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Summary

The Siuslaw National Forest proposes to allow commercial Special Forest Product collection. The project area is located within the lands administered by the Siuslaw National Forest, Oregon. This action is needed to regulate the collection of commercial Special Forest Products and to provide for sustainability of these products while protecting the environment. Tribal, incidental and personal Special Forest Products collections are minor and are categorically excluded from documentation in an environmental assessment or environmental impact statement. Tribal, incidental and personal Special Forest Products collections will adhere to the amended Forest Plan Standards and Guidelines.

The proposed action would determine which commercial special forest products may be gathered, where on the Forest they may be gathered, and how much may be gathered. (Alternative 2)

In addition, two non-significant Forest Plan amendments are proposed.

- The Wildlife Forest Plan Standard and Guideline, "Prohibit(ing) collection and transportation of Special Forest Products by motorized means (i.e., chainsaws, vehicles, etc.) or firearms from March 1 to October 1 each year, except for use of roads by vehicles," would be amended. This sentence would be amended to read, "There is also the potential to disturb nesting birds during the nesting season (March 1 to September 30). Disturbance events during the nesting season and associated with SFP harvest will comply with the most recent Biological Opinion for Disturbance Only Activities consulted on with the USFWS."
- The Forest Plan Standards and Guidelines for MA 6 (Cascade Head Scenic Research Area) and MA 7 (Cascade Head Experimental Forest) would be amended to allow tribal collection.

Based upon the effects of the alternatives, the responsible official will decide which special forest products may be gathered, where on the Forest they may be gathered, and how much may be gathered.

Chapter 1 - Introduction

Document Structure

The Forest Service has prepared this Environmental Assessment in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This Environmental Assessment discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and alternatives. The document is organized into five parts:

- **Introduction:** The section includes information on the history of the project proposal, the purpose of and need for the project, and the agency's proposal for achieving that purpose and need. This section also details how the Forest Service informed the public of the proposal and how the public responded.
- **Comparison of Alternatives, including the Proposed Action:** This section provides a more detailed description of the agency's proposed action. The alternative was developed based on significant issues. This discussion also includes possible mitigation measures.
- **Environmental Consequences:** This section describes the environmental effects of implementing the proposed action and other alternatives. This analysis is organized by resource components.
- **Agencies and Persons Consulted:** This section provides a list of preparers and agencies consulted during the development of the environmental assessment.
- **Appendices:** The appendices provide more detailed information to support the analyses presented in the environmental assessment.

Additional documentation, including more detailed analyses of project-area resources, may be found in the project planning record located at the Siuslaw National Forest Supervisor's Office in Corvallis, Oregon.

Background

On March 2, 1995 a Decision Notice was signed by Jim Furnish, Forest Supervisor, Siuslaw National Forest amending the Siuslaw National Forest Plan (USDA, 1990) Forest-wide Standards and Guidelines regulating the collection of Special Forest Products on the National Forest System lands administered by the Siuslaw National Forest (USDA, 1995a). This Decision authorized and regulated the forest-wide collection of Special Forest Products, provided that an additional site-specific analysis was completed and documented prior to the issuance of permits for a given area and Special Forest Product. Annual Special Forest Product meetings setting the site-specific policy for collections, development of permit regulations, and development of Special Forest Product collection maps were considered meeting the site-specific analysis requirement in the Decision Notice. Recent changes in staff along with a review of existing documents indicate the annual review process was not adequate to meet the intent of the 1995 decision. This

Environmental Assessment has been developed to bring that site-specific information together to allow the public to comment on the program and for the responsible official to make a site-specific decision.

An August 22, 2005 letter from Regional Forester Linda Goodman (Goodman, 2005) established a regional policy to conduct moss inventories and analysis prior to issuance of any permit or contract to determine baseline levels. At that time, the Siuslaw National Forest suspended all commercial moss harvest permits. Researcher JeriLynn Peck has completed an inventory and identified sustainable moss harvest rates for the Hebo Ranger District (Peck, 2007). Commercial moss harvest is included in the proposed alternative.

Two non-significant Forest Plan amendments are included in the Proposed Alternative. One allows compliance with current Biological Opinions consulted on with the US Fish and Wildlife Service. Allowing tribal collection of special forest products within the Cascade Head Scenic Research Area is the other.

The area considered in this environmental assessment are the lands administered by the Siuslaw National Forest. The land allocations from the Northwest Forest Plan (USDA,USDI, 1994) allocated lands to six broad categories. The Forest has approximately 58,309 acres Congressionally Reserved, 461,860 acres Late-Successional Reserve, 37,061 acres Adaptive Management, 29,978 acres Administratively Withdrawn and 58,888 acres Matrix. Riparian Reserves overlay all allocations and is estimated to encompass about 85 to 90 percent of the Forest.

Purpose and Need for Action

The purpose of this project is to regulate the collection of commercial Special Forest Products to provide for use at a sustainable level while protecting the environment. This action is needed, because 1) it provides limits on amounts, location, or method of collection to control over harvesting of SFP resources, 2) it ensures consistent SFP administration across the Forest, and 3) it protects other resources from adverse effects incurred from SFP collection. This action responds to the goals and objectives outlined in the Siuslaw National Forest Land and Resource Management Plan (Forest Plan; USDA, 1990) as amended by the Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl (ROD; USDA/USDI, 1994b), and amended by the Special Forest Products Program Decision (USDA, 1995a). It does not hinder the attainment of the desired conditions described in the plan.

Proposed Action

The action proposed by the Forest Service to meet the purpose and need would determine which commercial special forest products may be gathered, where on the Forest they may be gathered, and how much may be gathered. (Chapter 2, Alternative 2 – The Proposed Action))

In addition, two non-significant Forest Plan amendments are proposed.

- The Wildlife Forest Plan Standard and Guideline, "Prohibit(ing) collection and transportation of Special Forest Products by motorized means (i.e., chainsaws, vehicles, etc.) or firearms from March 1 to October 1 each year, except for use of roads by vehicles," would be amended. This sentence would be amended to read, "There is also the potential to disturb nesting birds during the nesting season (March 1 to September 30). Disturbance events during the nesting season and associated with SFP harvest will comply with the most recent Biological Opinion for Disturbance Only Activities consulted on with the USFWS."
- The Forest Plan Standards and Guidelines for MA 6 (Cascade Head Scenic Research Area) and MA 7 (Cascade Head Experimental Forest) would be amended to allow tribal collection.

Pacific yew is not addressed in this EA since it is covered in the Pacific Yew Final Environmental Statement Record of Decision. (USDA, USDI, FDA, 1993)

Matsutake mushroom harvest in the Oregon Dunes is not addressed in this EA since it is covered in the Decision for the Oregon Dunes National Recreation Area Environmental Assessment – Mushroom Harvesting. (USDA, FS, 1993)

Decision Framework

Given the purpose and need, the deciding official reviews the alternatives in order to make the following decisions:

1) Does limiting the amount, location, or method of collection control over harvesting SFP resources?

2) Is administration of SFP program consistent across the Forest?

3) Are resources protected from adverse effects during SFP collection?

Public Involvement

The proposal has been listed in the Schedule of Proposed Actions since the Winter 2006 Project Update. The proposal was provided to the public and other agencies for comment during scoping from January 14, 2006 through March 10, 2006.

No comments were received. The interdisciplinary team developed a list of issues to address.

Issues

Significant issues are defined as those directly or indirectly caused by implementing the proposed action. Non-significant issues are defined as those that are: 1) outside the scope of the proposed action; 2) already decided by law, regulation, Forest Plan, or other higher level decision; 3) irrelevant to the decision to be made; or 4) conjectural and not supported by scientific or factual evidence. The Council on Environmental Quality (CEQ) NEPA regulations require this delineation in Sec. 1501.7, "…identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review (Sec. 1506.3)

The Forest Service interdisciplinary team identified one significant issue during scoping. Scoping consisted of reviewing the Forest Plan and its amendments, reviewing the Annual

Special Forest Products meeting notes, reviewing current product plans and permits, and scoping the public,.

Issue - Sustainability of SFP and Ecosystems:

In this EA SFPs have been grouped, as shown below, based on similar products, collection methods, and effects on plants. By combining the products in this manner, the environmental impacts of each alternative can be assessed by group rather than by individual species. The grouping also would allow management flexibility as new SFPs are identified.

Group 1: Plants, Shrubs, And Trees Total Removal.

Group 2: Plants, Shrubs, And Trees Partial Removal.

Group 3: Moss

Group 4: Fungi.

Group 5: Wood Products

SFPs cover a range of forest plants and plant parts, such as fruits, seeds, and foliage. While studies (e.g., effects of collection) exist for some of the plants, others are not covered by documented research. Floral green plant research has been conducted regarding regeneration rates and harvest methods (Cocksedge and Titus, 2006, Ballard and Huntsinger, 2006). Moss inventory and sustainable harvest research on the Hebo Ranger District has recently been completed (Peck, 2007). Appendix D - Special Forest Product Plant Characteristics, provides a compilation of the key indicators listed below by specie.

- Key indicators for this issue include commercial SFP abundance, the method of SFP collection, the effects from harvest and the risk to sustainability.

Chapter 2 - Alternatives, including the Proposed Action

This chapter describes and compares the alternatives considered for the Special Forest Product Program. It includes a description of each alternative considered. This section also presents the alternatives in comparative form, sharply defining the differences between each alternative and providing a clear basis for choice among options by the decision maker and the public. Some of the information used to compare the alternatives is based upon the design of the alternative and some of the information is based upon the environmental, social and economic effects of implementing each alternative.

Alternatives

Alternative 1

No Action

Under the No Action alternative, the March 2, 1995 Decision Notice that amended the Siuslaw National Forest Plan (USDA, FS, 1990) Forest-wide Standards and Guidelines (USDA FS, 1995a) that were designed to be consistent with the Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl (USDA/USDI, 1994b) would continue to guide management of the project area. Completed site-specific analysis and documentation prior to the issuance of permits for a given area and Special Forest Product would be needed. In addition, the August 22, 2005 Regional Forester letter (USDA FS, 2005) banning commercial moss harvest until an inventory and analysis were completed would supercede the Forest-wide Standards and Guidelines. The Forest-wide Standards and Guidelines are listed in Appendix A.

Alternative 2

The Proposed Action

The action proposed by the Forest Service to meet the purpose and need would determine which commercial special forest products may be gathered, where on the Forest they may be gathered, and how much may be gathered. This alternative would meet the need for a site-specific analysis and documentation prior to the issuance of permits for a given area and Special Forest Product.

Two non-significant Forest Plan amendments are proposed.

- The Wildlife Forest Plan Standard and Guideline, "Prohibit(ing) collection and transportation of Special Forest Products by motorized means (i.e., chainsaws, vehicles, etc.) or firearms from March 1 to October 1 each year, except for use of roads by vehicles," would be amended. This sentence would be amended to read, "There is also the potential to disturb nesting birds during the nesting season (March 1 to September 30). Disturbance events during the nesting season and associated with SFP harvest will comply with the most recent Biological Opinion for Disturbance Only Activities consulted on with the USFWS."
- The Forest Plan Standards and Guidelines for MA 6 (Cascade Head Scenic Research Area) and MA 7 (Cascade Head Experimental Forest) would be amended to allow tribal collection.

Selecting this alternative would result in the site-specific management actions listed below. This alternative is responsive to the issues and is consistent with Forest Plan direction found in the March 2, 1995 Decision Notice amending the Siuslaw National Forest Plan (USDA, FS, 1990) Forest-wide Standards and Guidelines and Standards and Guidelines and the ROD (USDA/USDI, 1994b). In addition, a commercial moss harvest level for the Hebo Ranger District, guided by the research of JeriLynn Peck (Peck, 2007) on moss inventory and sustainable harvest, is included in the proposed action. This research responds to the August 22, 2005

Regional Forester letter (USDA FS, 2005) establishing a regional policy to conduct inventories and analyses.

Site Specific Management Requirements and Mitigation Measures

In addition to the Forest-wide Standards and Guidelines (Appendix A), the proposed site-specific commercial Special Forest Product regulations have been developed to meet the purpose and need and respond to the issues.

Common to all Products

- Values charged for products would be reviewed annually and would not be less than values established by the Region.
- Commercial harvesting would be prohibited in Wilderness Areas, Special Interest Areas (SIA), Corvallis Watershed, Cascade Head Experimental Forest and Research Natural Areas, except for Noble fir cone harvest within Marys Peak SIA (see Cones).
- Forest products would be required to be transported off the National Forest on the same day it was harvested.
- Harvested forest products would be hand carried to the road. Motorized methods of transporting forest products from the forest to the road would be prohibited, except in the Off Highway Vehicle (OHV) open areas in the Oregon Dunes National Recreation Area.
- The use of any National Forest campground as a collection point or headquarters would be prohibited.
- Camping on the National Forest while commercially harvesting special forest products, would require a separate camping permit.
- Areas encompassed by sensitive archaeological or historical sites would be excluded from SFP collection.
- To avoid the potential spread of noxious weeds, commercial permits would not be issued in areas that are heavily infested with weeds.
- Special Forest Product collection access would be allowed on Forest Service Key Roads. Access on Non-Key Forest Roads would be limited to those roads that are maintained open during other projects as approved by the Special Forest Product Coordinator or Sale Administrator.

Permittee Identification

A Rearview Mirror Card would need to be clearly displayed in the permittee's vehicle, except for firewood permits, and the permittee would need to be able to show a copy of the permit when asked by any Forest Service or Law Enforcement personnel. For Greenery and Mushroom permits, the permittee would need to wear the photo Identification card issued by the Forest

Service at all times while harvesting. The permittee would need to be able to present a copy of the permit when asked by any Forest Service or Law Enforcement personnel. Firewood permits would include load tickets that would replace the need for a Rearview Mirror Card.

Permit Removal Table

For products with specific quantities, such as moss or boughs, a table is included with the permit. The table is required to be filled out each day of collection to record the amount of product removed. A product removal table is not required for firewood since load tickets would be issued.

Group 1 –Plants, Shrubs, and Trees Total Removal

Transplants

Transplants are any plants, shrubs, or trees that are dug for the purpose of transplanting live native plants by nurseries or individual home owners. Commercial harvest would be limited to 20,000 plants per year.

Permits would specify species and size of transplants. All collections would be at least 200 feet from recreational sites and streams. To minimize disturbance to the area, holes created by digging the transplant would be refilled by the permittee. No more than 25 percent of the number of available transplants within the permit area would be allowed to be removed (Beach grass would not be limited). Harvest would be allowed only along Forest Service road cutbanks and ditchlines, with the exception that Off Highway Vehicles would be allowed to access dunal areas within "OHV open areas" and on "designated routes." Harvesting would be prohibited within 100 yards of western snowy plover nesting areas from March 15 to September 15. The permit would be approved by a Special Forest Product Coordinator or Sale Administrator.

Alder Puddle Sticks

Alder puddle sticks are used for stirring molten aluminum. Requests for puddle sticks have declined in the last few years. Commercial harvest would be limited to 100,000 pieces per year.

Alder puddle sticks are 1 to 4 inches in diameter and up to 12 feet in length. A maximum 2 inch stump height would be required. Harvest would be allowed only along designated Forest Service road cutbanks and ditchlines. Power equipment (i.e., chainsaws) has the potential to disturb nesting birds (Northern Spotted Owl and Marbled Murrelet) during the nesting season (March 1 to September 30). Disturbance events during the nesting season and associated with SFP harvest will comply with the most recent Biological Opinion for Disturbance Only Activities consulted on with the USFWS. The use of handsaws would be allowed and is not considered disturbance. The permit would be approved by a Special Forest Product Coordinator or Sale Administrator.

Cascara Bark

Cascara bark is harvested and sold for the production of a laxative. Commercial Cascara harvest would be limited to 14,000 pounds on the Central Coast Ranger District and 7,000 pounds on the Hebo Ranger District.

All cascara collection permit applications would be reviewed on a case-by-case basis to ensure an important band-tailed pigeon food source is not depleted. All slash and debris would be lopped and scattered so that it is no closer than 15 feet from the edges of roads, ditches, culverts, and streams. All collections would be at least 200 feet from recreational sites and streams. Trees would be felled prior to peeling. Stump heights would not be less than 12 inches above the ground. Stumps would not be peeled. Power equipment (i.e., chainsaws) has the potential to disturb nesting birds (Northern Spotted Owl and Marbled Murrelet) during the nesting season (March 1 to September 30). Disturbance events during the nesting season and associated with SFP harvest will comply with the most recent Biological Opinion for Disturbance Only Activities consulted on with the USFWS. The use of handsaws would be allowed and is not considered disturbance. The permit would be approved by a Special Forest Product Coordinator or Sale Administrator.

Roots

Roots are harvested for medicinal uses, basketry and other uses. Most of these permits are issued for personal use. Commercial use requirements are the same as personal use. Commercial harvest would be limited to 10,000 pounds per year.

All collections would be at least 200 feet from recreational sites and streams. To minimize disturbance to the area, holes created by digging the transplant would be refilled by the permittee. No more than 25 percent of the number of available roots within the permit area would be allowed to be removed. The permit would be approved by a Special Forest Product Coordinator or Sale Administrator.

Christmas Trees

Christmas trees are sold seasonally as individual tree permits. Occasionally, a permit (i.e., Boy scouts) is sold as a commercial permit in a specifically designated area. Commercial harvest would be limited to 1,000 trees per year.

Christmas tree cutting or digging would be prohibited within 200 feet of campgrounds and developed recreation sites, 100 feet of designated hiking trails or surface water (lakes or streams). In addition to the areas identified as prohibited from commercial harvest under the section; Common to All Products; the top of Mt. Hebo from the intersection of Forest Roads 14 and 1432 to North Lake and Marys Peak which includes all forest lands north of Highway 34 in Benton County, including all National Forest land accessed by the Marys Peak Road and the Woods Creek Road are prohibited. Holes dug would be filled by the permittee. A tree more than 12 feet tall would not be allowed to be topped, cut, or dug. The maximum stump height would be 6

inches high with no live branches attached to it. A tree could be cut or dug only if another tree is within 10 feet. No cutting or digging of Pacific Yew would be permitted. No use of All Terrain (ATV) or Off Highway (OHV) vehicles would be allowed. The permit would be approved by a Special Forest Product Coordinator or Sale Administrator.

Group 2 - Plants, Shrubs, and Trees Partial Removal

Boughs

Tree boughs are primarily used during the Christmas season for wreaths. The Siuslaw National Forest sells very few commercial bough permits. Bough harvesters are generally looking for noble fir and western redcedar boughs which are not as common in the Coast Range as they are in the Cascades. Douglas-fir is more common but not as desirable for bough harvest. Commercial harvest would be limited to 100 tons per year.

Permits would be issued for harvest in plantations only. The permit would designate the species. Bough harvest from the top half of the tree would be prohibited. All collections would be at least 200 feet from recreational sites and streams. All slash and debris would be lopped and scattered so that it is no closer than 15 feet from the edges of roads, ditches, culverts, and streams. The permit would be approved by a Special Forest Product Coordinator or Sale Administrator.

Cones

Conifer tree cones are collected for seed sources. Cones are also collected for ornamental purposes. Commercial harvest would be limited to 20,000 pounds per year.

Felling or otherwise damaging any tree or shrub would be prohibited. Power equipment (i.e., chainsaws) has the potential to disturb nesting birds (Northern Spotted Owl and Marbled Murrelet) during the nesting season (March 1 to September 30). Disturbance events during the nesting season and associated with SFP harvest will comply with the most recent Biological Opinion for Disturbance Only Activities consulted on with the USFWS. The use of handsaws would be allowed and is not considered disturbance.

