

community. The USFS Pacific Northwest Research Station, the National Biological Service (now being transferred to the U.S. Geological Survey), Oregon State University, and other institutions can contribute strongly to the AMA mission of learning through management.

- *Develop positive modes of interaction with county commissions.* Counties can identify areas in which the federal agencies could help promote county planning objectives

Public Participation

Many groups and organizations could contribute ideas and assistance to the AMA. Following are some of the types of organizations that would have the potential to participate:

- *Industry Groups* could participate in local advisory councils and community-based action groups, representing business and labor concerns in the adaptive management process.
- *Educational Organizations*, including local schools and community colleges, could take a more active role in AMA planning, implementation, and monitoring, while providing hands-on learning for those who participate.
- *Environmental Organizations* can provide valuable input to planning and study design efforts, through advisory councils, watershed councils, by actively reviewing and commenting on project proposals, and by mobilizing other citizens to take a more active role in public land management.
- *Nonpublic Institutions and Organizations*, such as service clubs, can serve to unify local business community interests to focus on forest management issues, and also promote volunteer efforts in tasks that relate to forest habitats, forest recreation, forest product utilization, and community benefits.
- *Community Adoption* of forest land tracts.

Volunteers

Partnerships and volunteerism can play an important role in training local residents, both adult and youth, to share in the process of maintaining and enhancing forest ecosystems.

- Form a Northern Coast Range AMA Volunteer Association;
- Provide opportunities for structured volunteer activities, such as: adopt a forest road, adopt a

forest trail, adopt a meadow, monitor a stream, maintain or clean up a campground, conduct wildlife surveys, conduct research study measurements, conduct population counts of wildlife species, or develop bird lists for an area;

- Recruit individual volunteers to assist with agency programs;
- Develop cooperative programs with public school classes and community colleges
- Invite non-agency persons to participate in conducting public tours of AMA management activities; and
- Form partnerships with existing organizations to provide and maintain new facilities, roads, trails, or interpretive signs and guide services.

Education

A key feature of the AMA is the opportunity to increase awareness and understanding of ecosystem processes and ecosystem management options. The knowledge developed by people in local communities, natural resource management agencies, colleges and universities, and research facilities needs to be shared as widely as possible among AMA participants and the local population. Increasing technical and scientific learning, sharing information, and training local workforces are all part of the educational component of AMA programs.

A list of current and ongoing educational programs and information sharing methods is located in Appendix G. The list includes presentations, publications, local community education opportunities, and the Internet.

Opportunities for new educational programs or learning experiences will flow from the creativity and commitment of all interested AMA stakeholders. Here is a starting list of ideas for sharing information on ecosystem management in the AMA:

- Make presentations to clubs and organizations
- Involve BLM or Forest Service staff in developing or teaching environmental science courses or instructional units at local schools.
- Set up outdoor education centers on AMA forest lands designed for use by local school classes for field trips focusing on natural resources, biology, and earth sciences.
- Develop interpretive trails and signs at sites of major project work, using vandal-resistant numbered signs that coordinate with narrative on small brochures.
- Train local teachers to bring classes into the woods to collect monitoring information on management activities in the AMA.

- Establish plots of forest land to be managed on an ongoing basis by teachers and students from local schools.
- Help establish social science curricula in local high schools, in which the students themselves would conduct surveys and interviews of people in local communities. Such studies would promote better understanding of the needs, wants, and perceptions of the resident and seasonal populations of the AMA.
- Encourage the formation of clubs and organizations focused on helping educate the public about management of forest resources on public lands.
- Mail AMA reports and Project Updates to local organizations, schools, and libraries.
- Present a variety of opportunities for involvement and/or education on the Northern Coast Range AMA home page on the Internet, for example:

- Information on meeting dates and locations for volunteer groups or educational programs in the AMA;
- Opportunities to volunteer with the agencies for specific projects--such as, to assist in monitoring the use of a project area by certain bird species; to adopt a particular segment of road or trail; to assist with transporting students to an outdoor education event.
- Opportunities to view a particular type of innovative tree harvesting operation--location, date, and times, and who to contact.

The AMA management team will continue to search for new and more effective ways of informing and including people from local communities, agencies, and organizations.

CHAPTER 5: IMPLEMENTATION

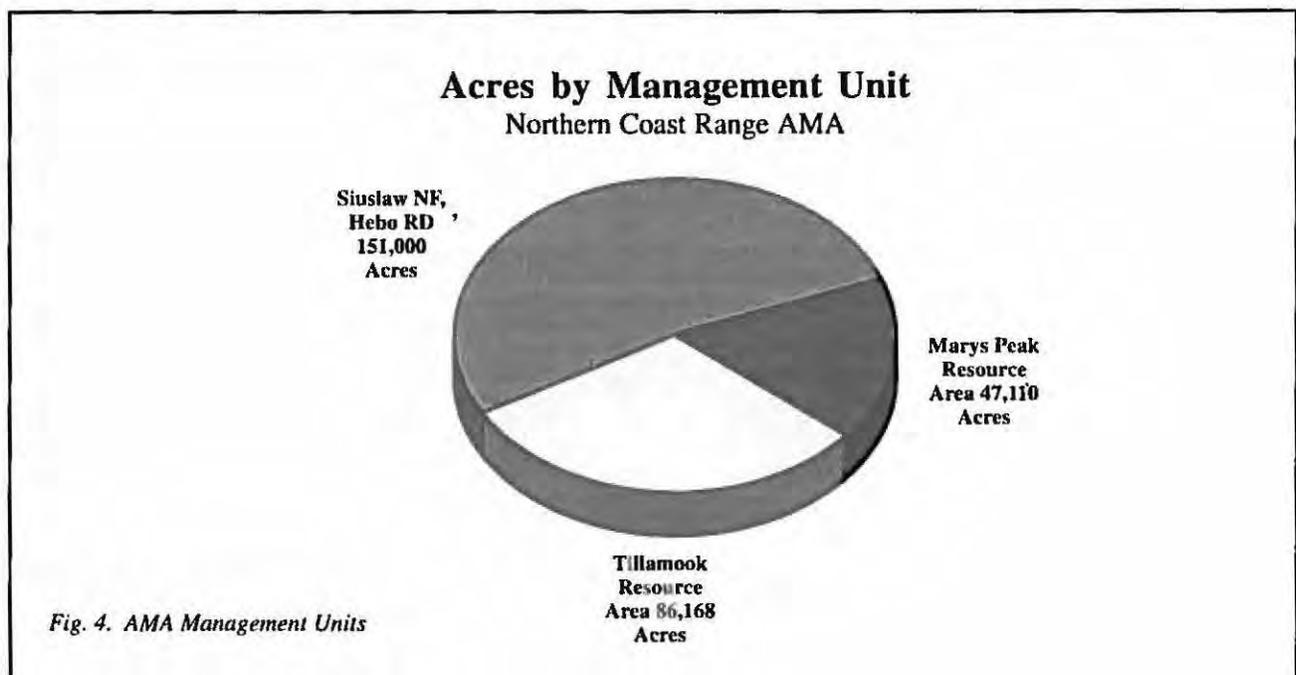


Trees encroaching on meadow.

AMA Organization

The Northwest Forest Plan includes lands administered by both the Bureau of Land Management, Salem District, Tillamook and Marys Peak Resource Areas; and the Siuslaw National Forest, Hebo Ranger District;

as part of the Northern Coast Range Adaptive Management Area. The Forest Service and Bureau of Land Management are expected to collaborate fully in management of the area. The AMA is almost evenly divided between national forest and BLM management units, as shown in Fig. 4.



Who is responsible for AMA management?

Following are the key BLM and Forest Service positions:

- The line officers of the three management units are responsible for all management actions in their respective administrative units. These officers are the Hebo District Ranger, the Tillamook Area Manager, and the Marys Peak Area Manager.
- An AMA Coordinator (which could be an employee of either the Forest Service or the BLM) is assigned to act as an interagency liaison and to coordinate work across the various management units and with other federal, state, and local agencies, Indian tribes, and the public. The Coordinator's principal office is located with the employing unit, but he/she will spend at least 20 percent of his/her time working in the offices of the other management units, on a regular basis, in order to improve coordination between agencies.
- A Lead Scientist from the Pacific Northwest Research Station, USFS, is assigned to assist the AMA staff in areas such as reviewing past and ongoing research in the AMA and north coast area, recommending priority research needs, assisting in development of sound scientific project design where needed, aiding in development of effective research and monitoring techniques, and providing liaison with other scientists.
- The management units provide key contact persons in each management unit to assist with coordination of AMA activities between agencies and with other groups and the public.
- The management units also provide, as needed, a public affairs officer, a geographic information systems (GIS) specialist and a community development specialist.

