SIUSLAW NATIONAL FOREST
MONITORING QUESTIONS

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Siuslaw National Forest
Corvallis, Oregon

This updated version of the forest monitoring questions
was prepared by an interdisciplinary team from the
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Contents

Contents

INTRODUCTION

This update of the Forest monitoring questions was developed in 1997 to meet two needs: 1) to address the Forest commitment to update the monitoring plan as part of the Coast Range Province Effectiveness Monitoring Pilot study, and 2) to ensure Forest monitoring is collecting information needed to support future Plan adjustments. The questions include revised and consolidated monitoring questions from the Siuslaw Forest Plan (1990) and the Oregon Dunes National Recreation Area (NRA) Management Plan (1994), as well as new questions responsive to the management direction in the Northwest Forest Plan (1994).

The monitoring questions were updated using the following strategy:

a. Forest monitoring questions were tiered to the province-scale monitoring questions, both implementation and effectiveness questions, developed for the NW Forest Plan. The intent is to eliminate redundancies at the project scale if monitoring and/or regional inventories at a larger scale can provide adequate information.
b. Monitoring questions were selected primarily for key resource issues and to meet requirements of NFMA. Monitoring of resource issues not covered by the Northwest Forest Plan was kept or added if considered an important issue to the Siuslaw National Forest.
c. Monitoring questions were grouped into broad resource issues to allow future projects and assessments to tier to the Forest Plan monitoring plan, rather than having specific monitoring questions developed for each project. The accumulation of monitoring questions emerging from projects, watershed analyses and LSR assessments was becoming unwieldy and impractical to implement with limited funds and staff.
d. Forest data that can support monitoring questions should be integrated into corporate databases.
e. Priority ratings were identified for each monitoring question based on the following:
    1 - required by law or regulation
    2 - needed to address a key Forest management issue
    3 - needed to address other Forest issues.

    It is unlikely there will be funds to conduct annual monitoring of all the questions. The priorities should be considered when allocating annual funds for monitoring activities.

Forest monitoring questions will be updated as needed to respond to new management issues.

The Forest monitoring questions are organized into four categories--Aquatic, Terrestrial, Social and Other. Several Forest management issues are identified for each category and one or more evaluation questions are identified for each issue. A set of worksheets, which describes the goals or desired conditions, monitoring indicators, sampling

methods, threshold of variability, responsibility, reporting period and estimated costs, follows the summary *list* of questions.

The eight questions that are tiered to province-scale monitoring are flagged with a **"PROVINCE SCALE"** label adjacent the question.

SUMMARY LIST OF MONITORING ISSUES AND QUESTIONS

AQUATIC GROUP

Monitoring Issue: **Anadromous Fish Habitat**

How is quality of anadromous fish habitat changing?

Evaluation Questions:

1. Do trends in fish habitat capability, naturally-occurring large woody debris, and health and survival of streamside conifers indicate about as much habitat by the end of the first decade?

2. Are projects included in the Accelerated Watershed Restoration Initiative restoring ecosystems in Key Watersheds?

3. Are aquatic resource management activities meeting prescribed standards and guidelines and do they comply with applicable laws and policies? **(From PROVINCE-SCALE)**

Monitoring Issue: **Lake Fish Habitat**

How is quality of lake fish habitat changing?

Evaluation Question:

1. Are trends in lake habitat conditions the same or improved slightly by the end of the first decade?

Monitoring Issue: **Fish Populations**

How are anadromous fish populations changing?

Evaluation Question:

1. Are fish stocks at risk (and viable populations of MIS) being maintained?

Monitoring Issue: **Water Quality**

Is the water quality of perennial streams, as measured by changes in water temperature, being maintained as predicted?

Evaluation Question:

1. Are the water quality parameters for water temperature within limits established by state water quality standards?

Monitoring Issue: **Water Use**

Can the Forest provide water to meet future demands for domestic and municipal use while meeting the Aquatic Conservation Strategy objectives for fish habitat?

Evaluation Question:

1. For each 5th-field watershed, what is the amount and what are the trends in domestic and municipal water use from Forest watersheds?

TERRESTRIAL GROUP

Monitoring Issue: **Forest Vegetation Condition**

Is the forest seral stage distribution moving toward the desired future condition? Are forest stand composition and structure moving toward the desired condition?

Evaluation Questions:

1. What are the spatial trends in seral conditions including age and structural distribution? **(From PROVINCE-SCALE)**

2. What are the trends in species composition and structure for stands in the various Northwest Forest Plan allocations? **(From PROVINCE-SCALE)**

3. Are silvicultural treatments effective in promoting development of LSOG composition and structure at the stand scale? Are the treatments resulting in forestwide diversity of late-successional conditions?

4. Are populations of destructive insect and disease organisms remaining below potentially damaging levels following management activities?

Monitoring Issue: **Plantation Management**

Are plantations being managed to maintain prescribed density levels?

Evaluation Questions:

1. Are managed stands being maintained at prescribed stocking levels?

2. Is reforestation meeting legal and policy requirements, i.e., are stands adequately restocked within 3 years of regeneration harvest?

3. Are management activities meeting the prescribed standards and guidelines and do they comply with applicable laws and policies? **(From PROVINCE-SCALE)**

Monitoring Issue: **Suitable Timber Land**

Has the suitable timber land base changed?

Evaluation Question:

1. Are lands which were identified as not suitable for timber production still unsuitable?

Monitoring Issue: **Special Forest Products**

Is moss being managed for harvest and long-term sustainability while complying with standards and guidelines? Are there any negative effects from harvest to the long-term sustainability of Matsutake mushroom resources?

Evaluation Questions for Moss:

1. How fast does moss regrow following harvest?

2. What is the impact of moss harvest at different levels of intensity?

3. What is the impact of moss harvest in the riparian zone?

Evaluation Questions for Matsutake Mushrooms:

1. Is the permit system and information providing adequate and appropriate information?

2. Is mushroom harvest reducing or disturbing mycelium habitat, and is it impacting other natural resources?

3. What are the best harvest levels and techniques for mushroom harvest?

4. How much mushroom is produced on the Oregon Dunes NRA?

5. Is spatial distribution of mushrooms affected by harvest?

Monitoring Issue: **Soil Productivity**

Is long-term soil productivity of forest land being maintained?

Evaluation Questions:

1. Are existing conifers being left to grow for future supplies of coarse woody debris inputs to soils?

2. Are sufficient quantities of unutilized large wood being left on harvest units adjacent to streams and on upland slopes for long-term soil productivity?

Monitoring Issue: **Research Natural Area Protection**

Are Research Natural Areas (RNAs) being protected according to the RNA Establishment Records?

Evaluation Questions:

1. Are human impacts within acceptable levels for the Research Natural Areas, i.e., in compliance with the Standards and Guidelines?
2. Are beachgrass control projects at Sandlake RNA effective?

Monitoring Issue: **Wildlife Habitat - Northern Spotted Owl**

What are the trends in habitat for northern spotted owl pairs and resident singles on the Forest landscape?

Evaluation Question:

1. What is the amount and what are the trends in suitable northern spotted owl habitat on the Forest? **(From PROVINCE-SCALE)**

Monitoring Issue: **Wildlife Habitat - Marbled Murrelet**
What are the trends in habitat for marbled murrelet on the Forest landscape?

Evaluation Question:
1. What is the amount and what are the trends in suitable marbled murrelet habitat on the Forest? **(From PROVINCE-SCALE)**

Monitoring Issue: **Wildlife Habitat - Northern Bald Eagle**
What are the trends in habitat for northern bald eagles on the Forest?

Evaluation Question:
1. What is the amount and trend in suitable northern bald eagle habitat on the Forest and within Management Area 4?

Monitoring Issue: **Wildlife Habitat - Western Snowy Plover**
What is the trend in restoring habitat for western snowy plover?

Evaluation Question:
1. Are habitats important for western snowy plover nesting and brood rearing increasing on the Forest? Are vegetation management programs effective in controlling European beachgrass?

Monitoring Issue: **Wildlife Habitat - Snags**
Has management for snags provided suitable habitat for snag-dependent species?

Evaluation Questions:
1. What is the life table for created and natural snags in selected treatment areas?

2. When do snag-dependent species begin to use man-made snags and what species (primary and secondary cavity users) are using both man-made and naturally occurring snags?

Monitoring Issue: **Wildlife Habitat - Special Habitats**
Are special habitats on the Forest being protected?

Evaluation Question:
1. Are special habitats being protected in accordance with Aquatic Conservation Strategy objectives and Riparian Reserve standards and guidelines as described in the NFP, and with Siuslaw Forest Plan standards and guidelines?

Monitoring Issue: **Wildlife Habitat - Early Seral Habitats**

Is biological diversity being maintained for native species and ecosystems?

Evaluation Question:

1. Are early seral habitats being maintained across the Forest landscape in amounts and distribution compatible with NFP standards and guidelines?

Monitoring Issue: **Wildlife Habitat - Wetlands**

Are wetland habitats important for waterfowl and shorebirds being maintained on the Oregon Dunes NRA and other areas such as the Salmon River estuary?

Evaluation Question:

1. Are wetland habitats managed to capture existing opportunities and promote the Forest emphasis?

Monitoring Issue: **Wildlife Populations - Northern Spotted Owl**

What are the trends in northern spotted owl populations on the Forest?

Evaluation Question:

1. What is the health of the northern spotted owl population that inhabits the Oregon Coast Range? Specifically, is the population of northern spotted owls decreasing, stabilized or increasing? **(From PROVINCE-SCALE)**

Monitoring Issue: **Wildlife Populations - Marbled Murrelets**

What are the trends in marbled murrelet populations on the Forest?

Evaluation Question:

1. What is the health of the marbled murrelet population that inhabits the Oregon Coast Range? Specifically, is the population of marbled murrelets decreasing, stabilized or increasing? **(From PROVINCE-SCALE)**

Monitoring Issue: **Wildlife Populations - Northern Bald Eagle**

What are the trends in northern bald eagle populations on the Forest?

Evaluation Question:

1. What is the health of the northern bald eagle population that inhabits the Oregon Coast Range? Specifically, is the population of northern bald eagles decreasing, stabilized or increasing?

Monitoring Issue: **Wildlife Populations - Western Snowy Plover**

What are the trends in western snowy plover breeding and wintering populations on the Forest?

Evaluation Question:

1. What is the health of the western snowy plover population that inhabits the Oregon Coast Range? Specifically, is the population of nesting and over-wintering western snowy plovers decreasing, stabilized or increasing?

Monitoring Issue: **Oregon Silverspot Butterfly**

Are recovery plan objectives for the Oregon silverspot butterfly being met?

Evaluation Questions:

1. Is all known habitat protected in accordance with the Recovery Plan?

2. Are protected and managed meadows producing enough violets?

3. Has a management plan for each habitat site been written?

4. Are viable butterfly populations being maintained on the Siuslaw National Forest?

SOCIAL GROUP

Monitoring Issue: **Commodity Production**

Is the Forest providing commodities at levels projected in the Forest Plan?

Evaluation Questions:

1. Are the total sale quantity and probable sale quantity (TSQ and PSQ) similar to the level predicted in the Forest Plan?

2. Are the annual quantities of Special Forest Products within limits prescribed in the Forest Plan Amendment #6 (Special Forest Products)?

Monitoring Issue: **Cultural Resources**

Are cultural and historical sites being used and protected as planned?

Evaluation Questions:

1. Is a complete structural inspection of historic structures being accomplished and are the necessary repairs being made?

2. Is appropriate stabilization or rehabilitation of damaged or eroded sites eligible for inclusion in the National Register of Historic Places (NHRP) being done?

3. Are cultural resource surveys being performed according to the Forest SHPO agreement?

Monitoring Issue: **Landownership Status**

Are the goals of the Landownership Adjustment Plan being met?

Evaluation Questions:

1. Have Forest lands program adjustment goals been met?

2. Has fragmentation of the Forest land base in Late-Successional Reserves changed?

Monitoring Issue: **Local Economies and Communities**

Are local natural resource based economies and communities healthy?

Evaluation Questions:

1. What are the trends in employment, unemployment and payrolls in communities affected by the Forest?

2. What are the demographic trends in communities affected by the Forest?

3. Are economic assistance opportunities available or operating in local communities?

4. What are the annual payments to counties?

5. Do trends in the Forest's contribution to area forest products industries indicate about as much contribution by the end of the first decade as provided at the beginning of the Northwest Forest Plan?

Monitoring Issue: **Public Coordination, Cooperation and Collaboration**

Do Forest activities involve a broad range of publics and a high level of interagency cooperation and collaboration?

Evaluation Questions:

1. Does the Forest have a high number and diverse range of agencies and publics participating in its activities, and improving relationships with its publics--as directed in the Northwest Forest Plan?

2. Are groups working together to develop innovative management approaches in the AMA, including social learning and adaptation?

Monitoring Issue: **Recreation Diversity**

Is the diversity of recreation opportunities provided for in the Forest Plan being supplied and used?

Evaluation Questions:

1. Is management of the following areas consistent with the assigned ROS or WROS classification and other direction in the Forest Plan?

   Wilderness, Oregon Dunes NRA, Cascade Head SRA, Special Interest Areas, Undeveloped areas, Sutton, Sandlake, and Developed recreation sites

2. Is the amount and type of recreation use occurring in various areas of the Forest as predicted in the Forest Plan?

Monitoring Issue: **Recreation - Off-highway Vehicles**

Is off-highway vehicle (OHV) use taking place as intended in the Forest Plan?

Evaluation Questions:

1. Is off-highway use of vehicles confined to those areas designated for such use in the Forest Plan?

2. Is off-highway vehicle use at the Oregon Dunes NRA complying with operating hour restrictions (curfews) and noise emission (dB) standards established in the Forest Plan?

Monitoring Issue: **Accessibility**

Are Forest recreation facilities, buildings, administrative sites and environmental education programs usable by all people regardless of physical and mental ability?

Evaluation Questions:

1. Are recreation sites and administrative facilities on the Forest brought to standard in accordance with the Forest Accessibility Transition Plan (1996)?

2. Are Forest environmental education programs available to people with disabilities?

Monitoring Issue: **Transportation - Access and Travel Management**

Is the plan for long-term access roads (primary and secondary roads) sufficient for general public access needs?

Evaluation Question:

1. What are the volume and trends in use patterns for the Primary and Secondary system of roads?

2. Are road maintenance and stabilization needs identified in Watershed Analyses or in Road Assessments being accomplished?

OTHER GROUP

Monitoring Issue: **Programs and Budgets**

Are Forest programs and budgets providing the needs for Forest Plan implementation?

Evaluation Questions:

1. Are the annual programs and budgets needed to implement the Forest Plan being realized?

2. What revenues were collected from sale or use of Forest resources?

3. What are the expenditures for major resource activities on the Forest?

Monitoring Issue: **Standard and Guideline Compliance for Resources/Activities Not Included in the Northwest Forest Plan**

Are management objectives for the following resources being met:?

bald eagle sites, cultural resources, recreation, scenery, silverspot butterfly habitat, and Wild & Scenic Rivers

Evaluation Question:

1. Do projects comply with standards and guidelines, as amended by the Northwest Forest Plan ?
   (See worksheets for applicable S&Gs for each resource.)

Monitoring Issue: **AMA Projects**

Is the AMA developing projects to test new approaches to land management that integrates economics and ecological objectives based on watershed and landscape analysis?

Evaluation Questions:

1. Is the AMA developing projects to test:
   a. creation and maintenance of a variety of forest structural conditions, including late-successional forest conditions and desired aquatic and riparian habitat conditions?
   b. integration of timber production with maintenance or restoration of fisheries habitat and water quality?
   c. restoration of structural complexity and biological diversity in forests and streams that have been degraded by past management activities and natural events?
   d. integration of wildlife habitat needs (particularly of sensitive and threatened species) with timber management?
   e. alternative logging and transportation systems with low impact to soil stability and water quality?
   f. the effects of forest management activities at the landscape level?

Monitoring Issue: **AMA Management**

Is the AMA exploring alternative ways of doing business internally and with other federal agencies, tribes, other organizations, local and state government and private landowners?

Evaluation Question:

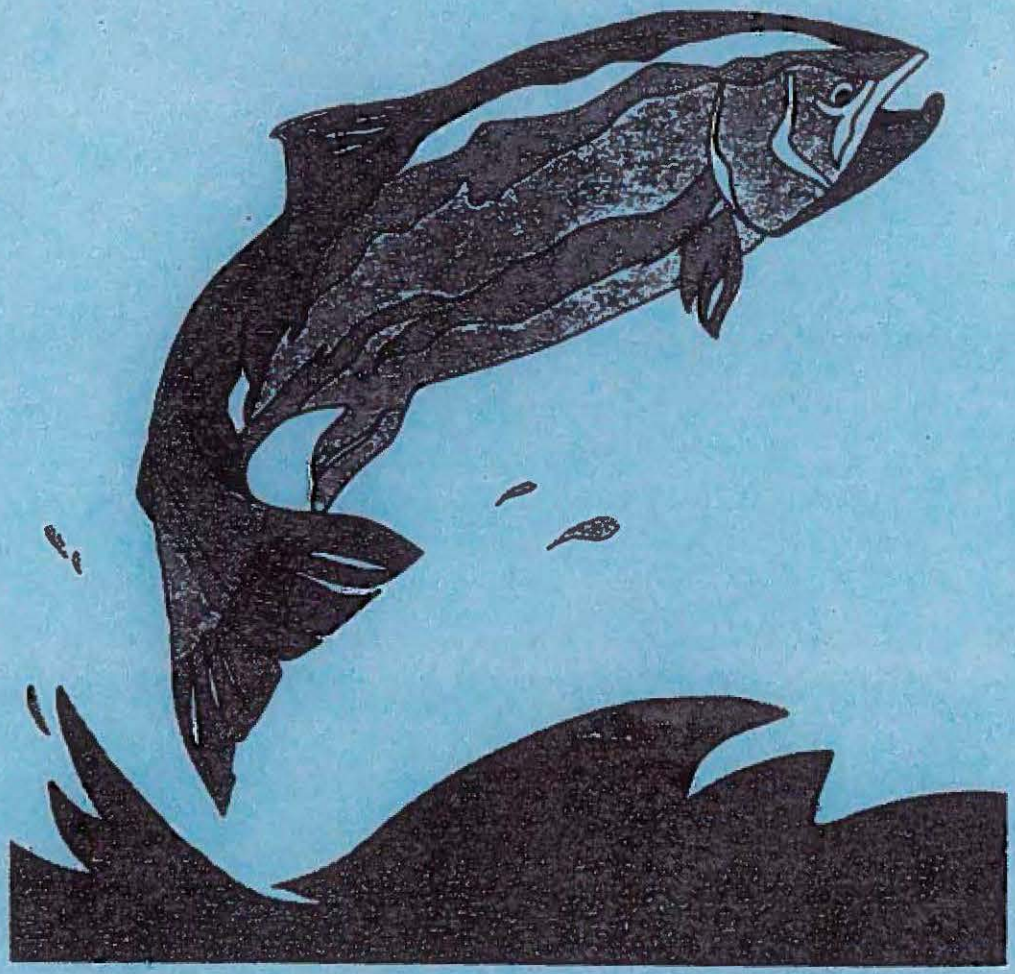
1. Is the AMA exploring alternative ways of doing business:
   a. in developing adequate and stable funding sources for monitoring, research, retraining, restoration and other activities?

   b. in developing AMA plans jointly with other federal agencies?

   c. in developing innovative approaches to agency organizations and personnel policies?

   d. in exploring innovative ways to work in multi-ownership watersheds?