An Ornamental cone permit would only permit harvest of cones that have fallen on the ground.

Noble fir cone harvest permits within Marys Peak SIA would allow noble fir cone harvest within 100 feet horizontal distance from any meadow only. Spur or gaff climbing would be prohibited. No use of off road vehicles would be allowed for any reason.

The permit would be approved by a Special Forest Product Coordinator or Sale Administrator.

Grass and Plant Seed

Commercial harvest would be limited to 500 pounds per year. All collections would be at least 200 feet from recreational sites and streams. No more than 25 percent removal would be

allowed within permit area. Plants would not be dug for transplants. The permit would be approved by a Special Forest Product Coordinator or Sale Administrator.

Berries

Commercial harvest would be limited to 100 permits per year. All collections would be at least 200 feet from recreational sites and streams. Permittee would avoid damaging the plants. The plants would not be allowed to be dug for transplanting. The permit would be approved by a Special Forest Product Coordinator or Sale Administrator.

Greenery and Cuttings

Greenery includes salal, huckleberry, dwarf Oregon grape, and swordfern. These products are used by the floral industry. Cuttings are other allowable species. Commercial harvest would be limited to 1,000 permits per year.

Careful clipping of the cutting without damaging the plant would be required. Plants would not be allowed to be dug for transplanting. Only 25 percent would be allowed to be removed from an individual plant. All collections would be at least 200 feet from recreational sites and streams. Each person harvesting would have to have a valid permit. Harvest amount would be regulated by length of permit. The permit would be approved by a Special Forest Product Coordinator or Sale Administrator.

Vine Maple, Willow or Dogwood Limbs and Hazel Shoots

Vine maple limbs are used for basketry, furniture and smoking meats. Most of these permits are sold for personal use. Commercial use requirements are the same as personal use. Commercial harvest would be limited to 50 tons per year.

All slash and debris would be lopped and scattered so that it is no closer than 15 feet from the edges of roads, ditches, culverts, and streams. All collections would be at least 200 feet from recreational sites and streams. No more than 25 percent of the number of available vine maples within the permit area would be allowed to be harvested. Only every other limb would be harvested. Power equipment (i.e., chainsaws) has the potential to disturb nesting birds (Northern Spotted Owl and Marbled Murrelet) during the nesting season (March 1 to September 30). Disturbance events during the nesting season and associated with SFP harvest will comply with the most recent Biological Opinion for Disturbance Only Activities consulted on with the USFWS. The use of handsaws would be allowed and is not considered disturbance. The permit would be approved by a Special Forest Product Coordinator or Sale Administrator.

Group 3 – Moss

Researcher JeriLynn Peck has completed an inventory and identified sustainable moss harvest rates for the Hebo Ranger District (Peck, 2007). Commercial harvest would be limited to 16,000 pounds per year. A harvest area would be open to harvest for twelve years. Only one harvest

area would be open at a time. The harvest areas would rotate every twelve years. The four currently established moss harvest areas would continue.

Commercial moss harvest would be allowed by permit on the Hebo Ranger District only, until an inventory and analysis is developed for the Central Coast Ranger District.

The harvest area would include only those stands that are under 110 years of age. All collections would be at least 200 feet from recreational sites and streams. Felling or otherwise damaging any tree or shrub is prohibited. Within a harvest area, moss could only be collected from every other harvestable moss mat on shrubs (e.g., vine maple) or trees (e.g., alder or conifer where moss is removed from the main bole). Moss would be collected only from standing trees or shrubs. The harvest of moss growing on the ground, including on rocks and downed logs would be prohibited, as is the harvest of moss greater than 20 feet above ground. The permit would be approved by a Special Forest Product Coordinator or Sale Administrator.

Group 4 – Fungi

Mushrooms

Matsutake collection specifically within the Oregon Dunes National Recreation Area is covered in a separate environmental document (USDA, 1993). Matsutake permits would be sold separately from other mushroom species.

Individual commercial permits are sold for other mushrooms. Commercial harvest would be limited to 1,000 permits per year. Permits are unlimited by weight or amount. All collections would be at least 200 feet from recreational sites and streams. Soil would be replaced by the permittee after removing mushrooms from the ground. Raking or other surface disturbance of the moss, organic matter, duff, or soil larger than the diameter of the mushroom cap would be prohibited. Raking would be considered disturbing the soil by hand or by using a tool such as a rake or hoe. Surrounding vegetation or down woody debris would not be allowed to be disturbed by the permittee. Harvesting would be allowed only during daylight hours. No artificial light would be permitted while harvesting. Each person would be required to have a permit. The permit would be approved by a Special Forest Product Coordinator or Sale Administrator.

Conks

Permits to collect conks are a very rare request. Commercial harvest would be limited to 50 permits per year. All collections would be at least 200 feet from recreational sites and streams. Permits would be prohibited within Marys Peak Special Interest Area. The permit would be approved by a Special Forest Product Coordinator or Sale Administrator

Group 5 – Wood Products

Firewood

Most firewood is sold for personal use. Commercial use requirements are the same as personal use. Harvest would be limited to 5,000 cords per year (Includes both commercial and personal). Firewood would be in designated areas or specially marked. One validated load ticket would be attached to the back of the load for every 1/3 cord or portion thereof, prior to leaving the cutting area. The attached load ticket would need to be visible from behind the vehicle. Load tickets would be validated by removing the applicable month and date in its entirety. All slash and debris would be lopped and scattered so that it is no closer than 15 feet from the edges of roads, ditches, culverts, and streams. Use of all wheel and track mounted logging and skidding equipment must be approved by the Special Forest Product Coordinator or Sale Administrator and would be prohibited from leaving the road surface. Firewood would be removed in lengths of 6 feet or less. The maximum allowable stump height would be 12 inches. Only decked material, not standing trees, would be designated for removal from a timber sale landing. The permit and length of permit would be approved by a Special Forest Product Coordinator or Sale Administrator.

Poles/Post/Split Rails

Most post, poles and split rail permits are personal use. Commercial use requirements are the same as personal use. Commercial harvest would be limited to 25 permits per year. The Forest Service would designate all material for harvest. The large-end diameter of individual post, pole, or rail would not exceed 9 inches, or 28 inches in circumference. The maximum allowable stump height would be 12 inches. All slash and debris would be lopped and scattered so that it is no closer than 15 feet from the edges of roads, ditches, culverts, and streams. Pacific Yew would not be cut. The permit would be approved by a Special Forest Product Coordinator or Sale Administrator.

Cedar Shake Bolts

Large fallen cedar is rare on Siuslaw National Forest. Standing large cedar is not expected to be harvested. Tribal cultural use of cedar is a priority. Additionally, large fallen cedars would be evaluated for use in watershed improvement projects. However, if a fallen cedar is not wanted by the tribes or needed for watershed improvement projects and it is blocking road access, a shake bolt or other permit may be prudent for removal.

The Forest Service would designate all material for harvest. All slash and debris would be lopped and scattered so that it is no closer than 15 feet from the edges of roads, ditches, culverts, and streams. All collections would be at least 200 feet from streams. The permit would be approved by a Special Forest Product Coordinator or Sale Administrator.

Alternative 3

Same as Alternative 2 except no commercial moss harvest

This alternative is identical to Alternative 2 except it does not allow commercial moss harvest. It would meet the purpose and need by determining which commercial special forest products may be gathered, where on the Forest they may be gathered, and how much may be gathered, with the exception of commercially harvested moss.

Monitoring

Annual Special Forest Product Review Team

Each year the review team would meet to review policy and procedures to ensure that the harvest of Special Forest Products is in accordance with the protection measures set forth in this document. Changes to policy or procedure consistent with the Forest Plan Standards and Guidelines and this Environmental Assessment would be documented. If policy or procedures considered are not consistent with the Forest Plan Standards and guidelines or this Environmental Assessment a correction, supplement, or amendment may be necessary.

If monitoring shows that the established Management Requirement and Mitigation Measures are not meeting the goals of sustainability or protecting the resources then the Review Team would recommend adjustments to the Management Requirements and Mitigation Measures.

If the results from monitoring are not consistent with the Forest Plan Standards and Guidelines, then the Review Team would recommend adjustments to the Management Requirements and Mitigation Measures.

Chapter 3 - Environmental Consequences

This section summarizes the physical, biological, social and economic environments of the affected project area and the potential changes to those environments due to implementation of the alternatives. It also presents the scientific and analytical basis for comparison of alternatives presented in the chart above.

Sustainability

Implementation of commercial Special Forest Products collection as described in Alternatives 2 and 3 would have no effect on the diversity and abundance of native and desired non-native plant and fungi species on the Siuslaw National Forest (Appendix D). The potential effects of harvest are twofold, 1) harvest of rare or uncommon species could diminish populations, leading to extirpation at some scale and 2) intensive harvest of more common species in a localized area, while not jeopardizing their existence project-wide, could reduce sustainability for that species within the immediate harvest area and have unforeseen impacts to the ecological functioning of the locale.

Project design reduces the risk of harvest of rare and uncommon species to an acceptable level. This is accomplished by maintaining a list of all species that are permissible for harvest. The list excludes all federal threatened and endangered species, species designated as Forest Service Region 6 sensitive, and Northwest Forest Plan survey and manage species. In addition, the list is reviewed by a botanist to identify species that may not be a conservation concern Forest-wide, but may be locally uncommon and therefore could be impacted by harvest. Any request to harvest plants that are not on the list of harvest species is reviewed on a case-by-case basis by a botanist. To reduce the possibility that the Forest Service sensitive fungus, noble polypore (*Bridgeoporus nobilissimus*), would be inadvertently collected along with other conks, areas where this species could occur will be excluded from conk harvest.

A species inventory was not conducted for this project, however plot data collected to develop the Field Guide to the Forested Plant Associations of the Northern Coast Range (McCain and Diaz 2002) can be used to infer distribution and abundance for plant species (Appendix D). All plants identified for harvest, with the exception of two, were found to be both well distributed and relatively common within the northern Oregon Coast Range.

Cascara (*Rhamnus purshiana*) is broadly distributed across the northern Oregon Coast Range, being a component of 78 percent of forested plant associations described for the area; however ,it also tends to be of limited occurrence, occupying only 4 percent of area for the plots in which it was found. It is unlikely that cascara harvest would lead to extirpation across the entire project area, but local populations could be impacted. A reduction of local cascara populations could also impact the native band-tailed pigeon, for which cascara fruit is an important food source.

Bitter cherry (*Prunus emarginata*) was found to be a component of 15 percent of forested plant associations described from the area and occupied 4 percent of the plot area where it was found, making it somewhat uncommon. Because bitter cherry is a pioneer species adapted to open habitat, it is probably underrepresented in the plot data, which focused on developed forest stands. It is possible that harvest could impact local populations on the Siuslaw National Forest.

To ensure the sustainability of cascara and bitter cherry at the local level, all permit applications for both species will be reviewed on a case-by-case basis.

There is little data to determine how the harvest of mushrooms affects sustainability of the entire organism. Because mushrooms are fruiting bodies, harvest has been thought to be analogous to picking an apple off the tree, having no effect on the parent. Some concern has been raised that continued harvest may deplete the spores that are available to begin new colonies. The oldest ongoing chanterelle mushroom monitoring study in North America has looked at the effects of harvest on plots established in 1986 in the Mt. Hood National Forest. Thirteen years of data provided no indication that harvest suppressed mushroom production (Pilz et al. 2003). While it is difficult to say with certainty that harvesting has no effect on mushroom sustainability, fluctuations in annual production will be assessed at the annual meeting. Also, the availability of mushrooms may dictate the amount of interest there is in commercial harvest, thus self-regulating the level of harvest activity.

Plot data from McCain et al. (2002) infer that all other species listed as permissible for harvest have distributions and abundance that would not be measurably impacted by harvest (Appendix D). To further ensure that local impacts do not occur from intense harvest activity, a number of project design criteria will be implemented. These include limiting the number of transplants, greenery, or seed harvested to 25 percent of the total amount available in an area, and annually reviewing the status of species on the list.

An August 22, 2005 letter from Regional Forester Linda Goodman established a regional policy to conduct moss inventories and analysis to determine sustainable harvest levels prior to issuance of any permit or contract. At that time, the Siuslaw National Forest suspended all commercial moss harvest permits. Researcher JeriLynn Peck has completed an inventory and identified sustainable moss harvest rates for the Hebo Ranger District (Peck, 2007). The length of time between harvests on a given portion of the Hebo Ranger District was chosen as 50 years (Harvest Interval) after considering moss regrowth rates, continuity of yield and maintenance of biodiversity. To model this, the District was divided equally into five harvest areas. Sustainable harvest was modeled at 16,000 pounds per year. Only one harvest area was open for harvest per decade.

Commercial moss harvest would be allowed by permit on the Hebo Ranger District only, until an inventory and analysis is developed for the Central Coast Ranger District.

In a personal communication with JeriLynn Peck, varying the number of harvest areas to as few as three with a 15 year rotation at 16,000 pounds per year would be consistent with the research and provide sustainability and maintenance of biodiversity. Currently, the Hebo Ranger

District has established three distinct harvest areas north of Highway 18 and one south of Highway 18. Harvest would be limited to one area for a rotation (12 years) while the other harvest areas are closed to harvest. Following a rotation, the harvested area would be closed and harvest moved to one of the other areas for a rotation. Harvest levels would be limited to 16,000 pounds per year.

The harvest area would include only those stands that are under 110 years of age. All collections would be at least 200 feet from recreational sites and streams. Felling or otherwise damaging any tree or shrub is prohibited. Within a harvest area, moss could only be collected from every other harvestable moss mat on shrubs (e.g., vine maple) or on trees (e.g., alder or conifer where moss is removed from the main bole). Moss would be collected only from standing trees or shrubs. The harvest of moss growing on the ground, including on rocks and downed logs would be prohibited, as is the harvest of moss greater than 20 feet above ground. The designated area would be approved by a Special Forest Product Coordinator or Sale Administrator.

Future monitoring may reveal that harvest levels could or should be adjusted. These monitoring results would be documented in the Annual Special Forest Products meeting notes and made available to the public.

Observations by Special Forest Product Coordinators and Sale Administrators brought to the annual Special Forest Products Review indicate that the current level of commercial Special Forest Product harvest is sustainable. These observations are substantiated by Appendix D - Special Forest Product Plant Characteristics. Cumulative effects to sustainability are insignificant and not measurable.

The Special Forest Products Review established a maximum allowable harvest for Cascara at 21,000 pounds per year (7,000 at Hebo Ranger District and 14,000 at the Central Coast Ranger District) several years ago to ensure sustainability. Recent research by JeriLynn Peck (Peck, 2007) prompted the proposal, in Alternative 2, for establishing a commercial moss harvest level of 16,000 pounds per year at the Hebo Ranger District.

Establishment of maximum harvest levels for the remaining products is a combination of field observations that indicate these maximum levels would not threaten their sustainability and that the Forests' current capability would be able to administer the program. The Special Forest Product annual review would continue to track the quantities removed and the sustainability of the products.

Table 2: Permit Quantities between 2002 and 2005

Commercial Special Forest Product	2002 to 2005 Permits	20002 to 2005 quantity	Average permits per year	Average quantity per year	Maximum harvest level per year
Alder Puddle Sticks	37	47,000 pieces	9	11,750	100,000 pieces
Boughs	44	71 tons	11	18 tons	100 tons
Cascara Bark	81	40,500 lbs	20	10,125 lbs	21,000 lbs
*Firewood (commercial)	728	8218 cords	182	2055 cords	5,000 cords
Greenery (permits)	1032	** Permit length	258	** Permit length	1,000 permits
Greenery (leases)	49	** Permit length	Last leases sold 2002	** Permit length	N/A
Misc. Plant Seeds	3	57 lbs	1	14 lbs	500 lbs.
Moss	736	497,400 lbs	184	124,350 lbs	16,000 lbs
Mushrooms	911	** Permit length	228	** Permit length	1,000 permits
Roots	19	4100 lbs	5	1025 lbs	10,000 lbs
Transplants	150	31,155 plants	38	7789 plants	20,000 plants
Seed Cones	11	1560 lbs	3	390 lbs	20,000 lbs.
Vine Maple limbs	30	56 tons	8	14 tons	50 tons

* Commercial firewood is approximately 25 percent of the firewood program. Personal use firewood is about 75 percent of the program.

** Quantity is controlled by the length of the permit. The harvester is limited by time and not quantity.

Economic Impacts

Greenery, mushrooms, firewood, transplants and moss constitute the majority of the commercially harvested Special Forest Products. Greenery harvest appears to be increasing somewhat. Quantifying the increase is difficult because the Forest has switched back from leases to individual permits. Mushrooms are very dependant on weather conditions that are conducive to mushroom production and the corresponding sales of permits reflects that. Commercial firewood makes up approximately 25 percent of the firewood program. Personal use firewood makes up the other 75 percent. Other commercially harvested products, such cascara bark, vine maple limbs and others, are important to harvester, but do not currently make up much of the program.

Table 2: Permit Quantities between 2002 and 2005

Commercial Special Forest Product	2002 to 2005 Permits	20002 to 2005 receipts	Average permits per year	Average receipts per year
Alder Puddle Sticks	37	$940	9	$235
Boughs	44	$1,410	11	$353
Cascara Bark	81	$2,015	20	$504
*Firewood (commercial)	728	$22,552	182	$5,638
Greenery (permits)	1032	$67,500	258	$16,875
Greenery (leases)	49	$47,297	Last leases sold 2002	$11,824
Misc. Plant Seeds	3	$50	1	$13
Moss	736	$24,620	184	$6,155
Mushrooms	911	$25,634	228	$6,409
Roots	19	$410	5	$103
Transplants	150	$17,036	38	$4,259
Seed Cones	11	$1,460	3	$365
Vine Maple limbs	30	$560	8	$140
TOTAL	3831	$211,484	957	$52,871

* Commercial firewood is approximately 25 percent of the firewood program. Personal use firewood is about 75 percent of the program.

The Forest estimates that the cost of these permits accounts for about 10 percent of the actual retail market value.

The commercial harvest of Special Forest Products has created opportunities for primary and secondary employment and economic growth and diversification throughout surrounding communities. Primary harvesters sell the product to brush sheds, mushroom buyers or firewood consumers. The brush sheds market greenery to floral brokers worldwide. Mushroom buyers market the product to grocery store and restaurant brokers around the globe. The quantity and availability of these products are key factors in determining the level of economic development

opportunity for this industry. Other public lands, i.e., BLM, State, County, in addition to private lands contribute to the availability of Special Forest Products.

No reduction in Special Forest Product demand is foreseen. Greenery and other Special Forest Products availability currently exceed demand. Mushroom harvest seems to have leveled at around 250 permits during a good mushroom year and does not exceed supply.

Moss harvest would be the only exception, where moss demand remains high and the Forest is proposing a decrease in harvest or prohibit harvest altogether. Reduction in availability of commercial moss may have an affect on business opportunities and employment in the local industry. Additionally, illegal harvest of moss may increase.

Noxious Weeds

Noxious weeds and other invasive plant species occur within the project area. A weed risk analysis determined that project implementation has a moderate risk of introducing or spreading invasive plants because of the potential for activities to occur within known infestations and because vehicles, which commonly move weed seed from site to site in tire tread and on the chassis, will be used in project activities. This risk was reduced from a high level by including the following project design criteria:

1. Restrict passenger and off-highway vehicles to existing roads and trails open to their use; and
2. Do not issue permits for areas where known invasive plant infestations are likely to spread as the result of vehicle use or ground disturbance associated with project activities.