The names of those currently assigned to these AMA staff positions, with their mailing addresses, phone and FAX numbers, and internet or DG addresses, are listed in Appendix H.

Decision space

The Northwest Forest Plan is clear on its mandate that, in the Adaptive Management Areas, the agencies are to pursue:

...localized, idiosyncratic approaches that may achieve the conservation objectives of these standards and guidelines..... These approaches rely on the experience and ingenuity of resource managers and communities rather than traditionally derived and tightly prescriptive approaches that are generally applied in management of forests (Northwest Forest Plan 1994).

The line officers of the three management units within the AMA have responsibility for lands and resources on federal lands within their respective units. Clearly, their decisions must be consistent with applicable laws, agency regulations and policy, and approved plans, including the Northwest Forest Plan, the Siuslaw Forest Plan, and the BLM Resource Management Plan. However, these planning documents create land allocations and deal with land management issues mostly in broad, fairly general terms (with certain exceptions). If they were to include a great deal of site-specific detail (if such detail were available) they would take much more time to prepare, would be too lengthy to be easily usable, and would quickly become outdated.

The three AMA managers need to regularly make decisions to implement site-specific actions, under the umbrella of the land-use allocations and standards contained in the plans. Local agency managers still have considerable discretion regarding:

- Management actions designed to test the Standards and Guides of the Northwest Forest Plan
- Priorities for accomplishment of various goals
- Specific types of projects to implement and size of area to include
- Specific locations for particular types of projects
- Specific techniques and methods to be applied
- Rates of activity and timelines for individual actions
- Extent of collaboration and consultation with others on specific actions

Thus, no one should assume that all decisions have been made in advance. There is plenty of room for meaningful public input and participation.

AMA Operations

Coordination between Forest Service, BLM, and PNW

- *AMA Management Team:* The Team, consisting of the AMA coordinator, the line officers from each management unit, and the Lead Scientist, meets regularly to coordinate activities and budget requirements, including review of ongoing projects, proposals for new projects, research needs, and incorporation of monitoring feedback. Ideas and suggestions received from AMA partners are also discussed. The suggestions may propose new management studies, research proposals, recreational facilities, or habitat improvement; or ideas for increased sharing of resources (e.g., staff expertise, equipment, funds), educational outreach, or coordination of management.
- *Scientist/Manager Coalition:* The AMA Team meets with other agency staff and interested scientists several times each year. The purpose of the Coalition is to look at overall AMA direction and progress in working toward long-term goals, and to discuss current needs for interagency and intergovernmental cooperation, research support and proposals for additional studies, education, outreach, and public participation.
- *Interagency Teams:* Since this AMA was initiated in 1994, interagency teams have worked together on public outreach efforts, various assessments, including watershed analysis and Late-Successional Reserve Assessment, and the preparation of this Guide. We expect to continue to employ interagency teams for planning, implementing, and monitoring of many future actions.

Coordination with Indian Tribes

- Members of the AMA Team meet periodically with representatives of the Grand Ronde and Siletz tribal councils to discuss matters of mutual concern and opportunities for collaboration.

Coordination with other agencies

- *Local Government:* Members of the AMA Team make periodic presentations to county commissioners, local city councils and chambers of commerce, and to their natural resource committees.
- *State Agencies:* Meetings are scheduled from time to time with the regional supervisors of the State of Oregon natural resource agencies to discuss issues of mutual concern and opportunities for collaboration.
- *Coast Range Province Advisory Committee:* The AMA Team works closely with this group, which includes representatives of many agencies and organizations and tribal governments, reviews ongoing management issues, including those in the AMA, and provides valuable feedback, insight, and recommendations.
- *Local Watershed Councils:* Members of the AMA Team participate in the activities of several watershed councils within the AMA, and provide technical, financial, and logistical support to council programs, as needed. The councils serve as a vehicle to help local citizens get involved in watershed-based ecosystem management.
- *Soil and Water Conservation Districts:* These organizations provide an educational and advisory outreach to private landowners, and can help to connect the interests of the federal agencies and other landowners through the adaptive management process.

Community interaction

Interaction between the federal land management agencies and local AMA communities can take many forms, but the most important avenues are as follows:

- Public meetings and workshops are scheduled from time to time in different towns in the AMA to share information about AMA activities, gather public opinions and input, and invite participation in upcoming events.
- Field tours are also scheduled several times each year, to view progress on various AMA projects and give participants additional opportunities to give feedback directly to the agencies.
- Federal agency open houses are scheduled periodically, to update interested persons and groups on AMA activities and needs.

- Agency staff members take part in the quarterly meetings of the Coast Range Province Advisory Committee (PAC), and in monthly meetings of the PAC's AMA Subcommittee.
- Agency staff members participate in and support activities of local watershed councils.
- Agency staff coordinate activities with the natural resource staffs of the Grand Ronde and Siletz Confederated Tribes.
- The Agency Staff periodically works with local school teachers and community college instructors in developing and presenting lessons relating to natural resources and public forest management issues.
- The Agency Staff communicates regularly with clubs and organizations which have entered into cooperative agreements for various kinds of resource use and management.
- Personal visits, letters, and phone calls to the agency offices by individuals and representatives of interest groups are always welcomed.
- The AMA Coordinator will initiate a periodic newsletter to keep interested organizations and individuals informed of AMA activities.

The AMA Team welcomes suggestions regarding additional ways of increasing and improving agency-community interaction and collaboration.

Project development guidelines

Many projects in the AMA will be designed to accomplish specific management objectives. When such projects are evaluated and identified as candidates for studies or research, the following guidelines should be followed:

Frame objectives: The learning objectives for each study or research project should be clearly stated in all NEPA documents, and the project implementation plans should describe strategies for accomplishing the learning objectives. The Lead Scientist or others may assist in this step. For some actions in which proven techniques are used to accomplish specific habitat goals, the learning objectives may be simply to confirm the results of previous treatments.

Use controls for comparison: So that they can be effectively evaluated, most projects should have a control with which the effects of management actions can be compared. Controls should be clearly delineated on maps, documented in project files, and protected from manipulation for as long as they are useful to the comparison (for example, at least the first 20 years for a

thinning project). Ideally, treatment areas should be delineated in a project area first and controls randomly selected from among them.

Keep treatments simple: It is important to keep the number of different types of activities within a project limited to a few treatments. Otherwise, each unit treated can become a unique case study (without replication), and documentation and delineation of what was done where on the ground can be more difficult. Simplicity in terms of the number of things to be compared within a project will not only make learning easier, but should make project design and implementation much easier. Different types of activities can always be tried on different projects.

Document projects: Documentation should consist of a description of each activity and why, how, and where it was implemented. Similar documentation methods should be developed for all agencies and a central repository designated for all records, ideally in a readily retrievable electronic format with hard copy backup.

Monitor: Define a monitoring plan for each project, detailing what *will* be measured, and when (what *might* be measured if resources are available could also be included). Monitoring should include, at a minimum, a pre-project characterization, a post-project characterization, and some schedule of future measurements. For some objectives, remote sensing (aerial photography or satellite imagery) may be adequate. If monitoring includes field measurements, permanently-marked sample points are highly recommended. Taking photographs at such points may be a useful way to show results to others.

Table 4 illustrates a proposed outline for the flow of work on learning projects in the AMA. The purpose of the chart is to help identify the sequence of actions and the kind of participants needed to ensure that each project will meet both its learning objectives and its management objectives. Not every project will require every step of this process--some actions, in fact, may not be defined as learning projects, though every action presents at least some opportunity for learning. This process itself will continue to be revised as we learn which approaches work better than others.

