nearly all the native forest land, and serving as connectivity and buffers for the patchwork of habitat reserves and other protected areas. Areas of forest that are not identified as HCV 2 are very small forest patches, have roads further fragmenting them or are larger patches with a high component of non-native forest. Hawaii has state-level legislation that addresses conversion through the Hawaii State Land Use Law. This law requires that all land be assigned to a District: Urban, Agricultural, or Conservation. All activities that take place on lands designated as Conservation Districts are regulated. This oversight provides effective protection from forest conversion for forested lands within Conservation Districts in the State of Hawaii.	Geographic Scale: State of Hawaii Functional Scale: Hawaii ecozones, Hawaii land management districts	Specified Risk: **Specified Risk Threshold 12** (HCV 2 is identified and/or its occurrence is likely in the area under assessment, and it is threatened by management activities) applies to HCV 2 forest that occurs: • Outside of GAP 1 or GAP 2 status areas, and • Outside of state Conservation Districts, and • Within the montane wet, montane mesic, and lowland mesic ecozones. Low Risk: **Low Risk Threshold 9** (there is no HCV 2 identified and its occurrence is unlikely in the area under assessment) applied to: • Forest land outside of HCV 2 areas. • Non-forested lands

		The Hawaii Forest Action Plan identifies eight vegetation zones (ecozones) that are described in the Hawaiian Islands CBA assessment above. The Forest Action Plan identifies three of these ecozones as having threats from unsustainable harvest. *Summary*: HCV 2 occurs throughout much of the Hawaiian Islands, but does not include all forested areas. The Hawaii Forest Action Plan identifies three ecozones with threats from forest management activities, but HCV 2 within these ecozones that are also within Conservation Districts and within GAP 1 and GAP 2 status areas are effectively protected.		**Low Risk Threshold 10 (**there is low/negligible threat to HCV 2 caused by management activities in the area under assessment) applies to HCV 2 forest that occurs outside of the montane wet, montane mesic, and lowland mesic ecozones. **Low Risk Threshold 11 (**HCV 2 is identified and/or its occurrence is likely in the area under assessment, but it is effectively protected from threats caused by management activities) applies to HCV 2 forest that occurs: • Within GAP 1 or GAP 2 status areas, and/or • Within state Conservation Districts

HCV 3: Rare Ecosystems

Indicator	Sources of Information	HCV Occurrence and Threat Assessment	Geographical/ Functional Scale	Risk Designation and Determination
3.3 HCV 3	**AK** HCV 3-1 HCV 3-2 HCV 3-3 HCV 3-4 HCV 3-5 HCV 3-6 HCV 3-7	Based upon the FSC US High Conservation Value Framework, two types of HCV 3 were identified and are addressed below – Old Growth Forests (or Primary Forests) and Priority Forest Ecosystems. Priority Forest Ecosystems are non-old growth but rare and high conservation value forests systems. In Alaska, Old-Growth and Priority Forest Ecosystems were assessed separately, with the latter being based largely on Alaska's Ecosystems of Conservation Concern report (HCV3-13). In Hawaii, all native forest types are considered rare and are therefore identified as HCV 3; any remaining old-growth forests	Geographical Scale: Entire assessment area (Alaska and Hawaii) Primary Functional Scales: Likelihood of Old Growth Occurrence,	Specified Risk: **Specified Risk Threshold 17** (HCV 3 is identified and/or its occurrence is likely in the area under assessment and it is threatened by forest management activities) applies to the following:

	HCV 3-8 HCV 3-9 HCV 3-10 HCV 3-11 HCV 3-12 HCV 3-13 **HI** HCV 3-15 HCV 3-16 HCV 3-17 HCV 3-18 HCV 3-19 HCV 3-20 HCV 3-21 HCV 3-22 HCV 3-23 HCV 3-24 HCV 3-25 HCV 3-26 HCV 3-27 HCV 3-28 HCV 3-29 HCV 3-30 HCV 3-31 HCV 3-32 HCV 3-33 HCV 3-34 HCV 3-35 HCV 3-36 HCV 3-37 HCV 3-38 HCV 3-39	would occur within these native forests, and therefore a single HCV 3 assessment was completed that includes both of these types of HCV 3. <u>Roadless Areas</u> In Alaska, roadless areas are not as rare, nor as small, as they are in the conterminous United States, and therefore are addressed through the HCV 2 assessment above. In Hawaii, most of the forested landscape has already been accessed and altered with few remaining intact blocks of forest that could be considered 'roadless.' Any roadless areas that still exist would be within the remaining fragments of native forest assessed below. Therefore, a separate assessment for roadless areas was not completed.	Forest Type Occurrence Secondary Functional Scales: Ownership, GAP Status, USFS Inventoried Roadless Areas, Alaska State Reserve Land, Conservation Easements, Hawaii Land Use Districts, Designated areas in Hawaii State Forest Reserves	• Accessible non-federal lands in Southeast and Southcentral Alaska that have a high likelihood of old growth, and are not within GAP status 1 or 2 areas, State Reserve land, or USFS Inventoried Roadless Areas. • Accessible non-federal and BLM lands in Interior and Southwest Alaska with a high likelihood of primary forest, and are not within GAP status 1 or 2 areas, State Reserve land, or USFS Inventoried Roadless Areas. • Hawaii native forests that are within the montane wet, montane mesic, or lowland mesic ecozones and are not within: a Conservation District; GAP status 1 or 2 area; F2, F3 or F4 designated areas in State Forest Reserves; or private land under a conservation easement. <u>Low Risk</u> **Low Risk Threshold 13:** (there is no HCV 3 identified and its occurrence is unlikely in the area under assessment) applied to • Alaska forest lands with a low likelihood of old-growth or primary forest. • U.S. Military lands

				• Hawaii non-native forests • Non-forested lands **Low Risk Threshold 14** (there is low/negligible threat to HCV 3 caused by management activities in the area under assessment) applied to the following. • Inaccessible non-federal lands in Southeast and Southcentral Alaska that have a high likelihood of old growth • Inaccessible non-federal and BLM lands in Interior and Southwest Alaska with a high likelihood of primary forest • Hawaii native forests in ecozones other than montane wet, montane mesic, and lowland mesic ecozones **Low Risk Threshold 15**: (HCV 3 is identified and/or its occurrence is likely in the area under assessment, but it is effectively protected from threats caused by management activities) applied to: • Accessible non-federal lands in Southeast and Southcentral Alaska that have a high likelihood of old growth, but are within GAP status 1 or 2 areas,

				State Reserve land, or USFS Inventoried Roadless Areas. • Accessible non-federal and BLM lands in Interior and Southwest Alaska with a high likelihood of primary forest, but are within GAP status 1 or 2 areas, State Reserve land, or USFS Inventoried Roadless Areas. • Hawaii native forests in montane wet, montane mesic, and lowland mesic ecozones that are within: a Conservation District; GAP status 1 or 2 area; F2, F3 or F4 designated areas in State Forest Reserves; or private land under a conservation easement.
	HCV 3-1 HCV 3-2 HCV 3-3 HCV 3-4 HCV 3-5 HCV 3-6 HCV 3-7 HCV 3-8 HCV 3-9 HCV 3-10 HCV 3-11 HCV 3-12 HCV 3-13 HCV 3-14	**Alaska Old Growth (Including Primary Forest)** Old growth is generally described as the oldest seral stage in which a plant community is capable of existing on a site, taking into account environmental factors and natural disturbance regime. Old growth development varies depending on forest community. For example, old growth in the Pacific Coast region of the United States begins at 200 – 250 years, while old growth in the North East United States begins at 150 -200 years. Depending on the frequency and intensity of disturbances, and site conditions, old-growth forest will have different structures, species compositions, age distributions, and functional capacities than younger forests. For the purposes of this report, HCV 3 old growth and primary forest will be combined. Primary forest is forest comprising a native tree composition without evidence of anthropogenic forest management. There are no comprehensive datasets for all old growth primary forest in Alaska, so data on forest cover were compiled from a few key datasets described separately below.	Specified Risk for non-federal lands in Southeast and South Central Alaska, and non-federal and BLM lands in Interior and Southcentral Alaska, that are identified as having a higher likelihood of containing old growth/primary forest, are accessible for forest management activities, and that are not effectively protected Low risk for the remainder of the state	Specified (Threshold 17) Low (Thresholds 13, 14, 15)