The goal of the design criteria is to reduce the risk of establishing or spreading invasive species to the same level as that posed by the casual forest visitor.

Wildlife

The affected environment is defined as all areas to be affected directly or indirectly by the proposed action and not merely the immediate area involved in the action. For the purposes of this evaluation, the affected environment includes all lands on the Siuslaw National Forest. Mountainous terrain, high precipitation, and productive forests generally characterize the area. Terrestrial wildlife on the Siuslaw Forest would include all species of mammals, birds, reptiles, amphibians and invertebrates that use all seral stages of coastal Douglas fir forests. These include species that would most commonly inhabit forest openings (i.e. quail, grouse, elk, etc.) young stands of densely stock conifers (i.e. thrushes, warblers, weasels, hares, etc.) mature conifer (i.e. kinglets, wrens, flying squirrels) and old growth (large woodpeckers, northern spotted owls, murrelets, and marten). The affected environment would also include numerous species only associated with special habitats like riparian areas (i.e. lakes, rivers, marshes, and streams) such as frogs, salamanders, turtles, waterfowl, and shorebirds, or cliff habitats that provide roosting

and nesting for vultures and marine birds, or caves that offer refuge to bats and some small mammals and reptiles.

Terrestrial Vertebrate and Invertebrate Species (*Forest Wildlife Biologist Report, April 2006*)

There is little difference between Alternatives with regards to what will actually occur on the Siuslaw Forest landscape related to Special Forest Product (SFP) harvest. The main distinction between the Alternatives is that Alternatives 2 and 3 allow SFP harvest with controls but more clearly defines where, when, and how they are to be removed. As a result, the environmental impacts of both alternatives are considered together in the following analysis of effects.

Listed species-- As required by the Endangered Species Act of 1973, as amended, a biological assessment (a project-file document) has been prepared for this project. This assessment evaluates and describes the potential effects of proposed actions on species listed under the Endangered Species Act that may be found on the Siuslaw National Forest. A 6-step evaluation process that describes impacts and determination of effects to all listed species is available for a detailed analysis and discussions (Forest Wildlife Biologist Report, 2006). The following is a summary of findings from the report.

Marbled murrelet-- This species is known to occupy many areas on the Siuslaw National Forest (495 occupied sites) and is assumed to be present in mature conifer stands (270,300 acres) that comprise approximately half the forested landscape. Murrelets use upper canopy environments that contain large limbs with large moss mats in mature/old growth conifer forests for nesting and rear their young after fledging in near-shore ocean environments. SFP harvest has the potential to impact nesting substrate and disturb nesting birds during the nesting season (April 1 to September 15). Disturbance events during the nesting season and associated with SFP harvest will comply with the most recent Biological Opinion for Disturbance Only Projects consulted on with the USFWS. Therefore, because of above consultation clearance, and because of the standards and guidelines that limit the height of SFP harvest to below 50 feet and prohibits any moss harvest above 20 feet, there are no impacts anticipated due to the proposed action on murrelet habitat, or to individuals due to disturbance. As a result, implementation of the proposed action will have *no effect* that is additive to the disturbance disclosed in the above reference consultation document on marbled murrelet.

Northern spotted owl-- This species is known to occupy many areas on the Siuslaw National Forest (149 nest sites) and is assumed to be present in mature conifer stands (270,300 acres) that comprise approximately half the forest landscape. Northern spotted owls use large cavities for nesting and forage on a variety of mammalian prey species (flying squirrels, mice, voles, etc.). SFP harvest does not impact nesting habitats of northern spotted owls but could interrupt normal

foraging patterns if prey substrate/food resources are reduced by SFP harvest. There is also the potential to disturb nesting birds during the nesting season (March 1 to September 30). Disturbance events during the nesting season and associated with SFP harvest will comply with the most recent Biological Opinion for Disturbance Only Activities consulted on with the USFWS. Therefore, because of above consultation clearance, the standards and guidelines that limit the height of SFP harvest to below 50 feet, limit the amount and distribution of SFP harvest to maintain a component of all SFP species across the landscape, limit the removal of wood products to only precommercial and commercial thinning projects or removal of designated hazard trees or as required for road and recreation site maintenance, and prohibits the harvest of moss above 20 feet, there are no impacts anticipated due to the proposed action on northern spotted owl habitat, or to individuals due to disturbance. As a result, the proposed action will have *no effect* that would be additive to any disturbance disclosed in the above reference consultation on northern spotted owls.

Bald eagle-- This species is known to occupy 27 nesting territories on the Siuslaw National Forest and is assumed to use mature conifer habitats within 1.0 miles on either side of major rivers (i.e. Siuslaw, Alsea, Umpqua, Nestucca etc.) and within 0.5 miles on either side of major tributaries (N. Fk Siuslaw, Five Rivers, Beaver Creek, etc.). Northern bald eagles often use the largest trees in a stand for nesting and are highly visible to humans in an around occupied nest territories. Northern bald eagles eat primarily fish with small amounts of rodents and carrion as available.

SFP harvest does not impact nesting habitats of northern bald eagles but has the potential to interrupt normal breeding behavior and feeding of young during the nesting season (January 1 to August 31), if near active nests. Disturbance events during the nesting season and associated with SFP harvest will comply with the most recent Biological Opinion for Disturbance Only Activities consulted on with the USFWS. Therefore, because harvest of SFP does not remove any habitat components used by northern bald eagles for nesting, and the standards and guidelines prohibit harvest within 0.5 miles from any active nest, there are no impacts anticipated from the proposed action on northern bald eagle habitat or to individuals due to disturbance. As a result, the proposed action will have *no effect* that is additive to the disturbance disclosed in the above referenced consultation document on northern bald eagles.

Western Snowy Plover-- Western snowy plovers use open sand environments near estuaries or along reaches of beach with suitable open sandy beach habitat above high tide. Nesting season is from March 15 to September 15 with on the ground signage and ropes to prevent human entry into key nesting areas. The proposed action prohibits removal of any SFP from within 100 yards of western snowy plover nesting areas during the nesting season (March 15 to September 15). Removal of any vegetation from areas surrounding nesting sites will not impact western snowy plovers due to the favorable result of opening up vegetated areas and creating open, sparsely

vegetated habitats. As a result, because the proposed action is restricted within 100 yards of plover nesting areas between March 15 and September 15 (thereby eliminating any potential for disturbance impacts) and all product removal will result in an increase in open, sparsely vegetated habitats, the proposed action will have *no effect* on western snowy plovers.

Oregon Silverspot Butterfly-- The Oregon silverspot butterfly requires one of three types of grasslands with nearby meadows. These are: coastal salt spray meadows, stabilized dunes, and/or montane meadows, which are surrounded by forests. There are only eight remaining locations where the habitat and the silverspot occurs. The grasslands that the silverspot inhabits provides larval host plants, adult nectar sources and wind protection. The wind protection is provided by the forest fringes around the meadow. The butterfly may retreat into these forests on especially windy days. Oregon silverspot butterfly habitat on the Siuslaw National Forest is constrained to the top of Mt. Hebo on the Hebo Ranger District and to a number of scattered coastal meadows on the Central Coast Ranger District. The Management Area (1) that contains all the suitable Oregon silverspot butterfly habitat is only available for SFP harvest if said harvest will further the objectives of the Management Area. As a result, there are no impacts anticipated to Oregon silverspot butterfly and the proposed action with have *no effect* on the Oregon silverspot butterfly.

American Brown Pelican- The American brown pelican uses coastal environments for feeding and roosting, rarely using any lands administered by the Siuslaw National Forest. Its presence is often associated with low fishing flights over river mouths and above the breaker zone along beaches. As a result, the American brown pelican does not have suitable habitat in any of the areas that would be available for SFP harvest. Therefore, there are no impacts anticipated to the American brown pelican and the proposed action will have *no effect* on the American brown pelican.

Designated Critical Habitat-- As part of the recovery effort, listed species may have habitat designated by the U. S. Fish and Wildlife Service and published in the Federal Register that is necessary for the species recovery. Habitat designated as such is called Critical Habitat (CH). The following analysis present anticipated impacts to designated CH for each species that has CH on the Siuslaw National Forest.

Northern Spotted Owl CH-- The Final Rule for Designation of Critical Habitat (CH) for northern spotted owls was published in the Federal Register on January 15, 1992. There are four primary constituent habitat elements that comprise CH that are identified in the Rule: 1) nesting habitat, 2) roosting habitat, 3) foraging habitat, and 4) dispersal habitat. Nesting habitat requirements include areas of large mature/old growth trees in a multilayer stand with suitable cavities that can be used for nesting. Roosting habitat is also made up of areas of large mature/old growth trees but does not necessarily require multilayed characteristics or cavities.

Foraging habitat can be both nesting and roosting habitat but has to provide suitable habitat for forage species (flying squirrels, tree voles, mice, etc.). Dispersal habitat is any conifer dominated stand of at least 40 percent canopy closure by trees of at least 11 inches diameter at breast height (DBH).

The proposed SFP harvest has the potential to impact foraging habitat as an indirect result of reducing suitable habitat for northern spotted owl prey species. The proposed SFP harvest does not have the potential to impact suitable nesting, roosting or dispersal habitat because elements important to each of these (mature/old growth conifer trees and snags in forest stands) will not be removed or altered by the harvest of SFP. Restrictions placed on the removal of some SFP that could otherwise indirectly impact northern spotted owl CH if not controlled include no harvest above 50 feet, no harvest of moss above 20 feet, only 25percent of all available trees and shrubs and ferns could be removed for transplants, only 25percent of any one plant could be removed for floral greenery, and only 25percent of vine maple limbs could be removed for basketry. In addition, removal of wood products would be limited to precommercial and commercial thinning projects, designated hazard trees, and what is required to maintain roads and recreation sites. Also, soil disturbance from fungus harvest is restricted to only the area of the above ground fruiting body. Because of the limits placed on the removal of SFP in northern spotted owl CH, the proposed action will have *no effect* on designated CH for northern spotted owls.

Marbled Murrelet CH-- The Final Rule for Designation CH for marbled murrelet was published in the Federal Register on May 24, 1996. This rule described primary constituent elements that are key features of habitat necessary for species recovery. They are: (1) space for individual and population growth, and for normal behavior; (2) food, water, air, light, minerals or other nutritional or physiological requirements; (3) cover or shelter; (4) sites for breeding, reproduction, or rearing of offspring; and (5) habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species.

Unrestricted SFP harvest has the potential to impact aspects of three marbled murrelet CH primary constituent elements. They are: 1) cover and shelter, 2) sites for breeding or reproduction, and 3) habitats protected from disturbance. Cover and shelter and sites for breeding and reproduction are connected in that forests suitable for murrelet nesting provided both together. That is, suitable nest trees contain all of the following that provide for both cover and shelter and breeding:

Trees that occur within 50 miles (81 km) of the coast and below 2,925 ft. (900 m) in elevation (Burger 2002);

Trees that are one of four species: Western hemlock, Douglas-fir, Sitka spruce or western red cedar (Nelson & Wilson 2002:24, 44);

Trees ≥ 19.1 in. (49 cm) (dbh) in diameter, > 107 ft. (33 m) in height, has at least one platform ≥ 5.9 in. (15 cm) in diameter, nesting substrate (e.g., moss, epiphytes, duff) on that

platform, and an access route through the canopy that a murrelet could use to approach and land on the platform (Burger 2002, Nelson & Wilson 2002:24, 27, 42, 97, 100);

And trees that have one or more tree branches or foliage, either on the tree with potential structure or on a surrounding tree, that provides protective cover over the platform (Nelson & Wilson 2002:98 & 99);

SFP harvest restrictions eliminate the potential for impacts to murrelet CH by prohibiting harvest of moss (the main nest substrate used) above 20 feet, and the harvest of any SFP above 50 feet. Because of the above restrictions on product harvest and clearance with the USFWS for disturbance events, the proposed action will have *no effect* on marbled murrelet CH.

Western Snowy Plover CH-- The Final Rule for Designation of CH for western snowy plover was published in the Federal Register on September 29, 2005. All habitats designated as CH are included in the area of the proposed action.

Impacts to critical habitat can occur if the proposed action would change any of the primary constituent elements of designated CH. The primary constituent elements for CH western snowy plover include: (1) Sparsely vegetated areas above daily high tides (such as sandy beaches, dune systems immediately inland of an active beach face, salt flats, seasonally exposed gravel bars, dredge spoil sites, artificial salt ponds and adjoining levees) that are relatively undisturbed by the presence of humans, pets, vehicles or human-attracted predators (essential for reproduction, food, shelter from predators, protection from disturbance, and space for growth and normal behavior);. (2) sparsely vegetated sandy beach, mud flats, gravel bars or artificial salt ponds subject to daily tidal inundation but not currently under water, that support small invertebrates such as crabs, worms, flies, beetles, sandhoppers, clams, and ostracods (essential for food); and (3) surf or tide-cast organic debris such as seaweed or driftwood located on open substrates such as those mentioned above (essential to support small invertebrates for food, and to provide shelter from predators and weather for reproduction).

The proposed action prohibits removal of any SFP within 100 yards of nesting areas during the nesting season (March 15 to September 15). Removal of any vegetation within CH will not impact western snowy plover due to the favorable result of opening up vegetated areas and creating open sparsely vegetated habitats. As a result, because the proposed action is restricted within 100 yards of plover nesting areas during the nesting season, thereby eliminating any disturbance impacts, and all product removal will result in an increase in open sparsely vegetated habitats, the proposed action will have *no effect* on designated CH for western snowy plover.

Sensitive Species-- Of the Regional Forester Sensitive species listed as either documented or suspected on the Siuslaw National Forest, the following species could potentially occur in and have suitable habitat in the area available for SFP harvest:

American peregrine falcon
Baird's shrew
Pacific shrew
Oregon red tree vole
Pacific fringe-tailed bat
Pacific fisher
California wolverine
Southern torrent salamander
Columbia torrent salamander
Foothill yellow-legged frog
Northwestern pond turtle
Evening Fieldslug

American peregrine falcon-- This species uses all coastal environments for opportunistic hunting, usually focusing on shorebird and wetland bird species, and does not nest in any of the habitats available for SFP harvest. As a result, there are no anticipated impacts to American peregrine falcon habitats or to individuals; and the proposed action will not cause this species to be driven closer to Federal listing or threaten its viability across its range.

Baird's Shrew-- This species is associated with Westside lowland conifer/hardwood forest, Westside oak and dry Douglas fir forests, and montane mixed conifer forests (Johnson and O'Neil, 2001). Habitat use for this species suggests ground dwelling, using logs and surface substrates. Food habitats include insects and insect eggs, as well as a variety of other invertebrates (Johnson and O'Neil, 2001). Due to the proposed action's standards and guidelines for harvest of SFP that calls for disbursed and minimal product removal in space and time; no harvest from the ground, logs or rocks; and due to the low likelihood that product removal would overlap any of the resource requirements for this species, there are no impacts anticipated to this species due to implementation of the proposed action. Therefore, the proposed action will not cause this species to be driven closer to Federal listing or threaten its viability across its range.

Pacific Shrew-- This species is distributed along the Oregon coast from Siltcoos River and Siltcoos Lake, Lane County, south into northwestern California. Habitats for this species are alder/salmonberry, riparian alder, and skunk cabbage marsh (Maser, 1981, p. 53). The sub-species *S. pacificus pacificus* is not thoroughly described in the literature so the *S. pacificus* information was used for this analysis. Habitat use for this species suggests ground dwelling, using logs and surface substrates. Food includes fungi, insects, insect eggs, as well as a variety of other invertebrates, including mollusks. Due to the proposed action's standards and guidelines for harvest of SFP that calls for disbursed and minimal product removal in space and time; no

harvest from the ground, logs or rocks; and due to the low likelihood that product removal would overlap any of the resource requirements for this species, there are no impacts anticipated to this species due to implementation of the proposed action. Therefore, the proposed action will not cause this species to be driven closer to Federal listing or threaten its viability across its range.

Oregon Red Tree Vole-- This species habitat association is mature and old growth conifer forests and would be expected to occur throughout the Siuslaw National Forest. Oregon red tree voles are very specialized feeders that feed almost exclusively on Douglas-fir needles, but sometimes eat needles of Western hemlock, Sitka spruce, or true firs, and occasionally the bark of the interior of twigs (Johnson and O'Neil, 2001). This species can spend most, if not all, their life high in the canopy of trees and rarely, if at all, use the forest floor. Due to the proposed action's standards and guidelines for harvest of SFP that calls for disbursed and minimal product removal in space and time, only slight, if any, overlap of product removal with forage needs (bough collection below 20 foot height only), there are no measurable impacts anticipated to this species due to implementation of the proposed action. Therefore, the proposed action will not cause this species to be driven closer to Federal listing or threaten its viability across its range.

Pacific Fringed-Tailed Bat-- This species inhabits caves, mines, rock crevices and buildings for roosting. Little is known about foraging areas, but habitats where they have been documented are salmonberry in proximity to immature conifer (Maser, 1981, p. 94). The Siuslaw National Forest landscape does not have suitable mine or cave habitat, but does have rock crevices and some buildings. Foraging can include wide areas, and this species is suspected to occur on the Forest. Implementation of the proposed action would have no impact on this species because no alteration of existing habitats is planned. Therefore, the proposed action will not cause this species to be driven closer to Federal listing or threaten its viability across its range.

Pacific Fisher-- This species is listed as a candidate for Federal listing with the US Fish and Wildlife Service and as such, is included on the Regional Foresters Sensitive Species list. This species is closely associated with Westside lowland coniferous forests that contain medium to large diameter trees, snags for denning, and suitable prey habitat of logs and forage species. Unrestricted SFP harvest has the potential to indirectly impact Pacific fisher by reducing prey species cover or forage. Restrictions placed on the removal of SFP that could otherwise indirectly impact prey species of Pacific fisher if not controlled include no harvest of any SFP above 50 feet, no harvest of moss above 20 feet, only 25percent of all available trees and shrubs and ferns could be removed for transplants, only 25percent of any one plant could be removed for floral greenery, and only 25percent of vine maple limbs could be removed for basketry. In addition, removal of firewood would be limited to only precommercial and commercial thinning projects or designated hazard trees, or as required to maintain roads and recreation sites. Also, soil disturbance from fungus harvest is restricted to only the area of the above ground fruiting body.

Because these restrictions would not alter existing habitats or would impact prey species, the proposed action would have no impact on this species. Therefore, the proposed action will not cause this species to be driven closer to Federal listing or threaten its viability across its range.

Southern Torrent Salamander-- This species lives in very cold, clear springs, seeps and headwater streams and is documented in the northern Coast Range south of the Little Nestucca River and the Grand Ronde Valley (Corkran and Thoms, 1996, p. 53). Based on the habitat association above and protection measures for SFP harvest that prohibits product removal from within 200 feet of streams for greenery and 100 feet for Christmas trees, there are no anticipated impacts to this species by the proposed action. Therefore, the proposed action will not cause this species to be driven closer to Federal listing or threaten its viability across its range.

Columbian Torrent Salamander-- This species lives in very cold, clear springs, seeps and headwater streams and is documented in the northern Coast Range north of the Little Nestucca river and the Grand Ronde Valley (Corkran and Thoms, 1996, p. 53). Based on the habitat association above and protection measures for SFP harvest that prohibits product removal from within 200 feet of streams for greenery and 100 feet for Christmas trees, there are no anticipated impacts to this species by the proposed action. Therefore, the proposed action will not cause this species to be driven closer to Federal listing or threaten its viability across its range.