Watershed analysis

The Northwest Forest Plan states that, "Ultimately, watershed analysis should be conducted in all watersheds on federal lands as a basis for ecosystem planning and management". Watershed analysis is a process designed to analyze and document the major ecological structure, functions, processes, and

Table 4. Development Process for Learning Projects

Action	Persons Responsible	Additional Information
Identify information needs	FS/BLM/PNW employees; other agencies; Sub-Pac, Tribes, other groups; public	Lead Scientist maintains files of information needs, forwards questions to agencies
Determine if the information has already been generated	Scientists and Agency Specialists (Forest Service, BLM, PNW)	Assigned specialists prepare feedback for originator
Prioritize needs; recommend projects	PAC; AMA Sub-Committee, other public	Provide recommendations to agency managers
Select projects and assign to administrative units	Agency managers	Determine where projects fit in agency work plans
Design study & monitoring plans	PNW scientist(s) with agency resource specialist(s)	Decide appropriate level or rigor of experimental design or management study
Find general locations	Unit managers and specialists	Return project file to AMA Coordinator if a suitable location cannot be found
Include studies in development of specific projects	ID teams with scientists	Provide public input through scoping
Implement projects	Unit managers and specialists	Keep scientists informed of progress
Monitor projects	Unit managers & staff, with scientists if expertise needed	Include public and volunteers where feasible
Analyze and interpret data generated	Scientists and/or resource specialists	Determine what we have learned
Prepare information papers	Scientists and/or resource specialists	Write to share with other agency offices, other AMAs, and public
Input information to central data base	AMA Coordinator	Determine if new questions have been generated

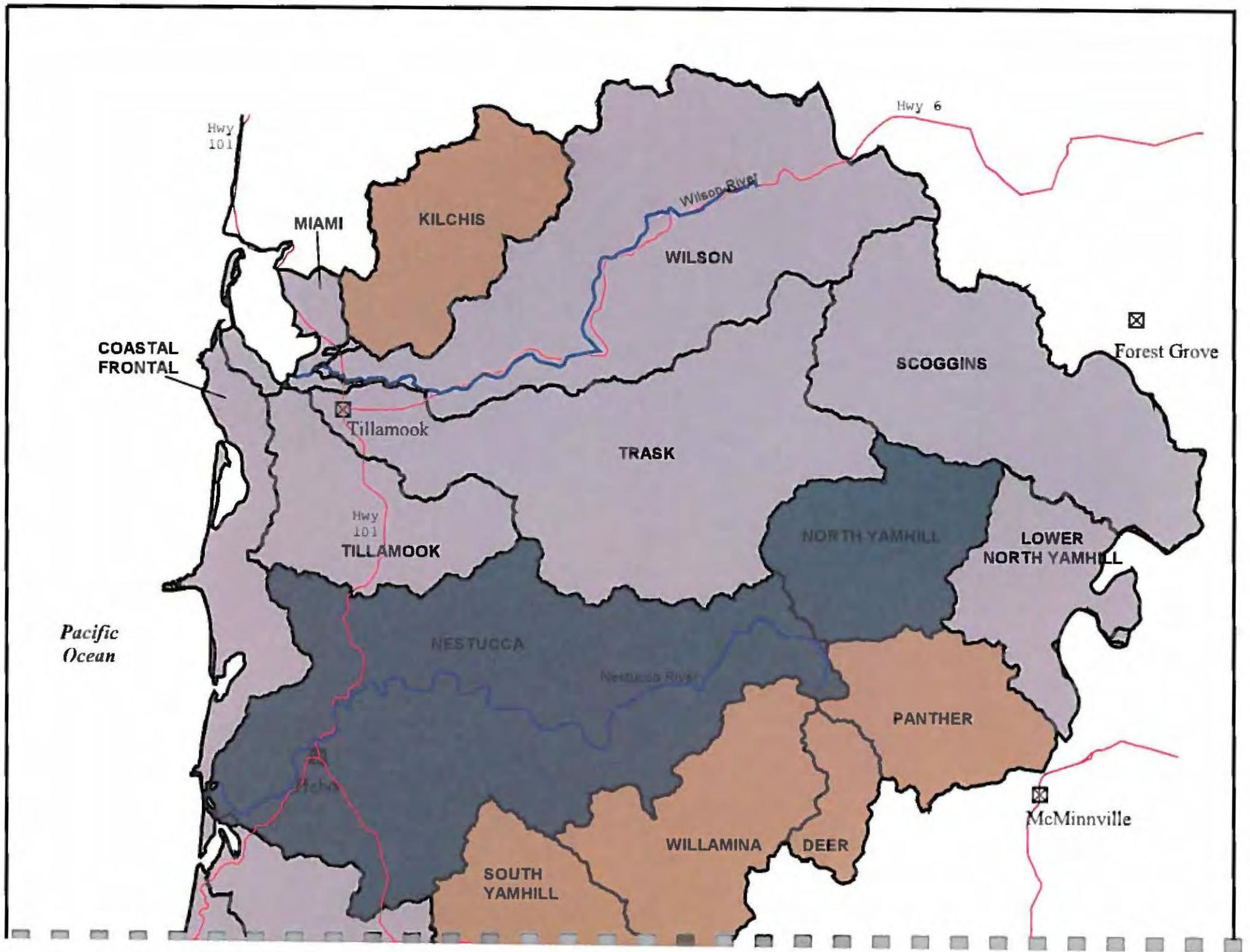
interactions occurring within a watershed. The area to be included in each analysis usually contains between 20 and 200 square miles.

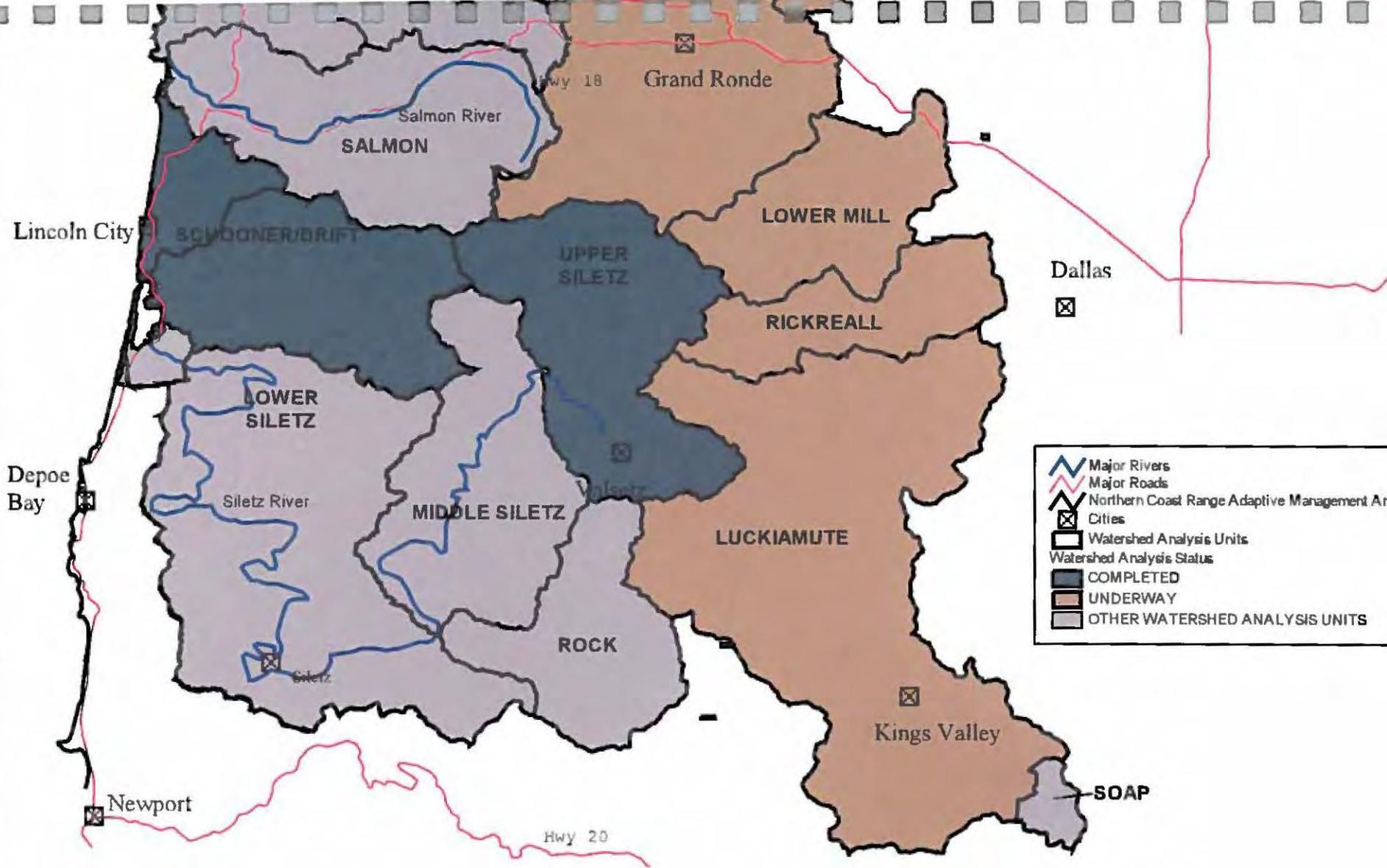
Within the AMA are 24 identified watersheds, as shown on map 5. Some of the watershed units displayed on the map may be combined for analysis. The map also identifies the four watersheds for which the analysis has been completed and others for which analysis is in

progress. The information collected through watershed analysis will be useful in the design and implementation of activities in the AMA.

Key watersheds

The Northwest Forest Plan designated certain drainages as key watersheds. Some of these key watersheds were designated to protect current "high quality habitat".