		Generally, threats to old growth forests include a lack of managing younger forests with a goal of creating old growth forests, timber harvest, invasive species, pests, pathogens, forest fragmentation, fire suppression, catastrophic wildfires and climate change. Loss of old growth to timber harvest on federal lands are take place at low rates. Losses on non-federal lands, particularly in Southeast Alaska, have continued at higher rates than on federal lands. Supporting evidence of these conclusions and generally that old growth is still being lost to timber harvest in Alaska on lands without specific protections from logging. Due to data availability and similarities in forest types and ownership, the Old-Growth assessment consolidated the four forested regions into two broad categories: The Southeast and Southcentral Regions, and the Interior and Southwest Regions. <u>Southeast and Southcentral Regions</u> In Alaska, old growth forest data for Southeast and Southcentral regions were identified using the “Coastal Temperate Rainforest - Remaining Late Seral Forest Fragments in Northwest North America” dataset. All Old-Growth forest land in the Southeast region, and the majority in the Southcentral region, is owned by the federal government (the remainder is native land). All of the federally owned forest and some of the State forest in the Southeast and Southcentral regions are effectively protected from management activities due to being located entirely within one or a combination of protected areas: USFS Inventoried Roadless Areas, National Parks, USFS Wilderness, National Wildlife Refuge, or Alaska State Parks and Reserve land. Recently, the State of Alaska and other parties have sued the federal government to open more areas of the Tongass National Forest to old growth logging, and even to exempt Alaska from the 2001 Roadless Rule entirely. Since these protections are currently in effect and historically these lawsuits have failed to open up old growth logging, these Old-Growth areas are deemed low risk. Although much of the Southeast and Southcentral Old-Growth forest land is legislatively protected, most of the remaining Old-Growth forest land contiguous to the legislatively protected forest land faces a low / negligible threat of management due to inaccessibility. These inaccessible, Old-Growth forest lands include BLM, native, and state ownership.		

		There is a small amount of Old-Growth forest which is within Native and municipal ownership that may be threatened by forest management activities. This Old-Growth forest is specified risk because there is no permanent logging protection, there is present potential for logging, especially on Native land, and there is road access. These Old-Growth forest areas are found mostly on the Kenai Peninsula and nearby mainland. <u>Interior and Southwest Regions</u> No similarly explicit dataset as was used for Southeast and Southcentral Alaska is available for the other regions (mostly Interior) which comprise roughly 70% of the forested land in Alaska. Other datasets were assessed in the following Priority Forest Ecosystems including Interior forest habitats. The Interior and Southwest forest land was assessed for likelihood of primary forest by spatially removing historical forest management activities and development. The resulting forestland is proposed to be primary forest and designated HCV 3. The vast block of forest land spanning the Interior and Southwest regions spans many different ownership types, including timberland and non-timberland managed by the State of Alaska, federal lands (e.g., National Parks, U.S. Military lands, Bureau of Land Management-administered lands, National Wildlife Refuges), privately-owned lands, municipal lands and native lands. State timberland in the north of the Southcentral region do not include primary forest. U.S. military land is not HCV 3 at all due to minimal forest cover. All National Park, National Wildlife Refuge, and State Reserve land, which comprise a vast majority of primary forest in the Interior and Southwest regions, are effectively protected from threats caused by management. Although much of the Interior and Southwest primary forest land is legislatively protected, most of the remaining primary forest land contiguous to the legislatively protected forest land faces a low / negligible threat of management. BLM and native owned accessible HCV 3 forest land outside of legislative protection undergo limited management and fuel very small, local timber markets for home building and firewood. The inaccessible areas within this HCV 3 land are deemed low / negligible threat.		

		All primary forest that are not legislatively protected and have road access are considered to be potentially threatened by forest management activities. Although there is currently very minor management or no activity in these road buffer areas, these roads provide an established infrastructure for developing a larger scale and more robust timber industry. Primary forest land ownerships not legislatively protected are BLM, native, private, and municipal. Although the BLM does conduct some limited small scale ecological forest management operations and limited timber management is conducted on native land for small scale, local uses such as house building or firewood, local facilities or transportation networks can potentially be developed to allow a more robust timber industry and more extensive timber management in this accessible area. All municipal and private primary forest lands are specified risk due to accessible timber and minimal logging restrictions. Affected Forest Ecosystems The identified old growth / primary forests are split across two distinct forest ecosystems: boreal forest and coastal temperate rainforest. • Boreal Forest – The boreal forest zone is a high latitude belt of forest that stretches across Alaska's interior to the Rocky Mountains in Canada. Conifers comprise the majority of the boreal forest tree species and vary depending on local and regional conditions. Broadleaf species also occur on a smaller scale either as monoculture or mixed with conifers. The Alaska boreal forest is found as far south as the Kenai Peninsula and as far north as the southern slopes of the Brook Range ecoregion. Primary conifer species include white spruce and black spruce. Primary broadleaf species include balsam poplar, quaking aspen, and paper birch. Primary boreal forests develop complex canopy structures and spatial patterns. These structures include a variety of tree species combinations, multiple tree canopy tiers, and wide diversity of both tall and short shrub species which support a range of animal species. The horizontal variability is achieved through the development of lakes, meadows, and shrubland. This robust network of landscape features renders the boreal forest a patchwork of distinct localized ecosystems depending on site conditions: each of which supports different plant and animal communities. These ecosystems range from dense, closed canopy forests to open shrub lands.		

		These varying boreal forest structures provides the specific and essential habitat for many bird species. Overall, birds comprise 80% of the vertebrates found in the boreal forest, and provide a fundamental ecological role in maintain the health of the forest structure. Many of these bird species are highly susceptible to habitat fragmentation. • Coastal Temperate Rainforest – Coastal temperate rainforest is found in mountainous coastal areas at high latitudes. Climate is mild with warm winters, cool summers, and high precipitation. In Alaska, coastal temperate rainforest is found throughout the Southeast region and coastal areas of the Southcentral regions. Much of this temperate rainforest in Alaska is currently in old growth condition which is broadly characterized by dominant trees being a minimum of 200 years old (with many being over 500 and even 1000 years old), multiple canopy tiers, and robust understory. Western hemlock is the most abundant tree species in the coastal temperate rainforest in Alaska. Other conifer species include Sitka spruce, mountain hemlock, Alaska yellow cedar, western redcedar, and shore pine. Broadleaf species include red alder and balsam poplar. Western hemlock dominates the Southeast region at lower elevations and mountain hemlock is dominant at higher elevations. Moving northwest into the Southcentral region, hemlock dominance is gradually replaced by Sitka spruce. The minor species are found throughout the temperate rainforest region. The variety of tree species and dynamic of localized disturbance, such as wind throw or disease (as opposed to large, high-severity stand-replacing disturbance such as wildfire) create a mosaic of complex forest structures which provide habitat for a large number of birds (including the endangered marbled murrelet, mammals, and amphibians. All of these animals live in a state of very precise and complex symbiosis with the coastal temperate rainforest, our understanding for which continually grows. *Summary*: In Alaska forests where Old-Growth/primary is either known or more likely to occur and where forest management is more likely to be occurring (due to accessibility and lack of effective protection), the level of threat to Old-Growth/primary forests from forest management activities can be assessed based upon the ownership type. In Southeast and Southcentral Alaska, Old-		

		Growth is likely not threatened on federal lands. In Interior and Southwest Alaska, the same is true for primary forest, with the exception of BLM lands.		
	HCV 3-13	**Alaska Priority Forest Ecosystems** Potential Priority Forest Types in South Central and Southeast Alaska that are by definition old growth (i.e., old growth Sitka spruce communities) and/or that prior to European settlement would have existed predominantly as late-successional forest due to their natural disturbance regime (e.g., Coastal temperate rainforest) are not included here as Priority Forest Types, but instead are addressed through the old growth/primary assessment described above. This assessment identifies gaps in coverage and data sources in the old growth/primary assessment above.		
		Boreal Forested Glacial Ablation Plain This habitat is dominated by mature forest and understory associated with growing in a periglacial environment. The forest is dominated or co-dominated by Alaska birch (*Betula neoalaskana)* and white spruce (*Picea glauca*) and occur and rare pockets in lower elevations of the Alaskan Range, Chugach Mountains, Wrangell Mountains, and the St. Elias Mountains. The age class of vegetation on ice-cored moraines differs greatly from 2-6 years to greater than 229 years old. The *Crepis nana* has the greatest representation of younger vegetation species while *Picea glauca-Rhytidium* type dominating the older species. The greatest threat is the warming climate which is causing glacier movement that threatens the stability of soils and vegetation. These habitats are remote, small in size, and offer marginal timber quality and value. They are effectively not at risk of forest management activities. *Summary*: This boreal forest type is not at risk of forest management activities due to its remote location.	Low Risk for the forest type	Low (Thresholds 13, 14, 15)
		Tamarac Wetland Tamarac (*Larix laricina*) wetland is co-dominated by stunted black spruce (*Picea mariana*) and other stunted understory vegetation. The wetland is located in drainages between the Brooks and Alaska Ranges. There's an abundance of the wetland found along the Tanana River and scattered along the Yukon, Kuskokwim and Koyukuk Rivers. The understory is dominated by *Larix laricina, Picea marina* and *Betula neoalaskana*. Total canopy coverage is 10-30%. High rates of mortality can be caused by larch sawfly (*Pristiphora erichsonni)*, larch casebearer (*Coleophora laricella),* and eastern larch beetle (*Dendroctonus simplex).* Undisturbed water flow is essential for the wetland and associated species. These habitats are remote, small in size, and offer marginal timber quality and value. They are effectively not at risk of forest management activities.	Low Risk for the forest type	Low (Thresholds 13, 14, 15)