AQUATIC GROUP



GROUP: AQUATIC

MONITORING ISSUE: Anadromous Fish Habitat

How is quality of anadromous fish habitat changing?

GOALS/DESIRED CONDITION:

Maintain fish habitat near present levels. Although habitat capability may continue to decline in the short term due to decay of large woody debris, this will be offset somewhat in the long term by ongoing watershed restoration activities, particularly underplanting of conifers and reestablishment of healthy, diverse, uneven-aged forests in late seral stages in most riparian areas. Many large conifer trees are growing where they can either fall into channels of streams supporting salmonid fishes, or become nurse logs for conifer regeneration in otherwise marginally hospitable streamside soils. Generally cool water temperatures are within tolerances of aquatic organisms naturally found in the system, and channels contain many pools and well-distributed complexes of large logs that interact over time and through a wide range of flows to create a high diversity of aquatic habitat types.

EVALUATION QUESTION 1:

Do trends in fish habitat capability, naturally-occurring large woody debris, and health and survival of streamside conifers indicate about as much habitat by the end of the 1st decade?

TYPE OF MONITORING: Effectiveness

MONITORING INDICATORS:

For stream habitat condition: Amounts of pools, riffles and large woody debris; distribution of fish at selected sites.

For streamside conifers: trends in leader growth, percent survival, relative canopy cover.

SAMPLING METHODS:

The Hankin/Reeves Aquatic Habitat Inventory - which primarily measures amounts of pools, riffles, and large woody debris, and general distribution of fish at selected sites - will be used in reaches of 24 streams that together are representative of anadromous fish habitat on the Forest. About 100 miles of streams (which is 8% of the total anadromous habitat) will be surveyed from 1989 to 1991, and then every 4-5 years.

Measures such as trends in leader growth, percent survival, and relative canopy cover will be taken periodically to determine if selected conifers in riparian areas are fluorishing as expected. Emphasis will be on riparian conifers that have been planted and/or released. Methods already have been established by COPE and others studying riparian silviculture in the Oregon Coast Range.

THRESHOLD OF VARIABILITY: Estimate of less than 90% of present fish habitat or instream debris levels by the end of the 1st decade. Suppression of leader growth to the point that it untimately leads to death of more than 25% of planted conifers.

RESPONSIBILITY: Management: Planning and Fisheries Staffs
Tasks: Data will be collected and compiled by S.O. stream survey specialists and district silviculturists. Summary reports will be prepared by the Forest Fish Biologist.

REPORTING PERIOD: Every 4-5 years;

ANNUAL COST OF MONITORING:

Salaries: Fish Biologist	
Field work, 10 days @ $150/day	$1,500
Analysis, 5 days @ $150/day =	750
Silviculturist, 28 days @ $150/day =	$4,200
Travel	250
Stream Survey Contract	$25,000
Total =	$31,700

REMARKS:

Monitoring will be coordinated with the Oregon Department of Fish and Wildlife. As opportunities arise, relationships between fish populations and levels of large woody debris, sedimentation in streams, and riparian conditions should be clarified. Evaluation of the success of planting conifers in riparian areas over the past decade on the Forest is important, as well as monitoring any new planting.

PRIORITY: 1

EVALUATION QUESTION 2:

Are projects included in the Accelerated Watershed Restoration Initiative restoring ecosystems in Key Watersheds?

GOALS/DESIRED CONDITION:

The Forest's Watershed/Fish Habitat Restoration Strategy and ongoing Accelerated Watershed Restoration Initiative are restoring ecosystems on the scale of the watershed. Conditions in key watersheds are "stormproofed" by reducing miles of roads, and otherwise restored to reduce risk to aquatic and riparian habitats and assure that fish habitat does not decline further. These secured key watersheds serve as the basis for recovery of anadromous fish stocks at risk. Priority should be given to actively reducing roads that pose the greatest risk.

TYPE OF MONITORING: Effectiveness

MONITORING INDICATORS:

See Sampling Methods.

SAMPLING METHODS:

Monitoring to be done by Forest personnel and ODFW research scientists, who will select the appropriate methods for study. Landslide inventories, an annual inventory of road status, Hankin-Reeves stream inventories, surveys of durability and effectiveness (Level-III) of instream structure projects, and smolt traps would be used to estimate long-term changes in fish habitat, populations of young fish, and sedimentation from road systems. (Most of these measures will not be needed on an annual basis.) The Tenmile Creek basin (Lane Co.) is the primary site for this monitoring effort, which will also include representatives from the Audubon Society, Tenmile Creek Association, and other interested groups.

THRESHOLD OF VARIABILITY: Conditions not measureably improved.

RESPONSIBILITY: Management: Planning Staff

Tasks: Summary reports will be prepared by Research Scientists.

REPORTING PERIOD: Annually, looking at trends on a 3-5 year basis.

ANNUAL COST OF MONITORING:

Salaries: Field work, 150 days @ $150/day		= $22,500
Analysis,	17 days @ $15	= $2,500
Travel		$4,000
Equipment		$1,000
	Total	$30,000

Researchers would provide additional details.

REMARKS:

Much of the monitoring would be part of the ongoing Siuslaw NF/ODFW/Tenmile Creek Assn. cooperative agreement to determine smolt production in the Tenmile watershed. This question includes only the aquatic and riparian components of watershed ecosystems. Emphasis will be on assessing effectiveness of reducing risk to fish habitat from roads, building instream structures, and planting of conifers in riparian areas.

PRIORITY: 1

EVALUATION QUESTION 3:

Are aquatic resource management activities meeting prescribed standards and guidelines and do they comply with applicable laws and policies?

GOALS/DESIRED CONDITIONS:

Projects selected to restore and enhance fish habitat are designed to meet all the Forest Plan standards and guidelines, especially those applicable to the Aquatic Conservation Strategy Objectives and Late-Successional Reserve management. Projects are tiered to completed watershed analyses and Late-Successional Reserve assessments.

TYPE OF MONITORING: Implementation

SAMPLING METHODS:

The monitoring and sampling methods are tiered to the province implementation monitoring plan, i.e., selected projects and review questions are determined by the Provincial Implementation Monitoring Team (PIMT) each spring. Additional projects may be added to the Forest monitoring program each year as needed to address Forest-specific management problems.

Selected projects potentially or directly affecting aquatic resources will be reviewed by an interdisciplinary team and include at least one other agency staff and 1-2 Provincial Advisory Committee (PAC) members. At least one timber sale and one watershed restoration project should be reviewed per district per year.

THRESHOLD OF VARIABILITY: Less than 100% compliance with Forest Plan standards and guidelines and with applicable laws and policies.

RESPONSIBILITY: Management: Planning Staff
Tasks: A summary report will be prepared by the Forest Monitoring Coordinator.

REPORTING PERIOD: Annually

ANNUAL COST OF MONITORING:

Salary for program coordinator, IDT representatives and SO specialists. This will vary by project. Estimated cost - $1800 per project review.

PRIORITY: 1

GROUP: AQUATIC

MONITORING ISSUE: Lake Fish Habitat

How is quality of lake fish habitat changing?

GOALS/DESIRED CONDITION:

Abundant cover and food resources are the primary factors determining quality of fish habitat in lakes. Maintain fish habitat near present levels, and eventually increase its quality and quantity slightly through habitat enhancement activities. Manage to provide healthy riparian zones, which are critical and strongly reflected in quality of fish habitat.

EVALUATION QUESTION:

Are trends in lake habitat conditions the same or improved slightly by the end of the 1st decade?

TYPE OF MONITORING: Effectiveness

MONITORING INDICATORS:

Physical and biological conditions - temperature, dissolved oxygen, alkalinity and chlorophyll concentrations

Abundance of food organisms, e.g., zooplankton, benthic invertebrates (particularly insects), and forage fish.

SAMPLING METHODS:

The Standard R6 lake survey - which primarily measures physical and biological conditions and abundance of food organisms - will be used every five years in each lake to determine trends in habitat.

THRESHOLD OF VARIABILITY: Conditions measurably degraded.

RESPONSIBILITY: Management: Fisheries Staff

Tasks: Summary reports will be prepared by District and Forest Fish Biologists.

REPORTING PERIOD: Every five years.

ANNUAL COST OF MONITORING:

Salaries: Field work,	20 days @ $150/day	= $3,000
Analysis,	7 days @ $15	= $1,000
Travel		$1,000
Equipment		$1,000
		$6,000

PRIORITY: 3

GROUP: AQUATIC

MONITORING ISSUE: Fish Populations

How are anadromous fish populations changing?

GOALS/DESIRED CONDITION:

Forest Plan standards and guidelines are effective in maintaining or enhancing wild fish stocks at risk. The Management Indicator Species (MIS) for the Forest is the coho salmon, which is a candidate for listing as T&E. It is important to determine if protecting and restoring fish habitat is helping to maintain anadromous fish runs at risk.

EVALUATION QUESTION:

Are fish stocks at risk (and viable populations of Management Indicator Species) being maintained?

TYPE OF MONITORING: Effectiveness

MONITORING INDICATORS:

Relative abundance of various fish species stratified by juvenile and adult

SAMPLING METHODS:

Species and relative abundance of fish can be determined during periodic Level-II stream surveys and R6 lake surveys done routinely throughout the Forest. This would detect major changes in juvenile fish populations. Adult runs would be determined by spawning surveys done in cooperation with ODFW and federal fisheries agencies. Ongoing studies on Knowles, Schooner, Tenmile, and Cummins creeks done in cooperation with ODFW, Tenmile Creek Assn., and PNW determine total smolt output from these basins each year. Much of the work would be shared by other agencies, which would help work out details of the spawning and lake fish surveys. Much of the needed funding is already included in ongoing stream surveys and cooperative agreements for basin studies. Monitoring can be accomplished using reports from the above activities.

THRESHOLD OF VARIABILITY: Viable populations of coho salmon and other stocks at risk not maintained. Explain why not. Listing of coho salmon as sensitive or T&E.

RESPONSIBILITY: Management: Planning Staff

Tasks: Summary reports prepared by the Forest Fish Bio.

REPORTING PERIOD: Annually, looking at trends on a 3-5 year basis.

ANNUAL COST OF MONITORING:

Salaries: Field work, 80 days @ $150/day	= $12,000
Analysis, 20 days @ $150/	= $3,000
Travel	$4,000
Equipment	$1,000

	$20,000

REMARKS: Off-Forest conditions that affect anadromous fish runs, such as fishing and ocean conditions, must be considered when assessing trends.

PRIORITY: 1

GROUP: AQUATIC

MONITORING ISSUE Water Quality

Is the water quality of perennial streams, as measured by changes in water temperature, being maintained as predicted?

GOAL/DESIRED CONDITION:

Water temperatures will not be increased beyond that allowed by the State water quality standards. For streams that are 64 degrees or warmer, no increase due to management activities is allowed. Streams that are found to be 62 degree to 63.5 degrees may increase up to 0.5 degrees as a result of management activities. Streams that are found to be cooler than 62 degrees can become up to 3 degrees warmer as a result of management activities. Specific references to this standard can be found in FW-117 Standard and Guideline of the Siuslaw Forest Plan, and in the State Water Quality standard described in the MOU between Oregon DEQ and USDA.

EVALUATION QUESTION:

Are the water quality parameters for water temperature within limits established by state water quality standards?

TYPE OF MONITORING: Effectiveness.

MONITORING INDICATORS:

Stream temperature

SAMPLING METHODS:

Ryan and HOBO stream water temperature recorders will be used to assess changes in stream temperatures in at least 4 Key Watersheds each year. In addition, the existing network of stream temperature monitoring developed in the Forest Plan (two 5th-field watersheds per District) will continue to be monitored.

THRESHOLD OF VARIABILITY: For any perennial stream, when the seven day average maximum water temperature exceeds 64 degrees F.

RESPONSIBILITY: Forest Hydrologist.

REPORTING PERIOD: Every 2 years.

ANNUAL COST OF MONITORING:

Salaries:

Hydrologist	
Field work, 30 days @ $150/day =	$4,500
Analysis, 10 days @ $150/day =	1,500
Travel	500
Total =	$6,500

PRIORITY: 1

GROUP: AQUATIC

MONITORING ISSUE: Water Use

Can the Forest provide water to meet future demands for domestic and municipal use while meeting the Aquatic Conservation Strategy Objectives for fish habitat?

GOAL/DESIRED CONDITION:

Provide treatable water to a coordinated public water supply system while retaining adequate instream flows to meet the intent of the Aquatic Conservation Strategy of the NW Forest Plan to protect dependent species and overall water quality.

EVALUATION QUESTION 1:

For each 5th-field watershed, what is the amount and what are the trends in domestic and municipal water use from Forest watersheds?

TYPE OF MONITORING: Implementation

MONITORING INDICATORS:

-Water use amounts estimated from Forest Water User Inventory.
-Water use demand estimated from State water permits.

SAMPLING METHODS:

Every 5 years, review State water permits and compare to Forest Water User Inventory.

THRESHOLD OF VARIABILITY:

For any stream, when utilized water rights exceed low flow needed for minimum instream flows.

RESPONSIBILITY:

Forest Hydrologist

REPORTING PERIOD: Every 2 years.

ANNUAL COST OF MONITORING:

Salaries:

For Hydrologist -	
Field work, 10 days @ $150/day =	$1,500
Analysis, 10 days @ $150/day =	1,500
Travel	500
Total =	$2,500

PRIORITY: 1

EVALUATION QUESTION 2:

What is the effect of municipal water consumption on surface (lake) water levels on the Oregon Dunes NRA?

TYPE OF MONITORING: Effectiveness

MONITORING INDICATORS:

-
-

SAMPLING METHODS:

This monitoring is tiered to the ongoing study by CH2M for the Coos Bay/North Bend Water Board. The Forest hydrologist will compile information from this study for the annual monitoring report.

THRESHOLD OF VARIABILITY:

RESPONSIBILITY:

Forest Hydrologist

REPORTING PERIOD: Every 2 years.

ANNUAL COST OF MONITORING:

Salaries:

For Hydrologist -	
Field work, 10 days @ $150/day =	$1,500
Analysis, 10 days @ $150/day =	1,500
Travel	500
Total =	$2,500

PRIORITY: _1_

TERRESTRIAL GROUP

GROUP: TERRESTRIAL

MONITORING ISSUE: Forest Vegetation Condition

Is the forest seral stage distribution moving toward the desired future condition? Are forest stand composition and structure moving toward the desired condition?

GOAL/DESIRED CONDITION:

The objective of Late-Successional Reserves is to protect and enhance conditions of late-successional and old-growth forest ecosystems, which serve as habitat for late-successional and old-growth related species, including the northern spotted owl. Protection and enhancement of these ecosystems includes reduction in fragmentation caused by past clearcut harvest. (NFP C-11)

The objectives of Riparian Reserves associated with matrix as specified by the Aquatic Conservation Strategy, are to restore and maintain the health of watersheds and aquatic ecosystems within them. Anadromous fish habitat is to be protected. Also, spatial and temporal connectivity within and between watersheds is to be maintained. (NFP B-9 through B-11)

EVALUATION QUESTION 1:

What are the spatial trends in seral conditions including structural distribution?

TYPE OF MONITORING: Effectiveness

MONITORING INDICATORS:

Indicators of spatial distribution of seral stages, and fragmentation of late-successional seral stages will be derived from the fragementation model FRAGSTATS. The following groups of metrics will be used as indicators and measured on a 10 year cycle:

1. Area (patch and core area density, size and variability)
2. Nearest neighbor (mean distance between patches, and variability)
3. Diversity (several diversity indices)

SAMPLING METHOD:

Information used to monitor seral stages and fragmentation levels of the landscape over time will be stratified by plant series and Plan allocation, and will include:

-Spatial vegetation data, which will include a vegetation layer derived from satellite imagery, or an updated photo-interpreted layer in the Forest GIS

-FRAGSTATS model results from analyzed spatial vegetation data.

Note- this monitoring question is being developed by the LSOG Effectiveness Monitoring Team.

THRESHOLD OF VARIABILITY:

No measurable increases in area and nearest neighbor metric outputs in LSR allocations.

RESPONSIBILITY:

Aquisition of the updated vegetation layer is key to answering this question. The vegetation layer could be provided by PNW, RO or Forest resources. Inventory, Ecology and GIS specialists will analyze and interpret FRAGSTATS output every 10 years.