	Major Rivers
	Major Roads
	Northern Coast Range Adaptive Management Area Cities
	Watershed Analysis Units
	COMPLETED
	UNDERWAY
	OTHER WATERSHED ANALYSIS UNITS

MAP 5
WATERSHED ANALYSIS STATUS



while others were applied to watersheds in which currently degraded habitat rates a high priority for restoration. Within key watersheds, an analysis is required prior to management activities, except for minor activities such as those categorically excluded under National Environmental Policy Act regulations. Timber cannot be harvested from key watersheds before watershed analysis is completed. The proposed schedule for analysis of the remaining watersheds within the Adaptive Management Area is shown in table 5.

At this time, we are not aware of current plans to prepare watershed analyses for the Wilson River, Trask River, Tillamook River, and Middle Siletz.

Timber harvest projections

The Northwest Forest Plan states that AMA plans should contain a short-term timber sale plan and long-term yield projections. For the long term, preliminary estimates indicate that a reasonable range of activity could result in a wide range of acres treated and volume harvested in any given year. The low end of the range reflects what can probably be accomplished with the limited staff and funding available at this time. The high end reflects the estimated potential harvest after

additional watershed analysis and specific project planning. Table 6 shows our preliminary estimates of annual acreage to be treated and volume that would be harvested.

Projected short-term (3 - 5 years) harvest plans for the AMA, including acres and associated volumes for specific planned projects, are shown in Appendix B, Timber Sale Plans. The information is based on current knowledge and assumptions, which will be refined and modified as additional watershed analyses and various AMA treatment trials are completed.

Funding AMA programs

As efforts to reduce the size and cost of the government proceed, the level of future appropriated funds for AMA programs appears uncertain. Success of the AMA, therefore, will most likely depend on the development of alternatives to traditional funding. As stated in the Northwest Forest Plan, page D-2, the AMA should provide...:

...demonstration of...new approaches to land management that integrate economic and ecological objectives based on credible

Table 5. Schedule for watershed analysis in the Northern Coast Range AMA

Watershed	Projected Calendar Year of Analysis					Key Watershed	Lead Office
	1994	1996	1997	1998	1999+		
Nestucca River	Done					Yes	
North Yamhill		Done				No	
Schooner/Drift Creek		Done				Yes	Hebo RD
Upper Siletz River		Done				Yes	Marys Peak RA
Little Nestucca River			X			No	Hebo RD
Luckiamute River			X			No	Marys Peak RA
Sand Lake (part of Coastal Frontal)			X			No	Possible contract - Hebo RD
Willamina/Deer/Panther Creeks			X			No	Tillamook RA
Kilchis River			X			Yes	TBNEP ¹
Neskowin Creek				X		No	Hebo RD
S. Yamhill/Lower Mill/Rickreall			X			No	Marys Peak RA
Rock Creek					X	No	Marys Peak RA
Salmon River					X	No	Hebo RD
Lower Siletz River					X	No	Hebo RD
Scoggins Creek/ Upper Tualatin River					X	No	Tillamook RA

¹Tillamook Bay National Estuary Project

Table 6. Estimated range of harvest acres and harvest volume of the AMA

Management Unit	Acres	Volume Range, MMBF ¹
Hebo Ranger District	380-590	6.1 - 8.1
Marys Peak Resource Area	85-244	0.8 - 2.2
Tillamook Resource Area	310-780	3.5 - 9.3
Totals	775-1614	10.4-19.6

development programs....Innovation is expected in developing adequate and stable funding sources for monitoring, research, retraining, restoration, and other activities.

Following are some possible alternatives for generating funds:

Grants One type of opportunity would be to seek grants from private corporations and companies, through agreements in which nonFederal parties provide money, equipment, property, or products to assist with ecosystem management activities, for mutual benefit.

Funding from AMA receipts When commodities are removed from federal lands in the AMA, whether timber, special forest products, or other materials, fees are generally charged. The AMA Team proposes to seek authority for new mechanisms for distribution of receipts. If a portion of the funds generated from federal lands within the AMA could be applied to AMA programs, the need to compete for limited federal dollars would be substantially reduced. A proposal requesting legislative action to provide this authority--at least on a trial basis--would need to be developed and submitted to the Washington offices of the Forest Service and BLM. Such authority could permit the Northern Coast Range AMA to eventually become self-supporting, with most costs borne primarily by those who use and benefit from the resources on public lands in the AMA.

Under such a funding system, incomes derived from activities within the AMA would be divided between the counties (under existing formulas), the local agencies, and the U.S. Treasury. Funds credited to the agency AMA accounts in the first year would be applied to AMA programs in the next fiscal year, with a fixed percentage dedicated to monitoring programs. Capital investment funding would continue to be received through appropriations for the first five years. Money not spent in one year could be carried over to the next. Money collected from past timber purchasers that is dedicated to reforestation activities would continue to be used until all approved projects stemming from those

sales are completed. Cooperative account funds would be transferred to the AMA budget, and those agreements would be fulfilled.

Pilot program--recreation receipts Many federal land management agencies have large backlogs of deferred maintenance for recreation sites. Facilities must sometimes be closed for health and safety reasons. With federal budgets expected to decline 15 to 25 percent over the next seven to ten years and recreation use increasing, federal agencies need to look for alternative funding sources for recreation. One opportunity is a pilot cost recovery fee program designed to maintain facilities on our public lands. This concept allows at least 80 percent of fees generated from the recreation facilities to remain at the management unit, and allows the money to be used for operation and maintenance. This pilot program will be implemented on National Forest System lands in 1997.

Road maintenance funding Road maintenance fees are a good example of the costs of a program being paid by primarily by those who benefit most. Fees are collected for commercial haul of timber products or rock over federally owned and maintained roads. Fee rates are based on thousands of board feet for timber hauled or cubic yards for minerals hauled. Funds are deposited in an account and then distributed to the various road maintenance units.

Communication sites fees The BLM and Forest Service developed a new fee policy and schedule for communication sites in the fall of 1995. The two agencies have adopted identical fee schedules and policies so that consistent rental fees will be charged for communication uses on public land. The new policy provides for the collection of fair market value for uses such as microwave dishes and communication towers and facilities.

Late-Successional Reserve in the AMA

Approximately 68 percent of the AMA is also classified by the Northwest Forest Plan as Late-Successional Reserve (LSR). This designation has some important implications regarding AMA management:

Why was LSR designated within the AMA?

The region-wide system of Late-Successional Reserves was designed to provide a "functional, interactive, late-successional and old-growth forest ecosystem" (Plan

1994, p. 6). Under all ten alternatives analyzed by the Forest Ecosystem Management Assessment Team (FEMAT 1993), LSR was designated for the north coast area, in which very little older forest habitat remains. One of the major reasons for this designation is to help ensure that nesting habitat for the marbled murrelet would be protected and increased. Nesting habitat for the murrelet, a small sea bird that nests in large, old trees, is very limited in the AMA at present. This is because most of the old-growth forest was eliminated by wildfires or logging during the last 100 years. The Plan explains the situation as follows:

Because most late-successional forests have already been harvested, requirements for marbled murrelet include: ...retaining LS/OG1s, LS/OG2s, and owl additions (from the Scientific Panel on Late-Successional Forest Ecosystems, 1991) as Late-Successional Reserves within the Adaptive Management Areas. These reserves should be managed as stipulated for such reserves under these standards and guidelines (ROD 1994, p. D-15).

How does the LSR classification affect AMA activities?

The primary management goal for this AMA is essentially the same goal as for Late-Successional Reserves: to maintain and develop late-successional forest habitat. Some significant differences exist, however, between the two allocations. The standards

and guidelines for LSR are more specific than those for AMA:

No programmed timber harvest is allowed inside the reserves. However, thinning or other silvicultural treatments inside these reserves may occur in stands up to 80 years of age [110 years in the Northern Coast Range AMA] if the treatments are beneficial to the creation and maintenance of late-successional forest conditions (PLAN, page 8).

On the other hand, programmed timber harvest is not only permitted, but expected in those portions of the AMA that are not LSR.

"One reason for locating Adaptive Management Areas adjacent to communities experiencing adverse economic impacts is to provide opportunity for social and economic benefits to these areas. Adaptive Management Areas are expected to produce timber as part of their program of activities..." (ROD 1994, page D-8).

In the portions of the AMA not designated as LSR, there is no upper age limit specified for timber stand management--so a great deal of room exists for innovation. Under the Plan's guidelines, stands of any age could be treated to enhance multistoried structure, increase species diversity, or encourage development of large, limby trees. The design of stand treatments may reflect a greater emphasis on providing economic benefits for local communities, while continuing to work towards the goal of increasing the amount of older-forest structure. Also, research projects planned for the AMA may incorporate a wider range of treatment types than would be considered appropriate in an LSR.

CHAPTER 6: MONITORING



Density Management Thinning: Tillamook Resource Area.