		Summary: Tamarac wetlands are sparse and disturbance is from defoliators and bark beetles.		
	HCV 3-15 HCV 3-16 HCV 3-17 HCV 3-18 HCV 3-19 HCV 3-20 HCV 3-21 HCV 3-22 HCV 3-23 HCV 3-24 HCV 3-25 HCV 3-26 HCV 3-27 HCV 3-28 HCV 3-29 HCV 3-30 HCV 3-31 HCV 3-32 HCV 3-33 HCV 3-34 HCV 3-35 HCV 3-36 HCV 3-37	**Hawaii Native Forests** Native Hawaiian forest types are unique in their composition and structure due to adaptation during 5 million years of isolation, and have a resulting high level of endemism with over 93% of native Hawaiian plants being endemic. The development of Native forest types is strongly influenced by elevation and aspect due to their effect on precipitation and temperature. Soil substrate is another factor playing a significant role in the development of Native forest communities. Natural communities tend to exhibit a distinct zonal pattern in Hawaii, with coastal lowland vegetation occurring at less than 1640 ft, montane vegetation from 1640 to 6560 ft, subalpine from 6560 to 9184 ft, and alpine vegetation at elevations greater than 9184 ft. According to the IUCN, forest formations can be broken down into subalpine, montane and lowland forests. With the arrival of humans, native Hawaiian forest cover has significantly declined. The most significant changes to Hawaiian vegetation took place following European arrival in 1778 as a result of grazing, clearing of land, harvesting of forest products, urbanization and the introduction of invasive species. It is estimated that 90 percent of Hawaii's dryland habitat, 61 percent of mesic habitat and 42 percent of native wetland habitats have been lost post-European contact. Similarly, freshwater stream habitat has declined, with 58 percent of perennial streams in the State having been altered. An estimated 10% of native vegetation is extinct, with 40-50% potentially threatened by extinction. In coastal, lowland and montane areas native vegetation is considered rare. According to moana.hawaii.edu, few remnants of natural vegetation can still be found on the coastal and lowland zones of Hawaii, what remains often degraded and simplified (moana.hawaii.edu). It is estimated that less than 10% of the land on Kauai, Oahu, Maui and Hawaii continue to support undisturbed native forest, and according to the IUCN, lowland forests on Niihau and Kahoolawe have been lost to development or replaced by non-native species. [HCV3_HI_6, HCV3_HI_5, HCV3_HI_7, HCV3_HI_8] The World Wildlife Fund classifies Native Hawaiian forests into two broad ecosystems: tropical dry forests and tropical moist forests. Both are included in the World Wildlife Fund Global 200 and both are indicated as Critical/Endangered. • Native Hawaiian Moist Tropical Forest – According to WWF, tropical moist forest is comprised of mixed mesic forests from 750 to 1250 m in	Specified Risk for Hawaii native forests that are within the montane wet, montane mesic, or lowland mesic ecozones and are not within: a Conservation District; GAP status 1 or 2 area; F2, F3 or F4 designated areas in State Forest Reserves; or private land under a conservation easement. Low Risk for the remainder of the state	Specified (Threshold 17) Low (Thresholds 13, 14, 15)

		elevation, rain forests found up to 1700 m, wet shrublands and bogs in swampy areas. Moist to wet forests are found on the windward lowland and montane areas of the larger islands and on mountain tops of some of the smaller islands. Koa and Ohia are common dominant canopy trees, are rich in taxa and have a high proportion of endemic species. The status of this ecosystem is critical/endangered as lowland and foothill moist forests have been largely eliminated. Relatively large blocks of montane forest on the larger islands still exist, but there is degradation from ungulates, invasive species, development and recreation. [HCV3_HI_2] • Native Hawaiian Dry Tropical Forest – Tropical dry forests typically occur on the leeward side of the main islands and once covered the summit regions of smaller islands. Most native lowland forests are either seasonal or sclerophyllous, and transition forests, including mixed mesic forests with elements of dry forest communities, occur where conditions are favorable. Dry forests vary from closed to open canopies and are dominated by the tree genera Acacia, Chamaesyce, Metrosideros, Sapindus, Sophora, Pritchardia, Pandanus, Diospyros, Nestegis, Erythrina, and Santalum. Around 22 percent of native Hawaiian plant species occur within this ecoregion. The status of this ecosystem is critical/endangered as Hawaiian dry forest has been reduced by 90 percent. The last remnants are being destroyed today through development, expansion of agriculture and pasture. Most larger fragments are in montane areas. What habitat remains is highly fragmented. [HCV3_HI_1] Based on inclusion in the WWF Global 200 list, and the high degree of loss, fragmentation and degradation of Hawaiian native forests, all remaining native forest types without the codominance of invasive species, (which are presumed degraded) are considered to meet the HCV 3 definition of rare ecosystems. Although not all lowland forests are included in the WWF definition, degradation evidenced above is enough to include all lowland forests in the HCV 3 definition. All Native Hawaiian forest types are anthropogenically rare, as the extent of these ecosystems have been greatly reduced by human activities. The existence of remaining native natural communities has been largely attributed to protections afforded by National Parks and State Natural Area Reserves, which contain many of the known natural plant communities of Hawaii. US Fish and Wildlife Service, one State Wilderness Preserve and the Nature Conservancy also protect natural communities. According to the IUCN		

		Directory of Protected Areas in Oceania, many but not all known natural plant communities are adequately protected in Hawaii. The GAP/LANDFIRE National Terrestrial Ecosystems data set was used to determine finer scale native Hawaiian forest types. This dataset includes detailed vegetation and land cover patterns for the United States, incorporating the Ecological System classification system developed by NatureServe. The Hawaii state vegetation dataset was produced based on surveys conducted in 1976-1981 and is thus outdated. The GAP/LANDFIRE dataset is the best available vegetation information for the State of Hawaii. [HCV3_HI_4, HCV3_HI_3, HCV3_HI_28] Native Forest Types defined as HCV 3 based on the GAP/LANDFIRE Dataset: • Closed Hala Forest • Closed Koa-Ohia Forest • Closed Ohia Forest • Closed Pouteria Forest • Koa Forest • Mamane/Naio/Native Trees • Native Mesic to Dry Forest • Native Wet Forest and Shrubland • Ohia Forest • Olopua-Lama Forest • Open Koa-Mamane Forest • Open Ohia Forest In 1961, Hawaii passed the Hawaii State Land Use Law requiring that all land be assigned to one of three “Districts”: Urban, Agricultural, or Conservation. This has since been updated to include a fourth ‘Rural’ District. Conservation Districts are a class of protected lands that were identified as important for the protection of watersheds, critical ecosystem services, forests, park lands, areas vital to endemic plants, fish, and wildlife. About 58% of the state’s forests are within Conservation Districts. The Hawaii Department of Land and Natural Resources regulates all activities that take place within Conservation District boundaries, requiring landowners to apply for a permit from the Department for any ground disturbing activities. This oversight provides effective protection for natural and cultural resources. [HCV3-38, HCV3-39, HCV3-40, HCV3-41]		

		The Hawaii Forest Action Plan identifies eight vegetation zones (ecozones) that are described in the HCV 1 Hawaiian Islands CBA assessment above. The Forest Action Plan identifies three of these ecozones as having threats from unsustainable harvest: montane wet, montane mesic, and lowland mesic ecozones. [HCV3-42] The Hawaii State Division of Forestry and Wildlife have developed management plans for some Forest Reserves. Areas of Forest Reserves have are categorized by level of timber emphasis, F1- F 4 - F1 is commercial wood harvest; F2 is limited small scale commercial harvest; F3 is personal wood harvest (non-commercial); F4 is restricted to wood extraction. There are three Forest Reserves that have area designated as F1 (large scale commercial harvest) These F1 Forest Reserves are non-native plantations that are low-biodiversity (the native forests were harvested and replanted several decades in the past). Other areas of F1 forest are scattered throughout montane wet, montane mesic or lowland mesic forests, though these are smaller scale. *Summary*: Based the high degree of loss, fragmentation and degradation of Hawaiian native forests, all remaining native forest types are considered to meet the HCV 3 definition of rare ecosystems. In three ecozones, these native forests are identified as being threaten by forest management activities. However, within Conservation Districts, the mandatory permitting process for ground disturbing land use activities provides effective protection from these threats. Other designations also limit the potential impact of forest management activities.		