Foothill Yellow-Legged Frog-- This species lives in sections of low-gradient streams with exposed bedrock or rock and gravel substrates (Corkran and Thoms, 1996, p. 113). Based on the habitat association above and protection measures for SFP harvest that prohibits product removal from within 200 feet of streams for greenery and 100 feet for Christmas trees, there are no anticipated impacts to this species by the proposed action. Therefore, the proposed action will not cause this species to be driven closer to Federal listing or threaten its viability across its range.

Northwestern Pond Turtle--This species lives in ponds, marshes, streams, and irrigation ditches, typically with rocky or muddy bottoms and grown in with watercress, cattails, water lilies, or other aquatic vegetation (Stebbins 1966, p. 83). The only noted difference between this species and subspecies are the markings and shape of the inguinal plates (Ibid, p84). Based on the habitat association above and protection measures for SFP harvest that prohibits removal within 200 feet of streams for greenery and 100 feet for Christmas trees, there are no anticipated impacts to this species by the proposed action. Therefore, the proposed action will not cause this species to be driven closer to Federal listing or threaten its viability across its range.

California Wolverine-- This species is not included in the eight Mustelids that reside in coastal Oregon (Maser, 1981, p. 288) and few, if any, areas on the Forest are high enough (>4,000 feet) or contain suitable habitat components (talus slopes and large areas of low to no human presence) to make the Forest truly suitable habitat. Although this species is listed as

suspected on the Forest in the Regional Foresters Sensitive Species list, based on the above habitat and distribution information and the dispersed SFP harvest strategy, there are no anticipated impacts to this species by the proposed action. Therefore, the proposed action will not cause this species to be driven closer to Federal listing or threaten its viability across its range.

Evening Field Slug-- This species is primarily associated with wet meadows in forested habitats in a variety of low vegetation litter, logs, rocks and debris. Little is known about this species or its habitat. Based on the habitat association and several protection measures for SFP harvest such as; prohibiting removal within 200 feet of streams for greenery and 100 feet for Christmas trees; and due to the proposed action's standards and guidelines for harvest of SFP that calls for disbursed and minimal product removal in space and time, no harvest from the ground, logs or rocks, and due to the low likelihood that product removal would overlap any of the resource requirements for this species, there are no impacts anticipated to this species due to implementation of the proposed action. Therefore, the proposed action would not cause them to be driven closer to Federal listing or threaten their viability across their range.

General Wildlife-- The project area consists of the entire Siuslaw National Forest, and there is a wide and varied assemblage of wildlife species found in and around the habitats where SFP harvest would occur. Habitats vary from old growth forests of temperate Douglas-fir and Sitka spruce, to mature and mid-seral conifer and deciduous forests, to early successional forest habitats and wetlands in the deflation plain along the Oregon Dunes National Recreation Area.

Game species that would most likely occur in habitats where SFP harvest would be permitted include big game species (elk, black-tailed deer, black bear), upland game bird species (ruffed and blue grouse, mountain quail and turkey), and small game (hares, rabbits, and squirrels). Because of site-specific restrictions placed on SFP harvest that avoid unique habitats such as wetlands and stream/river environments, there are no furbearers (except coyote, American marten, and bobcat) or waterfowl anticipated in areas of SFP harvest.

There are numerous non-game wildlife species that would be expected to reside in areas open to SFP harvest. They include reptiles (snakes, lizards, turtles), birds (hawks, owls, woodpeckers, warblers, vireos, finches, etc.) and mammals (mice, voles, rats, chipmunks, raccoons, etc.). Because of site-specific restrictions placed on SFP harvest that avoid unique habitats such as wetlands and stream/river environments, there are no amphibians (frogs, toads, newts, and salamanders) anticipated in areas of SFP harvest.

Many wildlife species share habitats that would be subject to SFP harvest and the potential to reduce either the reproductive or feeding opportunity for many species could occur with unregulated harvest. Feeding could be disrupted due to removal of plant food resources (berries, plant material, etc.), causing individuals to move to other locations where competition for food might occur. This would result in a greater risk of predation due to unfamiliar habitats, or

reduced fitness and being more vulnerable to seasonal stresses. Reproductive potential and fitness could also be impacted through displacement from familiar nesting areas or loss of suitable nesting habitat. Displacement would result in reduced reproductive productivity and reduced numbers of individuals to sustain local populations.

Overall, there are no measurable impacts anticipated to general wildlife species due to implementation of the proposed action, due to the protection measures for SFP harvesting, such as the proposed action's standards and guidelines for harvest of SFP that calls for disbursed and minimal product removal in space and time, no harvest from the ground, logs, or rocks, no harvest within 200 feet of streams, no harvest above 20 feet in height, and due to the low likelihood that product removal would overlap many of the resource requirements for most of these species.

Survey and Manage Species-- The Survey and Manage Species analyzed below are those identified in the Northwest Forest Plan that require pre-disturbance surveys for all proposed habitat altering activities. The following provides information about their habitat relationships, their likelihood of occurrence in the project area, and if surveyed for, the results of the surveys and management recommendations for protection of known sites.

Vertebrates-- The only Survey and Manage vertebrate on the Siuslaw National Forest is the red tree vole. Since this species is also a Regional Forester Sensitive Species, any effects to this species are discussed above in that section. Overall, however, due to the proposed action's standards and guidelines for harvest of SFP that calls for disbursed and minimal product removal in space and time, and only slight if any overlap of product removal with forage needs (e.g. bough collection below 20 foot height only), there are no measurable impacts anticipated to this species due to implementation of the proposed action. As a result, no pre-disturbance surveys are required for the red tree vole because no suitable habitat would be expected to be altered by the proposed action.

Invertebrates-- There are two species of Survey and Manage invertebrates (mollusks) on the Siuslaw National Forest that occur only on the Hebo Ranger District. These species require pre-disturbance surveys, if proposed actions are likely to disturb their habitat.

Puget Oregonian-- The Puget Oregonian has a close association to deciduous litter on the forest floor particularly around hardwood logs, under swordfern, hardwood trees, and especially big leaf maple. Based on habitat associations and protection measures for SFP harvest that prohibits removal within 200 feet of streams for greenery and 100 feet for Christmas trees, the disbursed and minimal product removal in space and time, no harvest from the ground, logs, or rocks, and due to the low likelihood that product removal would overlap any of the resource

requirements for this species, there are no impacts anticipated to this species and no pre-disturbance surveys are required.

Evening Fieldslug-- Since the evening filed slug is also a Regional Forester Sensitive Species, any effects to this species are discussed above in that section. There are no measurable impacts anticipated to this species due to implementation of the proposed action because of protection measures such as the proposed action's standards and guidelines for harvest of SFP that calls for disbursed and minimal product removal in space and time, and only, slight if, any overlap of product removal with forage needs (e.g. bough collection below 20 foot height only). As a result, no pre-disturbance surveys are required for the evening field slug because no suitable habitat would be expected to be altered by the proposed action.

Management Indicator Species (MIS)--Siuslaw National Forest Resource Management Plan MIS species are species that represent a larger group or guild of species that are thought to be indicators of habitat change. The MIS species on the Siuslaw Forest include American marten for mature older age stands, northern spotted owl for old growth conifer communities, pileated woodpecker for large snags and defective trees, primary cavity nesters (i.e. downy and hairy woodpeckers, red-breasted sapsucker, flicker, and red-breasted nuthatch) for small to medium size dead and defective trees, ruffed grouse for hardwood and deciduous mixed habitats, Aleutian Canada goose, bald eagle, brown pelican, Oregon silverspot butterfly, peregrine falcon, Roosevelt elk, and western snowy plover. MIS species listed above that have already received analysis in previous sections and will not be analyzed further here: the northern spotted owl, ruffed grouse, Aleutian Canada goose, bald eagle, brown pelican, Oregon silverspot butterfly, peregrine falcon, Roosevelt elk, and western snowy plover.

Of the remaining species (pileated woodpecker, downy and hairy woodpeckers, red-breasted sapsucker, flicker, red-breasted nuthatch and American marten) all are cavity users of small to large size snags or large logs for feeding nesting or denning. The primary component of suitable habitat for these species is snags and coarse woody debris. The proposed action has the potential to impact all of these species due to unrestricted removal of material for firewood. However due to required standards placed on the removal of firewood that includes harvest in only precommercial and commercial thinning projects, removal of only designated hazard trees, or as required for road and recreation site maintenance, there are no impacts anticipated to any of the MIS species listed above.

Neotropical Land Birds-- Neotropical land birds are species that inhabit a wide variety of vegetative types across all areas of the Siuslaw National Forest. Habitats used by neotropicals are abundant and widespread with no direct impacts anticipated to most of the species that use the

Siuslaw National Forest due to protection measures and restrictions placed on the amount, type, location, and means of SFP harvest (see discussion above for General Wildlife).

However one neotropical bird has declined as evidenced by recent monitoring (Nott, et.al. 2005) and warrants specific attention. The Western flycatcher (*Empidonax difficilis occidentalis*) has declined significantly (0.01=P<0.05) at one or more monitoring stations. The suggested reason for the decline (Nott, et.al. 2005) is stated as:

> *"Our results strongly suggest that "western" flycatcher is sensitive to proximal edges (i.e. patch size) of coniferous habitat. It may be sensitive to increased risks of nest predation and parasitism. The numbers of young and reproductive success are higher at those stations associated with a high total core area of coniferous forest habitat totaling 72percent of the landscape. Large tracts of old-growth forest (large core areas of coniferous forest) and dry-upland and riparian sites (thinner canopy and some mixed habitats) are beneficial to the reproductive success of "western" flycatchers."*

Given the above description of what is understood to be the cause of decline in western flycatcher abundance (loss of large contiguous blocks of mature/old growth conifer habitat) and the minimal if any effect SFP harvest would have on conditions causing western flycatcher declines, there are no impacts to western flycatchers anticipated due to the proposed action.

Fisheries

There would be no direct, indirect, or cumulative effects upon fisheries. This is due to the design criteria that prohibit harvest within 200 feet of streams or lakes.

Botanical

Botanical species documented from the Siuslaw National Forest (or suspected of occurring there) that are included on the Regional Forester's Sensitive Species List or managed as survey and manage, could potentially occur within areas harvested for special forest products. None of these species are targeted for harvest. The effects analysis determines the potential to incidentally harvest or otherwise impact species.

Sensitive Botanical Species (*Forest Botanist Report, May 2006*)

Regional Forester's Sensitive botanical species that are documented from or suspected to occur on the Forest include:

	Common Name	**Functional Group**
Vascular Plants		
Abronia umbellata	Pink sandverbena	Terrestrial Plant

	Common Name	**Functional Group**
Anemone oregana var. *felix*	Oregon bog anemone	Terrestrial Plant
Cardamine pattersonii	Saddle Mountain bittercress	Terrestrial Plant
Carex macrochaeta	Large-awn sedge	Terrestrial Plant
Carex pluriflora	Several-flowered sedge	Terrestrial Plant
Cimifuga elata	Tall bugbane	Terrestrial Plant
Cordylanthus maritimus ssp. *palustris*	Salt-marsh bird's beak	Terrestrial Plant
Dodecantheon austrofrigidum	Frigid shooting star	Terrestrial Plant
Eriophorum chamissonis	Chamisso's cotton grass	Terrestrial Plant
Erythronium elegans	Elegant fawn-lily	Terrestrial Plant
Filipendula occidentalis	Queen-of-the-forest	Terrestrial Plant
Fritillaria camschatcensis	Black lily	Terrestrial Plant
Geum triflorum var. *campanulatum*	Western red avens	Terrestrial Plant
Hydrocotyle verticillata	Water pennywort	Terrestrial Plant
Lilium occidentalis	Western lily	Terrestrial Plant
Limonium californicum	Marsh Rosemary	Terrestrial Plant
Lycopodiella inundata	Northern bog club moss	Terrestrial Plant
Ophioglossum pusillum	Adder's tongue	Terrestrial Plant
Saxifragia hitchcockiana	Saddle Mountain saxifrage	Terrestrial Plant
Senecio flettii	Flett's groundsel	Terrestrial Plant
Sidalcea nelsoniana	Nelson's checker mallow	Terrestrial Plant
Sidalcea hirtipes	Hairy-stemmed checker mallow	Terrestrial Plant
Silene douglasii var. *oraria*	Cascade Head catchfly	Terrestrial Plant
Utricularia gibba	Humped bladderwort	Aquatic Plant
Wolffia columbiana	Columbia watermeal	Aquatic Plant
Wolffia punctata	Dotted watermeal	Aquatic Plant
Bryophytes		
Encalypta brevicolla var. crumiana	Extinguisher moss	Terrestrial bryophyte
Herbertus sakuraii	Herbertus	Terrestrial bryophyte
Iwatsukiella leucotricha	Hairy leaf-tip moss	Epiphytic bryophyte
Plagiochila semidecurrens var *alaskana*	Alaska cedar-shake	Terrestrial bryophyte
Radula brunnea	Brown flatwort	Terrestrial bryophyte
Schistostega pennata	Green goblin moss	Terrestrial bryophyte
Tetraphis geniculata	Four-tooth bent knee moss	Terrestrial bryophyte
Lichens		
Bryoria pseudocapillaris		Epiphytic lichen
Bryoria spiralifera		Epiphytic lichen
Dermatocarpon luridum	Brook lichen	Aquatic lichen
Erioderma sorediatum	Mouse ears	Epiphytic lichen
Hypogymnia duplicata	Ticker tape lichen	Epiphytic lichen
Hypotrachyna revoluta	Powdered loop lichen	Epiphytic lichen
Leiodermia sorediatum	Treepelt lichen	Epiphytic lichen
Leptogium brebissonii		Epiphytic lichen

	Common Name	Functional Group
Leptogium burnetiae var. *hirsutum*		Epiphytic lichen
Niebla cephalota	Powdery fog lichen	Epiphytic lichen
Pannaria rubiginosa	Brown-eyed shingle lichen	Epiphytic lichen
Peltigera neckeri	Black saddle lichen	Terrestrial lichen
Peltigera pacifica	Fringed pelt lichen	Terrestrial/Epiphytic lichen
Pseudocyphellaria rainierensis	Specklebelly	Epiphytic lichen
Pyrrhospora quernea		Epiphytic lichen
Ramalina pollinaria	Chalky ramalina	Epiphytic lichen
Sticta arctica		Epiphytic lichen
Teloschistes flavicans		Epiphytic lichen
Tholurna dissimilis		Epiphytic lichen
Usnea longissima	Methuselah's beard lichen	Epiphytic lichen
Fungi		
Albatrellus avellaneus		Terrestrial fungi
Bridgeoporus nobilissimus	Noble polypore	Epiphytic conk
Cordyceps capitata		Terrestrial fungi
Cortinarius barlowensis		Terrestrial fungi
Cudonia monticola		Terrestrial fungi
Gomphus kauffmanii		Terrestrial fungi
Leucogaster citrinus		Terrestrial fungi
Mycena monticola		Terrestrial fungi
Otidea smithii		Terrestrial fungi
Phaeocollybia attenuata		Terrestrial fungi
Phaeocollybia californica		Terrestrial fungi
Phaeocollybia dissiliens		Terrestrial fungi
Phaeocollybia piceae		Terrestrial fungi
Phaeocollybia pseudofestiva		Terrestrial fungi
Phaeocollybia spadicea		Terrestrial fungi
Phaeocollybia sipei		Terrestrial fungi
Sowerbyella rhenana		Terrestrial fungi

Terrestrial Vascular Plants, Bryophytes and Lichen – None of these ground species are identified for harvest, and there would be no direct effects from implementation of Alternative 2 or 3. Indirect effects could result from mechanical damage to plants from vehicles and equipment, trampling, or from a change in habitat conditions. Project design criteria restricting vehicles and equipment to existing roads and requiring off highway vehicles (OHV) to use designated routes will reduce potential effects to background levels similar to Alternative 1. The proposed action therefore will not lead to a trend toward federal listing for these species.

Terrestrial Fungi – None of the species in this group are considered edible and will not be identified for harvest. Indirect effects could result from soil compaction by equipment. Project design criteria restricting vehicles and equipment to existing roads and requiring off highway

vehicles (OHV) to use designated routes will reduce potential effects to background levels similar to Alternative 1. The proposed action therefore will not lead to a trend toward federal listing for these species.

Aquatic Plants and Lichens – None of the species in this group are identified for harvest and no harvest activity will occur in lakes, ponds and streams where they could potentially occur. The proposed action will not lead to a trend toward federal listing for these species.

Epiphytic Bryophytes and Lichens – None of the species in this group are identified for harvest, and there would be no direct effects from implementation of Alternative 2. Because they grow on tree boles and tree and shrub limbs and twigs, indirect effects could result from the harvest of wood products, alder puddle sticks, boughs and cascara bark, vine maple, willow, or dogwood limbs, hazel shoots. Design criteria that limit the amount of material that can be harvested at a site (e.g. 25percent of the available stems or trees) will reduce the potential risk of inadvertently harvesting these species under Alternative 2. The proposed action therefore will not lead to a trend toward federal listing for these species.

No PETS species are targeted by moss harvest, however one epiphytic moss and one epiphytic lichen species could be incidentally collected because they occur mixed with mosses that are typically harvested from tree boles and branches.

Leptogium burnetiae var. *hirsutum* is a widespread, but rare lichen species. There are a total of five known sites in Oregon and Washington, none of which occur on Siuslaw National Forest. Because of its rarity, and project design criteria that restricts the amount of moss harvest at any given location, the risk that *L. burnetiae* var. *hirsutum* may be incidentally collected as a result of moss harvest is very small. The proposed action therefore will not lead to a trend toward federal listing for this species.

Iwatsukiella leucotricha has a north Pacific distribution pattern and is known two sites in Oregon, at Saddle Mountain and Onion Peak in Clatsop County (Harpel *et al*. 2005). The species occurs on the boles of both conifers and hardwoods at elevations of 2,700 feet and greater. Potential habitat for *I. Leucotricha* on Hebo Ranger District is restricted to the higher peaks, of which only Mt. Hebo has the access necessary to make commercial moss harvest viable. Project design criteria includes excluding moss harvest from the Mt. Hebo Biological Interest Area, therefore there is no likelihood that *I. Leucotricha* would be incidentally collected during moss harvest. The proposed action therefore will not lead to a trend toward federal listing for this species.

Epiphytic Conk – The one species in this group is a large shelf conk that may be attractive to conk collectors. Noble polypore habitat on the Siuslaw National Forest is restricted to noble fir

stands that occur at higher elevations in few localities. Project design criteria do not allow permits to be issued for conks in these potential habitat areas. The proposed action will not lead to a trend toward federal listing for this species.

Survey and Manage Species (*Forest Botanist Report, May 2006)*

Survey and Manage species documented from or suspected to occur on the Forest include:

Species	S&M Category	Survey Triggers		
		Within Range of the Species?	Project Contains Suitable habitat?	Project may negatively affect species/habitat?
Fungi				
Bridgeoporus nobililssimus	A	Yes	Yes	Addressed in Sensitive Species Section.
Clariadelphus occidentalis	B	Yes	Yes	No
Cudonia monticola	B	Yes	Yes	Addressed in Sensitive Species Section.
Galerina heterocystis	E	Yes	Yes	No
Gomphus kauffmanii	E	Yes	Yes	Addressed in Sensitive Species Section.
Gyromitra californica	B	Yes	Yes	No
Leucogaster citrinus	B	Yes	Yes	Addressed in Sensitive Species Section.
Phaeocollybia attenuata	D	Yes	Yes	Addressed in Sensitive Species Section.
Phaeocollybia californica	B	Yes	Yes	Addressed in Sensitive Species Section.
Phaeocollybia dissiliens	B	Yes	Yes	Addressed in Sensitive Species Section.
Phaeocollybia fallax	D	Yes	Yes	No
Phaeocollybia piceae	B	Yes	Yes	Addressed in Sensitive Species Section.
Phaeocollybia pseudofestiva	B	Yes	Yes	Addressed in Sensitive Species Section.
Phaeocollybia scatesiae	B	Yes	Yes	No
Phaeocollybia spadicea	B	Yes	Yes	Addressed in Sensitive Species Section.
Phaeocollybia sipei	B	Yes	Yes	No [2]
Ramaria araiospora	B	Yes	Yes	No [2]
Ramaria aurantiisiccescens	B	Yes	Yes	No [2]
Ramaria gelatiniaurantia	B	Yes	Yes	No
Ramaria stuntzii	B	Yes	Yes	No
Sparassis crispa	D	Yes	Yes	No
Spathularia flavida	B	Yes	Yes	No
Lichens				
Bryoria pseudocapillaris	A	Yes	Yes	Addressed in Sensitive Species Section.
Bryoria spiralifera	A	Yes	Yes	Addressed in Sensitive Species Section.