The general concepts for adaptive management were outlined in the Northwest Forest Plan:

The concept of adaptive management is straightforward and simple: new information is identified, evaluated, and a determination is made whether to adjust the strategy or goals. Adaptive management is a process of action-based planning, monitoring, researching, evaluating, and adjusting with the objective of improving the implementation and achieving the goals of these standards and guidelines (ROD 1994, p. E-13).

What is Monitoring?

Monitoring is systematically checking what we've done to see if it worked; it is therefore an integral step in the adaptive management process that must be directly tied to the objectives, designs, and implementation of different projects. Thus monitoring in the Northern Coast Range AMA will be closely tied to the specific learning and management objectives that were laid out in previous chapters. Although monitoring has been required of federal agencies in the past, efforts have tended to be poorly funded and haphazard. New monitoring efforts (for example, of a particular stream or stand of trees) will ideally be standardized across

agencies and fit into landscape- and regional-scale objectives to determine whether the Northwest Forest Plan is being implemented as intended and how well it is working.

Three distinct types of monitoring are generally recognized:

- *Implementation monitoring*: Are activities being implemented as planned? In other words, did we do it (build the road, thin the stand, collect the moss) the way we said we were going to do it? This tends to be the most straight-forward kind of monitoring.
- *Effectiveness monitoring*: Are desired results being achieved? For example, did thinning the stand of trees result in larger overstory trees and survival of planted understory trees? Is watershed restoration resulting in better water quality and improved fish habitat? This kind of monitoring usually evaluates change, and could use implementation monitoring as the initial source of information to be compared with information gathered in the future.
- *Validation monitoring*: Are underlying assumptions sound? Are estimates of impacts accurate? In particular, do the results tend to support the

Standards and Guides (and underlying assumptions) contained in the Northwest Forest Plan? For example, are late-successional species occupying thinned forests with late-successional structure, or are they responding to something else? Are salmon more abundant in restored watersheds, and why or why not? This kind of monitoring tends to be the most intensive and is often addressed with careful research designs, especially for actions for which we're not sure of possible impacts.

The Monitoring and Evaluation Plan in the Northwest Forest Plan (ROD 1994, Section E) presents a general framework for the kinds of information that should be gathered. The Research and Monitoring Committee, comprised of scientists and managers in the Regional Ecosystem Office, is developing more specific monitoring and research plans that will provide some guidance to AMA managers. Two projects developed by this Committee have chosen the Oregon Coast Range for pilot efforts to test and refine monitoring protocols. The implementation monitoring group developed a set of implementation monitoring questions which was tested during the summer of 1996 on fiscal year 1995 timber sales. The Regional Ecosystem Office will review the process, the questions used to implement the process, and the timing of the effort. The effectiveness monitoring group is evaluating monitoring questions, available data, and strategies for integrating efforts and analysis across agencies, with an emphasis on assessing forest structure across the Coast Range landscape.

The Salem District (BLM) Resource Management Plan and the Siuslaw National Forest Land and Resource Management Plan also contain evaluation questions and some monitoring requirements for individual projects and the organizations as a whole. Watershed analyses, which will eventually be completed for the entire AMA, provide a thorough assessment of existing information and identify specific items to be monitored on individual watersheds. Two networks of permanent forest plots already exist which will help us monitor forest change across the AMA (Map 5). The PRIME (Pacific Resource Inventory Monitoring and Evaluation) program run by the USFS Pacific Northwest Research Station (former called "FIA") monitors 143 plots within the AMA which are approximately on a 5.4 kilometer (3.4 mi) grid (number of plots by ownership: 32 State, 69 private industrial, 41 other private, 1 city). The Siuslaw National Forest installed about 70 permanent Current Vegetation Survey plots in 1996 on a more intensive 2.7 km (1.7 mi) grid; approximately 35 are within the AMA (only the coarser 5.4 km grid is shown in Map 5).

All of these efforts will provide general monitoring guidance for AMA activities at the broad scale to help us assess our progress toward restoring and maintaining late-successional habitat. Site-specific research and learning projects will require additional monitoring efforts to answer the questions they are designed to address.

Much of the existing guidance on ecosystem monitoring is fairly general; many important questions about monitoring strategies (What? Where? How? How much? How often?) still need to be decided. Monitoring all ecosystem components everywhere is of course not practical; strategies will need to identify the most important information and realistic funding to accomplish it. Strategies will also need to be coordinated so that project-level information can be compiled and help address district-level and region-wide issues.

Issues and Questions

The following is an initial "laundry list" of some of the issues and questions that could be addressed, and the variables (that is, kinds of information) that might be collected in the AMA. These items were gathered from several local, regional, and national reports (see references). The appropriate type of information and timing for collecting it differs with each variable. For example, water temperature might be measured weekly with thermometers during the summer for 5 years after a project, and forest structure across the landscape might be measured with satellite images once every 10 years.

Late-successional forest

Issue: Inadequate and insufficient late-successional forest habitat exists to support species associated with such forests.

Questions:

- What are the characteristics of late-successional forests in the different ecological zones within the AMA? (for developing desired conditions)
- Can desired late-successional stand characteristics be promoted through thinning, and what are the effects of different prescriptions for different types of stands?
- Can appropriate amounts of coarse woody debris be provided in managed stands?

Monitoring variables:

- Patch size, successional status, and location (fragmentation/isolation) of all forest stands
- Tree structure and composition (range of sizes, species, and canopy layers)

- Woody debris abundance (size, species, decay state)
- Understory herb and shrub composition and abundance (cover, species)
- Amount of land area occupied by exotic plant species
- Expected implementation of silvicultural prescriptions
- Changes in structure and composition on management units

Species of concern

Issue: For most species, except northern spotted owls and marbled murrelets, the necessary information to predict response of species to habitat change does not exist. Some species live in special habitat types (for example, meadows, rock outcrops, seeps or springs), often isolated pockets associated with specific microhabitats.

Questions:

- What is the relation between habitat and populations?
- What is the effect of the scale and amount of landscape diversity of stand types on species habitat needs?
- How effective are logs and snags and what are the appropriate sizes for providing habitat for late-successional species during early-successional stages?
- How do we address site-specific needs for all organisms when the exact habitat requirements for most of them are unknown? Can indicator species be reliably used?
- What are effective survey and management techniques and protocols for rare and lesser known species (mollusks, lichens, invertebrates, vascular plants)?
- How do roads and vehicle use affect species and habitat quality?
- What riparian reserve widths are sufficient to provide habitats and dispersal corridors for terrestrial species?

Monitoring variables:

- Population sizes of species of concern, including spotted owls, murrelets, and other rare species (including vertebrates, invertebrates, non-vascular plants, fungi)
- Population trends for species of concern (reproduction, survival, mortality)
- Species' habitat use (habitat type, presence of nests, feeding, roosting, travel corridors)
- Relation between populations and habitat condition (size, structure and composition, abundance of other species)

Riparian species and habitat

Issue: Anadromous fish populations have declined drastically in the past 150 years; habitat quality and water quality are degraded in many streams

Questions:

- What is the role of coastal estuaries in maintaining populations of different salmonids?
- Can conifer establishment and growth be initiated or accelerated in riparian zones dominated by hardwoods? Where and to what extent should this occur?
- What are the effects of management operations in riparian forests on stream flows, sedimentation, and microclimate?
- What riparian reserve widths are sufficient to protect riparian ecosystems?
- What types of road-building, road location, road maintenance, and decommissioning techniques would minimize impacts on watershed objectives?

Monitoring variables:

- Fish population sizes and trends
- Community composition (fish, invertebrates)
- Water quality (turbidity, chemistry, temperature, biological "integrity" (bacteria, algae)
- Water quantity
- Pool frequency and quality (width, depth, cover)
- Amount of fine sediment
- Coarse woody debris (size and quantity)
- Structure and composition of riparian vegetation
- Expected implementation of management projects
- Width-to-depth ratio
- Bank stability and lower bank angle
- Extent and location of roads
- Condition of roads, culverts, and sidecast
- Location and activity of landslides and slide-susceptible areas
- Location and amounts of water withdrawals and diversions

Human communities

Issue: People have depended on commodities from the AMA for many years; current outputs of traditional commodities (fish, fiber) are low.

Questions:

- Can stable economies be developed locally, based on restoration and sustainable use of late-successional forests?
- What are sustainable harvest rates for the various types of forest products, and which management techniques would be most effective?
- What types and amounts of recreational activity are consistent with habitat and ecosystem protection requirements?

Monitoring variables:

- Community demographics
- Community employment
- Facilities and infrastructure
- Social service burden (welfare, poverty, food stamps, AFDC)
- Crime, alcoholism, abuse, neglect
- Resource production rates
- Recreational use
- Scenic quality
- Commercial fishing
- Government revenues
- Federal assistance programs (loans and grants to state, county, town)
- Business trends
- Conditions and trends of Native American trust resources
- Protection of Native American religious and cultural heritage sites
- Access to Native American treaty resources and heritage sites

Adaptive management

Issue: Few local models for collaboration, planning, and coordination of land-management partners for ecosystem management objectives are available.