HCV 4: Critical Ecosystem Services

Indicator	Sources of Information	HCV Occurrence and Threat Assessment	Geographical/ Functional Scale	Risk Designation and Determination
3.4 HCV 4		Alaska and Hawaii are subject to the same Federal regulations described in the US NRA Part 1, and have the same protections required under those laws. Both states have additional forestry-specific regulations to further protect critical ecosystem services, particularly water resources.	Geographical Scale: Entire Assessment Area (Alaska and Hawaii)	Low Risk: Low Risk **Threshold 21** (HCV 4 is identified and/or its occurrence is likely in the area under assessment, but it is effectively protected from threats caused by management activities) applies to the portion

				of the assessment area within the State of Alaska. Low Risk **Threshold 20** (There is low/negligible threat to HCV 4 caused by management activities in the area under assessment) applies to the portion of the assessment area within the State of Hawaii.
	HCV 4-1 HCV 4-2 HCV 4-3 HCV 4-4 HCV 4-5 HCV 4-6	**Alaska** The data sourced used to identify HCV4 in Alaska was the US Forest Service's Forest to Faucets. The data set, developed by the US Forest Service, is intended to show the importance of forest health (private and public) to sustain water quality in watersheds that provide critical ecosystem service, such as clean surface water, to communities. A majority of Alaska's watersheds ranked low in their importance towards providing surface drinking water with the exception of eleven watersheds that are within close proximity to major cities. This data set identifies the presence of HCV4 but highlights that a small subset of Alaska forests and watersheds provide drinking surface water to communities. As defined in the Common Guidance for Identification of High Conservation Values, HCV 4 also includes other critical ecosystem services, such as soil erosion control, flooding mitigation, climate regulation, nutrient regulation, disease regulation, etc. Each ecosystem service that directly relates to forest health will be considered in the assessment of risk to HCV within Alaska. Alaska has three primary ecoregions with forested land that provides significant ecosystem services to local communities: The Boreal Cordillera; Alaska Boreal Interior and Marine West Coast Forest. Historically, riparian zones (wetlands, flood plains, etc.) have been attractive for logging operations because trees in these areas are considered more productive and have greater accessibility. This method of management draws concern because of the potential threat it raises to ecosystem services such as flood mitigation, water quantity and quality, soil erosion, and flow regimes. The state of Alaska adopted the Alaska Forest Resources and Practices Act in order to further protect riparian habitat, primarily for fish populations, water quality and quantity during and after forest operations. The act establishes Best Management Practices (BMP) for timber harvest, reforestation and access on state, private and municipal forest. Key provisions of the act that directly apply to	Low Risk for the entire state	Low (Threshold 21)

		the protection of ecosystem services place standards on operations along waterbodies, such as buffers, and prevention of erosion from roads and harvest into adjacent bodies of water. The act also includes articles drawn from the federal Clean Water Act, a policy structured to regulate pollutants discharged into surface water, to ensure compliance with federal policy as well. The Alaska Division of Forestry conducts compliance and effectiveness monitoring as a part of their efforts to minimize impacts of forest operations on riparian zones. Assessments are graded on compliance with BMPs in a range between one (rarely or ineffectively implemented) to five (consistently and effectively implemented). The Alaska Department of Natural Resources states that any individual field rating that is below a four will be revaluated, provided training or enforcement action is taken. Since 2015 forest operations surveyed within the Alaska region, 90% of operations have maintained a 4.0 score or above for BMPs compliance. Alaska also comprises of US Forest Service federally managed land (Tongass National Forest and Chugach National Forest) that operate under all the policies previously mentioned and also standards set within the agency. Soil and Water standards and guidelines are considered Best Management Practices and are noted in the Forest Service Handbook. As a part of the BMPs, implementation and effectiveness monitoring are implemented to ensure operations are within compliance. Past monitoring reports indicate instances where BMPs were not implemented but corrective actions were taken in order to uphold Soil and Water standards [6]. *Summary*: Management practices that threaten HCV 4 (as defined by the FSC US HCV Framework) would result in increased sediment and/or other pollutants in affected waters. Conversely, forest management practices that do not threaten water quality will also effectively maintain the provision of other ecosystem services by those same forests. Evidence of the effectiveness of BMPs associated with the Federal Clean Water Act, state-level forestry BMPs, and with the reported levels of compliance, indicate that there is a high likelihood that HCV 4 are not being threatened by forest management practices throughout the assessment area due to the implementation of forestry BMPs associated with State nonpoint source pollution programs for compliance with the federal Clean Water Act.		
	HCV 4-1 HCV 4-7 HCV 4-8 HCV 4-9	**Hawaii** Spatial data for valued agricultural land and dams (State of Hawaii Office of Planning) indicates the presents of ecosystem services benefits from reservoir enchantments of freshwater to productive agricultural land. Hawaii's	Low Risk for the entire State	Low (Threshold 20)

	HCV 4-10 HCV 4-11 HCV 4-12 HCV 4-13 HCV 4-14	municipalities also depend on reservoirs to recharge ground water aquafers that supply drinking water to communities. Forest provide an ecosystem service by capturing or slowing the rate of evaporation of precipitation, preventing erosion and increasing water retained for ground water. This spatial data concludes the importance of erosion prevention and a supply of clean drinking water to Hawaiian communities, which indicates the presents of HCV 4. Surface water is also a valued natural resource in Hawaii that provides more than 50% of irrigation water to agriculture but does not provide the majority of drinking water. During times of heavy rainfall, streams can quickly flood causing hazardous conditions to people and loss of property [Source: 5]. Vegetation plays an essential role in slowing the rate of water falls, the route it flows, and the rate of infiltration through soils which can reduce the severity or mitigate flooding and soil erosion. Hawaii's history includes a period of rapid development, high rates of forest removal and land conversion prior to 1903 when Forest Reserve System (FRS) was created. Hawaii's Forest Reserves are managed by the Department of Forest and Wildlife (DOFAW) and their directives are to protect, manage, restore, and monitor FRS natural resources. The Forest Reserve System is also considered apart of priority watersheds that provide significant ecosystem services to surrounding communities[2]. Within some Forest Reserves there are Timber Management Areas that are intended to supply sustainably sourced forest products. Forest harvesting operations do occur in priority watersheds. Any forest harvest operations that take place on State land are required to complete a management plan, an environmental assessment that is consistent with Best Management Practices (BMPs) and other appropriate regulations[4,5,6,8]. Since commercial forest harvest have not operated at a large scale (i.e., greater than a few dozen acres), there are few systems in place to address management activities and their impact. The Hawaii Department of Health created a management plan for 2015-2020 to increase coordination of among federal, state and local organizations to manage water quality through monitoring, assessment, planning and implementation on a regional scale[7]. There is currently no report on state or private commercial forest operations compliance with BMPs easily accessible. In 2010, the Hawaii Department of Land and Natural Resource released a report that listed ungulates and invasive plant species as the greatest threat to all Forest Reserves and related ecosystem services on the Hawaiian Islands According to this assessment logging is considered a low threat to eight of the ten Forest		

		Reserves. The BMPs document for the State of Hawaii list sediments, nutrients, debris and pesticides as the top pollutants during silvicultural activities. The scope of severity of these logging-related pollutants are mitigated by the BMPs and do not constitute a specified risk to HCV 4. *Summary*: Management practices that threaten HCV 4 (as defined by the FSC US HCV Framework) would result in increased sediment and/or other pollutants in affected waters. Conversely, forest management practices that do not threaten water quality will also effectively maintain the provision of other ecosystem services by those same forests. Evidence of the effectiveness of BMPs associated with the Federal Clean Water Act, state-level forestry BMPs, and with the reported levels of compliance, indicate that there is a high likelihood that HCV 4 are not being threatened by forest management practices throughout the assessment area due to the implementation of forestry BMPs associated with State nonpoint source pollution programs for compliance with the federal Clean Water Act.		