Species	S&M Category	Survey Triggers		
		Within Range of the Species?	Project Contains Suitable habitat?	Project may negatively affect species/habitat?
Hypogymnia duplicata	C	Yes	Yes	Addressed in Sensitive Species Section.
Leptogium cyanescens	A	Yes	Yes	No
Lobaria linita	A	Yes	Yes	No
Nephroma occultum	A	Yes	Yes	No
Niebla cephalota	A	Yes	Yes	Addressed in Sensitive Species Section.
Peltigera pacifica	E	Yes	Yes	Addressed in Sensitive Species Section.
Pseudocyphellaria perpetua	B	Yes	Yes	No
Pseudocyphellaria rainierensis	A	Yes	Yes	Addressed in Sensitive Species Section.
Teloschistes flavicans	A	Yes	Yes	Addressed in Sensitive Species Section.
Bryophytes				
Schistostega pennata	A	Yes	Yes	Addressed in Sensitive Species Section.
Tetraphis geniculata	A	Yes	Yes	Addressed in Sensitive Species Section.
Vascular Plants				
Coptis trifolia	A	Yes	Yes	Addressed in Sensitive Species Section.
Cypripediium montanum	C	Yes	Yes	No

No Survey and Manage species are identified to be harvested as special forest products. None of the fungi species are considered to be edible, with the exception of *Sparassis* c*rispa,* and collection therefore is unlikely to occur. To reduce the likelihood that *S. crispa* will be collected, it will not be listed as a species permissible for harvest (Appendix B) and will be included on the list of species for which harvest is specifically not allowed (Appendix C).As discussed in the Sensitive species section, the fruiting body of noble polypore could be mistaken for species more commonly collected as "artists conks". To minimize this potential, no permits for conks will be issued for areas where its host species, noble fir, grows. Habitat for the remaining fungi, bryophytes and the vascular plant *Cypripedium montanum* could be impacted by equipment or vehicles that compact the soil or cause mechanical damage. Project design criteria will reduce this potential by restricting vehicles to established roads and OHV routes.

Incidental collection of survey and manage lichens may occur when a species' substrate is harvested as a special forest product, for example lichens growing on the bole or branches of a tree that is harvested for posts, poles or boughs. Survey and Manage species are thought to be most closely associated with late-successional forest habitat. Project design criteria that limits the harvest of special forest products to plantations and younger stands reduces the potential for incidental harvest of survey and manage species to minimal levels.

Managing known sites of survey and manage species requires that project activities do not modify habitat structure or microclimate so that the site can no longer support the species. The harvest of special forest products occurs on a scale that will not likely result in changes to microclimate or alter the habitat and the risk of losing known sites is low.

Cultural

Protection of cultural resources, including subsurface archaeological sites and historic features, is mandated by Federal laws and policy. The potential for significant damage to these non-renewable resources is linked to Special Forest Product collection techniques of digging, raking and vehicular traffic where total plant removal or root collection is desired. All efforts should be taken to avoid known significant heritage areas where plant products, including transplants, roots and Christmas trees would be harvested by these means. Above-ground partial plant collection (i.e., boughs, bark, cones, seed and greenery) is not likely to adverse impact cultural resources. Mushroom harvest, where raking or other surface disturbance is limited in extent, should not adversely impact subsurface resources. Vehicular traffic, especially in areas west of the Highway 101 corridor, but confined to OHV open areas and on designated routes, is not anticipated to have undesirable effects specifically related to SFP, and will be monitored to assure cultural materials are not being impacted.

User Conflicts

The Management Requirements and Mitigation Measures in the Proposed Action minimize interaction between user groups. Collection of SFPs is restricted within 200 feet of campgrounds. Campgrounds cannot be used as staging areas. Collection is also restricted with 200 feet of streams.

Aquatic Conservation Strategy

On March 22, 2004 the USDA Under Secretary for Natural Resources and the Environment signed Record of Decision (ROD) amending the Northwest Forest Plan. The decision clarifies provisions relating to the application of the ACS. Specifically, the amendment removes the need for deciding officials to certify that individual projects meet ACS objectives at the site-specific level and short time frames. Instead, the ROD requires individual projects to meet ACS standards and guides and that ACS objectives be met at watershed or larger scales (5th field hydrologic fields or greater) and over longer time periods of decades or more. Project records must also demonstrate how the decision maker used relevant information from watershed analysis to provide context for project planning.

A compilation of watershed analyses have been completed for the Siuslaw National Forest. Relevant information was used from these analyses. Based on this information, the current Special Forest Products Program, the site specific management requirements, and the cumulative effects analysis done for this project, all activities proposed by the Program will meet the ACS standards and guides, and all ACS objectives will be met at the 5th-field watershed scale and over longer time periods of decades or more.

Short-Term Uses and Long-Term Sustainability

The use or protection of natural resources for long-term, sustained yield is the legislated basis of management and direction for the Forest Service (USDA, USDI 1994a, p. 321). Short-term uses include actions such as commercial harvest of special forest products. The site specific management requirements were developed to incorporate the standards and guides of the Siuslaw Forest Plan, as amended by the Special Forest Products Program Environmental Assessment, Decision Notice and Finding of No Significant Impact (1995a), and as amended by the Northwest Forest Plan. We expect that applying them to the actions proposed by the Program will reduce the potential for long-term loss in sustainability that may result from short-term uses.

Unavoidable Adverse Effects

Implementing any alternative would result in some adverse environmental effects that cannot be avoided. The site-specific management requirements, along with Forest standards and guides, are intended to keep the extent and duration of these effects within acceptable rates, but adverse

effects cannot be completely eliminated. The following adverse environmental consequences would be associated to some extent with Alternative 2:

- Short-term, localized reductions in individual harvested products..

Irreversible Resource Commitments

Irreversible commitments of resources are actions that disturb either a non-renewable resource (for example, heritage resources) or other resources to the point that they can only be renewed over 100 years or not at all. The site specific management requirements along with Forest standards and guides, are intended to reduce these commitments, but adverse effects cannot be completely eliminated. For example, the continued use of existing roads is an irreversible commitment of the soil resource because of the long time needed for a road to revert to natural conditions.

Irretrievable Commitment of Resources

An irretrievable commitment is the loss of opportunities for producing or using a renewable resource for a period of time. Almost all activities produce varying degrees of irretrievable resource commitments. They parallel the effects for each resource discussed earlier in this chapter. They are not irreversible because they could be reversed by changing management direction. The following irretrievable commitments of resources are expected:

- Loss of harvesting moss for forest-product use (Alternative 1 and 3).

Environmental Justice

Based on local knowledge, some low-income populations live in the vicinity of the Siuslaw National Forest. Some augment incomes through actions such as gathering firewood and picking brush to sell. Some farms exist in the planning area and domestic-use water systems include individual wells and spring-fed systems.

The Program would opportunities for commercial harvest of special forest products. None of the proposed actions are expected to physically affect farms or water quality of domestic-use water systems.

Effects of alternatives on the human environment (including minority and low-income populations) are expected to be similar for all human populations regardless of nationality, gender, race, or income. No disproportionately high and adverse human health or environmental effects on minority populations and low-income populations are expected as a result of implementing actions described for the alternatives.

Other Disclosures

Based on the evaluation of the effects, we concluded:

- This environmental assessment is tiered to the Siuslaw Forest Plan FEIS, as amended by the Special Forest Products Program Environmental Assessment, Decision Notice and Finding of

No Significant Impact (1995a), and as amended by the Northwest Forest Plan, and is consistent with those plans and their requirements.

- None of the alternatives would affect minority groups, women, and consumers differently than other groups. These groups may benefit from employment opportunities and by-products that proposed actions will provide; the no-action alternative would have neither adverse nor beneficial effects. None of the alternatives adversely affects civil rights. All permits that may be awarded as a result of implementation would meet equal employment opportunity requirements.
- Because of the site specific management requirements to be applied, none of the proposed actions will affect known prehistoric or historic sites. As outlined in the American Indian Religious Freedom Act, no effects are anticipated on American Indian social, economic, subsistence rights, or sacred sites.
- No adverse effects on wetlands and flood plains are anticipated; and no farm land, park land, range land, wilderness, or wild and scenic rivers will be affected.
- The proposed project is consistent with the Coastal Zone Management program.
- Because of the type of actions proposed, none of the proposed actions are expected to substantially affect human health and safety.
- Proposed activities are consistent with the Clean Air Act.
- Because of the site specific management requirements to be applied, this project is expected to be consistent with the Clean Water Act.
- The proposed program is not expected to measurably affect global warming. The US Forest Service will continue an active leadership role in agriculture and forestry regarding the reduction of greenhouse gas emissions (Joyce and Birdsey 2000).
- These actions do not set a precedent for future actions because they are similar to actions implemented in the past.

Cumulative Effects

The Council on Environmental Quality defines cumulative effects on the environment as those that result from the incremental actions of a proposal added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes them (40 CFR 1508.7).

For purposes of analyzing cumulative effects, the geographic areas potentially affected by the alternatives are the lands administered by the Siuslaw National Forest.

Sensitive Botanical Species - None of these species are identified for harvest and therefore would not lead to a trend toward federal listing for these species.

No PETS species are targeted by moss harvest; however one epiphytic moss and one epiphytic lichen species could be incidentally collected because they occur mixed with mosses

that are typically harvested from tree boles and branches. However, due to its rarity and project design criteria that restricts the amount of moss harvest at any given location, the risk that these may be incidentally collected as a result of moss harvest is very small. Therefore it would not lead to a trend toward federal listing for this species.

Noble polypore, an epiphytic conk species is a large shelf conk that may be attractive to conk collectors. Project design criteria do not allow permits to be issued for conks in these potential habitat areas. Therefore it would not lead to a trend toward federal listing for this species.

No Survey and Manage species are identified to be harvested as special forest products. The harvest of special forest products occurs on a scale that would not likely result in changes to the microclimate or alter the habitat therefore the risk of losing known sites is low.

Moss inventory and analysis by JeriLynn Peck (Peck, 2007) proposes to reduce the commercial moss harvest in response to the observed growth rates. Current inventory is a result of past harvest activity. Therefore the cumulative effect of past harvest in relation to observed growth rates and habitat have resulted in the proposed commercial harvest level.

Observations by Special Forest Product Coordinators and Sale Administrators brought to the annual Special Forest Products Review indicate that the current level of commercial Special Forest Product harvest is sustainable. These observations are substantiated by Appendix D - Special Forest Product Plant Characteristics. Cumulative effects to sustainability are insignificant and not measurable.

Chapter 4 - Consultation and Coordination

The US Forest Service consulted the following individuals, Federal, State, and local agencies, tribes and non-Forest Service persons during the development of this environmental assessment:

LIST OF PREPARERS:

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Cindy McCain	Ecologist
Carl Frounfelker	Wildlife Biologist
Marty Stein	Botanist
Dan Segotta	Central Coast Ranger District Operations Staff Officer
Kurt Davis	Central Coast Ranger District Special Forest Products Coordinator
Wayne Patterson	Hebo Ranger District Operations Staff Officer
Rich Babcock	Hebo Ranger District Special Forest Products Coordinator
John Sanchez	Fisheries Biologist

Introduction

As described in chapter 1, comment on the proposed action was solicited through letters, local newspapers, and the Siuslaw National Forest's quarterly "Project Update" publications. The results of specific government and agency consultations are summarized below.

Local Confederated Tribes

The Confederated Tribes of Siletz, the Confederated Tribes of Coos, Lower Umpqua, and Siuslaw, and the Confederated Tribes of Grand Ronde were informed of the Project's proposed actions during the initial public-notification process. No comments on the proposed actions were received from them.

Federal Agencies

National Marine Fisheries Service (or NOAA Fisheries)

Since the proposed action has no effect on listed species, consultation is not required.

US Fish and Wildlife Service

Since the proposed action has no effect on listed species, consultation is not required.

State of Oregon

The proposed actions were evaluated under the programmatic agreement (2004) with the State Historic Preservation Office (SHPO). No further consultation with SHPO was needed.

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Appendix A. Forest-wide Standards and Guidelines (From USDA FS, 1995a)

Special Forest Products

Types of Collection - Four types of Special Forest Product collection are allowed, depending on how the products would be used. Other standards and guidelines specify restrictions or prohibitions on certain types of collection.

a. ***Tribal use*** – Traditional noncommercial gathering by American Indians affiliated with a recognized tribe for cultural, spiritual, and medicinal use. No permit is required.
b. ***Incidental Use*** – On-site product consumption or use, usually associated with recreational activities. No permit is required.
c. ***Personal Use*** – Collection of material for personal use or consumption. Permits are required.
d. ***Commercial Use*** – Collection of material for the primary purpose of sale, resale, or use in a manufacturing process resulting in a finished product that will be sold. Permits or leases are required.

Mosses – The following mitigation measures apply to moss collection:

a. Restrict collection to every other branch on shrubs (e.g., vine maple) or to every other tree (e.g., alder or conifer where moss is removed from the main bole) during each collection year.
b. Allow a maximum of 10% of the Mapleton, Alsea, and Waldport Districts' land bases for commercial collection of moss. The area will be rotated at least every 2 years.
c. prohibit collection of moss from the ground, including moss growing on rocks and downed logs.
d. prohibit collection of moss greater than 20 feet above ground.

Lichens – Prohibit collection of all lichens for personal and commercial use in all Management Areas until survey and management requirements from the President's Forest Plan have been met.

Fungi – Place the following collection technique and rate restriction on both personal and commercial fungus collection:

a. No tools for digging or raking are allowed for collecting any mushrooms.
b. No surface disturbance larger than the diameter of the mushroom cap is allowed of moss, organic matter, duff, or soil.

Total Removal – With total removal of trees, shrubs, forbs, sedges, grasses, rushes, and ferns, do not exceed one-tenth (10%) of each species in the permit area when collection is for personal use. For every plant removed, leave nine plants intact. Collection should not exceed one-fourth (25%) of each species in the permit/lease area when collection is for commercial purposes. For every plant removed, leave three plants intact. Rest areas for a minimum or two years between commercial collections, or long enough so the resource is not depleted.

Partial Removal – With partial removal of trees, shrubs, forbs, sedges, grasses, rushes, and ferns, do not exceed one-fourth (25%) of each individual plant. For every branch or inflorescence removed, leave three intact.

Seed Collection – Allow seed collection under Special Forest Product permits/leases only where regeneration is not needed. Limit collection of nuts, seeds, and fruits to no more than 50% of each perennial plant species and 25% of each annual plant species per site per year. Seed cone collection will be reviewed on a case by case basis.

Survey – Ensure that a list of plants, fungi, lichens, and plant materials inappropriate for collection, including all species on the Regional Forester's Sensitive Plants List, is compiled and updated annually by a qualified botanist. Distribute this list to all district offices and District Special Forest Product coordinators. Permittees, lessees, and contractors will be shown or advised of this list.

Salvage – Coordinate and encourage Special Forest Product collection on areas where other management activities (e.g., timber sales) otherwise would damage or destroy the product. Under such circumstances, collection restrictions and prohibitions (e.g., height limits, lichens, etc.) for Special Forest Products may be suspended. Areas

scheduled for timber harvest, road and trail construction and maintenance, vegetation management, etc. should be given high priority for Special Forest Product collection.

Firewood – Provide personal and commercial firewood through precommercial and commercial thinning projects, removal of designated hazard trees, and required road and campground maintenance. Remove blowdown across roads while retaining as much as possible on site and out of view of road traffic in all Management Areas except in Matrix. In addition, allow firewood removal from October 1 to March 1 within 100 feet of the road center by designating alder along roads and conifer in young managed stands to promote stand development and improve public safety. Allow nonmechanized collection of firewood year round.

Adverse Effects – Terminate any personal or commercial Special forest Product permit or lease if monitoring indicates that the site or the species being collected is being adversely affected.

Recreation

Wild and Scenic Rivers – Ensure that personal and commercial collection of Special forest Products in river corridors identified as eligible for Wild and Scenic River designation is consistent with maintaining the outstandingly remarkable values identified for the river segment.

Developed Recreation sites – Prohibit personal and commercial Special Forest product collection in developed recreation sites. Firewood cutting and removal of certain invasive plants may be allowed in special instances for the purpose of vegetation management to meet site-specific resource enhancement objectives, provided applicable Standards and Guidelines are met.

Cultural Resources

Traditional Use – Acknowledge the collection of special Forest Products by members of American Indian tribes that have traditionally used resources now managed by the Siuslaw National Forest (USDA, 1998b).

Preference – Give preference for noncommercial use to American Indian tribes over commercial collection.

a. these collections may be ensured by not issuing commercial permits or leases for areas where American Indians collect culturally-significant products, or by not issuing commercial permits for plants/products American Indians collect.
b. Tribal officials can work with Special Forest Product managers to identify areas of culturally-significant plant resources and possible management practices which may enhance those resources.

Heritage Resources – Inventory and monitoring of heritage resources will be conducted in areas where Special Forest Product collection methods will create substantial direct and indirect ground disturbance through digging, raking, vehicular traffic, and other means.

Wildlife

Wildlife – Prohibit collection and transportation of Special Forest Products by motorized means (i.e., chainsaws, vehicles, etc.) or firearms from March 1 to October 1 each year, except for use of roads by vehicles.

Wildlife – Prohibit collection of Special Forest Products greater than 50 feet above ground from March 1 to October 1 each year.

Cascara –Review all cascara collection permit applications on a case-by-case basis to ensure an important band-tailed pigeon food source is not depleted.

Management Area Standards and Guidelines

Riparian Reserves

Special Forest Products – Prohibit personal and commercial collection of all Special Forest Products within 100 feet (slope distance) of perennial surface water, and of mosses and lichens within 200 feet (slope distance) of perennial surface water.

Administratively Withdrawn Areas

For MA1 (Oregon Silverspot Butterfly Habitat Areas)

Special Forest Products – Prohibit collection of all Special Forest Products, except when needed to attain management objectives.

For MA 4 (Bald Eagle Habitat Areas)

Special Forest Products – prohibit all personal and commercial Special Forest Product collection.

For MA 5 (Special Interest Areas)

Special Forest Products

Cape Perpetua and Kentucky Falls – Prohibit commercial collection of all Special Forest Products. Allow year-round collection of fungi, nuts, seeds, and fruits for tribal, incidental, and personal uses.

Marys Peak and Mt. Hebo – prohibit any collection of Special Forest Products, except when needed to attain management objectives.

For MA 6 (Cascade Head Scenic Research Area)

Special Forest Products – Prohibit collection of all Special Forest Products, except when needed to attain management objectives.

For MA 7 (Cascade Head Experimental Forest)

Special Forest Products – Prohibit collection of all Special Forest Products, except when needed to attain management objectives.