REPORTING PERIOD: 10 years

ANNUAL COST OF MONITORING:

Monitoring costs are incurred every 10 years.

Salaries

GIS specialist@ $220/day, 10 days	$2200
Inventory specialist@ $265/day, 10 day	$2650
Ecologist@ $220/day10 days	$2200
TOTAL:	$7050

Potential costs for acquring vegetation layer once every 10 years: $22,500*

(*-assumes that BLM will cover 50% of total cost)

PRIORITY: 2

EVALUATION QUESTION 2:

What are the trends in species composition and structure for stands in the various NFP allocations?

GOAL/DESIRED CONDITION:

The goals and objectives for stand level vegetation conditions varies by NFP allocation:

-The objective of Late-Successional Reserves is to protect and enhance conditions of late-successional and old-growth forest ecosystems, which serve as habitat for late-successional and old-growth related species, including the northern spotted owl. Desired late-successional and old-growth characteristics that will be created as younger stands change through successional development include: 1) multispecies and multilayered assemblages of trees, 2) moderate-to-high accumulations of large logs and snags, 3) moderate to high canopy closure, 4) moderate to high numbers of trees with physical imperfections such as cavities, broken tops and large deformed limbs, and 5) moderate-to-high accumulations of fungi, lichens and bryophytes (NFP, pg. C-9, B-5). In order to provide for habitat diversity on the Forest, a range of late-successional conditions is desirable.

-The objectives in riparian reserves are to maintain the natural disturbance regime, which for the Coast Range means long intervals with vegetation characteristics as defined above for LSR's (ROD, B-9).

-Matrix is the land outside of other allocations and is the suitable timber land base.

TYPE OF MONITORING: Effectiveness

MONITORING INDICATORS:

Indicators of late-successional composition and structure include:

1. numbers and diameter distribution of tree species
2. numbers of tree layers
3. tree deformities
4. volume and diameter distribution and decay of downed logs and snags
5. lichen richness and abundance

SAMPLING METHOD:

Use 1.7 mile CVS grid plot data remeasured every 8 years to determine, on a per acre basis, overall values. The data will be stratified by plant series and land allocation:

a. tree diameter class distribution by species
b. canopy structure and height class distribution of all trees and by species.
c. snag height, diameter and decay distribution
d. down woody debris in cubic foot volume by diameter class and decay class.
e. understory vegetation including indicator species for shrubs and herbs.
f. lichen species diversity and abundance

THRESHOLD OF VARIABILITY:

A drop below current levels in monitoring indicators in LSR and Riparian Reserves.

RESPONSIBILITY:

CVS data collection is the responsibility of the RO Inventory Shop. Data collection for lichens are the responsibility of the Air Resource Management Shop. Data analysis and interpretation is the responsibility of the Inventory Specialist, Ecologist, and Lichenologist.

REPORTING PERIOD: 10 years

ANNUAL COST OF MONITORING:

Monitoring costs are incurred at 10 year intervals.

Salaries

Inventory specialist @$265/day, 15 days	$3975
Ecologist @ $220/day, 15 days	$3300
Lichenologist @ $265/day, 5 days	$1325
TOTAL	$8600

PRIORITY: 2

EVALUATION QUESTION 3:

Are silvicultural treatments effective in promoting development of LSOG composition and structure at the stand scale? Are the treatments resulting in forestwide diversity of late-successional conditions?

TYPE OF MONITORING: Effectiveness

**** This question was developed with both a short-term and a long-term method. A short-term method was needed for the next 10-20 years to help managers understand if their vegetation treatments may be useful in promoting late-successional conditions. The long-term method, however, is the best way to determine the effectiveness of the vegetation treatments. As better information becomes available, these monitoring methods may change. ****

MONITORING INDICATORS:

The indicators for both the short-term and long-term approaches are the same, but the sources of information are different.

Short-term indicators:

-Stand structures, as projected from a vegetation simulation model using post-treatment stand conditions as the starting point.

Minimum desired stand structures for late-successional condition, defined by the LSOG effectiveness monitoring pilot for the Oregon Coast Range Province, are:

1. At least 20 trees/ha (8/ac) with dbh > or = 75 cm (30")
2. Multi-storied layers with a standard deviation of tree basal area > or = 0.2 m^2/ha.
3. At least 1 snag/ha (0.4/ac) > or = 15 m (49') tall and dbh > 50 cm (20")
4. At least 10 metric tons/ha (4.5 tons/ac) log biomass.

Note: A range of stand structures is desired, with all meeting at least the minimum identified above.

Long-term indicators:

-Stand structures derived from CVS data. Structure characteristics are the same as those shown for short-term.

Spatial variability indicators may be developed later and measured using stand exams.

SAMPLING METHOD:

SHORT-TERM:

A vegetation simulator model will be used to project expected stand conditions at age 80-150 years following a variety of treatments. (Eighty years is the earliest age at which late-successional conditions may appear.) The model results will be compared to a set of desired late-successional conditions. The model comparisons will be used to determine which silvicultural treatments may be effective in promoting late-successional condition. Specific steps are described below:

1. Post-treatment stand conditions will be entered into a vegetation simulator (FVS, ORGANON, or Zelig model) to project future conditions at age 80-150 years. Several runs will be made to get a frequency distribution of conditions. The projected conditions will be compared to the minimum "desired conditions" defined in "Monitoring Indicators" above.

2. Stands selected for monitoring will be stratified by 6 'subseries environments' (Sitka spruce - wet, moist and dry; western hemlock - wet, moist and dry).

3. Monitoring will focus on stands thinned at 25-45 years since this is expected to be the prevalent treatment in the Coast Range during the next 10-20 years. Other types of silvicultural treatments on the Forest include: 1) thinning at very early age (10-19 yrs) and 2) thinning at 45-70 years, but these will not be monitored. Effects of salvage harvest will also not be monitored.

Prior to monitoring: Stu Johnston, Forest silviculturist, will be needed to determine the most appropriate model for this problem.

A range of prescriptions will be run through the model to produce some probable output conditions (and a range of outputs). If the prescriptions do not produce the minimum desired future conditions, then the model may not be adequate for this assessment and modifications to the model or prescriptions will be needed.

LONG-TERM:

Long-term monitoring will be based on 'controlled observations' of selected stands--a minimum of 18 sites.

Monitoring of stand conditions will be conducted using Current Vegetation Survey (CVS) type plots. Some sites are expected to coincide with CVS plot locations; other sites will need additional plots installed.

Sites will be stratified by subseries environments as in the short-term approach. For each strata, at least 3 stands will be selected: 1) a control stand, 2) a lightly thinned stand and 3) a heavily thinned stand, with treatments selected to represent the extreme ends of the range of treatments, as much as possible. As with the short-term approach, only stands thinned at the 25-45 year old range will be monitored.

Treated stands will be monitored according to the CVS protocol (about every 8 years) to determine stand structural characteristics. Current data from CVS plots includes all the late-successional indicators needed at this time. If not all sites can be represented by the existing 1.7 mile CVS plots, the Forest will request funds for additional CVS plots to cover the gaps. This is expected to be no more than 18-24 additional plots.

Monitoring the spatial variability of stands following silvicultural treatment will be referred to research as a "validation" type of monitoring question. Andy Gray, PNW, will compile a list of known research sites that have been established to track changes in stand structures and spatial conditions following silvicultural treatments. These sites

may include recent AMA plots, Wildcat, Cataract, Black Rock and Big Elk. (Note: "Implementation" monitoring in the year following treatment can determine if the prescription met desired crown closure levels, but won't indicate the long-term effectiveness of the treatment in promoting spatial variability.)

An option to be considered for future monitoring is to use stand exams to supplement the data with spatial information about clumpiness or evenness of tree spacing.

THRESHOLD OF VARIABILITY:

This is identified for the short-term approach only.

Model projections do not reach desired future conditions under a range of practical prescriptions.

If this threshold occurs, the model should be fixed or prescriptions changed.
After 20 years, the model should be calibrated with data from the CVS plots.

RESPONSIBILITY: Timber Planner/Silviculturist

REPORTING PERIOD:Short-term: Annually; Long-term: every 10 years

ANNUAL COST OF MONITORING:

Short-term method:

Salaries: Silviculturist	
Model runs, pre-monitoring, 10 days @ $210/day =	$2,100
Field work, stand exams after harvest, 4 person days/site, 3 sites/yr @$210/P.day =	$2,520
Model runs, post harvest (3 sites/yr) 5 days @ $210/day =	1,050
Supplies	200
Total Costs =	$ 5,870

Long-term method: (10-year costs)

CVS plots - 38 plots/decade @ $1665/plot	$63,270
Silviculturist salary:	
Analysis of CVS data, 3 days @ $210/day =	630
Total =	$63,900
	or $6390/year

PRIORITY: 2

EVALUATION QUESTION 4:

Are populations of destructive insect and disease organisms remaining below potentially damaging levels following management activities?

GOAL/DESIRED CONDITION:

Insects and disease are an integral part of the forest ecosystem, however, if conditions are changed outside of the range of natural conditions, epidemics can occur. Insects and disease of major concern include Douglas-fir bark beetle, Swiss needle cast, and phellinus (root rot). Bark beetle infestations can build up in areas of concentrated blow-down or following harvest treatments that leave a high level of down wood. Swiss needle cast, a fungus which only infects Douglas-fir, has been increasing rapidly over the past few years, most noticeably in the spruce-hemlock zone ("fog-belt") in stands where 50% or more of the trees are Douglas fir.

Phellinus is present across the Forest and overstocked Douglas-fir stand conditions allow it to spread more rapidly than under natural conditions.

TYPE OF MONITORING: Effectiveness

MONITORING INDICATORS:

Acres of stands affected by various insects and disease.

SAMPLING METHODS:

Review periodic surveys conducted by Regional Office Forest Pest Management (FPM) and normal Ranger District surveillance by silviculturists or other district personnel.

THRESHOLD OF VARIABILITY: 5% of total Forest acres is affected.

RESPONSIBILITY: Forest Silviculturist, with District silviculturists

REPORTING PERIOD: Annually.

ANNUAL COST OF MONITORING:

Salary for: District silviculturist, @ $204/day		
1 day/district x 4 districts	=	$ 816
Forest silviculturist, 3 days @ $204/day	=	612
Total		$1,428

PRIORITY: 1

GROUP: TERRESTRIAL

MONITORING ISSUE: Plantation Management
Are plantations being managed to maintain prescribed density levels?

GOAL/DESIRED CONDITION:

Past harvest activity has resulted in over 200,000 acres of managed stands on the forest. Most of these stands will require thinning, either precommercial at younger ages or commercial at older ages, to meet management objectives. Objectives are defined by the NFP, the Siuslaw Plan, LSR Assessments, AMA plans, WA's, and ultimately, project design. Prescriptions will vary based on factors like NFP allocation, forest type, and plant association, and will be prescribed by a certified silviculturist.

EVALUATION QUESTION 1:

Are managed stands being maintained at prescribed stocking levels?

TYPE OF MONITORING: Implementation

MONITORING INDICATORS:

Stand thinnings will be tracked in the Forest activities data base and associated GIS activities layer. Stand conditions will be tracked in the Forest vegetation exam data base. Silvicultural treatment information is also compiled at the end of each fiscal year and stored in the Forest Timber Activity Control System (TRACS) data base. Acres thinned each year will be compiled from the Activities Data Base (ADB). The GIS activities data base will be compared to the annual TRACS report to assure proper reporting and storage of stand treatment information.

SAMPLING METHOD:

The stocking level question applies to managed stands of any age. Treatments that affect stocking level include planting, precommercial thinning and commercial thinning. The "free to grow" question applies mostly to younger stands. Treatments to be monitored are mainly brush release. All of these treatments are prescribed by a certified silviculturist. Prescriptions, as well as actual treatments, will be monitored.

Silvicultural treatment information is compiled at the end of each fiscal year and stored in the Forest Timber Activity Control System (TRACS) data base. Acres commercially thinned each year will be compiled from the STARS and GIS data bases. The GIS activities data base will be compared to the annual TRACS report to assure proper reporting and storage of stand treatment information.

Silvicultural prescriptions developed for managed stands must meet Plan standards and guidelines for stand management. Precommercial thinning prescriptions are developed following 8-year and 10-year surveys. Commercial thinning prescriptions are developed from stand exams of older plantations that are approaching commercial thinning conditions. Each year 5% of the 8 or 10-year surveys will be reviewed on each District for proper stocking levels and freedom from competing vegetation. The 5% will be chosen at random from the GIS data base, and the Forest silviculturist will

review prescriptions for treatment, accomplishment records of past activities, and perform ground checks of selected stands where problems are suspected.

THRESHOLD OF VARIABILITY: 10% from prescribed levels.

RESPONSIBILITY: Forest silviculturist

REPORTING PERIOD: Annually, by November 1 for accomplishment reports; by August 31 for monitoring of silvicultural prescriptions.

ANNUAL COST OF MONITORING:

Salary for:

Forest silviculturist, 12 days @ $200/day =	$2,400
District silviculturist @ $200/day, 5 days/district x 4 districts =	4,000
Total salary =	$ 6,400

PRIORITY: 3

EVALUATION QUESTION 2:

Is reforestation meeting legal and policy requirements, i.e., are stands adequately restocked with 3 years of regeneration harvest?

GOAL/DESIRED CONDITION:

NFMA regulations require that regenerated timber stands be adequately restocked within 5 years of harvest. Given the high rates of success with reforestation on the Siuslaw, the standard has been set at 3 years.

TYPE OF MONITORING: Implementation

MONITORING INDICATORS:

3-year survey results as reported in Annual Growth and Survival Report.

SAMPLING METHODS:

Reforestation activities and managed stand examination results are recorded in REFSURVEY data base. District silviculturists certify success of adequate restocking in January of each year. A certification attribute will be created for managed stands and added to the activities data base of the Forest GIS.

THRESHOLD OF VARIABILITY:5% of average annual acres for past 5 years

RESPONSIBILITY: Forest Silviculturist

REPORTING PERIOD: Annually for three year-old managed stands, by January 31.

ANNUAL COST OF MONITORING:

Salary for:

Forest silviculturist, 10 days @ $200/day = $2,000

PRIORITY: 1

EVALUATION QUESTION 3.

Are management activities meeting the prescribed standards and guidelines and do they comply with applicable laws and policies?

GOALS/DESIRED CONDITIONS:

The Forest supplies forest products, including timber, to local industry at sustainable levels, while maintaining late-successional and old growth ecosystems and maintaining or enhancing aquatic resource conditions. Vegetation treatments are selected to promote late-successional conditions in Late Successional Reserves and Riparian Reserves, and are tiered to Late-Successional Reserve assessments and completed watershed analyses. Selected projects are designed and implemented to meet all Forest Plan standards and guidelines and be in compliance with applicable laws and policies.

TYPE OF MONITORING: Implementation

SAMPLING METHODS:

The monitoring and sampling methods are tiered to the province implementation monitoring plan, i.e., selected projects and review questions are determined by the Provincial Implementation Monitoring Team (PIMT) each spring. Additional projects may be added to the Forest monitoring program each year as needed to address Forest-specific management problems.

Selected projects will be reviewed by an interdisciplinary team and include at least one other agency staff and 1-2 Provincial Advisory Committee (PAC) members.

THRESHOLD OF VARIABILITY: Less than 100% compliance with Forest Plan standards and guidelines and with applicable laws and policies.

RESPONSIBIITY: Management: Planning Staff
Tasks: A summary report will be prepared by the Forest Monitoring Coordinator.

REPORTING PERIOD: Annually.

ANNUAL COST OF MONITORING:

Salary for program coordinator, IDT representatives and SO specialists. This will vary by project. Estimated cost = $1800 per project review.

PRIORITY: 1

GROUP: TERRESTRIAL

MONITORING ISSUE: Suitable Timber Land
Has the suitable timber land base changed?

GOAL/DESIRED CONDITION:

The suitable timber land base as defined by the NWP and the Siuslaw Plan is about 16,000 acres. This is Matrix and AMA lands which are outside of Congressionally and administratively withdrawn areas, LSR's, riparian reserves, and unsuitable Siuslaw Plan management areas. Matrix acres are used as the basis for calculating PSQ.

TYPE OF MONITORING: Effectiveness

EVALUATION QUESTION:

Are lands which were identified as not suitable for timber production still unsuitable?

MONITORING INDICATORS:

Identification of tentatively suitable land is described in Siuslaw Plan FEIS Appendix pages B-6 and B-7, as modified by the land allocations in the Northwest Forest Plan. Acreages of non-forest lands, withdrawn lands, and lands with inadequate response information or potential for irreversible damage will be re-evaluated after 10 years. The following information will be continually updated and recorded in GIS and included in the evaluation:

- Forest land ownership
- Areas where irreversible damage is likely (unstable soils)
- Non-forest lands, i.e. water, roads, and campgrounds
- Lands with inadequate response information (shore pine)

The Timber Planning handbook details the land suitability process.

SAMPLING METHODS:

An analysis of the Matrix and AMA lands outside reserves was conducted in 1995 and 1997. The results are reported in the Federal Lands Assessment, July 1995, and in "PSQ/TSQ Adjustment", Siuslaw National Forest, June 1995. The reports show that, to meet management requirements for the Aquatic Conservation Strategy Objectives and late-successional habitat for northern spotted owls, about 511,002 acres are classed as unsuitable for timber production.

Included in these unsuitable lands are about 429,880 acres of Late-Successional Reserve (LSR) and 81,000 acres of Riparian Reserve associated with Matrix.

As watershed analyses and project level planning progresses with Plan implementation site-specific analyses of Riparian Reserves and LSRs will be conducted and a more precise measure of acres will be available. During project planning riparian reserves will be recorded in a separate "allocation" layer in GIS. This will allow analysis of effects on the total suitable land base. District watershed personnel are responsible for entering this information in GIS.