HCV 5: Community Needs

Indicator	Sources of Information	HCV Occurrence and Threat Assessment	Geographical/ Functional Scale	Risk Designation and Determination
3.5 HCV5	HCV 5-1 HCV 5-2 HCV 5-3 HCV 5-4 HCV 5-5 HCV 5-6 Expert 1 Expert 2 Expert 3 Expert 4	Non-Native Communities Within the definition of HCV 5, subsistence rights are the primary consideration of community needs. Subsistence rights are issues in both Alaska and Hawaii, though they are a substantial and controversial topic in Alaska, with disputes between access and exclusivity to subsistence-based activities. Subsistence activities by individuals from non-Native communities do occur, but evidence suggests that community-level dependence does not occur and does not meet the definition of HCV 5; therefore it can be concluded that HCV 5 related to non-Native communities are unlikely to occur in large parts of the assessment area. However, there are non-Native communities in portions of Alaska that are sufficiently dependent on subsistence activities for survival to meet the definition of HCV 5 (Emery 2005). Evidence of HCV 5 for Alaskan communities that are not indigenous is provided by the Alaska Department of Fish and Game's (ADF&G) Community Subsistence Information System (CSIS). ADF&G's database compiles consumption of subsistence goods (fish, land mammals, marine mammals, birds and eggs, marine invertebrates, and vegetation) from sample household's within individual	Geographical Scale: Entire Assessment Area (Alaska and Hawaii)	Low Risk: *Low Risk* ***Threshold 24*** *applies: There is low/negligible threat to HCV 5 caused by management activities in the area under assessment.*

		Alaskan communities. The Arctic region had the greatest per capita harvested pounds of subsistence goods in 2017 (402.3 lb per capita). Forest harvest activity is minimal in the arctic region therefor it is not considered a substantial threat to subsistence activities. The western region of Alaska harvested 378.7 pounds per capita in 2017, making it the second greatest in subsistent good accumulation for the State of Alaska; followed by Interior region (293.3 lb. Per capita), Southwest region (209.9), Southeast region (185.8 lb. Per capita) and the Southcentral region (145.2 lb. Per capita). The Alaska National Interest Land Conservation Act (ANILCA, Public Law 96-487, 1980) provides for customary and traditional uses by rural Alaska residents of wild, renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools or transportation, for the making and selling of handicraft articles out of nonedible byproducts of wildlife resources taken for personal or family consumption, for barter, or sharing for personal or family consumption, and for customary trade. Where subsistence-dependent communities occur in Alaska, forest management activities may take place. The impacts of forest management activities are varied, for example clearcuts impact native plant communities, but also may increase ungulate populations by improving grazing habitat. These impacts are localized and relatively small in the large forested landscape of remote Alaska, and do not substantially impede subsistence activities. <u>Native Communities</u> In Alaska and Hawaii, subsistence activities among some Native communities are critical to their livelihood. Subsistence activities are defined as the direct use of natural resources to meet the requirements of material and cultural survival outside of the formal market: hunting, fishing, trapping and gathering to obtain food, medicine and utilitarian materials for the individual and their social network. Subsistence is tied to cultural well-being as well as physical well-being. Access to subsistence resources is guaranteed to treaty tribes in the conterminous United States through the body of treaties and statutes which guarantee the traditional hunting, fishing, trapping and gathering rights of American Indian peoples. Alaska and Hawaii have separate canons of law which guarantee access to subsistence resources: ANILCA, and the Hawaii State Constitution (Article XII, Section 7). **Alaska**		

		ANILCA does recognize the special importance of subsistence activities to Alaska Natives; however, a recent legal review completed by Alaska Natives suggests that subsistence activities by Alaska Native peoples receives insignificant protections. Article 8 of the State Constitution enshrines equal protection of all Alaska residents to develop resources, failing to afford special protections to ensure access to these resources by Alaska Native peoples, in keeping with reserved rights protections afforded to American Indian treaty tribes. The State of Alaska retains authority to manage Alaska Native Claim Settlement Act (ANCSA) lands, failing to afford Alaska Natives self-determination over management of their subsistence resources, and making the scrutiny of Article 8 exceedingly important. Additionally, an expert mentioned that shareholders and descendants are typically able to hunt and have subsistence access to around 44 million acres of Alaska Native Corporation land. Under the 2008 Farm Bill, free access to National Forests is allowed for tribal Nations to collect forest products, with the qualification that they must first meet with a forest supervisor, and that the supervisor can decline based on sustainability concerns. Expert consultation confirmed that subsistence rights are adequately upheld in Southeast Alaska. **Hawaii** The Hawaii State Constitution explicitly protects the rights of descendants of Native Hawaiians to harvest marine and terrestrial resources traditionally used for subsistence, cultural and religious purposes within undeveloped land (Article XII, Section 7) and additional legislation grants further rights to specific Native Hawaiian communities. Legislation defines a process for a person to legally exercise traditional rights of gathering in which a person must qualify as “Native Hawaiian” and establish that the gathering practice is customary or traditional. For some Native Hawaiian communities, subsistence activities provide livelihood resources, making access to subsistence fishing, hunting, gathering and cultivation critical for survival. Additionally, Native Hawaiian communities that live within forested environments frequently gather materials from the forest that are essential for cultural or traditional activities or for medicinal use. Without these materials, the tribes would not be able to perform the activities and as a result, the community well-being would suffer. Forest management activities are taking place in areas where Native Hawaiians are engaging in subsistence activities. The forest management activities can limit Native Hawaiian access to subsistence resources according to expert consultation, and also may impact the abundance or quality of those resources. Although legal protections do exist, expert consultation suggests that rights are upheld inconsistently.		

		It is important to note that interpretations of the Hawaii State Constitution in the State Supreme Court have both strengthened and limited access and rights to subsistence resources. There is a legal process in place by which Native Hawaiian peoples can present evidence of traditional use of resources in an area where development or other projects may harm future access. Additionally, Native Hawaiian peoples can travel outside of an ahupua'a in which they reside to practice traditional subsistence resources with sufficient evidence that this practice is customary. However, other interests, including the Interest of the State to conserve certain natural resource and economic interests are balanced against the interests of Native Hawaiian subsistence rights, and conservation interests have been found in at least one case to outweigh subsistence rights. Expert consultation indicates that Native Hawaiian peoples may not always know their rights with regards to subsistence, and concern has been raised that forest management activities may be harming the abundance and quality of important natural resources. Additionally, forest activities that include fencing preclude access important for subsistence according to expert consultation [Experts 2 and 3]. Expert consultations raised concerns over how well Native Hawaiians' interested are upheld in forests where active management takes place. Experts referenced fencing, unjust enforcement of no-trespass laws in areas where Native Hawaiians believe they have rights to access, lack of cultural education, and agencies allowing economic interests to over-ride cultural interests in some land management decisions as barriers to Native Hawaiian forest-dependent community needs. Ultimately, however, the legal framework granting Native Hawaiians special access to forest resources for subsistence uses, and Native Hawaiians' right to challenge decisions through litigation, shows forest management activities do not substantially limit Native Hawaiians' forest-dependent community needs. Ongoing forest management activities have a minor impact on Native Hawaiians' rights and abilities to practice traditions subsistence activities. *Summary* Both Alaska and Hawaii include Native communities that depend on subsistence activities that meet the definition of HCV 5, and Alaska includes non-Native subsistence-dependent communities. While disagreement continues over the extent and exclusivity of access to subsistence resources in both states, Alaskan and Hawaiian subsistent-dependent communities are afforded sufficient protection of subsistence activities and there is not a widespread threat to forests		

		on which the communities are dependent for materials used in subsistence activities.		

HCV 6: Cultural and Sacred Sites

Indicator	Sources of Information	HCV Occurrence and Threat Assessment	Geographical/ Functional Scale	Risk Designation and Determination
3.6 HCV6	HCV 6-1 HCV 6-2 HCV 6-3 HCV 6-4 HCV 6-5 HCV 6-6 HCV 6-7 HCV 6-8 HCV 6-9 Expert 1 Expert 2 Expert 3	Cultural Values of Global or National Significance Information regarding UNESCO World Heritage Sites, National Monuments, National Natural Landmarks or Natural Parks and federal legislation covered in the US NRA Part 1 is relevant. Areas of Critical Importance for Traditional Cultures As discussed in the US NRA Part 1, locations of sites sacred to Native American tribes are not generally publicly available due to requests for confidentiality. The same is true for Native Hawaiian peoples and Alaska Native peoples. It is assumed that, because the entirety of Alaska is traditional homelands of Alaska Native peoples, areas of critical cultural importance exist throughout the assessment area. In Hawaii, it is similarly assumed that these areas exist throughout the assessment area, as the Hawaiian High Islands comprise the traditional territory of Native Hawaiian peoples. It is assumed that there are areas of higher concentration of sacred and culturally important areas, however. State laws offer further protection of areas of critical cultural significance in exceedance of Federal laws, in both Alaska and Hawaii. Expert consultation with a tribal liaison for the US Forest Service in Alaska agreed that there are sufficient protections for culturally significant sites, and efforts on the part of the State and federal agencies to provide redress where damage has occurred. The federal government is held to a higher standard with respect to protections of cultural sites. The expert is not aware of any major ongoing conflicts with respect to HCV 6 and the forest sector [Expert 1]. An Executive Order laid out during the Clinton Administration mandated that it is up to Tribal Nations, not federal agencies, which areas are considered sacred or not [7]. However, the Executive Order only addresses discrete areas of significance, and not landscapes of importance.	Geographical Scale: Entire Assessment Area (Alaska and Hawaii) Primary Functional Scale: Forested zone (as identified by the IFL Mapping Team[1]), Secondary Functional Scale: Hawaii Land Use Districts	Specified Risk: ***Threshold 30*** *(HCV 6 is identified and/or its occurrence is likely in the area under assessment and it is threatened by management activities.) applies to the following:* • Forested lands that are not within a Conservation District Low Risk: ***Threshold 28*** *(There is low/negligible threat to HCV 6 caused by management activities in the area under assessment) applies to the following:* • Forested areas that are within a Conservation District and non-forested areas