For MA 8 (Sand Lake)

Special Forest Products – Prohibit all personal and commercial collection of Special Forest Products. Allow year-round tribal and incidental collection of Special Forest Products, except for mosses, trees, and shrubs.

For MA (Sutton Recreation Area)

Special Forest Products – prohibit commercial collection of ferns, mosses, nuts, seeds, and fruits.

For MA 10 (Oregon Dunes National Recreation Area)

AW-32 – Special Forest Products –

a. **Restrictions –** Limit Christmas tree cutting, firewood collection, mushroom picking, and other Special Forest Product collection to designated areas.
b. **Mosses –** Prohibit all moss collection.

c. **Commercial Use –** Allow collection of trees, shrubs, forbs, sedges, grasses, and rushes. Prohibit collection of ferns, nuts, seeds, fruits, and wood products.

For MA 12 (Wilderness)

Special Forest Products – Prohibit personal and commercial collection of Special Forest Products. Allow year-round collection of fungi, nuts, seeds, and fruits for tribal and incidental uses.

For MA 13 (Research Natural Areas)

Special Forest Products – Prohibit collection of all Special Forest Products, except when needed to attain management objectives.

TABLE 1. SPECIAL FOREST PRODUCTS COLLECTION

MANAGEMENT AREA(S) WITH Net Acres for Each Area	TYPE OF COLLECTION	PRODUCTS ALLOWED	METHOD OF COLLECTION	TIMING OF COLLECTION
BALD EAGLE HABITAT AREAS 1,916 Acres	Tribal, Incidental	2,3,4*,5,6,7	Total & Partial	Year-round and only >0.5 mile from nests.
SPECIAL INTEREST AREAS 5,068 Acres Cape Perpetua & Kentucky Falls Marys Peak Botanical Area & Mt. Hebo Biological Area	Tribal, Incidental, Personal *Collection only if needed to attain management objectives*	5,7	Partial	Year-round
SAND LAKE 980 Acres	Tribal, Incidental	2,3,5,7	Partial	Year-round
	Tribal, Incidental	6	Total	Year-round
SUTTON RECREATION AREA 3,070 Acres	Tribal, Incidental, Personal	1,2,3,4*,5,6,7	Total & Partial	Year-round
	Commercial	1,2	Total & Partial	Year-round
OREGON DUNES NRA** 30,142 Acres	Tribal, Incidental, Personal	1,2,3,6,7	Total & Partial	Year-round
	Commercial	1,2	Total & Partial	Year-round
MATRIX 4,658 Acres	Tribal, Incidental, Personal	1,2,3,4*,5,6,7	Total & Partial	Year-round
	Commercial	1,2,3,4*,5,6,7	Total & Partial	Year-round & Rotational
NORTH COAST RANGE AMA 11,658 Acres	Tribal, Incidental, Personal	1,2,3,4*,5,6,7	Total & Partial	Year-round
	Commercial	1,2,3,4*,5,6,7 via 10-year lease, except 6 could be sold via both lease & permit	Total & Partial	Year-round
RIPARIAN (83,184 Acres), MURRELET (24,093 Acres), AND LATE-SUCCESSIONAL RESERVES (411,082 Acres) 518,359 Total Acres	Tribal, Incidental	1,2,3,4*,5,6,7	Total & Partial	Year-round
	Personal, commercial	1,2,3,4*,5,6,7	Total & Partial	Rotational
SILVERSPOT BUTTERFLY HABITAT (2,163 Acres), CASCADE HEAD SCENIC-RESEARCH AREA (7,186 Acres), AND RESEARCH NATURAL AREAS (1,256 Acres) 16,699 Total Acres	Collection only if needed to attain management objectives			
WILDERNESS 22,214 Acres	Tribal, incidental	5,7	Partial	Year-round
OWL PAIR AREAS 8,605Acres	Tribal, incidental	5,7	Partial	Year-round

Product groups: 1 = trees & shrubs, 2 = forbs, sedges, grasses, rushes, 3 = ferns, 4 = mosses (no lichen collection), 5 = fungi, 6 = wood products, 7 = nuts, seeds, & fruits

* For mosses, no more than 25,000 bushels would be collected per year Forest-wide from appropriate Management Areas.

** Fungi collection at Oregon Dunes NRA in accordance with ODNRA Mushroom Management EA.

Appendix B.

Species Acceptable for Collection

COLLECTIBLE MUSHROOM SPECIES

Commercial and personal permits for mushroom picking are available for the following mushroom species. If permits are requested for any species not on the list, Districts will consult with a qualified botanist on a case-by-case basis. Special permits may be issued to mycological societies and universities for education and research purposes to collect a variety of species that are not included on this list. Incidental collection is allowed for species which are not listed.

Chanterelles -
- common chanterelle (*Cantharellus cibarius*)
- white chanterelle (*Cantharellus subalbidus*)
- winter chanterelle (*Cantharellus infundibuliformis*)

Boletus mushrooms -
- king boletus (*Boletus edulis*)
- scaber stalk boletus (*Leccinum manzanitae*)

Oyster mushrooms -
- oyster mushroom (*Pleurotus ostreatus*)
- angel wings (*Pleurotus porrigens*)

Pine mushroom -
- matsutake (*Tricholoma magnivelare*)

Sulphur shelf fungus -
- chicken of the woods (*Laetiporus sulphureus*)

Slippery Jack mushroom -
- *Suillus luteus*

Imperial mushroom -
- *Catathelasma imperialis*

Hedgehog mushroom -
- *Hydnum repandum*

Shaggy mane mushroom -
- *Coprinus comatus*

Lobster mushroom -
- *Hypomyces lactifluorum*

Coral fungus - conifer coral fungus
- *Hericium albeitus*

Appendix C.

Species Inappropriate for Collection

*BOTANICAL SPECIES **NOT** AVAILABLE FOR COLLECTION AS SPECIAL FOREST PRODUCTS on the Siuslaw National Forest*

A. Botanical species on the Regional Forester's Sensitive List that are unavailable for personal or commercial harvest on the Siuslaw National Forest

Scientific Name	Common Name (Habitat)
FORBS	
Abronia umbellata spp. breviflora	pink sandverbena (beaches and foredune; open sand)
Anemone oregana var. felix	Oregon bog anemone (coastal mashes and sphagnum bogs)
Cardamine pattersonii	Saddle mountain bittercress (bogs, wet areas, moist cliffs and edges)
Cimicifuga elata	tall bugbane (moist forests along edges and roadside, often north slopes with big-leaf maple)
Cordylanthus maritimus ssp. palustris	salt-marsh bird's beak (low, sandy salt marsh, fringes of lakes and bogs)
Dodecatheon austrofridgidum	frigid shooting star (stream sides on rocks below the high water line, mostly at higher elevations)
Erythronium elegans	elegant fawn-lily (high elevation meadows, bogs, rock cliffs and forest)
Filipendula occidentalis	queen-of-the-forest (moist headwalls, seeps, and wet rocks above high water along streams)
Fritillaria camschatcensis	black Lily (moist open places, bogs and marshes)
Geum triflorum var. campanulatum	western red avens (exposed grassy and dry area at high elevation)
Hydrocotyle verticillata	water pennywort (dune deflation plains, bog edges, marshes and ponds)
Lilium occidentale	western lily (open forest or shrublands on poorly drained soils, often along margins of ephemeral ponds/small channels under shrubs)
Limonium californicum	marsh rosemary (salt marsh)
Lycopodiella inundata	northern bog Clubmoss (dune deflation plains, coastal bogs and lake margins)
Ophioglassum pusillum	adder's tongue (edges of lakes, ponds, dune deflation plains)
Saxifragia hitchcockiana	Saddle Mountain saxifrage (grassy, rocky or gravelly areas at higher elevations)
Senecio fletii	Flett's groundsel (open rocky tallus slopes)
Sidalcea hirtipes	hairy-stemed checkermallow (grassy meadows, coastal bluffs)
Sidalcea nelsoniana	Nelson's checkermallow (wetland prairies, endemic to the Willamette Valley)
Silene douglasii var. oraria	Cascade Head catchfly (grassy coastal bluffs)
Urticularia gibba	humped bladderwort(standing or slow moving water)

Wolffia borealis	dotted watermeal (ponds, free floating)
Wolffia columbiana	Columbia watermeal (ponds, floating below the surface)
GRASSES, SEDGES, RUSHES	
Carex macrochaeta	large-awned sedge (moist openings, usually close to beaches)
Carex pluriflora	Several-flowered sedge (Sphagnum bogs, brackish water near the coast)
Eriophorum chamissonis	Chamisso's cotton grass (coastal fens, swamps and bogs)
MOSSES AND LIVERWORTS	
Encalypta brevicolla var. *crumiana*	extinguisher moss (soil in shaded crevices of basalt on ridgetops subject to frequent fog)
Herbertus sakuraii	(Peat substrates in cool moist locations)
Iwatsukiella leucotricha	hairy leaf-tip moss (bark of conifer and hardwood trees on ridges subject to fog penetration at higher elevations near the coast)
Plagiochila semidecurrens var. *alaskana*	Alaska cedar-shake (north face of exposed basalt ridges and cliffs at high elevations in the Oregon Coast Range)
Radula brunnea	brown flatwort (north face of exposed basalt ridges and cliffs at high elevations in the Oregon Coast Range)
Schistostega pennata	green goblin moss (caves, mine shafts, old root cellars and dark recesses under old rootwads of large windthrown trees)
Tetraphis geniculata	four-tooth bent knee moss (older conifer forest, occurring on snags, logs and stumps)
LICHENS	
Bryoria pseudocapillaris	(on exposed coastal trees and shrubs near the coast)
Bryoria spiralifera	(on exposed coastal trees and shrubs near the coast)
Dermatocarpon luridum	brook lichen (on rocks in freshwater streams, rivers and seeps above 1,000 feet elevation)
Erioderma sorediatum	mouse ears (on shrubs and conifer trees in semi-open habitats near the coast)
Hypogymnia duplicata	ticker tape lichen (on tree boles and branches in cool, moist sites, mostly higher elevations)
Hypotrachyna revoluta	powdered loop lichen (coastal, usually on tree boles, occasionally on rocks.
Leiodermia sorediatum	treepelt lichen (on shrubs and conifer trees in coastal shrub thickets and wooded deflation plains)
Leptogium brebissonii	(coastal forest edges, shrub wetlands, riparian areas)
Leptogium burnetiae var. *hirsutum*	(moist habitats, usually on trees, occasionally on decaying logs, rock and moss)
Niebla cephalota	powdery fog lichen (on trees, rocks and shrubs in exposed windswept locations near the coast and in the fog belt)
Pannaria rubiginosa	brown-eyed shingle lichen (on bark in dune deflation plains, low elevation mature riparian forest and wetlands)
Peltigera neckeri	black saddle lichen (mossy logs, soil and tree bases in wet forested habitats)
Peltigera pacifica	fringed pelt lichen (coastal, mossy logs, soil and tree bases in wet forested habitats)
Pseudocyphellaria rainierensis	specklebelly (on tree boles in moist, old growth forest)

Pyrrhospora quernea	(on tree boles and branches in stabilized coastal dunes, rocky headlands and estuary areas)
Ramalina pollinaria	chalky ramalina (on tree branches in low-elevation swamps, usually with Sitka spruce)
Sticta arctica	(exposed rocks and moss covered soil of windswept ridges or marine terraces)
Teloschistes flavicans	(on tree boles and branches in coastal headlands)
Tholurna dissimilis	(on exposed branches and twigs in humid alpine and sub-alpine habitats)
Usnea longissima	Methuselah's beard lichen (on conifer and hardwood branches, usually in low-elevation riparian areas)
FUNGI	
Albatrellus avellaneus	(on soil in old growth forest, associated with conifer roots, most likely Sitka spruce)
Bridgeoporus nobilissimus	noble polypore (on true fir (*Abies* spp.) trees, snags and stumps particularly noble fir (*A. procera)*
Cordyceps capitata	(on soil in conifer or hardwood forest, parasitic on deer truffles (*Elaphomyces* spp))
Cortinarius barlowensis	(on soil in coastal to montane conifer forests)
Cudonia monticola	(on soil in Sitka spruce needle litter and coniferous debris)
Gomphus kauffmanii	(on soil in deep duff and humus under pine or true fir)
Leucogaster citrinus	(on soil associated with the roots of Douglas-fir, shorepine, and western hemlock)
Mycena monticola	(on soil in conifer forest above 3,000 feet)
Otidea smithii	(on exposed soil, duff or moss under cottonwood, Douglas-fir and w. hemlock)
Phaeocollybia attenuata	(on soil in conifer forest)
Phaeocollybia californica	(on soil associated with the roots of Pacific silver fir, Douglas-fir and w. hemlock)
Phaeocollybia dissiliens	(on soil associated with the roots of Pacific silver fir, Douglas-fir and w. hemlock)
Phaeocollybia piceae	(on soil associated with the roots of Pacific silver fir, Douglas-fir and w. hemlock)
Phaeocollybia pseudofestiva	(on soil under mature mixed conifers and hardwoods)
Phaeocollybia sipei	(on soil associated with the roots of Pacific silver fir, Douglas-fir and w. hemlock)
Phaeocollybia spadicea	(on soil in low-elevation Sitka spruce forest)
Sowerbyella rhenana	(on soil in moist, mature conifer forests)

B. Northwest Forest Plan Survey and Manage Species known from or likely to occur on the Siuslaw National Forest that are unavailable for personal or commercial harvest.

Scientific Name	Common Name (Habitat)
FORBS	
Botrychium minganense	mingan moonwort (adjacent to streams in moist forest sites)
Botrychium montanum	mountain moonwort (adjacent to streams in moist forest sites)
Cypripedium montanum	mountain ladyslipper (open forest habitat on the east side of

	the Coast Range)
Coptis trifolia	three-leaf goldthread (fens and wet meadows)
MOSSES AND LIVERWORTS	
Diplophyllum plicatum	(base of trees in moist, mature forest habitat)
Schistostega pennata	Green goblin moss (mineral soil on upturned root wads where moist year-round)
LICHENS	
Bryoria subcana	(boles and branches of conifers in moist, mature forest)
Buellia oidalea	(bark and wood of conifers and hardwoods trees and shrubs within 1 mile of the coast.
Cetrelia cetrarioides	(boles of hardwoods and conifers in riparian forest)
Collema nigrescens	(boles of hardwood trees in riparian forest)
Dendriscocaulon intricatulum	(twigs of conifers)
Leptogium cyanescens	(over moss on trees or the ground in moist sites)
Lobaria linita	(on tree boles or rock at higher elevations)
Nephroma occultum	(on conifer branches or boles in mature forest)
Pseudocyphellaria perpetua	(branches and twigs of conifers)
FUNGI	
Ramaria species	coral mushrooms (on soil in a variety of habitats)
Sparassis crispa	Cauliflower mushroom (on soil, associated with Douglas-fir and pine)

C. Other botanical species of conservation concern tracked by the Oregon Natural Heritage Program that are unavailable for personal or commercial harvest.

Scientific Name	Common Name (Habitat)
SHRUBS	
Myrica gale	sweet gale (bog edges)
Vaccinium oxycoccos	wild cranberry (coastal fens, bogs, pond margins)
FORBS	
Ammannia robusta	ammania (wet places)
Abronia latifolia	yellow sandverbena (beach/dunes)
Camissonia graciliflora	bill suncup (open slopes, grasslands)
Castilleja ambigua	johnny-nip (coastal bluffs, salt marshes)
Darlingtonia californica	California pitcher-plant (bogs, marshes)
Elodea nuttallii	Nuttall's waterweed (ponds, streams)
Erythronium revolutum	coast fawn-lily (shady woods, wet area margins)
Honkenya peploides	seabeach sandwort (beaches)
Iliamna latibracteata	globemallow (conifer forests, streamsides)
Lasthenia macrantha ssp. prisca	large-flowered goldfield (seaward slopes, rocky cliffs)
Microseris bigelovii	coast microseris (moist meadows, open slopes)
Myriophyllum sibiricum	water-milfoil (ponds)
Najas guadalupensis	Guadalupe water-nymph (ponds, streams)
Polygonum punctatum	water smartweed (edges of ponds)
Polystichum californicum	California sword fern (woods, streambanks, rocky slopes)
Rhianthus crista-galli	rattle-box (moist places)
Romanzoffia thompsonii	mistrnaiden (wet cliffs)

Samolus parviflorus	brookweed (moist sites)
Sedum radiatum ssp. *ciliosum*	stonecrop (rocky ledges and slopes)
Sidalcea cusickii	Cusick's checker-mallow (open grasslands)
Stellaria humifusa	spreading starwort (salt marsh)
Subularia aquatica	Awlwort (edges of ponds)
Synthyris schizantha	fringed syntheris (mountain peaks)
Tofieldia glutinosa	sticky tofieldia (wet meadows, bogs, streambanks)
Triglochin striatum	arrow-grass (estuaries)
Veratrum insolitum	Siskiyou false hellebore (forest openings)
GRASSES, SEDGES, RUSHES	
Cyperus acuminatus	sharp-pointed flatsedge
Cyperus bipartitus (= *C. rivularis*)	shining flatsedge (wet places)
Cyperus niger var. *capitatus*	flatsedge (wet places)
Dulichium arundinaceum	dulichium (fens, wet meadows)
Eleocharis parvula var. *parvula*	small spike-rush (wet places)
Eriophorum chamissonis	Chamisso's cotton-grass (fens, wet meadows)
Juncus gerardii	mud rush (wet places)
Poa kelloggii	Kellogg's bluegrass (pond/ marsh/ seep edges)
Poa laxiflora	loose-flowered blue (moist, shady areas)
Poa marcida	withered bluegrass (moist forest`)
Rhynchospora capitellalta	beakrush (bogs, fens)
Poa unilateralis	coastal bluff bluegrass (coastal headlands and bluffs)
Scirpus subterminalis	water clubrush (ponds)
FERNS	
Adiantum jordanii	California maidenhair fern (shaded moist rocky banks, ravines and canyons)
MOSSES AND LIVERWORTS	
Campylopus schmidii	(moist edges of forested islands in dunal areas)
Polytrichum strictum	(organic soils, often on sphagnum)
Tetraplodon mnioides	(dung, skeletons, carcasses)
LICHENS	
Bryoria bicolor	(conifer boles and branches)
Nephroma bellum	(conifer branches)
Pseudocyphellaria mougeotiana	(conifer branches)
Usnea hesperina	(conifer and hardwood boles and branches)

D. Plant species inappropriate for collection due to rarity or sensitivity of habitat, or because they have a limited distribution in the Oregon Coast Range, or because the plants are unable to survive transplantation (including all species covered under the Oregon Wildflower Law : ORS 564.010):

	Scientific Name	Common Name (Habitat)
SHRUBS		
	Berberis aquifolium	tall Oregon grape
**	*Rhododendron*	rhododendron species

FORBS		
*	*Allium* spp.	wild onion/garlic
*	*Calochortus* spp.	mariposa/sego lily/cats-ear
	Calypso bulbosa	faiiy-slipper
*	*Camassia* spp.	camas
	Cypripedium spp.	lady's-slipper
*	*Dodecatheon* spp.	shooting star
	Douglasia spp.	douglasia
	Drosera spp.	sundew species
*	*Erythronium* spp.	adder's-tongue/trout-lily/fawn-lily
*	*Fritillaria* spp.	fritillary, yellow bells
	Habenaria spp.	bog-orchid/rein-orchid
	Lewisia spp.	lewisia
*	*Lilium* spp.	tiger lily, Columbia lily
	Lysichitum americanum	skunk cabbage
	Orobanche pinorum	pine broomrape
	Perideridia spp.	yampah
	Xerophyllum tenax	beargrass
ACHLOROPHYLLOUS SPECIES		
	Allotropa virgata	candystick
	Eburophyton austineae	phantom-orchid
	Hemitomes congestum	gnome plant
	Pityopus caIifornica	pine-foot
MOSSES		
	Sphagnum spp.	sphagnum, peat moss

* Seeds of these species may be collected only under personal use permitting processes (10 plant fruits/person/year).