THRESHOLD OF VARIABILITY: 5% change in tentatively suitable or suitable lands

RESPONSIBILITY:

Tentatively suitable land:

For irreversible damage information: Forest soil scientist

For other land status and vegetation information: Forest timber planner

Lands suitable for timber production:

Recording leave areas in GIS: District watershed specialist

Apply site-specific information to the entire land base: Forest soil scientist

REPORTING PERIOD:

Evaluation and reporting for tentatively suitable lands will be done every ten years; the first report is due October 1, 2004 (10 years after Northwest Forest Plan amendment).

ANNUAL COST OF MONITORING:

Salary for:

Forest timber planner, 4 days @ $265/day	=	$1,060
Forest soil scientist, 4 days @ $265/day	=	1,060
Forest TE&S coord., 4 days @ $210/day	=	840
District watershed specialist, 1 day @ $200/day x 3 districts	=	300
Miscellaneous materials for mapping:		1,000
Total =		$4,260

PRIORITY: 1

GROUP: TERRESTRIAL

MONITORING ISSUE: Special Forest Products

Is moss being managed for harvest and long term sustainability while complying with standards and guidelines? Are there any negative effects from harvest to the long-term sustainability of Matsutake mushroom resources?

GOAL/DESIRED CONDITION:

Maintain moss or bryophytes for their functional ecosystem role and manage for a sustainable harvest. Although some information is known about the resource inventory, broader landscape level inventories are still needed. Until the impacts of collection are known, a harvest limit of 125,000 lbs per year is established for the Forest.

The Moss Harvest Plan (1996) will be used to accomplish the monitoring analysis and strategy for achieving the answers to the desired conditions of bryophytes.

EVALUATION QUESTIONS:

1. How fast does moss regrow following harvest?
2. What is the impact of moss harvest at different levels of intensity?
3. What is the impact of moss harvest in the riparian zone?

TYPE OF MONITORING: Effectiveness

MONITORING INDICATORS:

Bryophyte communities on the forest floor, logs, trees and shrubs.

SAMPLING METHOD:

Two large stewardship areas located on the Hebo Ranger District have been established which are also located in the North Coast Adaptive Management Area. Each area is approximately 2300 acres consisting of clearcuts and young conifer forest, young to mature hardwood and mixed forest and some older conifer forest. Each stewardship area has been divided into three harvest areas with different guidelines for each:

1. No harvest within 200 feet of perennial stream, no harvest above 40 feet, and harvest less than 30 pounds of moss per acre.

2. No rules area, harvest is at the discretion of the harvester (anything goes).

3. Control area, no harvest.

Within each area 24 permanent plots have been established which require annual monitoring. Also 30 upland plots were surveyed for the bryophyte communities on the forest floor, logs, trees, and shrubs, ten in each harvest zone. 24 riparian plots in each area have been surveyed for the bryophyte communities also.

The FW-190 and RR-1 standards and guidelines will be tested in the sampling methods to see if they are achieving the desired conditions/goals, or if modifications to the standards and guidelines are needed.

THRESHOLD OF VARIABILITY: Unknown.
At this point we have only established base line data. The process to test the standards and guidelines will take about 5 years.

RESPONSIBILITY: A challenge cost share has been set up with the Nature Conservancy. The program management will be done by the SFP Forest Program Manager.

REPORTING PERIOD: Annually, with completion in 4-5 years.

ANNUAL COST OF MONITORING:
Through the Challenge Cost Share we have hired an epiphyte ecologist to set up all the field design and plot sampling and analysis. The costs per year for salary, vehicle, and minor equipment is $18,000.

PRIORITY: 1

EVALUATION QUESTIONS for Matsutake Mushrooms:
1. Is the permit system and information providing adequate and appropriate information?
2. Is mushroom harvest reducing or disturbing mycelium habitat, and is it impacting other natural resources?
3. What are the best harvest levels and techniques for mushroom harvest?
4. How much mushroom is produced on the Oregon Dunes NRA?
5. Is spatial distribution of mushrooms affected by harvest?

GOAL/DESIRED CONDITION:
Provide environmental protection to the mushroom resource through management direction and monitoring. Provide for sale of personal use and commercial permits for the harvest of mushrooms at a sustainable level, following restrictions in FW-192.

TYPE OF MONITORING: Effectiveness

MONITORING INDICATORS:
See Sampling Method.

SAMPLING METHOD:
Beginning in 1993 a study area at Eel Creek Campground, Oregon Dunes NRA, was set aside for no mushroom harvesting. Four permanent 250 meter line intercept transects targeting mushroom habitat have been read each December. Various levels of surface disturbance from both harvesters and natural causes were tallied. Information and mapping has been done on over 2500 mushrooms and from 82 shiros (sp). In 1995, 27 plots were selected for different treatments:
6 plots were assigned deep rake
6 plots were assigned shallow rake

6 plots were assigned harvest of all mushrooms with minimal disturbance
9 plots were assigned as control plots

Data is collected on rainfall, air and soil temperatures, deer and wildlife consumption, and size and grade of mushrooms.
In addition, a questionnaire was mailed out to all mushroom permittees as well as law enforcement officers for records of theft and citations.

THRESHOLD OF VARIABILITY: Unknown.

RESPONSIBILITY: Forest Botanist and SFP Forest Program Manager

REPORTING PERIOD: Annually, completion at end of 1998

ANNUAL COST OF MONITORING:
The study costs $10,000 per year with a Dunes employee working during a 3 month period to oversee the Eel Creek study. Additional help for analysis from the PNW mycologists is also included in the $10,000.

PRIORITY: 2

REMARKS:
Indications are that both shallow and deep raking terminated the mushroom production. Budgets to help reduce theft and environmental damage must be increased during peak mushroom seasons. The Eel Creek study should be finalized in calender year 1998 with more conclusive results and recommendations.

GROUP: TERRESTRIAL

MONITORING ISSUE: Soil Productivity
Is long-term soil productivity of forest land being maintained?

GOAL/DESIRED CONDITION:

The Forest goal is to prevent significant or permanent impairment of the productivity of the soil resource. The objective is to utilize management techniques that limit soil erosion, soil nutrient losses, and compaction to ensure maintenance of long term productivity of all resources that depend on soils for their productive potential.

The future condition of soils across the Forest includes maintenance of the natural levels of nutrients, and organic and mineral components. No more than 15% of any managed area may be left in a detrimental condition such as eroded, compacted, displaced or severely burned. Large logs, which provide the primary link between harvested and planted stands of trees, will remain at least at minimum levels across harvest units.

The basic potential of streamside soils to produce future supplies of large wood - both for the continued productivity of the soils, and for providing future sources of wood for stream channel structure is partially dependent upon persistent, long term inputs of large tree boles to the soil surface which maintain soil biological activities, and become nurse trees for future conifers in an otherwise marginally hospitable aquic soil regime.

EVALUATION QUESTION 1:

Are existing conifers being left to grow for future supplies of coarse woody debris inputs to soils?

EVALUATION QUESTION 2:

Are sufficient quantities of unutilized large wood being left on harvest units adjacent to streams and on upland slopes for long-term soil productivity?

TYPE OF MONITORING: Implementation

MONITORING INDICATORS:

Random transects on at least 10 percent of all harvest units will be done to measure the total amounts of potential and existing large wood on the soil surface.

SAMPLING METHODS:

Samples are 1/10 acre plots taken every 100 feet on a randomly located "W" that spans, as much as practicable, the entire proposed or existing harvest unit. Number, size, and decay class of down woody debris, and number and size of all standing live and dead trees are documented at each sample site within 1/2 chain radius of the plot centers. Monitoring to take place every 5 years.

THRESHOLD OF VARIABILITY: Sample that indicates less than 90% of predicted down woody debris or less than 60% of predicted standing conifer by the end of the 1st decade.

RESPONSIBILITY: Management: Soil Scientist

Tasks: Data will be collected and compiled by S.O. stream survey specialists and district silviculturists. Summary reports will be prepared by the Forest Fish Biologist.

REPORTING PERIOD: Every five years

ANNUAL COST OF MONITORING:

Salaries: Soil Scientist	
Field work, 10 days @ $150/day =	$1,500
Analysis, 3 days @ $150/day =	450
Silviculturist, 10 days @ $150/day =	$1,500
Travel	25
Total Cost every 5 years =	$ 3,700

PRIORITY: 1

GROUP: TERRESTRIAL

MONITORING ISSUE: Research Natural Area Protection

-Are Research Natural Areas (RNAs) being protected according to RNA standards and guidelines in the Forest Plan and applicable Establishment Records?

GOAL/DESIRED CONDITION:

The goal is to preserve the ecosystems classified in Cummins/Gwynn Creek, Reneke Creek, Sandlake, Neskowin Crest, Flynn Creek and Tenmile Creek Research Natural Areas, and to allow uses that will not impede the natural conditions of the areas.

EVALUATION QUESTION 1:

Are human impacts within acceptable levels for the Research Natural Areas?, i.e., in compliance with the Standards and Guidelines?

TYPE OF MONITORING: Implementation

MONITORING INDICATORS:

a. Evidence of off-road vehicles, bikes and foot traffic away from established trails.
b. Damaged signs or other vandalism.
c. Erosion associated with trails or old roads.

SAMPLING METHOD:

Biennial site visits by RNA stewards or Forest RNA Coordinator to identify any existing or potential problems with human uses in the RNAs.

Pertinent standards and guidelines will be evaluated for:

Sandlake - 13-01, 02, 06, 07, 09, 13
Reneke Cr. - 13-01, 09
Cummins/Gwynn Cr. - 13-01, 05, 06, 07, 08
Flynn Cr. - 13-07, 08, 09
Neskowin Crest - 13-01, 07, 08, 09

THRESHOLD OF VARIABILITY: Any sign of visible damage.

RESPONSIBILITY: RNA Steward/RNA Coordinator

REPORTING PERIOD: Every 2 years.

ANNUAL COST OF MONITORING:

Monitoring costs will be incurred every 2 years -
Salary for: RNA Coordinator/Steward 6 days @ $200 = $1,200

PRIORITY: 2

EVALUATION QUESTION 2:
Are beachgrass and Scot's broom control projects at Sandlake RNA effective?

TYPE OF MONITORING: Effectiveness

MONITORING INDICATORS:
a. Beachgrass abundance
b. Cover of native species.

SAMPLING METHOD:
Effectiveness of beachgrass control (e.g., pulling) in maintaining native dunes vegetation communities will be monitored from permanent established transects. 12 plots were established May 23, 1995, on a transect across a range of beachgrass densities. Photo points were installed and plots marked with PVC pipe.

THRESHOLD OF VARIABILITY: Increase in beachgrass abundance and decrease in native vegetation along the transect and/or at photo points.

RESPONSIBILITY: SO Ecologist

REPORTING PERIOD: Every 3 years.

ANNUAL COST OF MONITORING:
Monitoring costs will be incurred every 3 years -
Salary for: SO Ecologist 5 days @ $200/day = $1,000

PRIORITY: 2

REMARKS:
Beachgrass control projects will occur annually.

GROUP: TERRESTRIAL

MONITORING ISSUE: Wildlife Habitat - Northern Spotted Owl

What are the trends in habitat for northern spotted owl pairs/resident singles on the Forest landscape?

GOAL/DESIRED CONDITION:

Increases in late seral habitat condition is a primary goal in the Oregon Coast Range and on the Forest. Desired condition is to have the maximum acreage of mature and old growth conifer in LSR's given the physical and biological limits of the Oregon Coast Range.

EVALUATION QUESTION:

What is the amount and what are the trends in suitable northern spotted owl habitat on the Forest?

TYPE OF MONITORING: Effectiveness

MONITORING INDICATORS:

Current acres of mature conifer and older seral condition on the Forest. In addition, a forecast of anticipated habitat change through 5 decades will portray future development and recovery of late seral conditions from habitat restoration activities.

SAMPLING METHOD:

The interagency Effectiveness Monitoring workgroup for northern spotted owls is developing methods for monitoring this question at the province scale. The Forest will adopt these procedures to determine trends at the Forest scale.

Additional monitoring to determine trends at a subbasin scale (4th field watershed) and to differentiate AMA lands from nonAMA lands may be conducted. Data for current habitat levels will be collected using GIS vegetation layer. Data for anticipated habitat change will be based on the Forest Vegetation Simulator (FVS) model in Fort Collins, CO, using habitat and growth conditions for the Oregon Coast Ranges.

THRESHOLD OF VARIABILITY: Any loss of current habitat levels or prediction of less than 90% of anticipated habitat levels through 5 decades.

RESPONSIBILITY: Wildlife Staff

REPORTING PERIOD: Every 5 years.

COST OF MONITORING:

Monitoring costs will be incurred every 5 years.

Salary: 5 days x $150/day	$750
Program Coordinator: 3 days x $200/day	600
Incidental costs	150
Total	$1,500

REMARKS: This monitoring item is not part of accomplishments in the Forest MAR.

PRIORITY: 1

GROUP: TERRESTRIAL

MONITORING ISSUE: Wildlife Habitat - Marbled Murrelet

What are the trends in habitat for marbled murrelet on the Forest landscape?

GOAL/DESIRED CONDITION:

Increases in late seral habitat condition is a primary goal in the Oregon Coast Range and on the Forest. Desired condition is to have the maximum acreage of mature and old growth conifer in LSR's given the physical and biological limits of the Oregon Coast Range.

EVALUATION QUESTION:

What is the amount and what are the trends in suitable marbled murrelet habitat on the Forest?

TYPE OF MONITORING: Effectiveness

MONITORING INDICATORS:

Current acres of mature conifer and older seral condition on the Forest. In addition, a forecast of anticipated habitat change through 5 decades will portray future development and recovery of late seral conditions from habitat restoration activities.

SAMPLING METHOD:

The interagency Effectiveness Monitoring workgroup for marbled murrelets is developing methods for monitoring this question at the province scale. The Forest will adopt these procedures to determine trends at the Forest scale.

Additional monitoring to determine trends at a subbasin scale (4th field watershed) and to differentiate AMA lands from nonAMA lands may be conducted. Data for current habitat levels will be collected using GIS vegetation layer. Data for anticipated habitat change will be based on the Forest Vegetation Simulator (FVS) model in Fort Collins, CO, using habitat and growth conditions for the Oregon Coast Ranges.

THRESHOLD OF VARIABILITY: Any loss of current habitat levels or prediction of less than 90% of anticipated habitat levels through 5 decades.

RESPONSIBILITY: Wildlife Staff

REPORTING PERIOD: Every 5 years.

COST OF MONITORING:

Monitoring costs will be incurred every 5 years.

Salary: 5 days x $150/day =	$750
Program Coordinator: 3 days x $200/	600
Incidental costs =	100
Total =	$1,500

REMARKS:

This monitoring item is not part of the accomplishments in the Forest MAR.

PRIORITY: 1

GROUP: TERRESTRIAL

MONITORING ISSUE: Wildlife Habitat - Northern Bald Eagle
What are the trends in habitat for northern bald eagles on the Forest?

GOAL/DESIRED CONDITION:
The development of late seral conditions in the Coast Range is a primary goal of LSR areas on the Forest. Bald eagles specifically use mature conifer along large rivers and their major tributaries. The desired condition for bald eagles habitat along major rivers and tributaries is mature conifer or old growth habitat.

EVALUATION QUESTION:
What is the amount and trend in suitable northern bald eagle habitat on the Forest, and within Management Area 4?

TYPE OF MONITORING: Effectiveness

MONITORING INDICATORS:
1) Current acres of mature conifer habitat within 1.0 mile of major rivers (e.g., Siuslaw) and within 0.5 miles of major tributaries of major rivers (e.g., North Fork Siuslaw River) and the trend in mature conifer habitat within the same areas expressed as a decadel projection for the next 5 decades, and

2) Current acres of mature conifer habitat in Management Area 4 sites and the habitat trend within the same areas expressed as a decadel projection for the next 5 decades.

SAMPLING METHODS:
Mapping of 1.0 mile and 0.5 mile eagle suitable habitat zones buffered on major rivers and large tributaries, respectively. Review and editing of Management Area 4 allocations. Data for current habitat levels within above zones and allocation will be collected using GIS vegetation layer. Data for anticipated habitat change within above zones and allocation will be based on the Forest Vegetation Simulator (FVS) model in Fort Collins, CO using habitat and growth conditions for the Oregon Coast Ranges.

THRESHOLD OF VARIABILITY: Any loss of current habitat levels or prediction of less than 90% of anticipated habitat levels through 5 decades.

RESPONSIBILITY: Wildlife Staff

REPORTING PERIOD: Every 5 years.

COST OF MONITORING:
Monitoring costs will be incurred every 5 years.

Salary: 5 days x $150/day =	$750
Program Coordinator: 3 days x $200/day =	600
Incidental costs =	150
Total =	$1,500

REMARKS:
This monitoring item is not part of the accomplishments for the Forest MAR.

PRIORITY: 1

GROUP: TERRESTRIAL

MONITORING ISSUE: Wildlife Habitat - Western Snowy Plover
What is the trend in restoring habitat for western snowy plover?

Western snowy plover habitat has been declining along the central Oregon Coast due in large part to the spread of European beachgrass. As part of the Forest effort to restore habitats, a strong emphasis has been placed on controlling the spread of and reducing the acres of potential snowy plover habitat currently affected by beachgrass.

GOAL/DESIRED CONDITION:

Reduce European beachgrass habitats so that they are no longer adversely impacting western snowy plover. Desired condition is to eliminate European beachgrass from key nesting and brood rearing habitats. These habitats are typically in or adjacent to estuaries where wind scour and shifting drainage patterns have historically maintained western snowy plover habitat.

EVALUATION QUESTION:

Are habitats important for western snowy plover nesting and brood rearing increasing on the Forest? Are vegetation management programs effective in controlling European beachgrass?

TYPE OF MONITORING: Effectiveness

MONITORING INDICATORS:

1) Acres of western snowy plover nesting and brood rearing habitat created.

2) Acres of western snowy plover nesting and brood rearing habitat maintained.