[1] Forest Zone Extent (http://www.intactforests.org/data.ifl.html)

		Two Native Hawaiians working for separate Native rights and cultural heritage organizations independently expressed concern regarding the protection of sacred sites (*wahi kapu*). One expert described that archaeology firms are paid to dispute claims by Native Hawaiian informants about the presence of *wahi kapu* in areas proposed for the development of projects. She indicated this level of disregard for Native Hawaiian concerns is pervasive. She did acknowledge that there is a legal process in place to address violations to burial sites, though no other forms of *wahi kapu* [Expert 2]. The other expert consult maintains that the laws that exist to protect sacred sites in Hawaii are not typically followed, and said that forest management specifically has caused harm to sacred sites and that there is not a process in place for reparations where damage has occurred. He explains that economic interests are weighed more heavily than Native Hawaiian values associated with sacred sites. He believes that there is systemic violation by the State of laws that protect sacred sites [Expert 3]. *Summary:* In Alaska, sufficient legal protections for HCV 6 exist and expert consultation indicates that there is no systematic and widespread violations by the forest sector, although there is some ongoing controversy surrounding court interpretations of legal protections. In Hawaii, legal structures are in place to protect Native Hawaiian cultural and sacred sites. However, our contacts independently reported systemic disregard for Native Hawaiian HCV6 concerns by State agencies, with one mentioning the forest sector specifically. We attempted to contacted other agency, academic, and Native representatives to solicit additional expert consultations, but did not receive any other replies. We also looked for litigation over these issues, but did not find examples related to forest management activities. In the global context to which FSC's guidance criteria apply, while the expert consultations are troubling, evidence is lacking that forest management activities are substantially affecting HCV6 resources in Hawaii sufficient to cause specified risk. However, specified risk is designated as a precautionary approach.		

Category 3 Control measures

Indicator	Control measures (M – mandatory / R – recommended)
3.1	No mandatory or recommended control measures are defined.
3.2	
3.3	

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HCV 1

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Controlled wood category 4: Wood from forests being converted to plantations or non-forest use

NOTE: *Part 2 of the US NRA covers all portions of the states of Alaska and Hawaii, for all types of forests, and excludes the remainder of the US states and territories.*

Overview

The following risk assessment for Category 4 begins with an assessment of applicable legislation to determine whether natural vegetation land use changes are prevented (or kept to a level that does not exceed the stated threshold) by US or state-level legislation or public policy. This is followed by an assessment of rates and extent of conversion based on state-scale and finer-scale data and literature review.

NOTE: Static PDF maps of specified risk designations are available on the FSC US web site and a spatial data layer is available upon request.

Category 4 Risk assessment

Indicator	Sources of Information	Indication of risk, evidence used	Geographical/ Functional scale	Risk designation and determination
4.1	1	**Assessment of Applicable Legislation:** An assessment of applicable legislation at the national level (including Alaska and Hawaii) was carried out for Part 1 of the US National Risk Assessment (FSC-NRA-USA V1-0) [1]. In the United states, there is no national legislation related to conversion of forestland to non-forest or plantation. Although the assessment for Category 1 concluded that laws in the US are enforced, it is not possible to conclude from this assessment that applicable legislation prevents conversion to the outcome required indicator 4.1, and therefore an assessment of the rates and extent of conversion within each state will be necessary.	Geographic Scales: State Functional Scale: Forested zone (as identified by the IFL Mapping Team[1]), Hawaii Land Use District	Specified risk Specified risk **Threshold 7** (There are significant economic drivers for conversion. Data yield evidence that conversion is occurring on a widespread or systematic basis) applies to portions of Hawaii that are within the forested zone, but are not within designated Conservation Districts.
	2-16	**State-Scale Assessment of Rates, Extent and Drivers of Conversion:** Alaska: There are roughly 129 million acres of forested land in Alaska, of which over 50% is federally managed and another 25% is managed by state and local governments. The remaining forestland is managed by private landowners. The majority of this private land is managed by Alaska Native corporations, with other private landowners managing less than 1% of the state's total forestland. [9]		

[1] **Forest Zone Extent (http://www.intactforests.org/data.ifl.html)**

Indicator	Sources of Information	Indication of risk, evidence used	Geographical/ Functional scale	Risk designation and determination
		Both Alaska State Statute and Federal U.S. Code require that public forestland be managed on a sustained-yield basis, suggesting that conversion to non-forest use or plantation on public land is limited. Additionally, The National Forest Management Act directs the US Forest Service to restock after harvest for lands that they administer (i.e., National Forests). The Alaska Forest Resources Practices Act, which also applies to private land, requires sustained-yield management, though limited conversion to other land uses within a set time following harvest is allowed. [12] Because it is not possible to conclude that state-level legislation prevents conversion, further analysis was carried out to determine the extent and drivers of conversion of forest to non-forest or plantation in Alaska. Global Forest Watch suggests that forest loss is occurring throughout the central portion of the state, but their data indicates that this forest loss is primarily driven by wildfire and would not typically be considered permanent conversion. This central portion of Alaska is primarily boreal forest, which depends on fire to help the ecosystem regenerate. [10, 13] Global Forest Watch data also suggests that wood fiber or timber plantations are not common in Alaska. [8] Other studies have found that tree planting does take place in the state but in limited circumstances to encourage regeneration of natural forests, suggesting conversion to plantation is not common. [11] Additional literature review suggests that a majority of the commercial forest management activities in Alaska take place in the southeast and southcentral coastal forests. [13, 14] A 2015 census of Alaska's timber processors conducted by the University of Montana estimates there were 60 primary wood products facilities active in the state. The majority of these mills are located in the coastal region of the state with only 14 located in the central boreal part of the state. [15] Due to the low number of mills relative to the total forest area in the state, along with the findings that theses mills are concentrated in an area that the spatial data suggests is not experiencing forest loss, it can be determined that there is a low risk for conversion to non-forest or plantation in Alaska. <u>Hawaii:</u> Currently, forests make up 1.7 million acres, or 41%, of Hawaii's total land area and about half of these forests are privately owned. [2] The first Polynesians to arrive on the Hawaiian Islands began to alter the landscape as they cleared the lower-elevation forests		<u>Low risk</u> The following low risk thresholds apply to the entire state of Alaska, non-forested portions of Hawaii, and to the portions of Hawaii that are designated Conservation Districts and are within the forested zone: **Threshold 1** (Thresholds provided in the indicator are not exceeded) and **Threshold 3** (Other available evidence do not challenge a 'low risk' designation): It is unlikely that the thresholds are being exceeded and evidence do not challenge a 'low risk' designation.