**Personal use permits of native rhododendrons are allowed; commercial collection is prohibited.

Appendix D

Special Forest Product Plant Characteristics

Big-leaf maple (*Acer macrophyllum*)

Range: Alaska to California, mostly Cascades and west, but also in west-central Idaho.

Abundance: In the northern Oregon Coast Range, big-leaf maple was found in 17% of upland forest ecology plots. It is widely distributed across much of the Forest's environmental range, occurring in 73% of forested plant associations described from the area (McCain et al. 2002). It is least common in the Sitka spruce zone along the coast, and most constant in the warmest, driest grand fir and Douglas fir associations. It is a typical tree species in 7 plant associations (>50% of the plots). Where it occurs, trees >12 feet tall average 17% cover. Abundance on the Siuslaw National Forest is similar to that of the northern Coast Range as a whole. Big leaf maple in the Siuslaw National Forest may be somewhat more abundant than in the cool, moist northern extent of the Oregon Coast Range.

Uses: Transplants and firewood.

Plant Characteristics: Big-leaf maple is a moderately long-lived tree that can reach a maximum height of 100 feet. It reproduces primarily by seed but can also be propagated from cuttings and sprouts from the stump. The active growth periods are spring and summer. Growth rate is considered to be rapid.

Effects of Harvest: Big-leaf maple is well distributed across the Forest and harvest at select sites will have no effect on the species' abundance or distribution.

Bitter cherry (*Prunus emarginata* var. *mollis*)

Range: British Columbia to southern Oregon.

Abundance: In the northern Oregon Coast Range, bitter cherry was found in 1% of upland forest ecology plots. It is somewhat uncommon, occurring in 15% of forested plant associations described from the area (McCain et al. 2002). It is not a typical tree species in any plant association (>50% of the plots. Where it occurs, trees >12 feet tall average 4% cover. It is typical of open sites, or recent forest clearings, which are not included in the upland plant

classification. Abundance on the Siuslaw National Forest is similar to that of the northern Coast Range as a whole.

Uses: Berries, firewood.

Plant Characteristics: Bitter cherry is generally a small tree but individuals can grow to a height of 80 feet. The species reproduces by seed but can also sprout from the stump. The active growth period is in the spring. Growth rate is considered to be moderate.

Effects of Harvest: Harvesting trees for firewood would likely result in the mortality of the tree, although it may continue to reproduce from stump sprouts. Because bitter cherry is somewhat uncommon, harvest may effect the distribution and abundance of the species on the Forest. The harvest of berries will have no effect on the species' abundance or distribution

Black twinberry (*Lonicera involucrata*)

Range: Alaska to California east to northern Michigan and Wisconsin.

Abundance: In the northern Oregon Coast Range, black twinberry was found in only 1% of upland forest ecology plots. It is recorded only from near-coast environments, occurring in 8% percent of forested plant associations described from the area (McCain et al. 2002). All occurrences within upland forest plots were in Sitka spruce associations. It is not a typical shrub species in any association (>50% of the plots). Where it occurs, it averages 3% cover. Abundance on the Siuslaw National Forest is similar to that of the northern Coast Range as a whole.

Uses: Transplants, medicinal.

Plant Characteristics: Black twinberry is a perennial shrub reaching 10 feet in height. Reproduction is by seed. The active growth period is the spring. Growth rate is considered to be moderate.

Effects of Harvest: Harvesting transplants will remove the shrub from the site. Removing no more than 25 percent of the plants at select sites will have no effect on the species' abundance or distribution.

Blue iris (*Iris tenax*)

Range: Western Washington and Oregon.

Abundance: In the northern Oregon Coast Range, blue iris was found in 1% of upland forest ecology plots. It is somewhat uncommon in the mature stands in the sample, recorded in 8% percent of forested plant associations described from the area (McCain et al. 2002). It is a typical herb species in only one of those associations (>50% of the plots). Where it occurs in the sampled mature stands, it averages 1% cover. It is typical of open sites, meadows, roadsides, or recent forest clearings, which are not included in the upland plant classification. Abundance on the Siuslaw National Forest is similar to that of the northern Coast Range as a whole.

Uses: Transplants.

Plant Characteristics: Blue iris is a perennial rhizomatous forb. Reproduction is by both seed and underground rhizome. The active growth period is the spring.

Effects of Harvest: Harvesting transplants will remove plants from the site, although it is likely that some portion of the underground rhizome will remain. Removing no more than 25 percent of the plants at select sites will have no effect on the species' abundance or distribution..

Bracken fern (*Pteridium aquilinum* var. *pubescens*)

Range: Western North America.

Abundance: In the northern Oregon Coast Range, bracken fern was found in 24% of upland forest ecology plots. It is very widespread across the Forest's environmental range, occurring in 90% percent of forested plant associations described from the area (McCain et al. 2002). It is a typical fern species in 7 plant associations (>50% of the plots). Where it occurs, it averages 3% cover. Bracken fern is also typical of open disturbed sites, meadows, roadsides, or recent forest clearings, which are not included in the upland plant classification. Abundance on the Siuslaw National Forest is similar to that of the northern Coast Range as a whole.

Uses: Fiddleheads.

Plant Characteristics: A perennial fern species, bracken fern reproduces from spores.

Effects of Harvest: Harvest of the new fronds (fiddleheads) may decrease the growth of this plant in the short-term, but its fast growth, aggressive nature and wide distribution will result in no effect on the species' abundance or distribution.

California wax-myrtle (*Myrica californica*)

Range: Coastal Washington to California.

Abundance: In the northern Oregon Coast Range, California wax-myrtle was found in only 3% of upland forest ecology plots. It is not common in the mature stands in the sample, recorded in 13% percent of forested plant associations described from the area (McCain et al. 2002).). It is a typical shrub species in only 2 of those associations (>50% of the plots). Where it occurs, it averages 11% cover. It is most common in plant associations dominated by rhododendron and/or evergreen huckleberry, both most common in the south to southwest sections of the Siuslaw National Forest and in the Oregon Dunes NRA. Abundance on the Siuslaw National Forest is may be higher than in the northernmost portions of the Oregon Coast Range.

Uses: Transplants.

Plant Characteristics: Wax myrtle is a shrub or small tree reaching a height of 30 feet. Reproduction is by seed. The active growth period is spring and summer and the growth rate is considered to be moderate.

Effects of Harvest: Harvesting transplants will remove the shrub from the site. Removing no more than 25 percent of the plants at select sites will have no effect on the species' abundance or distribution.

Cascara (*Rhamnus purshiana*)

Range: British Columbia to California, mostly west of the Cascade Crest, but occasionally east to western Montana.

Abundance: In the northern Oregon Coast Range, cascara was found in 26% of upland forest ecology plots. It is widely distributed across the Forest's environmental range, occurring in 78% percent of forested plant associations described from the area (McCain et al. 2002). It is a typical species in only 4 of those associations (>50% of the plots). Where it occurs, it averages 4% cover. Most individuals in the mature sampled stands are small (<12') cascara. Abundance on the Siuslaw National Forest is similar to that of the northern Coast Range as a whole.

Uses: Bark used for medicinal purposes.

Plant Characteristics: Cascara is a long-lived deciduous shrub or small tree. It reproduces by seed only, but does have the ability to sprout from the roots and stem. Growth rate is considered to be slow.

Effects of Harvest: Trees cut for bark collection have the ability to sprout from the roots and stump, possibly producing a new stem. Because Cascara only averages 4 percent cover in the plant associations that it occurs, harvest may effect the distribution and abundance of the species on the Forest.

Deer fern (*Blechnum spicant*)

Range: Circumboreal in the northern hemisphere south to California.

Abundance: In the northern Oregon Coast Range, deer fern was found in 44% of upland forest ecology plots. It is common in the mature stands in the sample, recorded in 78% percent of forested plant associations described from the area (McCain et al. 2002). It is a typical fern species in only 14 of those associations (>50% of the plots), 7 of these are in the Sitka spruce zone. In the western hemlock zone, it is most common in the moistest associations. Where it occurs in the sampled mature stands, it averages 2% cover. Deer fern is also common in riparian zones, and was recorded in 41% of riparian plant community samples. Abundance on the Siuslaw National Forest is may be somewhat lower than the northern portion of the Oregon Coast Range where higher precipitation favors deer fern.

Uses: Transplants.

Plant Characteristics: Deer fern is a perennial rhizomatous fern. Reproduction is by both spores and underground rhizomes. The active growth period is the spring and summer. The growth rate is considered to be moderate.

Effects of Harvest: Harvesting transplants removes the above-ground portion of the plant from the site. Below-ground rhizomes will likely be left after harvest that will produce new plants. Harvesting no more than 25 percent of the plants at select sites will have no effect on the species' abundance or distribution.

Douglas-fir (*Pseudotsuga menziesii*)

Range: Western North America.

Abundance: In the northern Oregon Coast Range, Douglas-fir was found in 92% of upland forest ecology plots. It is extremely widely

distributed across the Forest's environmental range, occurring in 98% percent of forested plant associations described from the area (McCain et al. 2002). Douglas fir is a typical tree species in 36 of those associations (>50% of the plots). Where it occurs, it averages 51% cover. Abundance on the Siuslaw National Forest is similar to that of the northern Coast Range as a whole.

Uses: Firewood, transplants, poles, posts, rails, boughs.

Plant Characteristics: Douglas-fir is a large, long-lived tree up to 300 feet in height. Reproduction is by seed. The active growth period is the spring and summer. Growth rate is considered to be moderate.

Effects of Harvest: Douglas-fir is well distributed across the Forest and harvest at select sites will have no effect on the species' abundance or distribution.

Douglas spiraea (*Spiraea douglasii*)

Range: Alaska to California east to Idaho.

Abundance: In the northern Oregon Coast Range, Douglas spiraea (hardhack) was found in less than 1% of upland forest ecology plots. It is limited in distribution to the margins of riparian or wetland zones, occurring in only 1% percent of forested plant associations described from the area (McCain et al. 2002). It is not a typical shrub species in any of the upland associations (>50% of the plots). Where it occurs, it averages 1% cover. Douglas spiraea was recorded in many wetland communities in the Oregon Dunes. Abundance on the Siuslaw National Forest is similar to that of the northern Coast Range as a whole.

Uses: Transplants.

Plant Characteristics: Douglas spiraea is a perennial shrub, reaching 8 feet in height. It reproduces by seed and will also sprout from the root.

Effects of Harvest: The harvest of transplants will remove the shrub from the site, however root fragments left in the soil may re-sprout to form another plant. Harvesting no more than 25 percent of the plants at select sites will have no effect on the species' abundance or distribution.

Dwarf Oregon grape (*Mahonia nervosa*)

Range: British Columbia to central California.

Abundance: In the northern Oregon Coast Range, dwarf Oregon grape was found in 37% of upland forest ecology plots. It is widely distributed across the Forest's environmental range, occurring in 85% percent of forested plant associations described from the area (McCain et al. 2002). It is a dominant shrub species in 14 of those associations (>50% of the plots). Where it occurs, it averages 8% cover. Dwarf Oregon grape has lowest constancy and cover in the moist western hemlock associations in lower slope positions, and Sitka spruce plant associations. Abundance on the Siuslaw National Forest is similar to that of the northern Coast Range as a whole.

Uses: Transplants, roots, berries.

Plant Characteristics: Oregon-grape is a perennial rhizomatous shrub. Reproduction is by seed. The active growth period is the spring and summer and the growth rate is considered to be slow.

Effects of Harvest: Harvest of transplants and roots will remove the plant from the site although roots left behind in the soil may re-sprout. Harvesting no more than 25 percent of the plants at select sites will have no effect on the species' abundance or distribution. Harvesting berries will also have no effect on the species' abundance or distribution.

European beach grass (Ammophila arenaria)

Range: Native to Europe, now established along the US Pacific Coast.

Abundance: In the northern Oregon Coast Range, European beach grass is confined to the active dunal strip along the coast. It was introduced for sand stabilization, and has spread to become an invasive in Oregon's dunes. It was not found in upland forest ecology plots. In communities classified in the Oregon Dunes National Recreation Area, it can range in average cover from 1 to 51%. It is a major influence on dunes communities from Sand Lake in the north of the Siuslaw down to the most extreme south end of the Forest in the ODNRA. Abundance in the Siuslaw National Forest may reflect other parts of the Coast Range with similar dunal habitats.

Uses: Transplants.

Plant Characteristics: European beach grass is a perennial rhizomatous forb. Reproduction is by both seed and underground rhizome. The active growth period is spring and fall. Growth rate is considered to be moderate.

Effects of Harvest: Harvest of this invasive species will have no effect on infestations because any rhizome left at the site will produce a new plant. A negative effect may result from transplanting European beach grass into an area where it did not previously exist, thus potentially creating a new infestation.

Evergreen Huckleberry (*Vaccinium ovatum*)

Range: British Columbia to northwest California.

Abundance: In the northern Oregon Coast Range, evergreen huckleberry was found in 39% of upland forest ecology plots. It is somewhat widespread across the Forest's environmental range, occurring in 73% percent of forested plant associations described from the area (McCain et al. 2002).). It is a typical shrub species in 11 of those associations (>50% of the plots). Where it occurs, it averages 18% cover. It is most common in the south to southwest sections of the Siuslaw National Forest and in the Oregon Dunes NRA. Evergreen huckleberry is frequently associated with rhododendron. Abundance on the Siuslaw National Forest may be higher than in the northernmost portions of the Oregon Coast Range.

Uses: Berries, greenery, transplants.

Plant Characteristics: Evergreen huckleberry is a perennial shrub with non-deciduous leaves. Reproduction is by seed. Plants can reproduce vegetatively by re-sprouting at the base and by layering of buried branches. The active growth period is spring and summer. Growth rate is considered to be slow.

Effects of Harvest: Harvesting no more than 25 percent of the plants for transplants at select sites will have no effect on the species' abundance or distribution.. The harvest of berries will occur at rate and duration as to have no effect on the reproductive capability of evergreen huckleberry. Greenery harvest likewise will also have no effect on the species' abundance or distribution because of the species ability to re-sprout from the base and stem buds.

False lily-of-the-valley (*Maianthemum dilatatum*)

Range: Alaska to California, Idaho.

Abundance: In the northern Oregon Coast Range, false lily-of-the-valley was found in 31% of upland forest ecology plots. It is common in the mature stands in the sample, recorded in 73% percent of forested

plant associations described from the area (McCain et al. 2002). It is a typical herb species in 9 of those associations (>50% of the plots). Where it occurs in the sampled mature stands, it averages 2% cover. It is most common in moist Sitka spruce plant associations or higher elevation moist western hemlock associations. Abundance on the Siuslaw National Forest is similar to that of the northern Coast Range as a whole.

Uses: Transplants.

Plant Characteristics: False lily-of–the-valley is a perennial forb. Reproduction is by seed.

Effects of Harvest: Harvesting transplants will remove the plant from the site. Harvesting no more than 25 percent of the plants at a given site will have no effect on the species' abundance or distribution.

False Solomon's seal (*Smilacina racemosa*)

Range: Widespread in western North America.

Abundance: In the northern Oregon Coast Range, false Solomon's seal was found in 3% of upland forest ecology plots. It is somewhat uncommon in the mature stands in the sample, recorded in 43% percent of forested plant associations described from the area (McCain et al. 2002). It is a typical herb species in only one of those associations (>50% of the plots). Where it occurs in the sampled mature stands, it averages 1% cover. Abundance on the Siuslaw National Forest is similar to that of the northern Coast Range as a whole..

Uses: Transplants.

Plant Characteristics: False Solomon's seal is a rhizomatous perennial forb that reproduces both by seed and vegetatively

Effects of Harvest: Harvested transplants will remove the plant from the site. Removing no more than 25 percent of the plants at a given site will have no effect on the species' abundance or distribution.

Foxglove (*Digitalis purpurea*)

Range: Native to Eurasia, now widely established in North America.

Abundance: In the northern Oregon Coast Range, purple foxglove was found in 4% of upland forest ecology plots. It is somewhat common in the

mature stands in the sample, recorded in 43% percent of forested plant associations described from the area (McCain et al. 2002). It is not a typical herb species in any of those associations (>50% of the plots). Where it occurs in the sampled mature stands, it averages 1% cover. This non-native is typical of open disturbed sites, roadsides, or recent forest clearings, which are not included in the upland plant classification. Abundance on the Siuslaw National Forest is similar to that of the northern Coast Range as a whole.

Uses: Foxglove is a popular ornamental, with known medicinal properties. Local purposes of collections are not documented.

Plant Characteristics: Purple foxglove is a biennial forb. Reproduction is by seed.

Effects of Harvest: Harvest will not likely lead to a spread of this non-native invasive species at the harvest site because any root or plant fragments left behind will not grow. Transplanting to a site where foxglove does not occur could have a negative effect, however in the vicinity of the Siuslaw National Forest, the species has naturalized and can be found in almost all disturbed areas

Lady fern (*Athyrium felix-femina*)

Range: Alaska to California, east to South Dakota with outliers as far as Quebec.

Abundance: In the northern Oregon Coast Range, lady fern was found in 29% of upland forest ecology plots. It is common in the mature stands in the sample, recorded in 68% percent of forested plant associations described from the area (McCain et al. 2002). It is a typical fern species in only 8 of those associations (>50% of the plots). Where it occurs in the sampled mature stands, it averages 1% cover, mainly restricted to moist microsites or riparian edges within the stands. Lady fern is extremely common in riparian zones, and was recorded in 91% of riparian plant community samples. Abundance on the Siuslaw National Forest is similar to that of the northern Coast Range as a whole.

Uses: Transplants.

Plant Characteristics: Lady fern is a perennial fern. Reproduction is by spores.

Effects of Harvest: Harvesting transplants will remove the plant from the site. Removing no more than 25 percent of the plants at a given site will have no effect on the species' abundance or distribution.

Licorice fern (*Polypodium glycyrrhiza*)

Range: Alaska to California, Idaho.

Abundance: In the northern Oregon Coast Range, licorice fern is found in 6% of upland forest ecology plots. It is common across much of the Forest's environmental range, occurring in 60% percent of forested plant associations described from the area (McCain et al. 2002). It is a typical fern species in only one plant association (>50% of the plots). Where it occurs, it averages 1% cover. It generally is found as an epiphyte, especially on big leaf maple. Abundance on the Siuslaw National Forest is similar to that of the northern Coast Range as a whole.

Uses: Local uses are not documented.

Plant Characteristics: Licorice fern is a rhizomatous perennial fern. Reproduction is by spores.

Effects of Harvest: Harvesting transplants will remove the plant from the site. Removing no more than 25 percent of the plants at a given site will have no effect on the species' abundance or distribution.

Lodgepole pine (*Pinus contorta* var. *contorta*)

Range: Western North America.

Abundance: In the northern Oregon Coast Range, lodgepole pine (shore pine) was found in 4% of upland forest ecology plots. It is narrowly distributed along the near-ocean coastal strip, occurring in 18% percent of forested plant associations described from the northern Coast Range (McCain et al. 2002).It is a typical tree species in only one plant association (>50% of the plots). Where it occurs, trees >12 feet tall average 12% cover. Lodgepole pine is typical of dunal environments, and it can be seral to Sitka spruce. Abundance on the Siuslaw National Forest is similar to that of the northern Coast Range as a whole.