3) Trends in the amount and distribution of western snowy plover nesting and brood rearing habitat.

SAMPLING METHODS:

The initial step in monitoring the above indicators requires mapping and digitizing the potential and currently suitable snowy plover habitat in GIS. This will be done for the Oregon Dunes NRA and Sutton area, Mapleton RD.

In subsequent years, the habitat layer must be edited and updated before acre tabulations can be made. Snowy plover habitat improved is reported as accomplishment in MAR 72.6-1.

THRESHOLD OF VARIABILITY: Any loss of current habitat levels or less than 90% of target accomplishment annually.

RESPONSIBILITY: Wildlife Staff

REPORTING PERIOD: Annually

ANNUAL COST OF MONITORING:

Salary: 5 days x $150/day =	$750
Program Coordinator: 2 days x $200/da	400
Incidental costs =	150
Total =	$1,300

PRIORITY: 1

GROUP: TERRESTRIAL

MONITORING ISSUE: Wildlife Habitat - Snags

Has management for snags provided suitable habitat for snag-dependent species?

Many snags are man-made in the sense that live green trees are killed by various means to mitigate for loss of naturally occurring snags after regeneration harvest or as an enhancement opportunity during/after commercial thinning. This monitoring question addresses the life/longevity of man-made and natural snags and which snag-dependent species use them.

GOAL/DESIRED CONDITION:

The goal for manmade and natural snags is retention on the landscape for as long as feasible. The desired condition is to maintain all manmade and natural snags and to have all snags (as a group) be used by primary cavity excavators and eventually by secondary cavity users for breeding/feeding habitat.

EVALUATION QUESTIONS:

1. What is the life table for created and natural snags in selected treatment areas?
2. When do snag-dependent species begin to use manmade snags and what species (primary and secondary cavity users) are using both manmade and naturally occurring snags?

TYPE OF MONITORING: Effectiveness

MONITORING INDICATORS:

1) Trend in number of snags remaining from initial creation or identification.
2) Trend in number of species using snags from initial creation or identification.

SAMPLING METHOD:

Presence of snags and snag use will be recorded every other year in selected harvest areas clearcut in the late 1980's on the Alsea Ranger District and from commercial thinnings on other areas of the Forest.

THRESHOLD OF VARIABILITY: Retention of less than 90% of previous snag habitat level.

RESPONSIBILITY: Wildlife Staff

Data collection will be accomplished through a purchase order. Data analysis will be conducted by the Wildlife Staff.

REPORTING PERIOD: Every other year.

COST OF MONITORING:

Monitoring costs will be incurred every other year.

Purchase Order for Field Work/Report =	$2,600
Program Coordinator: 2 days x $200/day =	400
Total/year =	$3,000

PRIORITY: 3

GROUP: TERRESTRIAL

MONITORING ISSUE: Wildlife Habitat - Special Habitats
Are special habitats on the Forest being protected?

GOAL/DESIRED CONDITION:
Protection and proper management of special habitats is an important goal of the NFP. Desired condition is to have well distributed, diverse, and complex assemblage of special habitats on the Forest.

EVALUATION QUESTION:
Are special habitats being protected in accordance with Aquatic Conservation Strategy objectives and Riparian Reserve standard and guidelines as described in the NFP, and with Siuslaw Forest Plan standards and guidelines?

TYPE OF MONITORING: Implementation

MONITORING INDICATORS:
Protection and management of special habitats as measured by:

1. Identification and mapping of special habitats during project planning.

2. Compliance with FP standards and guides (FW-071), Aquatic Conservation Strategy Objectives, and riparian reserve standards and guidelines during project implementation.

SAMPLING METHODS:
Project selection will be based on either a 100% sample of projects implemented if 5 or less from each field office, or a sample of up to 5 from each field unit selected from those projects having the highest potential to impact special habitats.

Field biologists will be interviewed or project documents reviewed to evaluate if projects implemented complied with above monitoring indicators.

THRESHOLD OF VARIABILITY: Fewer than 90% of all projects being in compliance with 1) and 2) above.

RESPONSIBILITY: Wildlife Staff

REPORTING PERIOD: Annually

ANNUAL COST OF MONITORING:

Salary: 6 days x $150/day =	$900
Program Coordinator: 2 days x $200/day =	400
Incidental costs =	100
Total =	$1,400

PRIORITY: 2

GROUP: TERRESTRIAL

MONITORING ISSUE: Wildlife Habitat - Early Seral Habitats

Is biological diversity being maintained for native species and ecosystems?

Management for late seral plant communities on all acres capable of producing such habitat will be at the expense of existing early seral habitat. The amount and distribution of early seral vegetation is an important component of habitat diversity for species dependent on grass-forb and shrub brush communities for part or all of their natural history requirements.

GOAL/DESIRED CONDITION:

Maintain a component of early seral vegetation on the Forest. Desired condition is a network of well distributed early seral communities associated with natural forest openings or selected man-made meadow environments.

EVALUATION QUESTION:

Are early seral habitats being maintained across the Forest landscape in amounts and distribution compatible with NFP standards and guidelines?

TYPE OF MONITORING: Implementation

MONITORING INDICATORS:

Maintenance/enhancement of early seral plant communities as measured by:

1. Identification and mapping of existing early seral habitats important to maintain as part of project planning,

2. Maintenance of existing early seral habitats identified above as part of project implementation, and

3. Trends in the amount and distribution of existing early seral plant communities identified above across the Forest.

SAMPLING METHODS:

Source of current habitat acres is GIS vegetation layer of non-conifer dominated stands younger than 10 years. Project selection will be based on either a 100% sample of projects implemented if 5 or less from each field office, or a sample of up to 5 from each field unit selected from those projects having the highest potential to impact existing early seral habitats identified as important to maintain. Acres of early seral habitat treated are reported as part of Forest accomplishment in MAR 66.2-1.

Field biologists will be interviewed or project documents reviewed to evaluate if projects implemented complied with above monitoring indicators.

THRESHOLD OF VARIABILITY: Fewer than 90% of all projects with early seral habitats being in compliance with 1) and 2) above. Any loss of existing early seral habitats identified as important to maintain.

RESPONSIBILITY: Wildlife Staff

REPORTING PERIOD: Annually

ANNUAL COST OF MONITORING:

Salary: 6 days x $150/day =	$900
Program Coordinator: 2 days x $200/day =	400
Incidental costs =	100
Total =	$1,400

PRIORITY: 2

GROUP: TERRESTRIAL

MONITORING ISSUE: Wildlife Habitat - Wetlands

Are wetland habitats important for waterfowl and shorebirds being maintained on the Oregon Dunes NRA and other areas such as the Salmon River estuary?

The Forest has placed a high emphasis on wetland development and maintenance primarily on the Oregon Dunes NRA, however, other areas such as the Salmon River estuary and scattered wetland habitats throughout the Forest are included in this effort.

GOAL/DESIRED CONDITION:

The goal is to identify wetland management opportunities and promote wetland management across the Forest. Desired condition is to improve wetland capacity to provide breeding, brood rearing, and migratory habitat for western Oregon waterfowl, shorebirds, and other species dependent on wetlands.

EVALUATION QUESTION:

Are wetland habitats managed to capture existing opportunities and promote the Forest emphasis?

TYPE OF MONITORING: Implementation

MONITORING INDICATORS:

1. Acres of waterfowl, shorebird and wetland habitat inventoried.

2. Acres of waterfowl, shorebird and wetland habitat improved or maintained.

3. Trends in the amount and distribution of waterfowl, shorebird and wetland habitat managed.

SAMPLING METHOD:

Field biologists will be interviewed or project accomplishment reports reviewed for completion of above monitoring indicators.

Monitoring will be based on review of activities critical to Forest target accomplishment of MAR target 66.2-1.

THRESHOLD OF VARIABILITY: Less than 90% of target accomplishment for inventory and wildlife habitat improvement of wetland habitats.

RESPONSIBILITY: Wildlife Staff

REPORTING PERIOD: Annually

ANNUAL COST OF MONITORING:

Salary: 6 days x $150/day =	$900
Program Coordinator: 2 days x $200/day =	400
Incidental costs =	100
Total =	$1,400

PRIORITY: 2

GROUP: TERRESTRIAL

MONITORING ISSUE: Wildlife Populations - Northern Spotted Owl

What are the trends in northern spotted owl populations on the Forest?

GOAL/DESIRED CONDITION:

Northern spotted owl population recovery is a primary goal for lands within the range of the species. The desired future condition is a well distributed, genetically interacting, demographically diverse population of northern spotted owls that inhabit a high percent of their native range.

EVALUATION QUESTION:

What is the health of the northern spotted owl population that inhabits the Oregon Coast Range? Specifically, is the population of northern spotted owls decreasing, stabilized or increasing?

TYPE OF MONITORING: Effectiveness

MONITORING INDICATORS:

1. Northern spotted owl demographic parameters from ongoing investigations by the Pacific Northwest Research Station, Corvallis, OR, on the Mapleton Ranger District, Siuslaw National Forest, and
2. Results and conclusions from the Northern Spotted Owl Effectiveness Monitoring Plan for the Northwest Forest Plan.

SAMPLING METHODS:

Data will be retrieved from Pacific Northwest Research Station and Regional Office and summarized for the Forest as feasible.

Monitoring of northern spotted owl population size and reproduction for the Forest relies 100% on the current PNW demographic study. If study is terminated, the source of data for question 1 above will no longer exist. The step down to Forest scale for question 2 will provide information that is less reliable than larger scale discussions and conclusions. If reliability is determined to be unacceptable, question 2 may be dropped.

THRESHOLD OF VARIABILITY:

1. Decline in numbers or reproductive performance that exceeds levels as determine by the Pacific Northwest Research Station. Currently no such number exists (E. Forsman, pers. comm.).
2. Loss of owl pairs in excess of anticipated levels as determined by the Regional Northern Spotted Owl Effectiveness Monitoring Team.

RESPONSIBILITY: Wildlife Staff for data summarization.

REPORTING PERIOD: For question 1 - Annually for duration of demographic study,
For question 2 - Every 5 years

ANNUAL COST OF MONITORING:

For demographic study information -

Salary for data retrieval and summary: 2 days = $400

For summarizing regional data every 5 years -

Salary for data retrieval and summary: 2 days = $400

PRIORITY: 1

GROUP: TERRESTRIAL

MONITORING ISSUE: Wildlife Populations - Marbled Murrelet

What are the trends in marbled murrelet populations on the Forest?

GOAL/DESIRED CONDITION:

Marbled murrelet population recovery is a primary goal for lands within the range of the species. The desired future condition is a well distributed, genetically interacting, demographically diverse population of marbled murrelets that inhabit a high percent of their native range.

EVALUATION QUESTION:

What is the health of the marbled murrelet population that inhabits the Oregon Coast Range? Specifically, is the population of marbled murrelets decreasing, stabilized or increasing?

TYPE OF MONITORING: Effectiveness.

MONITORING INDICATORS:

1. Trend in marbled murrelet densities within each Recovery Plan Zone on the Forest.

2. Trend in juvenile ratios (ratio of juveniles to after-hatch-year birds) within each Recovery Plan Zone on the Forest.

3. Results and conclusions from the Marbled Murrelet Effectiveness Monitoring Plan for the Northwest Forest Plan that relate to murrelet population health and distribution.

SAMPLING METHOD:

Data will be retrieved from U.S. Fish and Wildlife Service and Forest Service Regional efforts and discussed in relation to Forest conditions/management actions. A summary of information will be prepared for the Forest for each monitoring indicator above.

Monitoring of marbled murrelet density, juvenile ratios, and population health and distribution relies 100% on planned USFWS and FS Regional efforts. If monitoring is not accomplished at these larger scales, little, if any, information would be available for Forest scale questions.

THRESHOLD OF VARIABILITY: No threshold of variability has been determined for marbled murrelet density, trend in juvenile ratios or population health and distribution.

RESPONSIBILITY: Wildlife Staff for data summarization.

REPORTING PERIOD: Every 5 years for each indicator.

ANNUAL COST OF MONITORING:

Monitoring costs will be incurred every 5 years for summarizing regional data -

Salary for data retrieval and summary: 2 days = $400

PRIORITY: 1

GROUP: TERRESTRIAL

MONITORING ISSUE: Wildlife Populations - Northern Bald Eagle

What are the trends in northern bald eagle populations on the Forest?

GOAL/DESIRED CONDITION:

Northern bald eagle population recovery is a primary goal for lands within the range of the species. The desired future condition is a well distributed, genetically interacting, demographically diverse population of northern bald eagles that inhabit a high percent of their native range.

EVALUATION QUESTION:

What is the health of the northern bald eagle population that inhabits the Oregon Coast Range? Specifically, is the population of northern bald eagles decreasing, stabilized or increasing?

TYPE OF MONITORING: Effectiveness

MONITORING INDICATORS:

1. Trend in the number of northern bald eagle nest sites on the Forest.

2. Trend in reproductive success of nest sites on the Forest.

SAMPLING METHODS:

Data will be retrieved from the U.S. Fish and Wildlife Service, Oregon Cooperative Wildlife Research Unit "Bald Eagle Nest Locations and History of Use in Oregon" annual report. A summary of information will be prepared for the Forest for each monitoring indicator above.

Data collection needed for Forest scale bald eagle monitoring relies 100% on surveys carried out by the U.S. Fish and Wildlife Service, Oregon Cooperative Wildlife Research Unit. If monitoring data is not collected, little, if any, information could be summarized that addresses the monitoring indicators above.

THRESHOLD OF VARIABILITY:

23 nest sites are required to meet recovery numbers for the Forest. No threshold of variability exists for bald eagle reproductive success on the Forest for the Oregon Coast Range.

RESPONSIBILITY: Wildlife Staff for data summarization.

REPORTING PERIOD: Annually for each indicator.

ANNUAL COST OF MONITORING:

Salary for data retrieval and summary: 2 days = $400

PRIORITY: 1

GROUP: TERRESTRIAL

MONITORING ISSUE: Wildlife Populations - Western Snowy Plover

What are the trends in western snowy plover breeding and wintering populations on the Forest?

GOAL/DESIRED CONDITION:

Western snowy plover population recovery is a primary goal for the Central Oregon Coast. The desired future condition is a well distributed, genetically interacting, demographically diverse population of western snowy plovers that inhabit the Central Oregon Coast.

EVALUATION QUESTION:

What is the health of the western snowy plover population that inhabits the Central Oregon Coast? Specifically, is the population of nesting and over wintering western snowy plovers decreasing, stabilized or increasing?

TYPE OF MONITORING: Effectiveness

MONITORING INDICATORS:

1.Trend in the number of western snowy plover nest sites on the Forest.

2. Trend in reproductive success of nest sites on the Forest.

3. Trend in the over wintering western snowy plover population.

4. Western snowy plover winter use from ongoing investigations by The Nature Conservancy, Oregon Department of Fish and Wildlife, Mapleton Ranger District, Oregon Dunes NRA, U.S. Fish and Wildlife Service, and volunteers.

SAMPLING METHODS:

Data will be retrieved from the nesting, reproduction, and winter survey effort collected by Forest Service, Nature Conservancy, Oregon Department of Fish & Wildlife, U.S. Fish and Wildlife Service, and volunteers and summarized for each monitoring indicator above.

Data collection needed for Central Oregon Coast snowy plover reproductive, nesting and winter population monitoring relies on surveys carried out by Forest Service, U.S. Fish and Wildlife Service, Nature Conservancy, and Oregon Department of Fish & Wildlife biologists and summarized for each monitoring indicator above. If monitoring data is not collected, little, if any, information could be summarized that addresses the monitoring indicators above.

THRESHOLD OF VARIABILITY: No threshold of variability exists for western snowy plover reproduction, nesting and over wintering population on the Central Oregon Coast.

RESPONSIBILITY: Wildlife Staff

REPORTING PERIOD: Annually for each indicator.

ANNUAL COST OF MONITORING:

Salary for nesting and reproductive surveys: 70 days x $120/day =	$8,400
Salary for on-site program coordinator: 10 days x $200/day =	2,000
Travel : 60 days x $20/day =	1,200
Salary for data summary 2 days x $200/day =	400
Total =	$12,000

PRIORITY: 1

GROUP: TERRESTRIAL

MONITORING ISSUE: Silverspot Butterfly

Are recovery plan[1/] objectives for the Oregon silverspot butterfly being met?

GOALS/DESIRED CONDITION:

(1) Secure and enhance existing habitats of the Oregon silverspot butterfly, thus assisting removal of the subspecies from the list of threatened and endangered species. This includes areas with known butterfly populations as well as those identified as sites for habitat rehabilitation and/or introduction of butterflies. Overall, provide 400 acres of prime meadow habitat within Management Area 1.

(2) Natural meadow habitat, consisting primarily of wildflowers and native grasses, provides cover for butterfly larvae. Abundant growth of common blue violets is needed to provide food for the larvae. It is important to determine if management practices are effective in maintaining sufficient larval rearing habitat to meet recovery objectives. In addition, nectar sources for adults should be scattered throughout the meadows and forest fringes should provide food and protect adult butterflies from wind and adverse weather at some sites.

(3) A Forest goal is to prepare and implement long-term plans for management of each habitat site as called for in 1990-1996 Management Plans for the Oregon Silverspot Butterfly (Hammond, 1989).

EVALUATION QUESTIONS:

1. Is all known habitat protected in accordance with the Recovery Plan?
2. Are protected and managed meadows producing enough violets?
3. Has a management plan for each habitat site been written?

TYPE OF MONITORING: (1) Implementation, (2) Effectiveness, (3) Implementation

MONITORING INDICATORS: See Sampling Methods.

SAMPLING METHODS:

(1) Field review in potential habitat areas, done in conjunction with other monitoring activities, to determine if all silverspot butterfly habitat is included in Management Area 1. Emphasis will be on areas surrounding sites at Rock Creek/Big Creek, Bray Pt., Cascade Head, and Mt. Hebo.