Questions:

- Which planning systems are most effective for developing collaborative decisions about desired conditions and priority setting among action plans?
- To what extent must management on federal lands compensate for management practices on nonfederal lands? What incentives or mechanisms would encourage cooperation from nonfederal owners?
- How can monitoring plans be developed that provide statistically reliable information?
- Can priorities be set for monitoring certain key species or stand and landscape attributes?
- How can the results of monitoring activities be most effectively translated into improved decisions on future projects?

Monitoring variables:

- Numbers of participants in agency planning and implementation efforts
- Degree of involvement of different partners in agency efforts
- Degree of coordination among government agencies in accomplishing federal objectives
- Degree of standardization of measurement protocols and information storage among agencies
- Extent to which plans, objectives, or activities were modified by new information

- Completion and updating of the AMA Guide, watershed analyses, late-successional reserve assessments, AMA assessments (biophysical, social, economic, research)

Making Sure Monitoring Happens

A strategy for setting priorities among monitoring elements will be developed after landscape design is completed, so that information to be gathered will fit into learning objectives for the AMA. The strategy will include how monitoring will be accomplished and by whom.

Monitoring offers an opportunity for all affected interests to participate, including federal, state, and local agencies; tribes; local communities; private citizens and land owners; interest groups; and schools. Indeed, it is not likely that the Forest Service and Bureau of Land Management will have sufficient funds and work force to meet even minimum monitoring needs.

The Research and Monitoring Committee is compiling a list of monitoring activities in this region and will identify research priorities for monitoring needs. Monitoring priorities in the AMA will be adjusted as information from the Research and Monitoring Committee is received.

AMA Guide Revisions

Monitoring results are likely to lead to revisions of the AMA Guide. AMA activities and monitoring information will be reviewed periodically, and the Guide will be supplemented or revised as necessary. The AMA Coordinator will be responsible for maintaining the Guide; revisions and additions will be available from BLM offices in Tillamook and Salem, and Forest Service offices in Hebo and Corvallis.



West slope Mt. Hebo.

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APPENDIX A: The Concept of Adaptive Management

The federal land management agencies have long operated under a philosophy that sought what were called "best management practices". These practices were selected from an array of options, based on available science and the experience of managers. Standards and guidelines were then developed to direct how the "best" practices were to be applied across the landscape. The results were monitored (though monitoring was often a weak link in the system) and the practices were continued until some unexpected, unacceptable result caused the managers to alter them or develop new ones. Learning occurred, albeit slowly and unsystematically.

The core idea of *adaptive management* is to accelerate the rate at which we learn from experience--so that appropriate adjustments to our management practices can be made more quickly. Learning is the principal product of adaptive management, and is considered a resource of value equal to, or even greater than, other outputs of management. Because we must manage resources under circumstances that contain varying degrees of uncertainty, all of the effects of any management action are never fully known; as a result, all such actions are in a sense experimental.

To accelerate the rate of learning from these management "experiments," partnerships of land

managers, scientists, and citizens are designing sets of management actions to apply--principally in the Adaptive Management Areas, but also on other public lands in the region. The selected strategies are applied on the landscape at a variety of scales, the effects of the actions are predicted by all members of the partnerships, and the appropriate variables are monitored over time to see if the predicted outcomes were near the mark. What variables will be monitored--and how--is included in the original design, and the monitoring is focused on the learning objectives of the Northwest Forest Plan.

The three-way partnership has multiple benefits: it combines on-the-ground knowledge of the land managers, the scientific knowledge and methods of the scientists, and the local knowledge of the citizen-owners of the public forests. The partnership also taps into the ideas, values, and creativity of all three. Answers to some management questions will require traditional, rigorous, controlled science experiments; having scientists in the partnership will help identify such questions and how the experiments can be designed to answer them. Other questions may be explored by more general management studies. Some types of experiments might not be implementable under the AMA guidelines, but cooperative studies might be initiated with private land owners interested in answering the same sorts of questions.

Some techniques will work better than others; in fact, if an adequate range of techniques is applied, we would *expect* that some will probably fail to achieve our objectives. Successful application of adaptive management includes the need to take risks--and to learn from both our "failures" and our "successes." Learning, the cornerstone of adaptive management, provides the motivation needed to change standards and guidelines where necessary, and to adjust policies and management activities as needed to better manage complex ecosystems.

APPENDIX B: Harvest Projections

As stated in chapter 4, the AMAs are expected to continue to produce a harvest of timber. Estimates of long-term yield for the three management units in the North Coast Adaptive Management Area are presented in chapter 5. Tables 7, 8, and 9 display short-term timber sale plans for the Hebo Ranger District, the Marys Peak Resource Area, and the Tillamook Resource area.

U.S. Forest Service, Hebo Ranger District

Table 7. Short Term Harvest Projections: Siuslaw National Forest - Hebo Ranger District
Fiscal year

Fiscal Year	Sale Name	Stand Description	Acres	Estimated Volume (MMBF)
97	Burnt Flat Thinning	Off-site stands	185	3.4
97	Hiack Thinning	Young managed stands	109	1.6
97	Upper Drift Thinning	Young managed stands	160	1.3
	Fiscal year totals		454	6.3
98	Upper Niagara Thinning	Off-site stands	150	3.3
98	Alder Treatment		75	1.3
98	Little Nestucca Thinning	Young managed stands	300	2.4
	Fiscal year totals		525	7.0
99	Burnt Last Thinning	Off-site stands	200	4.0
99	Alder Treatment		90	1.6
99	Lower Drift Thinning	Young managed stands	300	2.5
	Fiscal year totals		590	8.1
00	Hebo Remains Thinning	Off-site stands	120	2.4
00	Alder Treatment		90	1.6
00	Salmon River Thinning	Young managed stands	260	1.8
00	Miscellaneous Sales	Natural regeneration stands	160	1.1
	Fiscal year totals		630	6.9
01	Alder Treatment		90	1.6
01	Devil's Lake Thinning	Young managed stands	600	4.2
01	Miscellaneous Stands	Natural regeneration stands	160	1.4
	Fiscal year totals		850	7.2

Bureau of Land Management, Marys Peak Resource Area

Table 8 identifies the short-term harvest for the Marys Peak portion of the AMA. The specific projects identified for fiscal years 1996 and 1997 will provide enough timber volume to meet the Probable Sale Quantity (PSQ) that was developed for the full decade 1995-2004. Additional projects are anticipated for 1998, 1999, and 2000, but are not yet identified.

Table 8. Short-term harvest projections - Marys Peak Resource Area Fiscal year

Fiscal Year	Sale Name	Management Allocation	Acres	Estimated Volume, MMBF
96	Sand Creek Density Management	AMA	75	1.78
97	Callahan Cr. Density Management	AMA	145	2.80
98		LSR/AMA	85	0.75
99		LSR/AMA	85	0.75
00		LSR/AMA	85	0.75

Bureau of Land Management, Tillamook Resource Area

Table 9 displays short-term harvest projections for Tillamook. Acres and volumes for 1996 and 1997 are more definite than those for 1998. The figures for 1999 and 2000 are projected targets.

Table 9. Short-term harvest projections - Tillamook Resource Area Fiscal Year

Fiscal Year	Sale Name	Management Allocation	Acres	Estimated Volume, MMBF
96	Rye Mtn. Density Management	AMA/LSR	123	1.50
96	Phoenix Density Management	AMA/LSR	54	1.00
	Fiscal year totals		177	2.50
97	Neverstill Density Management	AMA/LSR	140	1.10
97	Borderline Bear Density Mgt.	AMA/LSR	400	3.20
97	Bald Panther Salvage	AMA/LSR	30	1.05
	Fiscal year totals		570	5.35
98	Stoned Gopher Thinning	AMA	75	0.90
98	Spotted Panther Density Mgt.	AMA	75	0.90
98	Cooper's Creation Density Mgt.	AMA/LSR	159	1.90
	Fiscal year totals		309	3.70
99		AMA and LSR/AMA	309	3.54
00		AMA and LSR/AMA	309	3.54

Several types of variables will affect the harvest estimates contained in the timber sale plans for each management unit:

- (1) The actual amount of timber offered will vary from the estimates as environmental analysis is carried out and detailed surveys of project areas are conducted.
- (2) Annual sale volumes may have to be less than the estimates because of reduced agency work force.
- (3) The projected sale program may change if higher priority projects are recommended in upcoming watershed analysis of specific basins.
- (4) The sale program will also be adjusted annually to fit with Siuslaw National Forest and BLM programs of work. That is, some years harvest in the AMA will be more than the estimated long-range sale quantities and in other years less.