Indicator	Sources of Information	Indication of risk, evidence used	Geographical/ Functional scale	Risk designation and determination
		for agriculture and homesteads. The arrival of European settlers accelerated the introduction of non-native plants and animals to the islands, further altering the species makeup and structure of Hawaii's forests. [2, 3] Forested ecosystems in Hawaii are threatened by a myriad of issues including the loss of biodiversity caused by the introduction of non-native species, invasive pests and pathogens, conversion of forestland to other land use (including residential and other urban development), recreational overuse, unsustainable harvest, cattle grazing, and impacts from climate change. [2, 3, 18] In 1961, Hawaii passed the Hawaii State Land Use Law requiring that all land be assigned to one of three "Districts": Urban, Agricultural, or Conservation. This has since been updated to include a fourth 'Rural' District [17]. Conservation Districts are a class of protected lands that were identified as important for the protection of watersheds, critical ecosystem services, forests, park lands, areas vital to endemic plants, fish, and wildlife. [4, 5] About 58% of the state's forests are within Conservation Districts. [3]. The Hawaii Department of Land and Natural Resources regulates all activities that take place within Conservation District boundaries, requiring landowners to apply for a permit from the Department. This oversight provides effective protection from forest conversion to non-forest use or plantation. This is further supported by the lack of plantations (as defined by FSC) within Conservation Districts [2,6,7] and the establishment of most plantations that do exist in Hawaii on land formerly used for agriculture [2, 3]. Forested lands exist within Rural, Urban or Agricultural Districts but do not have the same level of protections as those within Conservation Districts. [2] *Summary:* In the United States, there is no legal framework that consistently or comprehensively governs conversion of forestland to non-forestland or from forestland to plantation. Alaska does not have state-level legislation prohibiting conversion. Analysis suggests that the forest lost occurring in the state (as identified by Global Forest Watch) is driven by wildfires and is therefore not considered permanent forest conversion. [8] Further, a majority of the commercial forest management activities taking place in Alaska are concentrated in portions of the state that spatial data suggests are not experiencing forest loss. [13, 14] Therefore, we can conclude that there is a low risk for conversion of forest to non-forest or plantation in Alaska. In Hawaii, there is state-level legislation that addresses forest conversion. The Hawaii State Land Use Law requires that lands be assigned to a district: Rural, Urban, Agricultural, or Conservation. [4, 5, 17] All activities on lands designated as Conservation Districts are regulated. This oversight provides		

Indicator	Sources of Information	Indication of risk, evidence used	Geographical/ Functional scale	Risk designation and determination
		effective protection from forest conversion for forested lands within Conservation Districts in the State of Hawaii. [2, 5]		

Category 4 Control measures

Indicator	Control measures (M – mandatory / R – recommended)
4.1	No mandatory or recommended control measures are defined.

Category 4 Information sources

No	Source of information	Relevant indicator
1	Forest Stewardship Council US. National Risk Assessment for the Conterminous United States of America (FSC-NRA-USA V1-0). 2019. Retrieved from https://us.fsc.org/en-us/certification/controlled-wood/fsc-us-controlled-wood-national-risk-assessment-us-nra	4.1
2	Hawaii Department of Land and Natural Resources, Division of Forestry and Wildlife. Hawaii Forest Action Plan. 2016. Retrieved from https://dlnr.hawaii.gov/forestry/files/2013/09/Hawaii-Forest-Action-Plan-2016-FINAL.pdf	4.1
3	Hawaii Department of Land and Natural Resources, Division of Forestry and Wildlife. Amended Assessment of Needs, State of Hawai'i. 2018. Retrieved from https://dlnr.hawaii.gov/forestry/files/2018/12/Hawaii-Forest-Legacy-Assessment-of-Needs_FINAL.pdf	4.1
4	DLNR Office of Conservation and Coastal Lands. Conservation District. https://dlnr.hawaii.gov/occl/conservation-district/	4.1
5	Hawaii Administrative Rules, Title 13, Department of Land and Natural Resources, Subtitle 1 Administration, Chapter 5, Conservation District. https://dlnr.hawaii.gov/occl/files/2013/08/13-5-2013.pdf	4.1
6	Conservation District Subzones map: https://www.arcgis.com/home/webmap/viewer.html?useExisting=1&layers=38023ecc0065499b91c8ff95617db9ed	4.1
7	Little, Jr., Elbert L. and Skolmen, Roger G. Common Forest Trees of Hawaii (Native and Introduced). USDA Forest Service. 1989. https://www.fs.fed.us/psw/publications/documents/misc/ah679.pdf	4.1
8	Global Forest Watch. Retrieved from https://www.globalforestwatch.org/map	4.1
9	Alaska Resource Development Council. Alaska's Forest Industry. Retrieved from https://www.akrdc.org/forestry	4.1
10	Woodford, Riley. Regeneration Following Fire Creates Fertile Habitat for Wildlife. Alaska Fish & Wildlife News. Alaska Department of Fish and Game. 2003. Retrieved from http://www.adfg.alaska.gov/index.cfm?adfg=wildlifenews.view_article&articles_id=60	4.1
11	Graham, Jeff S., Joyner, P. Tree Planting in Alaska. Tree Planters' Notes 54(2):4-11. 2011. Retrieved from https://rngr.net/publications/tpn/54-2/tree-planting-in-alaska/at_download/file	4.1
12	Division of Forestry, Alaska Department of Natural Resources. Alaska Forest Resources & Practices Act. 2007. Retrieved from http://forestry.alaska.gov/Assets/pdfs/reforestation/07JuneForestResourcesPracticesAct.pdf	4.1
13	Alaska Forest Facts. Alaska Forest Association, Inc. Retrieved from https://www.akforest.org/facts.htm	4.1

No	Source of information	Relevant indicator
14	Alaska Resource Development Council. Alaska's Forest Industry. Retrieved from https://www.akrdc.org/forestry	4.1
15	University of Montana, Bureau of Business and Economic Research. Alaska's Forest Products Industry and Timber Harvest, 2015. 2017. Retrieved from http://www.merid.org/en/tongassimplementation/~/media/Files/Projects/tongass%20implementation/Alaska%202015%20FIDACS%20Tables%204-18-17.pdf	4.1
16	The National Forest Management Act (NFMA) of 1976 § 6(g). Retrieved from https://www.fs.fed.us/emc/nfma/includes/NFMA1976.pdf	4.1
17	Hawaii Rural Development Council. 2008. Introduction to Hawaii's Land Classification and Management System – A Manual for Residents. Retrieved from http://www.hawaiirdc.org/wp-content/uploads/2012/11/hrdc_land_use_manual_2008.pdf	4.1
18	NatureServe. NatureServe Explorer: An Online Encyclopedia of Life.	

Controlled wood category 5: Wood from forests in which genetically modified trees are planted

NOTE: *Part 2 of the US NRA covers all portions of the states of Alaska and Hawaii, for all types of forests, and excludes the remainder of the US states and territories.*

Overview

The Category 5 risk assessment was completed by a consultant on behalf of FSC International. It was approved following a public consultation, then formally published as part of a Centralized National Risk Assessment (CNRA) for the entire United States (including Categories 1 and 5). This information was updated and included in the approved National Risk Assessment Part 1 (FSC-NRA-USA V1-0), published in April 2019.

As part of FSC US' effort to develop Part 2 of the US NRA for Alaska and Hawaii, staff reviewed the published Category 5 content to assess its applicability to those two states. Because the content evaluates sources that apply to the entire United States, not only the conterminous US, it was determined that the Low Risk conclusions for Category 5 in the published National Risk Assessment Part 1 (FSC-NRA-USA V1-0) also apply to Alaska and Hawaii.

Risk assessment

Indicator	Sources of information	Indication of risk, evidence used	Geographical/ Functional scale	Risk designation and determination
5.1	See the US NRA Part 1 for details on the national-scale assessment. NOTE: GMO papaya trees are found in Hawaii, but are used for agricultural purposes. They are not identified in any literature as components of Hawaii forests, nor as sources of timber products.		Entire Assessment Area	Low risk The following low risk thresholds apply to the entire assessment area: **Threshold 2** (There is no commercial use of GMO (tree) species in the area under assessment) and **Threshold 3** (Other available evidence does not challenge a 'low risk' designation).

Control measures

Indicator	Control measures (M – mandatory / R – recommended)
5.1	Not Applicable

Annex A Glossary

In some instances, the US Forest Management (FM) Standard definitions are included here as guidance. However, for the purposes of the National Risk Assessment, the primary definitions provided below are to be considered normative. Differences between these definitions and the FM certification definitions are due to the different purposes served at different scales.

Control Measure (CM): An action that the organization shall take in order to mitigate the risk of sourcing material from unacceptable sources. (Source: FSC-STD-40-005 V3-1)

NOTE Avoidance of unacceptable sources is always considered an acceptable Control Measure

Low Risk: A conclusion, following a risk assessment, that there is negligible risk that material from unacceptable sources can be sourced from a specific geographic area. (Source: FSC-PRO-60-002a V1-0)

Old Growth: Late-successional forests that were mature at the time of European settlement and the beginning of commercial timber harvesting in a given location, and whose late-successional structural elements and species composition have not been degraded by historic timber harvest. Late successional structures that define old growth usually include high canopy closure, multi-layered, multi-species, dominance by large overstory legacy (i.e. pre European settlement) trees, and a high incidence of large snags, trees with broken tops, and very large coarse woody debris.