(2) Use transect surveys as outlined in McCorkle et al. 1980. "Ecological Investigation Report Oregon Silverspot Butterfly (Speyeria zerene hippolyta)." Siuslaw National Forest. 117 pp. Survey annually (usually by contractor) to determine if density of violets is at or above original survey levels. Concentrate sampling at Rock Creek/Big Creek, Mt. Hebo, and Bray Pt.

(3) Every two years, review management plans for population areas at Rock Creek/Big Creek, Bray Pt., Mt. Hebo and any other newly discovered or introduced population.

THRESHOLD OF VARIABILITY: (1) Any known habitat not protected; (2) violet densities below original survey levels (1980); (3) more than 20% not completed.

RESPONSIBILITY: Wildlife Staff (Forest Coordinator for butterfly program)
Data will be collected and analyzed by a private contractor. A summary report will be prepared by the Forest Coordinator of the Oregon silverspot butterfly program.

REPORTING PERIOD: (1) Bi-annually, (2) annually, (3) every five years

ANNUAL COST OF MONITORING:

Salary: 24 days x $100 per day =	$2,400
Program Coordinator, 2 days @ $150/day =	$300
Travel: 24 days x $20 per day =	480
Incidental costs =	120
Total =	$3,300

REMARKS:
Monitoring will be coordinated with the U.S. Fish and Wildlife Service and the species Recovery Team. Relationships between butterfly populations and amounts of habitat need to be clarified, as do the size, number, and distribution of habitat areas needed to attain recovery.

1/ A final recovery plan has not been completed by USFWS. The Forest is following recommendations described in an interim management plan (Hammond, P.C. 1989. 1990-1996 management plans for the Oregon silverspot butterfly. Siuslaw National Forest)

PRIORITY: 1

EVALUATION QUESTION 4:

Are viable butterfly populations being maintained on the Siuslaw National Forest?

GOALS/DESIRED CONDITION:

The Forest goal is to provide habitat to support populations adequate to meet recovery objectives. Population estimates made in summer 1990 are 2,000 adults at Mt. Hebo, 200 at Rock Creek/Big Creek, and 100 at Bray Point. Populations should remain relatively stable until completion of more specific recovery objectives.

TYPE OF MONITORING: Effectiveness

MONITORING INDICATORS: See Sampling Methods

SAMPLING METHODS:

Observe adult butterfly abundance during the flight season for population areas at Rock Creek/Big Creek, Bray Pt., Mt. Hebo, and any newly discovered or introduced population. Make observations at least twice under favorable weather conditions in August and September. The trips will coincide with other activities of the contractor monitoring violet densities.

THRESHOLD OF VARIABILITY: Any apparent loss of a population for two consecutive years.

RESPONSIBILITY: Wildlife Staff

Data will be collected and analyzed by private contractors. A summary report will be prepared by the Forest Coordinator of the Oregon silverspot butterfly program.

REPORTING PERIOD: Annually

ANNUAL COST OF MONITORING:

The costs are included in those shown for the silverspot habitat monitoring question.

REMARKS:

Coordinate monitoring with the USFWS and the species Recovery Team. Clarify relationships between butterfly populations and size, number, and distribution of habitat areas needed to attain recovery.

PRIORITY: 1

SOCIAL GROUP

GROUP: SOCIAL

MONITORING ISSUE: Commodity Production

Is the Forest providing commodities at levels projected in the Forest Plan?

GOAL/DESIRED CONDITION:

The Forest will produce a predictable and sustainable level of timber and nontimber resources to meet its obligation under the Northwest Forest Plan. A sustainable supply of timber and other forest products is needed to help maintain the stability of local and regional economies (NFP, p. 26).

Probable sale quantity (PSQ) is the timber volume harvested only from matrix lands and AMA lands outside reserved areas; the volume is "chargeable" to PSQ. Harvest volume from other land allocations is nonchargeable, but is included with PSQ for the Total Sale Quantity (TSQ). The NFP projected a PSQ for the Siuslaw NF of 23 mmbf per year (FSEIS, p. 3&4-268). The PSQ may change with a revision of the Siuslaw Forest Plan.

The Forest will also produce a sustainable, long term supply of desired special forest products (SFPs). Along with personal and Tribal uses of SFPs, this will provide a commercial supply of SFPs that will create income for collectors. Commercial collection of SFPs is allowed on 568,067 acres of the Forest. Collection of moss is limited to no more than 125,000 pounds per year. A limit of 95 matsutake mushroom commercial permits are sold annually on the Forest. These permits allow an unlimited amount to be harvested within a 6 month period.

EVALUATION QUESTION 1:

Are the total sale quantity and probable sale quantity (TSQ and PSQ) similar to the level predicted in the Forest Plan?

TYPE OF MONITORING: Implementation

MONITORING INDICATORS:

Use the Timber Sale Information Reporting System (TSPIRS).

SAMPLING METHOD:

Obtain annual TSPIRS report, "Source and Application of Funds Worksheet" (TPIR01) for timber volume harvested. The sale quantities will be stratified by District and by AMA/nonAMA lands.

THRESHOLD OF VARIABILITY: Deviation of 10% from TSQ and/or PSQ over a 3 year period.

RESPONSIBILITY: Forest Economist.

REPORTING PERIOD: Annually

ANNUAL COST OF MONITORING:
Salary costs: Forest Economist, 1 day @ $190/day.

PRIORITY: 1

Note: The PSQ from the NFP did not take into account the increase of riparian reserve width along intermittent streams in the final plan. The actual PSQ for the forest is between 5 and 12 mmbf. Adjustments to the PSQ will not likely be resolved until the Siuslaw Forest Plan is revised.

EVALUATION QUESTION 2:
Are the annual quantities of Special Forest Products within limits prescribed in Forest Plan Amendment #6 (Special Forest Products)?

TYPE OF MONITORING: Implementation

MONITORING INDICATORS:
Use the Timber Sale Statement of Account--Sold and Removed Reports for number of permits issued for Special Forest Products.

SAMPLING METHOD: Obtain annual Sold and Removed Reports from the Timber Sale Account Coordinator. Stratify results according to District and AMA/non-AMA lands.

THRESHOLD OF VARIABILITY: Quantities of Special Forest Products exceed limits by 5 %.

Note: The "Threshold of Variability" % does not include theft. If theft is considered the % would increase.

RESPONSIBILITY: Special Forest Product Administrator

REPORTING PERIOD: Annually

ANNUAL COST OF MONITORING:
Salary costs: Financial Assistant (GS-7) 1 day @ $110/day = $110

PRIORITY: 1

GROUP: SOCIAL

MONITORING ISSUE: Cultural Resources

Are cultural and historical sites being used and protected as planned?

GOALS/ DESIRED CONDITION:

The Forest direction is to survey, inventory and evaluate sites for cultural resources and identify those that have resource or interpretive potential. The objective is to evaluate all significant historic structures within a 5 year period to ensure compliance with the National Historic Preservation Act and 36 CFR 68.4.

EVALUATION QUESTION 1:

Is a complete structural inspection of historic structures being accomplished and are the necessary repairs being made?

TYPE OF MONITORING: Implementation

MONITORING INDICATORS:

Forest Facilities Report - list of historic places and maintenance needs.

SAMPLING METHODS:

Monitor the Forest Facilities Report for identification of structures needing repair. Using the list of those buildings on or eligible for the National Register of Historic Places, check to make sure all of these buildings are included in the listing. The archeologist will personally inspect each of these buildings at least once within the 5 year period and Heceta House will be thoroughly inspected at least once every 2 years. District Cultural Resource Technicians and the district Recreation Assistant will be briefed on the results of the inspections, and when repairs are needed an additional trip to the building with the above listed people will be conducted. Evaluation and summary reports will be prepared by the Forest Archeologist

THRESHOLD OF VARIABILITY: less than 100% of the inspections completed within a 5 year period.

RESPONSIBILITY: Forest archeologist

REPORTING PERIOD: Heceta House every 2 years; All significant structures every 5 years.

ANNUAL COST OF MONITORING:

Salary for:

Forest archeologist, 12 days @ $200/day = $2,400

PRIORITY: 1

REMARKS:

Architectural inspections are conducted by Engineering to determine the condition of structures and include recommendations for stabilization/rehabilitation. The Forest Archeologist monitors these reports for any information about significant structures. In

addition, an onsite inspection of each structure will be made by the Forest Archeologist as outlined above. When an historic building or structure is involved, stabilization and/or rehabilitation plans will be developed in consultation with the Forest Archeologist. Appropriate lead-in time is necessary as mitigation plans must be submitted to the State Historic Preservation Office (SHPO) office for their concurrence. The work should be accomplished within one year.

EVALUATION QUESTION 2:

Is appropriate stabilization or rehabilitation of damaged or eroded sites eligible for inclusion in the National Register of Historic Places (NHRP) being done?

Goals/Desired Condition:

Archeological sites eligible for the National Register of Historic Places (NRHP) must periodically be inspected to insure that natural or cultural forces are not impairing those qualities that made them significant.

TYPE OF MONITORING: Implementation

MONITORING INDICATORS:

Heritage Monitoring Form from district offices.

SAMPLING METHOD:

Monitoring of archeological sites will be accomplished by District Cultural Resource coordinators and technicians, and by the Forest Archeologist. Once annually an inspection will be conducted by District Coordinators and Technicians. A "Heritage Monitoring Form" (see attached) will be completed and sent to the Forest Archeologist to provide information of any significant disturbances, deterioration or erosion. If there has been significant damage, a restoration plan will be developed and the work will be accomplished within one year.

If no report is submitted for a protected site within the timeframe of the report period, the District will be requested to send a qualified employee to make an inspection. This should be accomplished within one month.

The Forest Archeologist will inspect those sites that have been evaluated and found to be eligible for the National Register. District Cultural Resource Technicians will inspect sites which have research or interpretative values.

THRESHOLD OF VARIABILITY: Damage that threatens loss of values not repaired.

RESPONSIBILITY: Forest Archeologist

REPORTING PERIOD: 3, 6, and 9 years

ANNUAL COST OF MONITORING:

Salary for:

Forest archeologist, 15 days @ $200/day	= $3,000
CRM Technician, 3 days/ District @ $120/day	= $1,440
Total salary =	$4,400

PRIORITY: 1

EVALUATION QUESTION 3:

Are cultural resource surveys being performed according to the Forest/SHPO agreement? 1/

Goals/Desired Condition:

The Forest direction is to survey, inventory and evaluate sites for cultural resources and identify those that have resource or interpretive potential. The objectives are to inventory all acres scheduled for project work following the SHPO agreement procedures.

TYPE OF MONITORING: Implementation

MONITORING INDICATORS:

Project survey accomplishments from CRM data tables.

SAMPLING METHOD:

The Forest archeologist will compare the CRM pre-project survey data table with the annual project plans for all ground-disturbing activities every 6 months. In addition, the post-project data table will be compared with completed projects every 6 months to make sure that post-project surveys are being completed in a timely manner.

The Forest archeologist is responsible for reviewing reports and insuring that survey work is done in compliance with standards required. The district CRM technicians are responsible for partial maintenance of data tables, i.e., keeping the files and tables up to date.

Frequency of data collection - twice annually.

THRESHOLD OF VARIABILITY: less than 100% survey of project areas.

RESPONSIBILITY:

Cultural Resource Management Technicians on each district will select projects to survey and prepare reports for review by Recreation Staff and District Rangers. Technicians will be assisted by Forest Archeologist.

REPORTING PERIOD: Every 3 years.

ANNUAL COST OF MONITORING:

Salary for:

Forest archeologist, 40 days @ $200/day	=	$8,000
CRM Technician, 20 days/District @ $120/day	=	$7,200 (4 Districts)
" " 10 days/ODNRA @ $120/day	=	$1,200
Total salary	=	$16,400

PRIORITY: 1

REMARKS:

The District CRM Coordinator will use project plans from all shops to plan and prioritize the pre- and post-project surveys for the CRM Technicians on their district. These plans will have to be coordinated with the supervisors of the technicians.

An annual report, prepared by the Forest Archeologist, will be provided to the Recreation Staff and District Rangers to insure that management is cognizant of our compliance situation.

Data tables will be maintained and updated continuously at the Forest Archeologist's Office, so printouts will be available at any time upon request.
An annual report detailing number of sites surveyed, benefitting functions, numbers of new sites and cumulative totals for each of the categories is prepared for the Regional and Washington Offices.

1/ The SHPO agreement is on file in the Archeologist's Office. It requires a preliminary survey of the high probability areas (as defined in the "Cultural Resource Inventory Plan for the Siuslaw National Forest, Volume 1: Research Design) and, upon completion of the project, a survey of at least 20% of all of the remaining areas within the project area.

GROUP: SOCIAL

MONITORING ISSUE: Landownership Status
Are the goals of the Landownership Adjustment Plan being met?

GOAL/DESIRED CONDITION:
Landownership will be adjusted, as opportunities arise, to consolidate NFS lands, reduce work in property lines, acquire lands in federally-designated areas, obtain lands needed for administrative or research purposes, improve resource conservation and production, or otherwise to clearly serve the public interest. Landownership adjustments will be carried out according to the priorities set forth in the Forest's Landownership Adjustment Plan.

EVALUATION QUESTION 1:
Have Forest Lands Program adjustment goals been met?

TYPE OF MONITORING: Implementation

MONITORING INDICATORS:
a. calculate net acres added/lost to the Forest land base, annually
b. brief list of land adjustments, annually

SAMPLING METHOD: Annually obtain 5409 and 5410 reports from the Lands office. These reports summarize each land exchange/purchase.

THRESHOLD OF VARIABILITY: Greater than 40 percent of land adjustment expenditures have been made for adjustments that are not consistent with the Forest Program goals.

RESPONSIBILITY: Forest Economist

REPORTING PERIOD: Annually

ANNUAL COST OF MONITORING:
Salary for: Forest Economist, 1 day @ $190/day = $190

PRIORITY: 3

EVALUATION QUESTION 2:
Has fragmentation of the Forest land base in Late-Successional Reserves changed?

TYPE OF MONITORING: Implementation

MONITORING INDICATORS:
a. calculate land area/boundary ratio of LSRs in GIS (should increase with decreasing fragmentation)

SAMPLING METHOD:

Query Forest GIS Land Status and Planning layers to determine area/boundary ratio for LSRs.

THRESHOLD OF VARIABILITY: Area/boundary ratio decreases more than 10 percent.

RESPONSIBILITY: Forest analyst

REPORTING PERIOD: Every 5 years

COST OF MONITORING:

Every 5 years:
Salary for: Forest analyst, 1 day @ $200/day = $200

PRIORITY: 3

GROUP: SOCIAL

MONITORING ISSUE: Local Economies and Communities

Are local natural resource-based economies and communities healthy?

GOAL/DESIRED CONDITION:

Provide predictable and sustainable levels of wood fiber and other forest products in order to help maintain stable local communities. In addition to commodity outputs, recreation and watershed restoration activities will provide additional employment and income in local communities.

EVALUATION QUESTION 1:

What are the trends in employment, unemployment and payrolls in communities affected by the Forest?

TYPE OF MONITORING: Effectiveness

MONITORING INDICATORS:

a. county-level total annual employment, and specifically the Lumber and Wood Products sector (SIC Code 24), the Forestry sector (08), the Fisheries sector (09), and the Amusements and Recreation Services sector (79) **(priority 1)**

b. county-level annual payrolls for the same sectors **(priority 1)**

c. county-level annual unemployment rate **(priority 1)**

d. TSPIRS estimate of timber-related jobs and income **(priority 2)**

SAMPLING METHOD:

Obtain employment and payroll data from annual State of Oregon Employment Department publication "Oregon Covered Employment & Payrolls". Obtain unemployment data from the State of Oregon Employment Department. Obtain TSPIRS timber-related data from TSPIRS Employment, Income and Program Level Account provided by the Regional Office.

THRESHOLD OF VARIABILITY: All industry sectors show a decrease in employment or payroll over 5-year periods.

RESPONSIBILITY: Forest Economist

REPORTING PERIOD: Annually

ANNUAL COST OF MONITORING:

Salary for: Forest Economist, 2 days @ $190/day = $380

PRIORITY: 2

EVALUATION QUESTION 2:
What are the demographic trends in communities affected by the Forest?

TYPE OF MONITORING: N/A

MONITORING INDICATORS:

a. county-level annual population count, including breakdowns by age, race, and per-capita personal income

SAMPLING METHOD:

Obtain demographic data from county demographic profiles produced by the State of Oregon Employment Department.

THRESHOLD OF VARIABILITY: No indicator identified.

RESPONSIBILITY: Forest Economist

REPORTING PERIOD: Every 3 years

ANNUAL COST OF MONITORING:

Salary for: Forest Economist, 2 days @ $190/day = $380

PRIORITY: 2

EVALUATION QUESTION 3:

Are economic assistance opportunities available or operating in local communities?

TYPE OF MONITORING: Implementations

MONITORING INDICATORS:

a. Annually review the amount of Forest Service-administered, Rural Community Assistance grant dollars awarded to local communities. Note the number of grants below and above $20,000 (or the amount indicating whether a community is in the strategic planning stage or ready to implement actual projects). **(priority 1)**

b. Annually note how many communities out of the Forest's list of small local timber-dependent communities have completed community strategic plans. (Small local timber-dependent communities are those lying within 100 miles of the Siuslaw National Forest with a population under 10,000 and at least 15% of its economy dependent on the timber industry.) A strategic plan requires development of a formal community organization, a list of specific projects improving a community's short- or long-term future, and awareness of available assistance in planning, housing development, etc. **(priority 1)**

c. Anually note the number of non-grant partnerships that the Forest is actively involved in -- specifically land-stewardship, ecosystem management and community-economic partnerships, and those targeting displaced timber and fish workers (e.g., Reedsport Salmon Festival). **(priority 3)**

d. Annually estimate the number of local communities planning or implementing alternative natural resource income efforts (e.g., special forest products, hardwoods, etc.). **(priority 3)**

SAMPLING METHOD:

Obtain record on amount of Forest Service-administered, Rural Community Assistance grant dollars awarded to local communities. Acquire Forest's list of small local timber-dependent communities and documentation of which communities have community strategic plans. Collect data on non-grant partnerships in which the Forest is actively involved. Acquire data on number of local communities planning or implementing alternative natural resource income efforts. Stratify data by AMA/non-AMA.