Uses: Firewood, posts, poles, rails.

Plant Characteristics: Lodgepole pine is a medium size tree up to 50 feet in height. Reproduction is by seed. The active growth period is the spring and summer. Growth rate is considered to be rapid.

Effects of Harvest: Within its range on the Forest, lodgepole pine is well distributed and harvest will have no effect on the species' abundance or distribution.

Noble fir (*Abies procera*)

Range: Washington to northern California.

Abundance: In the northern Oregon Coast Range, noble fir was found in less than 1% of upland forest ecology plots. It is rare, occurring in only one of 40 forested plant associations described from the area (McCain et al. 2002). It is a typical tree species in that plant association (>50% of the plots). Where it occurs, trees >12 feet tall average 53% cover. Noble fir occurs only on peaks and high ridges in the Coast Range. On the Siuslaw, it is found on elevations from 3400 to 3800 feet, and is documented only on Marys Peak. There are some recorded occurrences on Salem BLM lands and Oregon State Forests in the north portion of the Coast Range, where moisture/temperature factors enable the noble fir to occur at elevations down to 2200 feet (average 2900). Abundance on the Siuslaw National Forest is somewhat more limited than in northern high precipitation areas in the Coast Range.

Uses: Boughs, cones, Christmas trees.

Plant Characteristics: Noble fir is a large size tree up to 230 feet in height. Reproduction is by seed. The active growth period is the spring and summer. Growth rate is considered to be rapid.

Effects of Harvest: Harvest of noble fir products is highly regulated and occurs as needed to meet other resource objectives, primarily the maintenance of open meadow habitat. Despite its rarity on the Siuslaw National Forest, harvest will have no effect on the species' abundance or distribution.

Oregon oxalis (*Oxalis oregana*)

Range: Alaska to California.

Abundance: In the northern Oregon Coast Range, Oregon oxalis was found in 52% of upland forest ecology plots. It is widely distributed across the Forest's environmental range, occurring in 80% percent of forested plant associations described from the area (McCain et al. 2002). It is a typical herb species in 19 of those associations (>50% of the plots). Where it occurs in the sampled mature stands, it averages 17% cover. Oregon oxalis is most abundant in moist plant

associations, either in lower slope positions or benches, or where fog and clouds enhance moisture regimes at higher elevations. Abundance on the Siuslaw National Forest is similar to that of the northern Coast Range as a whole.

Uses: Transplants.

Plant Characteristics: Oregon oxalis is a perennial rhizomatous forb. Reproduction is by both seed and underground rhizome.

Effects of Harvest: Harvest of plants will likely leave underground rhizomes behind that will result in new plants. Harvest at select sites will have no effect on the species' abundance or distribution.

Pearly everlasting (*Anaphalis margaritacea*)

Range: Widespread in North America.

Abundance: In the northern Oregon Coast Range, pearly everlasting was found in 1% of upland forest ecology plots. It is somewhat common in the mature stands in the sample, recorded in 25% percent of forested plant associations described from the area (McCain et al. 2002). It is a typical herb species in only one of those associations (>50% of the plots). Where it occurs in the sampled mature stands, it averages 1% cover. It is typical of open sites, meadows, roadsides, or recent forest clearings, which are not included in the upland plant classification. Abundance on the Siuslaw National Forest is similar to that of the northern Coast Range as a whole.

Uses: Transplants, seed, dried flowers.

Plant Characteristics: Pearly everlasting is a perennial rhizomatous forb. Reproduction is by both seed and underground rhizome. The active growth period is the spring and summer. Growth rate is considered to be rapid.

Effects of Harvest: Harvest of plants will likely leave underground rhizomes behind that will result in new plants. Harvest at select sites will have no effect on the species' abundance or distribution.

Red alder (*Alnus rubra*)

Range: Alaska to northern California, mostly from the Cascades and west, but also in northern Idaho.

Abundance: In the northern Oregon Coast Range, red alder was found in 38% of upland forest ecology plots. It is widely distributed across much

of the Forest's environmental range, occurring in 75% percent of forested plant associations described from the area (McCain et al. 2002).It is a typical tree species in 5 plant associations (>50% of the plots). Where it occurs, trees >12 feet tall average 15% cover. Red alder is typical of riparian zones (found in 68% of riparian plant community plots) where it is more dominant than in mature upland sites. Red alder is also a common species in young stands or on disturbed sites, and can be dominant along roads. Abundance on the Siuslaw National Forest is similar to that of the northern Coast Range as a whole.

Uses: Alder puddle sticks, firewood, posts, poles, rails.

Plant Characteristics: Red alder is a short-lived tree that can reach a maximum height of 90 feet. It reproduces by seed. The active growth periods are spring and summer. Growth rate is considered to be moderate.

Effects of Harvest: Red alder is well distributed across the Forest and harvest at select sites will result in no effect on the species' abundance or distribution.

Red elderberry (*Sambucus racemosa*)

Range: Widespread in North America.

Abundance: In the northern Oregon Coast Range, red elderberry was found in 18% of upland forest ecology plots. It is well distributed across the Forest's environmental range, occurring in 60% percent of forested plant associations described from the area (McCain et al. 2002). It is a typical shrub species in only 2 of those associations (>50% of the plots). Where it occurs, it averages 3% cover. Red elderberry has highest constancy in the moist western hemlock associations Sitka spruce plant associations or open riparian forest positions. It is especially abundant along streams or in recent forest clearings in lower slope positions. Abundance on the Siuslaw National Forest is similar to that of the northern Coast Range as a whole.

Uses: Transplants, berries.

Plant Characteristics: Red elderberry is a perennial shrub or small tree growing up to 20 feet in height. Reproduction is by seed. The active growth period is during the spring and summer. Growth rate is considered to be moderate.

Effects of Harvest: Red elderberry is well distributed across the Forest and harvest at select sites will have no effect on the species' abundance or distribution.

Red-flowering current (*Ribes sanguineum*)

Range: British Columbia to California.

Abundance: In the northern Oregon Coast Range, red-flowering currant was found in less than 1% of upland forest ecology plots. It occurs in 5% percent of forested plant associations described from the area (McCain et al. 2002). It is not a typical shrub species in any of those associations (>50% of the plots). Where it occurs, it averages 1% cover. It may be somewhat more abundant along roadsides or in recent forest clearings which are not included in the upland plant classification. Abundance on the Siuslaw National Forest is similar to that of the northern Coast Range as a whole.

Uses: Transplants.

Plant Characteristics: Red-flowering current is a perennial shrub reaching a height of 12 feet. Reproduction is by seed, although the species can be propagated from cuttings. The active growth period is the spring and summer. Growth rate is considered to be moderate.

Effects of Harvest: Harvesting transplants will remove the plant from the site. Removing no more than 25 percent of the plants at select sites will have no effect on the species' abundance or distribution.

Red Huckleberry (*Vaccinium parvifolium*)

Range: British Columbia to California.

Abundance: In the northern Oregon Coast Range, red huckleberry was found in 84% of upland forest ecology plots. It is very widespread across the Forest's environmental range, occurring in 90% percent of forested plant associations described from the area (McCain et al. 2002).). It is a typical shrub species in 32 of those associations (>50% of the plots). Where it occurs, it averages 7% cover. Red huckleberry is most constant and abundant in the Sitka spruce zone, and also western hemlock/salal associations. Abundance on the Siuslaw National Forest is similar to that of the northern Coast Range as a whole.

Uses: Transplants, berries.

Plant Characteristics: Red huckleberry is a perennial shrub reaching a height of 12 feet. Reproduction is by seed, although the species can be propagated from cuttings. The active growth period is the spring and summer. Growth rate is considered to be slow.

Effects of Harvest: Red huckleberry is well distributed across the Forest and harvest at select sites will have no effect on the species' abundance or distribution.

Rhododendron (*Rhododendron macrophyllum*)

Range: British Columbia to California.

Abundance: In the northern Oregon Coast Range, rhododendron was found in 19% of upland forest ecology plots. It is widespread across the Forest's environmental range, occurring in 90% percent of forested plant associations described from the area (McCain et al. 2002).). It is a typical shrub species in 50 of those associations (>50% of the plots). Where it occurs, it averages 28% cover. It is most common in the south to southwest sections of the Siuslaw National Forest and in the Oregon Dunes NRA. Abundance on the Siuslaw National Forest is may be higher than in the northernmost portions of the Oregon Coast Range.

Uses: Transplants.

Plant Characteristics: Rhododendron is a perennial shrub reaching a height of 15 feet. Reproduction is by seed and branch layering. The active growth period is the spring and summer. Growth rate is considered to be moderate.

Effects of Harvest: Harvesting transplants will remove the plant from the site. Removing no more than 25 percent of the plants at select sites will have no effect on the species' abundance or distribution.

Salal (*Gaultheria shallon*)

Range: British Columbia to southern California.

Abundance: In the northern Oregon Coast Range, salal was found in 69% of upland forest ecology plots. It is very widely distributed across the Forest's environmental range, occurring in 95% percent of forested plant associations described from the area (McCain et al. 2002). It is a typical shrub species in 30 of those associations (>50% of the plots). Where it occurs, it averages 20% cover. Salal has lowest

constancy and cover in the very moist lower slope western hemlock and Sitka spruce plant associations (understories dominated by salmonberry, devils club and/or oxalis). Abundance on the Siuslaw National Forest is similar to that of the northern Coast Range as a whole.

Uses: Greenery and transplants.

Plant Characteristics: Salal is a perennial shrub with non-deciduous leaves. In addition to producing seed, plants can reproduce from underground rhizomes and re-sprout from buds after cutting. The active growth periods are spring summer and fall. Growth rate is considered to be rapid.

Effects of Harvest: The ability to reproduce from underground rhizomes and re-sprout from buds makes it unlikely that the harvest of branches for greenery would cause mortality to the plant. The harvest of greenery will have no effect on the species' abundance or distribution. Harvesting transplants will remove the plant from the site. Harvesting no more than 25 percent of the plants at a given site will have no effect on the species' abundance or distribution.

Salmonberry (*Rubus spectabilis*)

Range: Alaska to northern California, northern Idaho.

Abundance: In the northern Oregon Coast Range, salmonberry was found in 55% of upland forest ecology plots. It is widely distributed across the Forest's environmental range, occurring in 83% percent of forested plant associations described from the area (McCain et al. 2002). It is a typical shrub species in 18 of those associations (>50% of the plots). Where it occurs, it averages 16% cover. Salmonberry has highest constancy and cover in the moist western hemlock associations in lower slope positions, and Sitka spruce plant associations. It is especially abundant along streams or in recent forest clearings in lower slope positions. Generally, little salmonberry is found in mature stands with rhododendron. Abundance on the Siuslaw National Forest is similar to that of the northern Coast Range as a whole.

Uses: Berries.

Plant Characteristics: Salmonberry is a perennial shrub reaching a height of 12 feet. Reproduction is by seed. The active growth period is the spring and summer. Growth rate is considered to be moderate.

Effects of Harvest: Salmonberry is well distributed across the Forest and harvest at select sites will have no effect on the species' abundance or distribution.

Sitka spruce (*Picea sitchensis*)

Range: Southeast Alaska to northern California.

Abundance: In the northern Oregon Coast Range, Sitka spruce was found in 32% of upland forest ecology plots. It is distributed from the coast inland as far as fog exerts a dominant environmental influence. Sitka spruce occurs in 63% percent of forested plant associations described from the northern Coast Range (McCain et al. 2002).It is a typical tree species in 9 plant associations (>50% of the plots), all in the Sitka spruce series. Where it occurs, trees >12 feet tall average 24% cover. Sitka spruce can be found along valley bottoms and on floodplains further inland than in upper-slope positions. Abundance on the Siuslaw National Forest may be somewhat more confined to the coast than may be true in the most northerly portion of the northern Coast Range.

Uses: Transplants, Christmas trees.

Plant Characteristics: Sitka spruce is a long-lived tree that can reach a maximum height of 200 feet. It reproduces by seed. The active growth period is spring and summer. Growth rate is considered to be moderate.

Effects of Harvest: Within its range on the Forest, Sitka spruce is well distributed and harvest at select sites will have no effect on the species' abundance or distribution.

Slough sedge (*Carex obnupta*)

Range: British Columbia to California.

Abundance: In the northern Oregon Coast Range, slough sedge was found in 1% of upland forest ecology plots. It is uncommon in the mature stands in the sample, recorded in 18% percent of forested plant associations described from the area, mainly restricted to wet microsites or riparian edges within the stands (McCain et al. 2002). This sedge was not typical in any of those associations (>50% of the plots. Where it occurs in the sampled mature stands, it averages 2% cover. Slough sedge is generally confined to wetlands. Abundance on the Siuslaw National Forest is similar to that of the northern Coast Range as a whole.

Uses: Transplants, seed.

Plant Characteristics: Slough sedge is a perennial rhizomatous forb. Reproduction is by both seed and underground rhizome. The active growth period is spring and summer. Growth rate is considered to be rapid.

Effects of Harvest: Harvest of plants will likely leave underground rhizomes behind that will result in new plants. Harvest at select sites will have no effect on the species' abundance or distribution.

Stream violet (*Viola glabella*)

Range: Alaska to California, east to Montana.

Abundance: In the northern Oregon Coast Range, stream violet was found in 2% of upland forest ecology plots. It is not widely distributed across the Forest's environmental range, occurring in 35% percent of forested plant associations described from the area (McCain et al. 2002). It is a typical herb species in 3 of those associations (>50% of the plots). Where it occurs in the sampled mature stands, it averages 2% cover. Stream violet is somewhat more abundant in moist plant associations. Abundance on the Siuslaw National Forest is similar to that of the northern Coast Range as a whole.

Uses: Transplants.

Plant Characteristics: Stream violet is a perennial rhizomatous herb. Reproduction is by seed.

Effects of Harvest: Harvest of plants will likely leave underground rhizomes behind that will result in new plants. Harvest at select sites will have no effect on the species' abundance or distribution.

Sword fern (*Polystichum munitum*)

Range: Alaska to California, east to Idaho and Montana.

Abundance: In the northern Oregon Coast Range, sword fern was found in 94% of upland forest ecology plots. It is extremely widespread across the Forest's environmental range, occurring in 98% percent of forested plant associations described from the area (McCain et al. 2002). It is a typical fern species in 38 plant associations (>50% of the plots). Where it occurs, it averages 33% cover. Sword fern is one of the most common and abundant species in the northern Coast Range. Abundance on the Siuslaw National Forest is similar to that of the northern Coast Range as a whole.

Uses: Transplants.

Plant Characteristics: Sword fern is a perennial rhizomatous fern. Reproduction is by spores. The active growth period is the spring and summer. Growth rate is considered to be moderate.

Effects of Harvest: Sword fern is well distributed across the Forest and harvest at selected sites will have no effect on the species' abundance or distribution.

Thimbleberry (*Rubus parviflorus*)

Range: Alaska to California, east to Idaho and Montana.

Abundance: In the northern Oregon Coast Range, thimbleberry was found in 17% of upland forest ecology plots. It is distributed across the Forest's environmental range, occurring in 70% percent of forested plant associations described from the area (McCain et al. 2002). It is a typical shrub species in only 2 of those associations (>50% of the plots). Where it occurs, it averages 2% cover. It may be somewhat more abundant along roadsides or in recent forest clearings which are not included in the upland plant classification. Abundance on the Siuslaw National Forest is similar to that of the northern Coast Range as a whole.

Uses: Berries.

Plant Characteristics: Thimbleberry is a perennial rhizomatous shrub reaching 6 feet in height. Reproduction is by both seed and underground rhizome. The active growth period is spring and summer. Growth rate is considered to be rapid.

Effects of Harvest: The harvest of berries at selected sites will have no effect on the species' abundance or distribution.

Vine maple (*Acer circinatum*)

Range: Southeast Alaska to northern California.

Abundance: In the northern Oregon Coast Range, vine maple was found in 53% of upland forest ecology plots. It is widely distributed across the Forest's environmental range, occurring in 85% percent of forested plant associations described from the area (McCain et al. 2002). It is a typical shrub species in 21 of those associations (>50% of the plots). Where it occurs, it averages 31% cover. Abundance on the

Siuslaw National Forest is similar to that of the northern Coast Range as a whole.

Uses: Transplants, basketry, furniture and smoking meats.

Plant Characteristics: Vine maple is a shrub or small tree. Reproduction is by seed, stump sprouts and layering of branches. The active growth periods are spring and summer. Growth rate is considered to be moderate.

Effects of Harvest: Vine maple is well distributed across the Forest and harvest at selected sites will have no effect on the species' abundance or distribution.

Western hemlock (*Tsuga heterophylla*)

Range: Alaska to California, northern Idaho and northwest Montana.

Abundance: In the northern Oregon Coast Range, western hemlock was found in 66% of upland forest ecology plots. It is widely distributed across much of the Forest's environmental range, occurring in 88% percent of forested plant associations described from the area (McCain et al. 2002).It is a typical tree species in 27 plant associations (>50% of the plots). Where it occurs, trees >12 feet tall average 29% cover. Western hemlock has the highest constancy in the Sitka spruce zone and in moist western hemlock plant associations. It has the lowest constancy in the warm, dry western hemlock associations and the grand fir zone. Abundance on the Siuslaw National Forest is similar to that of the northern Coast Range as a whole.

Uses: Firewood, posts, poles, rails.

Plant Characteristics: Western hemlock is a large tree up to 170 feet in height. Reproduction is by seed. The active growth period is the spring and summer. Growth rate is considered to be slow.

Effects of Harvest: Western hemlock is well distributed across the Forest and harvest at selected sites will have no effect on the species' abundance or distribution.

Western red cedar (*Thuja plicata*)

Range: Alaska to northern California, north Idaho and northwest Montana.

Abundance: In the northern Oregon Coast Range, western redcedar was found in 32% of upland forest ecology plots. It is widely distributed

	across much of the Forest's environmental range, occurring in 83% percent of forested plant associations described from the area (McCain et al. 2002).It is a typical tree species in 4 plant associations (>50% of the plots). Where it occurs, trees >12 feet tall average 14% cover. Abundance on the Siuslaw National Forest is similar to that of the northern Coast Range as a whole.
Uses:	Firewood, posts, poles, rails, shingle bolts.
Plant Characteristics:	Western red cedar is a large tree up to 150 feet in height. Reproduction is by seed. The active growth period is the spring and summer. Growth rate is considered to be slow.
Effects of Harvest:	Western red cedar is well distributed across the Forest and harvest at selected sites will have no effect on the species' abundance or distribution.

Yarrow (*Achillea millefollium*)

Range:	Circumboreal in the northern hemisphere.
Abundance:	In the northern Oregon Coast Range, yarrow was found in less than 1% of upland forest ecology plots. It is not common in the mature stands in the sample, recorded in only 3% percent of forested plant associations described from the area (McCain et al. 2002). Where it occurs in the sampled mature stands, it averages 2% cover. It is typical of open sites, meadows, gravel bars, roadsides, or recent forest clearings. Abundance on the Siuslaw National Forest is similar to that of the northern Coast Range as a whole.
Uses:	Medicinal.
Plant Characteristics:	Yarrow is a perennial rhizomatous forb. Reproduction is by both seed and underground rhizome. The active growth period is the spring and summer. Growth rate is considered to be moderate.
Effects of Harvest:	Harvest of plants will likely leave underground rhizomes behind that will result in new plants. Harvest will have no effect on the species' abundance or distribution.