- Type 1 Old-Growth: Old-Growth that qualifies as primary forest. That is, it has never been subject to commercial timber harvest.
- Type 2 Old-Growth: Old-Growth forest that has been subject to some level of commercial timber harvest, but still contains the structural elements of Old Growth and legacy trees.

FM Standard Definition: (1) the oldest seral stage in which a plant community is capable of existing on a site, given the frequency of natural disturbance events, or (2) a very old example of a stand dominated by long-lived early- or mid-seral species. The onset of old growth varies by forest community and region. Depending on the frequency and intensity of disturbances, and site conditions, old-growth forest will have different structures, species compositions, and age distributions, and functional capacities than younger forests. Old-growth stands and forests include: Type 1 Old Growth: three acres or more that have never been logged and that display old-growth characteristics. Type 2 Old Growth: 20 acres that have been logged, but which retain significant old-growth structure and functions.

Permanently Protected: For the purposes of this National Risk Assessment (NRA), these are lands where the management intent is equivalent to Status 1 or Status 2 of the GAP Status Codes, as defined in the data standards for the Protected Areas Database-US (http://gapanalysis.usgs.gov/padus/data/standards/).

Status 1: An area having permanent protection from conversion of natural land cover and a mandated management plan in operation to maintain a natural state within which disturbance events (of natural type, frequency, intensity, and legacy) are allowed to proceed without interference or are mimicked through management. For example, federally designated wilderness areas and areas protected under State legislation with similar goals and restrictions.

Status 2: An area having permanent protection from conversion of natural land cover and a mandated management plan in operation to maintain a primarily natural state, but which may receive uses or management practices that degrade the quality of existing natural communities, including suppression of natural disturbance. For example, National Parks, National Wildlife Refuges, Research Natural Areas, local conservation areas and private conservation land, but not National Forests, State-administered lands, historical/cultural areas, etc.

NOTE The USGS maintains a GAP Protected Areas Viewer application that presents those GAP Status 1-4 areas that have been inventoried: http://gapanalysis.usgs.gov/padus/viewer/

Plantation: Forest areas lacking most of the principal characteristics and key elements of native ecosystems as defined by FSC-approved national and regional standards of forest stewardship, which result from the human activities of either planting, sowing or intensive silvicultural treatments (source: FSC-STD-01-001).
The use of establishment or subsequent management practices in planted forest stands that perpetuate the stand-level absence of most principle characteristics and key elements of native forest ecosystems will result in a stand being classified as a plantation. The details addressing ecological conditions used in stand-level classification are outlined in related guidance. Except for highly extenuating circumstances the following are classified as plantations:

- cultivation of exotic species or recognized exotic sub-species;
- block plantings of cloned trees resulting in a major reduction of within-stand genetic diversity compared to what would be found in a natural stand of the same species;
- cultivation of any tree species in areas that were naturally non-forested ecosystems.

See Appendix G of the FSC US Forest Management Standard for: 1) guidance on the classification of plantations; 2) guidance on principle characteristics and key elements of native forest ecosystems; and 3) guidance on management practices related to plantations.

Primary Forest: Forest that has not historically been subject to commercial logging, and has historically been maintained in a forested condition. Forest that has encroached on lands not previously forested is not considered primary. Primary forest includes Type 1 Old-Growth.

NOTE Given natural disturbance and successional regimes, stands of any age or successional stage may qualify as primary forest. For example, a primary forest does not by definition need to contain an abundance of mature trees.

FM Standard Definition: A forest ecosystem with the principal characteristics and key elements of native ecosystems, such as complexity, structure, diversity, an abundance of mature trees, and that is relatively undisturbed by human activity. Human impacts in such forest areas have normally been limited to low levels of hunting, fishing, and very limited harvesting of forest products. Such ecosystems are also referred to as "mature," "old growth," or "virgin" forests. See also old growth.

Specified Risk: A conclusion, following a risk assessment, that there is a certain risk that material from unacceptable sources may be sourced or enter the supply chain from a specific geographic area. The nature and extent of this risk is specified for the purpose of defining efficient Control Measures. (Source: FSC-PRO-60-002a V1-0)

Annex B Risk Designations by US State

This annex provides a summary of risk designation decisions by state.

A 'Specified' notation below indicates that there is specified risk designated within the state, but not the entire region. This table is for general reference only – the normative risk designations are provided in the main document.

State	Category 1: Legality	Category 2: Traditional & Human Rights	Category 3: High Conservation Values						Category 4: Conversion	Category 5: Genetically Modified Organisms
			HCV 1: Species Diversity	HCV 2: Landscape-Level Forests	HCV 3: Rare Ecosystems	HCV 4: Critical Ecosystem Services	HCV 5: Community Needs	HCV 6: Cultural Values		
Alaska	Low	Low	Specified[1]	Low	Specified[4]	Low	Low	Low	Low	Low
Hawaii	Low	Low	Specified[2]	Specified[3]	Specified[5]	Low	Low	Specified[6]	Specified[7]	Low

1 Critical Biodiversity Area: Interior Alaska, Southeast Alaska
2 Critical Biodiversity Area: Hawaiian Islands
3 Landscape Level Forest
4 Old Growth/Primary Forest
5 Native Forest
6 Forested lands not within Conservation Districts
7 Forested lands in Rural, Agricultural or Urban Districts

Annex C G1-S1/S2 Species for HCV 1 Assessment

This annex lists all of the species that met the initial criteria for consideration in the HCV 1 individual species assessment (see Annex D for assessment methodology). The following species are all G1 (critically imperiled at a global scale) and S1 (critically imperiled at a state scale) in at least one state or G1 and S2 (imperiled at a state scale) in at least one state, based upon a data search completed through NatureServe's Explorer.

Name		Taxonomy		Conservation Status			Distribution
Common Name	**Scientific Name**	**Species Group (Broad)**	**Species Group (Fine)**	**Nature-Serve Global Status**	**U.S. Endangered Species Act Status**	**IUCN Red List Status**	**Country: States/ Provinces**
Akikiki	***Oreomystis bairdi***	Birds	Perching Birds	G1	LE: Listed endangered	CR - Critically endangered	US: HI
Akohekohe	***Palmeria dolei***	Birds	Perching Birds	G1	LE: Listed endangered	CR - Critically endangered	US: HI
Nihoa Finch	***Telespiza ultima***	Birds	Perching Birds	G1	LE: Listed endangered	CR - Critically endangered	US: HI
Hawaiian Duck	***Anas wyvilliana***	Birds	Waterfowl	G1	LE: Listed endangered	EN - Endangered	US: HI
Oahu 'Elepaio	***Chasiempis ibidis***	Birds	Perching Birds	G1	LE: Listed endangered	EN - Endangered	US: HI
Nukupu'u	***Hemignathus lucidus***	Birds	Perching Birds	G1	LE: Listed endangered	CR - Critically endangered	US: HI
Short-tailed Albatross	***Phoebastria albatrus***	Birds	Other Birds	G1	LE: Listed endangered	VU - Vulnerable	US: AK, CA, HI, WA CA: BC
Puaiohi	***Myadestes palmeri***	Birds	Perching Birds	G1	LE: Listed endangered	CR - Critically endangered	US: HI
North Pacific Right Whale	***Eubalaena japonica***	Mammals	Whales and Dolphins	G1	LE: Listed endangered	EN - Endangered	US: AK, CA, HI, OR CA: BC
Kiwikiu	***Pseudonestor xanthophrys***	Birds	Perching Birds	G1	LE: Listed endangered	CR - Critically endangered	US: HI
'O'u	***Psittirostra psittacea***	Birds	Perching Birds	G1	LE: Listed endangered	CR - Critically endangered	US: HI
Po'Ouli	***Melamprosops phaeosoma***	Birds	Perching Birds	G1	LE: Listed endangered	CR - Critically endangered	US: HI

Palila	***Loxioides bailleui***	Birds	Perching Birds	G1	LE: Listed endangered	CR - Critically endangered	US: HI
'Akepa	***Loxops coccineus***	Birds	Perching Birds	G1		EN - Endangered	US: HI
Laysan Finch	***Telespiza cantans***	Birds	Perching Birds	G1	LE: Listed endangered	VU - Vulnerable	US: HI
Hawaiian Goose	***Branta sandvicensis***	Birds	Waterfowl	G1	LE: Listed endangered	VU - Vulnerable	US: HI
Akiapolaau	***Hemignathus wilsoni***	Birds	Perching Birds	G1	LE: Listed endangered	EN - Endangered	US: HI
Laysan Duck	***Anas laysanensis***	Birds	Waterfowl	G1	LE: Listed endangered	CR - Critically endangered	US: HI
Millerbird	***Acrocephalus familiaris***	Birds	Perching Birds	G1		CR - Critically endangered	US: HI