THRESHOLD OF VARIABILITY:

a. Dollars received by Siuslaw communities is below 15% of the allocation for Oregon (During NW Economic Adjustment Initiative, Oregon allocation is ~$5,000,000).
b. No new community plans are funded each year, and fewer than two communities receive funding to implement completed plans.
c. Forest invests in fewer than two new partnerships each year or does not maintain current level of involvement in on-going partnerships.
d. Forest is not working with at least one community on developing alternative natural resource income efforts.

RESPONSIBILITY: Forest Rural Community Development Coordinator

REPORTING PERIOD: Annually

ANNUAL COST OF MONITORING:

Salary for: Forest Rural Community Development Coordinator
1 day @ $190/day = $190

PRIORITY: 1

EVALUATION QUESTION 4:

What are the annual payments to counties?

TYPE OF MONITORING: Effectiveness

MONITORING INDICATORS:

Report of 25% fund payments to each county, obtained from RO

SAMPLING METHOD:

Obtain amounts of 25% fund payments from the Forest to each county from the Financial Management staff in the Regional Office.

THRESHOLD OF VARIABILITY: Deviations from projections exceed 20% over 3 years.

RESPONSIBILITY: Forest Economist

REPORTING PERIOD: Annually

ANNUAL COST OF MONITORING:
Salary for: Forest Economist, 1 day @ $190/day = $190

PRIORITY (Q4): 1

EVALUATION QUESTION 5:
Do trends in the Forest's contribution to area forest products industries indicate about as much contribution by the end of the first decade as provided at the beginning of the Northwest Forest Plan?

TYPE OF MONITORING: Effectiveness

MONITORING INDICATORS:
Timber Disposition Forms record log flows (in MBF) from the Siuslaw to particular mills. Volume will be tallied by county, and stratified according to AMA/non-AMA.

SAMPLING METHOD:
Obtain annual Timber Disposition Forms from the Timber Sale Account Coordinator.

THRESHOLD OF VARIABILITY: Decrease of 50% from baseline contributions after 10 years.

RESPONSIBILTIY: Forest Economist

REPORTING PERIOD: Every 5 years.

ANNUAL COST OF MONITORING:
Salary for: Forest Economist, 1 day @ $190/day = $190

PRIORITY: 2

GROUP: SOCIAL

MONITORING ISSUE: Public coordination, cooperation and collaboration

Do Forest activities involve a broad range of publics and a high level of interagency cooperation and collaboration?

GOAL/DESIRED CONDITION:

The Northwest Forest Plan calls for broadened public participation and a high level of coordination, cooperation and collaboration among federal and state agencies, counties, communities, private landowners, tribes, and other publics in:

- planning, implementation and monitoring;
- providing opportunities to share information;
- identification of clear expectations and responsibilities; and
- active partnerships.(NFP, pg. 53, 55, E-6, E-15)

EVALUATION QUESTIONS:

1. Does the Forest have a high number and diverse range of agencies and publics participating in its activities, and improving relationships with its publics--as directed in the NW Forest Plan?

2. How successful have groups been in working together to develop innovative management approaches in the AMA, including social learning and adaptation?

TYPE OF MONITORING: Implementation

MONITORING INDICATORS:

a. Annually meet with program staff and project team leaders to evaluate:

1.Number of interagency teams that employees are actively involved in (including natural resource education projects such as High School Leadership Conference and Forest Camp);

2. Number of formal partnerships and agreements between the Forest and other agencies or groups;

3. Range and diversity of publics participating in projects and issues (including local community groups and whether their participation occurs in all regions of the Forest);

4. Whether new partnerships and agreements involve different groups and perspectives); and

5. Quality of coordinated and collaborative activities with publics.

b. At the end of each year (November-December), send out a short "report card" (adapted OMB-approved Customer Comment Card) to other federal and state agency staff for feedback on quantity and quality of coordinated and collaborative activities, and our overall working relationship.

c. At the end of each year (November-December), send out a short "report card" (adapted OMB-approved Customer Comment Card) to key contacts and publics--especially permittees and those involved in watershed analyses and the Coast Range Province Advisory Committee (PAC)--for feedback on quantity and quality of coordinated and collaborative activities, and our overall working relationship.

SAMPLING METHOD:

Obtain data from Forest program staff and team leaders on number of interagency teams in which employees are active participants; number of formal partnerships and agreements between the Forest and other agencies or groups; range and diversity of publics participating in projects and issues; affiliation, composition and perspective of groups entering into new partnerships and agreements; and quality of coordinated and collaborative activities with publics (use "report card"/adapted Customer Comment Card). Summarize or secure summaries of the data gathered through the Forest "report card" (adapted Customer Comment Card) given to other federal and state agency staff, key contacts, and publics.

THRESHOLD OF VARIABILITY:

1a. Forest's level of involvement in interagency teams drops below current level and Forest does not invest in new partnerships when opportunities arise each year.

1b. Forest does not invest in at least one new partnership each year, or does not maintains current level of involvement in on-going partnerships.

1c. For each project or issue, only one perspective (e.g., environmental community) receives the majority (>75%) of communication and public participation efforts. Initial mailing lists must include as wide a range of publics as possible.

1d. New partnerships and agreements involve no new perspectives. One perspective (e.g., environmental community) comprises the majority (>50%) of new partnerships and agreements.

1e, 2, 3. "Report card" or survey mean does not increase by at least one point in the positive direction on the rating scale each year. For example, if the mean of the results equals 3 on a 5-point scale (e.g., "Neither agree or disagree"), the mean should increase to 4 the following year (e.g., "agree").

RESPONSIBILITY: Forest Social Scientist or Public Involvement/Affairs Specialist

REPORTING PERIOD: Annually

ANNUAL COST OF MONITORING:

Salary for: Forest Social Scientist or Public Involvement/Affairs Specialist,
5 days @ $190/day = $950

PRIORITY: 2

GROUP: SOCIAL

MONITORING ISSUE: Recreation Diversity

Is the diversity of recreation opportunities provided for in the Forest Plan being supplied and used?

GOAL/DESIRED CONDITION:

A broad spectrum of outdoor recreation opportunities is provided in order to meet projected use. It is necesary to confirm that projected use is actually occurring to assure that the right types and amounts of recreation opportunities are being provided (Forest Plan, pg. III-6).

EVALUATION QUESTION #1:

Is management of the following areas consistent with the assigned ROS or WROS classification and other direction in the Forest Plan?

- Wilderness
- Oregon Dunes NRA
- Cascade Head SRA
- Special Interest Areas
- Undeveloped Areas
- Sutton
- Sand Lake
- Developed Recreation Sites

TYPE OF MONITORING: Implementation

MONITORING INDICATORS:

A. ROS Physical Setting Criteria
   - Remoteness
   - Size
   - Evidence of Humans

B. ROS Social Setting Criteria (user density)

C. ROS Managerial Setting Criteria (degree of regulation and noticeability)

SAMPLING METHOD:

Field reviews of management areas and developed sites for ROS/WROS consistency. -- Review 5 randomly selected sites/areas every year to determine whether they are consistent with designated ROS/WROS class criteria.

THRESHOLD OF VARIABILITY: Any deviation from designated ROS/WROS class criteria.

RESPONSIBILITY:

Tri-annual field reviews -- Forest Recreation Staff

REPORTING PERIOD: Every 3 years.

ANNUAL COST OF MONITORING:

Field work - 5 days @ $150/day =	$750
Travel =	$250
TOTAL =	$1,000

PRIORITY: 2

EVALUATION QUESTION #2:

Is the amount and type of recreation use occurring in various areas of the Forest as predicted in the Forest Plan?

TYPE OF MONITORING: Implementation

MONITORING INDICATORS: Amount of recreation use by activity by area.

SAMPLING METHOD:

Compare annual recreation use reports against projected first-decade use projections:

Developed Recreation: 817.2 MRVDs annually

Nonwilderness Dispersed Recreation:

Semi-Primitive Motorized - 417.7 MRVDs annually

Semi-Primitive Non-Motorized - 22.7 MRVDs annually

Wilderness Recreation: 12.8 MRVDs annually

THRESHOLD OF VARIABILITY: Deviation greater than 50% from projected amounts.

RESPONSIBILITY: Forest Recreation Staff

REPORTING PERIOD: Annually

ANNUAL COST OF MONITORING:

1 day @ $150/day = $150

PRIORITY: 2

GROUP: SOCIAL

MONITORING ISSUE: Recreation - Off-highway Vehicles

Is off-highway vehicle (OHV) use taking place as intended in the Forest Plan (as amended by NFP)?

GOAL/DESIRED CONDITION:

Management and monitoring of off-highway vehicle use is required by 36 CFR Part 295 in order to assure such use is not or will not cause unacceptable adverse effects on soil, water, fish, wildlife, vegetation, forest visitors, and cultural and historic resources. Opportunities for off-highway vehicle recreation are provided on the Oregon Dunes NRA, Sandlake and Sutton Recreation Area.

EVALUATION QUESTION #1:

Is off-highway use of vehicles confined to those areas designated for such use in the Forest Plan?

TYPE OF MONITORING: Implementation

MONITORING INDICATORS:

1. Violations of vehicle closures and restrictions (e.g., designated routes, noise buffers and designated dispersed campsites at Oregon Dunes NRA).
2. Tracks and other evidence of vehicle use in closed areas.
3. Use of non-designated routes and dispersed camping areas.
4. New user-developed routes/campsites outside those designated.

SAMPLING METHOD:

1. Review violation notices annually for vehicle closure violations.

2. Three times annually during the high OHV-use season (May-September), randomly select one OHV-closed area at Oregon Dunes NRA and examine for tracks and/or other other evidence (e.g. equipment parts, engine noise, etc.) of vehicle use in closed areas.

3. At the Oregon Dunes NRA in Management Area 10C (OHV Restricted) areas, annually monitor (during the May-September high OHV-use season) 5 randomly-selected deflation plain routes that are NOT designated for continued OHV use. Examine for evidence of continued OHV use.

4. At the Oregon Dunes NRA, in areas where dispersed camping is allowed only in designated sites (Management Areas 10A and 10C), annually monitor (during the May-September high OHV-use season) 5 randomly-selected historic camp sites that are NOT designated for continued use. Examine for evidence of continued use.

5. At the Oregon Dunes NRA, tour 2 randomly selected OHV riding areas (Management Areas 10A and 10C) once annually. Examine for evidence of new-developed OHV routes in vegetated areas and for newly developed dispersed camping sites.

6. At the Oregon Dunes NRA, monitor the Woahink Noise Buffer (Management Area 10L) for 1 hour twice annually (randomly selected dates) during the high OHV-use season (May-September) to determine if OHV use is restricted to the 2 dunes access corridors and that use is at prescribed slow speeds (less than 20 mph).

THRESHOLD OF VARIABILITY

Closure Compliance -

Greater than 10% increase in number of violation notices from previous year (from #1 above) or

Evidence of closure violations found 33% or more of the time (1 or more times out of the 3 sample dates) (from #2 above).

Designated OHV Route Compliance -

Evidence of continued use on more than 20% (1 out of 5 sampled) of non-designated historic deflation plain routes (from #3 above) or

New OHV routes are the same or increased from previous year (from #5 above).

Designated Dispersed Camping Compliance -

Evidence of continued use at more than 20% (1 out of 5 sampled) of non-designated historic dispersed camp sites (from #4 above) or

New dispersed camp sites (undesignated) are the same or increased from previous year (from #5 above).

Buffer Compliance -

Thirty percent (30%) or more of use observed during sample period (2 hours total) is either outside designated access corridors or in excess of prescribed 20 mph speed.

RESPONSIBILITY: Ranger District Recreation Staff

REPORTING PERIOD: Annually

ANNUAL COST OF MONITORING:

Closure Compliance	
3 days @ $150/day =	$450
Designated Route Compliance	
2 days @ $150/day =	$300
Designated Dispersed Camping Compliance	
2 days @ $150/day =	$300
New Route and Dispersed Campsite Monitoring	
2 days @ $150/day =	$300
Noise Buffer Compliance	
1 day @ $150/day =	$150
Travel for all of above =	$400
TOTAL =	$1,900

PRIORITY: 1

EVALUATION QUESTION #2:

Is off-highway vehicle use at the Oregon Dunes NRA complying with operating hour restrictions (curfews) and noise emission (dB) standards established in the Forest Plan?

TYPE OF MONITORING: Implementation

MONITORING INDICATORS:

Violation of decibel output maximums by individual machines.

OHV-noise trend for NRA user population.

Violation of operating hour restrictions.

SAMPLING METHOD:

1. Using random sample days (stratified for day of week and season of year) and randomly selected OHV staging areas, systematically sample (noise test) OHVs entering the sand at the Oregon Dunes NRA. Sample a total of 80 hours per year (40 two-hour sample periods) with 2-hour sample periods occurring during peak OHV-use hours (10 a.m. to 4 p.m.) on selected days.

2. Four times annually during the peak OHV use season (May-September) randomly select a curfew area at the Oregon Dunes NRA and monitor it for 1 hour during the curfew period to determine if OHV use is occurring within the area during the curfew hours.

THRESHOLD OF VARIABILITY:

OHV Noise Compliance -

Greater than 5% of all machines sampled exceed allowable noise standards.

Curfew Compliance -

Curfew violation exceeds 25% (more than once during 4 sample periods).

RESPONSIBILITY: Ranger District Recreation Staff

REPORTING PERIOD: Annually

ANNUAL COST OF MONITORING:

OHV Noise Compliance	
2 people @ 80 hours @12.50/hour =	$2,000
Curfew Compliance	
8 hours @ $12.50/hour =	$100
Travel for all above =	$500
TOTAL =	$2,600

PRIORITY: 1

GROUP: SOCIAL

MONITORING ISSUE: Accessibility

Are Forest recreation facilities, buildings, administrative sites, and environmental education programs usable by all people regardless of physical and mental ability?

GOAL/DESIRED CONDITION:

Constructed sites on the Forest and Forest programs are accessible to people of all physical and mental abilities (Section 504, Rehabilitation Act of 1973).

Section 504 of the Rehabilitation Act of 1973 requires that all federal facilities and programs be accessible to people with disabilities. The Siuslaw Accessibility Transition Plan for facilities and recreation sites (1996) outlines what is needed in order to remodel buildings and sites, so that they meet access standards.

EVALUATION QUESTIONS:

1. Are recreation sites and administrative facilities on the Siuslaw National Forest being brought to standard in accordance with the Forest Accessibility Transition Plan (1996)?

2. Are Forest environmental education programs available to people with disabilities?

TYPE OF MONITORING: Implementation

MONITORING INDICATORS:

Percentage of sites and programs that meet standard.

SAMPLING METHODS:

Review and update recreation site records, trail records, building and administrative site records to find percentage of sites that meet standard. If sites are not accessible, determine why they are not meeting the standards.

Review two or three environmental education programs a year against access standards.

THRESHOLD OF VARIABILITY: Fewer than 75% of the Forest's facilities are accessible.

RESPONSIBILITY:

Forest Landscape Architect with Facilities Engineer and Forest Environmental Education Coordinator.

REPORTING PERIOD: Annual.

ANNUAL COST OF MONITORING: 5 days @ $200/day = $1000.

PRIORITY: 1

GROUP: SOCIAL

MONITORING ISSUE: Transportation - Access & Travel Management

Is the Access & Travel Management Plan for long-term access roads (Primary and Secondary roads) sufficient for general public access needs?

GOAL/DESIRED CONDITION:

As a result of forest planning, access and travel management decisions will reflect a balance between demands for use of the transportation system, resource and environmental impacts.

EVALUATION QUESTION #1:

What are the volumes and trends in use patterns for the Primary and Secondary system of roads?

TYPE OF MONITORING: Effectiveness

MONITORING INDICATORS:

Use standard traffic counts and statistical analysis to quantify use and determine peak use and trends.

SAMPLING METHOD:

Study impacts and gather special use allocation data as well as recreation uses to determine use levels, trends and demands in order to reevaluate ATM categories and needs.

Place approximately one third per year of the combined Primary and Secondary Forest Development Road system under traffic surveillance using on-site traffic counters year-round. Data collection will average once per week per site. 100 percent ATM coverage in 3-year cycle.

THRESHOLD OF VARIABILITY: Annual average daily traffic deviation of 40% or more for any portion of Primary or Secondary system within the reporting period.

RESPONSIBILITY: Engineering Staff

REPORTING PERIOD: Every 3 years

ANNUAL COST OF MONITORING:

Salary for Engineering Staff - 52 days @ $ 155/day =	$8,060
(20-25 sites per week field data collection)	
Analysis & Report =	500
Total =	$8,560

PRIORITY: 2

EVALUATION QUESTION #2:

Are road maintenance and stabilization needs identified in Watershed Analyses or Road Assessments being accomplished?

GOALS/DESIRED CONDITION:

Road maintenance levels are reduced and roads stabilized, as well as permanent structures upgraded to facilitate reduced sedimentation, peak flow run-off, and identified fish impass. Recommendations for watershed restoration projects, including road projects, are provided in Watershed Analyses and Road Assessments.

TYPE OF MONITORING: Implementation

MONITORING INDICATORS:

Annual road maintenance accomplishment and watershed restoration roads project accomplishments.

SAMPLING METHOD:

Review Transportation Management System (TMS) database for annual accomplishments of road stabilization and obliteration.

Compare the accomplishments to the recommendations in Watershed Analyses and Road Assessments. Select 2 watersheds per year for review.

THRESHOLD OF VARIABILITY: Fewer than 20% of road miles treated within a watershed two years following development of the watershed restoration implementation plan.

RESPONSIBILITY: Engineering staff

REPORTING PERIOD: Annually

ANNUAL COST OF MONITORING:

Salary for Engineering Staff: 2 days @ $ 200/day = $400

PRIORITY: 2

OTHER GROUP

GROUP: OTHER

MONITORING ISSUE: Programs and Budgets

Are the annual programs and budgets needed to implement the Forest Plan being realized?

GOAL/DESIRED CONDITION:

The goal is to implement the Forest Plan while meeting annual budget constraints. This monitoring is required by 36 CFR 219.12(k)(1) and (3).

Information used to determine Forest Plan implementation needs comes from various sources as follow:

For fish habitat resources - "Watershed protection and restoration in the Mid-Oregon Coast Range", Siuslaw NF (1993); watershed analyses; and Oregon Dunes NRA Management Plan, App. B.

For watershed restoration - watershed analyses and annual restoration needs.

For wildlife habitat improvements - Oregon Dunes NRA Management Plan, App. B., and Challenge Cost share opportunities with partners.

For vegetation management - goals are described in Late-Successional Reserve Assessments and the 5-year Silviculture Treatment Schedule (in development)

For recreation - Siuslaw Forest Plan, App. B, and Oregon Dunes NRA Management Plan, App. B.

For transportation system - Road Assessments, watershed analyses, Flood Project Proposals, project EAs and annual road maintenance surveys.

In addition, there will be emerging issues that may require urgent attention and that reduce time and budgets for other forest projects.

EVALUATION QUESTION 1:

Are the annual programs and projects needed to implement the Forest Plan being accomplished?

TYPE OF MONITORING: Implementation

MONITORING INDICATORS:

Use the Management Attainment Reports for program accomplishments.

SAMPLING METHOD:

Obtain Management Attainment Report annually (at the end of the fiscal year) from the Budget and Finance office. Check with program managers to verify attainments or report additional accomplishments.

Forest economist will construct a table of Forest-wide accomplishments from the MARs report.

THRESHOLD OF VARIABILITY: Accomplishments are less than 90% of Plan targets over 3 years. If there are no Plan targets, accomplishments are less than 90% of annual project targets established to implement the Plan.

RESPONSIBILITY: Forest economist.

REPORTING PERIOD: Annually

ANNUAL COST OF MONITORING:

Salary for: Forest Economist, 3 days @ $190/day = $570

PRIORITY: 1

EVALUATION QUESTION 2:

What revenues were collected from sale or use of Forest resources?

TYPE OF MONITORING: Implementation

MONITORING INDICATORS:

a. revenues (for Timber, Land Use, Recreation, Power, Minerals, Admission & User Fees, and Grazing) are reported on the Annual Collection Statement compiled by the Regional Office

b. Rec Fee Demo site revenues will be tabulated by the Forest Budget and Finance office, for FY 97 and 98, and longer if the program continues

c. revenues and number of permits issued for Special Forest Products will be reported on Sold and Removed Reports (from the Timber Sale Statement of Account)

SAMPLING METHOD:

Obtain Annual Collection Statement, and Rec Fee Demo revenues annually (at the end of the fiscal year) from the Budget and Finance office. Obtain Sold and Removed Reports from Timber Sale Account Coordinator.

A table of Forestwide revenues will be constructed from these reports and statements.

THRESHOLD OF VARIABILITY: Revenues decrease more than 10% from the previous year.

RESPONSIBILITY: Forest economist.

REPORTING PERIOD: Annually

ANNUAL COST OF MONITORING:

Salary for: Forest Economist, 3 days @ $190/day = $570

PRIORITY: 1

EVALUATION QUESTION 3:

What are the expenditures for major resource activities on the Forest?

TYPE OF MONITORING: Implementation

MONITORING INDICATORS:

a. the annual "Year End Closing Analysis" compiled by the Budget and Finance office reports expenditures by program area

b. funding for monitoring activities will be compiled from budget planning records

SAMPLING METHOD:

Obtain Year End Closing Analysis from the Budget and Finance office. Obtain monitoring activity expenditures from program managers and the Budget and Finance office.

A table of Forest-wide expenditures will be constructed from the reports and statements.

THRESHOLD OF VARIABILITY: Expenditures by resource change more than 20% in a 3-year period without any change in resource production or management activity.

RESPONSIBILITY: Forest economist.

REPORTING PERIOD: Annually

ANNUAL COST OF MONITORING:

Salary for: Forest Economist, 3 days @ $190/day = $570

PRIORITY: 1

GROUP: OTHER

MONITORING ISSUE: Standard and Guideline Compliance for Resources/Activities not addressed in the NW Forest Plan

Are management objectives for the following resources being met?
bald eagle sites, cultural resources, recreation, scenery, silverspot butterfly habitat, Wild & Scenic Rivers.

Specific goals, standards and guidelines and sampling methods are described for each resource on following pages.

GOALS/DESIRED CONDITION:
The Forest goal is to ensure that activities are being implemented as intended and compatible with progress toward various objectives.

EVALUATION QUESTION:
Do projects comply with standards and guidelines, as amended by the Northwest Forest Plan standards and guidelines (S&Gs)?

TYPE OF MONITORING: Implementation

MONITORING INDICATORS:
Compliance with Siuslaw LRMP standards and guidelines, as amended by the Northwest Forest Plan standards and guidelines.

SAMPLING METHODS:
The Program Coordinator for each resource or activity and a team of District and S.O. personnel will review environmental assessments and post-project conditions on-the-ground.

Review projects potentially or directly affecting these resources. Exact projects to be monitored are yet to be determined.

THRESHOLD OF VARIABILITY: An answer of "no" to the question "Was this pertinent S&G implemented?"

RESPONSIBILITY: Management: Planning Staff
Tasks: A summary report will be prepared by the Forest Coordinator of the various programs.

REPORTING PERIOD: Annually

ANNUAL COST OF MONITORING:

Salary for program coordinator, IDT representatives and district specialists. This will vary by specific resource.

Generic S&G compliance cont.

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RESOURCE: Bald Eagle Sites

Goals/desired condition for bald eagle habitat:

The bald eagle is a federally-listed threatened species in Oregon. The Forest Plan goal is to insure that management of bald eagles and their habitat complies with the Pacific Bald Eagle Recovery Plan (August 1986) and Working Implementation Plan (January 1989). The USFWS recovery goal for the Siuslaw NF is 23 nesting pairs. The Forest Plan allocated 23 sites in Management Area 4, each with about 125 acres. As site management plans are prepared, the size delineated on the ground may change to meet topographic and vegetative conditions.

Applicable standards and guidelines for bald eagle sites:

Siuslaw Forest Plan, 04-01 through 04-21 and FW-042 through FW-045

Sampling methods for bald eagle sites:

Each year, contact each Ranger District to determine if any management activities have occurred or are planned within any of the 23 nest sites. The review of activities will include activities occurring within and immediately adjacent to each bald eagle management site.

Review all identified projects to insure compliance with the applicable standards and guidelines listed above.

Cost of monitoring:

Salary for:

Program coordinator, 1 day @ $200/day x 4 districts = $ 800
4 district specialists, @ $150/day/person for 1 day = 600

Total = $1,400

PRIORITY: 1

Generic S&G compliance cont.

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RESOURCE: Recreation Facilities

Goals/desired condition:

The Forest Plan goal for recreation is to offer a variety of recreational opportunities in both undeveloped and developed forest environments by providing access, facilities, and visitor information appropriate for the recreation setting and necessary to meet a variety of public demands.

Outdoor recreation resources are provided and managed to complement forest objectives intended to protect, maintain or improve non-recreation resource conditions, particularly those associated with late-successional and old-growth forests, including protection for riparian areas and waters.

Native and non-native vegetation is controlled to achieve varied resource objectives and to restore dunes geomorphological processes in localized areas.

Applicable standards and guidelines for recreation resources:

Recreation standards and guidelines identified in Siuslaw Forest Plan, FW-006 through FW-016; Oregon Dunes NRA Management Plan, AW-6 through AW-19 and pp. III-13-14, III-17-18; and Northwest Forest Plan, pp. C-6 (all land allocations), C-17 (LSRs), C-34 (Riparian Reserves).

Sampling Methods for recreation facilities:

Review proposed recreation projects for consistency with Forest Plan standards and guidelines intended to protect, maintain or improve non-recreation resource conditions.

Annually, field review two randomly selected recreation sites and areas to ensure they are being managed in a manner consistent with Forest Plan standards and guidelines intended to protect, maintain or improve other resource conditions.

Evaluation questions for recreation facilities:

1. Are recreation projects being constructed and managed to meet other resource (ecosystem) considerations contained in the Forest Plan, as amended by the NFP?
2. Are vegetation management projects being accomplished as part of recreation development projects?
3. Are vegetation management projects effective in controlling European beachgrass?

Cost of monitoring:

Salary for:

Recreation substaff, 1 day @ $200/day for 2 districts	= $ 400	
1 district specialist, @ $150/day/person for 1 day x 2 districts	= 300	
3 IDT, @ $150/day/person for 1 day x 2 districts	= 900	
	Total	= $1,600

PRIORITY: 2

Generic S&G compliance cont.

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RESOURCE: Scenery

Goal/desired condition for scenery:

Restore, maintain, or enhance scenic quality on Siuslaw National Forest lands and Cascade Head.

Applicable Standards and Guidelines for scenery:

The Forest Plan standards and guidelines provide specific resource management direction for the Forest to meet Plan objectives (pg. IV - 2, 26). In addition, the Cascade Head Scenic Research Area Act and Management Plan provide direction for scenery management within Cascade Head (Cascade Head Scenic Research Area FEIS, pp 35-39, CHSRA Management Plan, p.65, Office of the Secretary Final Guidelines pp 8-9).

Monitoring indicators for scenery:

Visual effects of landscape changing projects and extent of visual effects in a total viewshed would be measured. The units of measure are scenic quality objectives and scenic integrity levels.

Sampling Methods:

Field review of completed projects and field inventory of overall viewshed condition. The Scenery Resource Management Handbook, No. 701, outlines the scenery management system to be used in evaluating impacts to scenery on National Forest lands. Photo points will be established in each area and corridor. At least one highway corridor, special area (Special Interest Areas, Mount Hebo, Cascade Head), and a recreation complex will be covered each year. All scenery identified as significant would be covered within five years. Repeat, so that major Forest views are photographed at ten year intervals.

Evaluation questions for scenery:

Do management activities meet scenery resource objectives?
Are viewshed integrity levels being maintained or raised?

Locations for scenery monitoring:

Corridors selected for having highest scenic importance in the Forest Plan (pg. IV - 26) are: Highway 101, Highway 38, Highway 34, Highway 18, Highway 126. All the Special Interest Areas, the Oregon Dunes, and Cascade Head also have high scenic values recognized as important in their management.

Viewshed monitoring to include views of the following areas and views of forest land from within these areas--Marys Peak, Mount Hebo, Cape Perpetua, Siltcoos Corridor, South Jetty Corridor, Horsfall Corridor, Sutton Recreation Area, Sand Lake Recreation Area--and views of Cascade Head, as well as other monitoring along the corridors listed above.

Cost of monitoring

Photography, analysis 25 days @ $200	= $5000
Supplies, film, dev, maps	= 180
Mileage,	
10 days @ 200 mi/ and .31/mile	= 620
	$5800

PRIORITY: 2

Generic S&G compliance cont.

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RESOURCE: Silverspot Butterfly

Goals/desired condition for silverspot butterfly:

The Forest goal is to ensure that activities in and near silverspot butterfly habitat and enhancement practices, such as burning, mowing, and hand slashing of vegetation, are being implemented as intended and compatible with progress toward recovery.

Applicable standards and guidelines for silverspot butterfly:

Siuslaw Forest Plan, 01-01 through 01-22.

Sampling Methods for silverspot butterfly:

Reviews should include one habitat enhancement project on each of the Hebo and Waldport Districts. The review team should include at least representatives of wildlife, recreation, and visual resources. Representatives of the U.S. Fish and Wildlife Service and the species Recovery Team will be invited to participate.

Cost of monitoring:

Salary for:

Program coordinator, 1 day @ $150/day x 2 districts	= $ 300
10 IDT, @ $120/day/person for 1 day x 2 districts	= 2,400
5 district specialists, @ $100/day/person for 1 day x 2 districts	= 1,00
Total	= $3,700

PRIORITY: 1

Generic S&G compliance cont.

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RESOURCE: Wild & Scenic Rivers

Goal/desired condition for Wild and Scenic Rivers

The free-flowing characteristics, the identified outstandingly remarkable values, and the classification of eligible rivers are protected to the standards outlined in the Standards and Guidelines of the Forest Plan. The Wild and Scenic River eligibility status is maintained for qualifying rivers within the Siuslaw National Forest.

Applicable Standards and Guidelines for Wild and Scenic Rivers

Siuslaw Forest Plan pp. IV - 41 and 42; FW-017, 018, 019, 020, 021, 022, 023.

Monitoring indicators for Wild and Scenic Rivers

The types of modifications and activities that affect a river's classification, free-flow, and values include: water supply structures, diversions, or dams; development of hydro-electric power facilities, flood control dams and levees, utilities, structures, mining claims and activities, road construction, bridges, agriculture uses and development, recreation development, motorized travel, and timber harvest. Certain types of new modifications are prohibited, depending on the river's classification.

Sampling Methods:

Review of projects--prior to implementation and after implementation--that may impact Wild and Scenic Rivers. Reviews to be conducted by the appropriate resource specialist(s) for the river's outstanding values, and by the Landscape Architect and/or Recreation Manager.

Evaluation question for Wild and Scenic Rivers

Are the free-flowing characters, outstandingly remarkable values, and the classifications of the following eligible rivers being maintained?

Locations and classification of eligible Wild and Scenic Rivers

Alsea - Recreation
Drift Creek(Siletz) - Scenic, recreation
Nestucca - Recreation
N. Fork of the Smith - Scenic, recreation
Siuslaw - Recreation
Tenmile Creek - Scenic
Tahkenitch Creek - Wild
Umpqua - Recreation
Wassen Creek - Wild, recreation

Cost of monitoring:

Salary, vehicle, plus film and film development. Time involved will vary with type and number of projects in any year.

PRIORITY: 1

GROUP: OTHER

MONITORING ISSUE: AMA Projects

Is the AMA developing and implementing projects to test new approaches to land management that integrate economic and ecological objectives based on watershed and landscape analysis?

GOALS/DESIRED CONDITION:

The overall objective of the North Coast AMA is to learn how to manage for late-successional forest habitat in terms of both technical and social challenges, and in a manner consistent with applicable laws. There is freedom to encourage innovation in achieving the goals of the plan standards and guidelines (NFP, pg. D-1 thru D-3, D-15).

EVALUATION QUESTION 1:

Is the AMA developing projects to test:

a. creation and maintenance of a variety of late-successional forest structural conditions, desired aquatic and riparian habitat conditions?
b. integration of timber production with restoration and maintenance of late-successional forest habitat, fisheries habitat and water quality?
c. restoration of structural complexity and biological diversity in forests and stream that have been degraded by past management activities and natural events?
d. integration of wildlife habitat needs (particularly of sensitive and threatened species) with timber management?
e. alternative logging and transportation systems with low impact to soil stability and water quality?
f. the effects of forest management activities at the landscape level?

TYPE OF MONITORING: Implementation

MONITORING INDICATORS:

Reference project objectives stated in project Environmental Assessments and Decision Memos (CE projects).

SAMPLING METHODS:

Annually review all EA projects and a random sample of CE projects to determine how many propose new approaches to management. Results will be stratified by type of management project.

THRESHOLD OF VARIABILITY: After 3 years from release of the Northwest Forest Plan, fewer than 50% of projects in the AMA are developed to test new approaches to land management.

RESPONSIBILITY: Forest Planner

REPORTING PERIOD: Annually

ANNUAL COST OF MONITORING:

Salary for: Forest Planner, 3 days @ $220/day = $ 660

PRIORITY: 3

GROUP: OTHER

MONITORING ISSUE: AMA Management

Is the AMA exploring alternative ways of doing business internally and with other federal agencies, tribes, other organizations, local and state government and private landowners?

GOALS/DESIRED CONDITION:

The primary social objective of AMAs is the provision of flexible experimentation with policies and management. Agencies are expected to develop plans jointly where multiple agencies are involved. Specific community roles with public agencies and subject matter experts will include helping find innovative ways to set objectives, develop plans, implement projects and monitor accomplishments.

EVALUATION QUESTION 1:

Is the AMA exploring alternative ways of doing business:

a. in developing adequate and stable funding sources for monitoring, research, retraining, restoration and other activities?
b. in developing an AMA plan jointly with other federal agencies?
c. in developing innovative approaches to agency organizations and personnel policies?
d. in exploring innovative ways to work in multi-ownership watersheds?
e. in involving the research community in developing landscape scale studies?

TYPE OF MONITORING: Implementation

MONITORING INDICATORS:

See Sampling Methods.

SAMPLING METHODS:

For a:Every 2 years, the SO budget analyst should review Hebo Ranger District budget records with the district budget analyst to identify special funding situations.

For b. Every 2 years, the Forest Planner should review any AMA plans developed for the North Coast AMA to determine how much interagency work was involved.

For c. Every 5 years, a SO personnel specialist should review personnel organizations and policies at Hebo RD to determine what, if any, differences have been established for the AMA.

For d. Every 3 years, the District Planner should review Hebo Ranger District projects to determine which ones have been implemented in multi-ownership watersheds and if those entail different management approaches.

THRESHOLD OF VARIABILITY: After 3 years from release of the Northwest Forest Plan, no innovative approaches to the above questions have been adopted.

RESPONSIBILITY:

For a: Forest budget analyst;
for b: Forest Planner;
for c: Forest personnel specialist;
for d: Hebo RD planner

REPORTING PERIOD: Every 2 years

ANNUAL COST OF MONITORING:

Salary for a Forest specialist, 2 days @ $200/day = $400

PRIORITY: 3