APPENDIX C:

Special Areas in the AMA

Special areas in the AMA include Research Natural Areas (RNAs), Areas of Critical Environmental Concern (ACECs), and the Cascade Head Experimental Forest and Scenic-Research Area.

Research Natural Areas have been designated on both National Forest and BLM-administered lands for primarily scientific and educational purposes. Specifically, RNAs are intended to

- Preserve examples of significant natural ecosystems for comparison with those influenced by humans
- Provide educational and research areas for ecological and environmental studies, and
- Preserve gene pools for typical and rare, threatened, and endangered species.

There are eight RNAs within the AMA: five administered by the Bureau of Land Management and three administered by the Forest Service.

Areas of Critical Environmental Concern (ACECs) are designated on BLM-administered lands to provide special management attention for important botanical, geological, archaeological, paleontological, or scenic resources, or to address natural hazards. Some ACECs are also designated as RNAs, and others as Outstanding Natural Areas (ONAs).

Research Natural Areas

- High Peak-Moon Creek, a 1,526-acre RNA and ACEC on BLM lands, was established in 1984 to represent a variety of mature and old-growth coastal western hemlock communities. High Peak-Moon Creek is about 11 air miles southeast of Tillamook and four air miles north of Blaine, in the Tillamook Resource Area.
- The Butte, a 40-acre RNA and ACEC on BLM lands, was recommended for designation in 1980 because of its unusual distribution of plant communities. It is about 8 miles due west of McMinnville, in the Tillamook Resource Area.
- Saddleback Mountain, a 135-acre RNA and ACEC on BLM lands in the Marys Peak Resource Area, was recommended for RNA status in 1975 because of its unique stand of old-growth pacific silver fir. It is about 11 miles east of Lincoln City.
- Little Sink, an 80-acre RNA and ACEC on BLM lands, was first proposed for protection in the late 1940s, and was finally nominated as an ACEC in 1981. The area is remarkable because of its geological instability, which has caused extensive landslide activity over the years, resulting in an extremely varied, hummocky landscape and a wide variety of plant communities. It is forested mostly with old-growth Douglas-fir. Little Sink is

located in the Marys Peak Resource Area, about 2 miles south of Falls City.

- Forest Peak is a 134-acre RNA and ACEC on BLM lands about 10 miles northwest of Corvallis. It was established to preserve an example of unique vegetation types found on dry foothills on the west side of the Willamette Valley.
- Neskowin Crest RNA (1,190 acres) was established on Siuslaw National Forest lands in 1941 as an example of Sitka spruce-western hemlock forest on the ocean front. Neskowin Crest RNA is within the Cascade Head Scenic Research Area and Experimental Forest, about ten miles north of Lincoln City.
- The 241-acre Sand Lake RNA was established in 1995 as an example of a large parabola dune system. Sand Lake RNA is on the east side of the Three Capes Scenic Highway a few miles south of Cape Lookout.
- Reneke Creek RNA is a 480-acre coastal watershed within Siuslaw National Forest with two matched perennial streams dominated by red alder. Reneke Creek is near the Sand Lake estuary, just east of the community of Tierra del Mar.

Areas of Critical Environmental Concern

(Those which are also RNAs are listed above)

- Elk Creek is an ACEC of 1,577 acres on BLM lands in the Tillamook Resource Area. The ACEC was established in 1989 to help protect nesting bald eagles in the area. It is about 25 miles east of Beaver, on the north side of the Nestucca River.
- The Nestucca River ACEC, comprising 1,062 acres on BLM lands in the Tillamook Resource Area, was designated in 1983 to focus special management on this area of important scenic, fisheries, wildlife, botanical, and recreational values. The ACEC is located about 25 miles east of Beaver.
- Sheridan Peak ACEC, comprising 299 acres of BLM lands in the Tillamook Resource Area, was established in 1983, to protect and study a local population of *Poa marcida*, or weak bluegrass, a sensitive grass species. It is located on the crest of the Coast Range, about 23 air miles southeast of Tillamook.
- Walker Flat ACEC, a ten-acre parcel on BLM lands in the Tillamook Resource Area, was established in 1994 to protect habitat surrounding a population of *Sidalcea nelsonii*, Nelson's checkermallow, a sensitive plant species. It is located about 12 miles west of Carlton.
- Lost Prairie ACEC, consisting of 58 acres of BLM lands in the Marys Peak Resource Area, was

originally proposed for protection by the Nature Conservancy in 1977. The ACEC contains a natural high-elevation peat bog containing a rich variety of moist-site vegetation, including several sensitive species. It is isolated in an area of private lumber company lands about 12 miles east of Lincoln City.

- Valley of the Giants ACEC / Outstanding Natural Area includes 51 acres of BLM lands in the Marys Peak Resource Area. It was designated in 1994 to protect a stand of large old-growth Douglas-fir forest and to provide opportunities for viewing and study. It is located on the North Fork of the Siletz River, about 13 air miles east of Lincoln City.
- Rickreall Ridge ACEC, comprising 177 acres of BLM lands in the Marys Peak Resource Area, was originally proposed for protection by the Nature Conservancy in 1976, as a site for botanical study and sightseeing. The ridge supports a relatively unusual plant community, a blend of species characteristic of the Willamette Valley with typical Coast Range plants and some that are more characteristic of southwestern Oregon. It is located about 12 air miles west of Dallas.

Cascade Head Experimental Forest

The Experimental Forest, located on a prominent headland on the Pacific Ocean north of Lincoln City, was established by the Forest Service in 1934 to represent typical Sitka spruce-western hemlock forests found along the Oregon Coast. An active research program, managed by the Pacific Northwest Research Station, has been ongoing in this 11,980-acre forest ever since. Numerous long-term studies begun in the 1930s, 1940s, and 1950s are still active today.

In 1974, Congress established the Cascade Head Scenic-Research Area, which includes the western half of the experimental forest, the Salmon River estuary, and contiguous private lands. This designation added several grassy coastal headlands and the estuary to the mature forest ecosystems already part of the experimental forest. The result has been a more diverse set of habitats available for research on coastal ecosystems.

Together the Cascade Head Experimental Forest and Scenic-Research Area ensure the protection and encourage the study of significant areas; promote more sensitive relations between people and their environment; and provide present and future generations with the use and enjoyment of an area of diverse beauty. The area was designated a Biosphere Reserve as part of the United Nations Man and the Biosphere Reserve system in 1980.

APPENDIX D: Communities of the Northern Coast Range AMA

Following is a summary of the various types of communities in the AMA. These lists will be expanded as other communities are identified.

Communities of Place

Tribal governments

Confederated Tribes of the Grand Ronde Community

Confederated Tribes of the Siletz Indians of Oregon

Cities and towns and rural communities within the AMA boundary:

Benton County:

Kings Valley

Hoskins

Lincoln County:

Devil's Lake

Kernville

Lincoln City

Neotsu

Oretown

Otis

Rose Lodge

Siletz

Polk County:

Falls City

Grand Ronde

Pedee

Willamina

Tillamook County:

Bay City

Beaver

Blaine

Cape Meares

Cloverdale

Garibaldi

Hebo

Lee's Camp

Neskowin

Netarts

Oceanside

Oretown

Pacific City

Pleasant Valley

Tierra del Mar

Tillamook

Washington County:			
Timber			
Yamhill County:			
Carlton	Wapato		Willamina
Yamhill			
Cities and towns and rural communities near, but outside the AMA boundary:			
Corvallis	Dallas		Depoe Bay
Forest Grove	McMinnville		Newport
Salem	Sheridan		Toledo

Communities of Interest

Environmental organizations

- Oregon Chapter Sierra Club
- Oregon Natural Resources Council
- Audubon Society
- Coast Range Association
- Native Plant Society

Industry and logger groups

- Oregon Forest Products Transportation Assoc.
- Association of Oregon Loggers, Inc.
- Oregon Reforestation Contractors Association

Local watershed councils

- Nestucca Watershed Council
- Netarts Watershed Council
- Yamhill Basin Council
- Tillamook Bay National Estuary Council

Community-based action groups

- North Coast Ecosystem Work Force Initiative (Jobs in the Woods)
- Local Community Based Partnerships
- Soil and Water Conservation Districts
- Patterson Creek Pals

Special interest advocacy groups

- Northwest Steelheaders
- Friends of Walker Creek Wetlands

Recreational groups

- Hiking groups
- Off-highway vehicle groups
- Applegate Rough Riders Motorcycle Club
- Northwest Trail and Sand Patrol

NonPublic institutions and organizations

- Civic groups
- Fraternal organizations
- Churches
- Local educational and school groups

Special forest products groups

- Moss collectors
- Special forest products collectors
- Special forest product buyers

APPENDIX E:

Sources of Funding and Assistance

The following types of agreements, grants, and cooperative programs have been used or are currently in use in the AMA:

Challenge Cost-Share Agreements are authorized under the Interior and Related Agencies Appropriations Act of 1992. The Act authorizes the Forest Service to cooperate with other parties to develop, plan, and implement projects that are beneficial to the parties and that enhance Forest Service activities. Projects can be financed with matching funds from cooperators. Cooperators may be public and private agencies, organizations, institutions, and individuals (Forest Service Manual, 1587.12)

Collection Agreement is an instrument to accept money, equipment, property, or products from a nonfederal party to carry out a purpose authorized by law. These agreements may involve both trust fund collections (advances) and reimbursements. The following federal laws authorize the Forest Service to enter into these agreements (Forest Service Manual 1584):

- Cooperative Funds Act of June 30, 1914
- Granger-Thye Act of April 24, 1950
- Acceptance of Gifts Act of October 10, 1978
- Forest and Rangeland Renewable Resources Research Act of 1978, as Amended

- Intergovernmental Cooperation Act of 1968, as Amended
- United States Information and Exchange Act
- Federal Employees International Organization Service Act

Cooperative Agreements and Grants are the instruments used to transfer money, property, services, or anything of value to a recipient to support or stimulate activities for the public good. Law enforcement agreements are joint ventures between the agency and local governments, to enforce state and local laws on public lands administered by the Forest Service and Bureau of Land Management (Forest Service Manual 1581, BLM Handbook 1511-1).

Cooperative Research and Development Agreements are authorized under the Federal Technology Transfer Act. This Act authorizes the Forest Service, where appropriate, to transfer federally owned or originated technology to state and local governments and to the private sector. The Act authorizes an agreement between one or more federal laboratories and one or more nonfederal parties under which the Forest Service, provides personnel, services, facilities, equipment, or other resources with or without reimbursement. This Act does not authorize transfer of funding by the Forest Service to nonfederal parties. The nonfederal parties

may provide funds, personnel, services, facilities, equipment, and other resources toward the conduct of specified research and development projects that are consistent with the mission of the Forest Service (Forest Service Manual 1587.14).

Cooperative Research and Development Agreements for the Department of Interior have been managed by the National Biological Service.

Interagency and Intraagency Agreements deal with other federal agencies. An interagency agreement is used when one federal agency is in a position to provide materials, supplies, equipment, work, or services of any kind that another agency needs to accomplish its mission. Intraagency agreements may be used when one District or Resource Area is in a position to provide materials, supplies, equipment, work, or services of any kind to another District or Area to accomplish its mission (Forest Service Manual 1585, BLM Manual 5010).

A memorandum of understanding (MOU) is the instrument used for a written plan between the Federal government and other parties for carrying out their separate activities in a coordinated and beneficial manner and for documenting a framework for cooperation. A letter of intent may be used in place of a MOU, only when the activities involve a foreign government and the foreign government will not accept the title of MOU to document a framework for cooperation. Memoranda of Understanding and letters of intent are not fund-obligating documents and cannot be used when the intent is to exchange funds, property, services, or anything of value. Under a MOU or letter of intent each party directs its own activities and uses its own resources (Forest Service Manual 1586, BLM Manual 1786).

Jobs in the Woods

The North Coast Ecosystem Work Force Initiative has launched eight demonstration projects in Oregon, designed to link dislocated timber workers with ecosystem restoration work. The projects are part of Jobs in the Woods, a program created by the Clinton administration as part of the Northwest Economic Adjustment Initiative.

The North Coast Ecosystem Workforce Demonstration Project is largely based on community partnerships and an ability to form alliances with local, private, and public organizations. Management Training Corporation (MTC), a Tillamook based business, is an example of a private sector partner bringing crucial

components to the project. The Corporation acts as the general project manager and provides classroom training. Another example of private-sector participation is the project employer of record, Pierce, Inc. Pierce is a local employment contractor working with MTC to hire the project workers.

Partners in the North Coast Ecosystem Workforce Project include:

- Environmental Protection Agency
- Governor's Federal Forest and Resource Policy Team
- Management and Training Corporation, Tillamook County
- Oregon Department of Environmental Quality
- Oregon Department of Forestry
- Oregon Economic Development Department
- Oregon Fish and Wildlife Department
- Oregon State University
- Pierce, Inc.
- Tillamook Bay Community College
- Tillamook County
- Tillamook County Economic Development Department
- Tillamook County Soil and Water Conservation District
- Tillamook Small Business Development Center
- USDA, Forest Service
- USDI, Bureau of Land Management
- USDI Fish and Wildlife Service

The North Coast Ecosystem Workforce, which began operating in May 1995, employs 13 dislocated timber workers in year-round ecosystem-management jobs. The workers earn a family wage plus benefits. They receive one day of classroom education for every four days of field work. The training is a curriculum provided through various education partners in Oregon. Workers completed more than \$700,000 worth of ecosystem restoration projects on Bureau of Land Management and Forest Service administered lands during the first year of the program. Some projects have been completed on state and private lands in the North Coast region.

The Bureau of Land Management, Tillamook Resource Area, and the Forest Service, Hebo Ranger District, have packaged projects normally let as one-to-three week contracts to create a year-long program that requires a wide diversity of ecosystem enhancement skills. These projects include stand exams, density management in young stands, management of competing vegetation in plantations, animal damage management, plantation pruning projects, culvert inventory and marking, culvert downspout installation, creation of wildlife trees, riparian area underplanting, and road decommissioning.

Contracting workshops

The Tillamook Bay Community College Small Business Development Center, in cooperation with federal and state agencies, presents an annual one-day workshop on "Securing U.S. Government and State Agency contracts." The workshops present an overview of how businesses can access contracts with the following agencies: Bureau of Land Management, Forest Service, Oregon Department of Forestry, Department of Administrative Services, and the Government Contracts Acquisition Program (GCAP). Graduates of the Jobs-in-the-Woods program are encouraged to attend.

Knutson-Vandenberg Act

Another avenue available to finance activities on National Forest System lands is through the Knutson-Vandenberg Act (K-V) of June 9, 1930, as amended by the National Forest Management Act of October 22, 1976. This Act is the authority for requiring purchasers of National Forest timber to make deposits to finance sale-area-improvement activities to protect and improve the future productivity of the renewable resources of forest lands within timber sale areas. Activities include operations to improve conditions on the timber sale area, maintenance and construction for restoration, timber stand improvement, and other improvements related to range, wildlife and fish habitat, soil and watershed, and recreation values. Sale-area improvement activities must be carried out only on lands with full National Forest status and on lands administered in accordance with the laws, rules, and regulations applicable to National Forest lands (Forest Service Handbook 2409.19).

The following are some of the types of projects that may be performed using K-V funding (Forest Service Handbook 2409.19):

- Plant, seed, or fertilize preferred vegetation to enhance wildlife forage, cover, or rangeland ecosystems.
- Improve fish habitat.
- Plant riparian vegetation.
- Provide recreation opportunities such as Christmas tree cutting, berry picking, wildlife viewing, and other activities through vegetation management, marking, or other methods.
- Provide interpretative signs or other media to assist the public in understanding management activities.
- Establish dispersed camping sites in timber sale-area boundaries.
- Stabilize areas of soil erosion.
- Obliterate unneeded roads in timber sale areas and restore site productivity by activities such as ripping, planting, seeding, and fertilizing.

APPENDIX F: Human-Resource Programs

Human-resource programs can provide a way to carry out federal work projects for which other funds are not available. The objective is to provide both social and natural-resource benefits through administering and hosting programs in work, training, and education.

Volunteer Programs

Salem BLM District's volunteer program has been growing steadily during the past seven years. Although the number of volunteers has decreased recently, the number of volunteer hours has increased substantially.

What began seven years ago as mostly volunteer park-maintenance help from youth groups, Boy and Girl Scouts, and various other clubs has expanded to include about 70 college students and graduates. Students from across the country and throughout the world seek experience in natural resources by volunteering for the BLM.

Some of these students were placed in Salem through the Student Conservation Association and through college internships with Willamette University, Western Oregon State College, Oregon State University, Chemeketa Community College, University of Oregon, University of Pennsylvania, Lewis and Clark, University

of Freiburg (southern Germany), and Sprague High School.

Others are college graduates seeking experience in their field of study. These volunteers generally work 3 to 6 months surveying for spotted owls and marbled murrelets, monitoring fish habitat, inventorying soil and riparian conditions, surveying for endangered plant species, and assisting seed propagation at Horning Seed Orchard.

Everybody wins with the volunteer program; it provides work experience for local youth while accomplishing agency goals. One opportunity would be to work with the local school district to set up a Sponsored Group Volunteer Agreement. In many instances, this agreement could provide the student the ability to fulfill some of the Certificate of Advanced Mastery requirements (CAM). Many college students are looking for volunteer opportunities to provide them job experience, complete course work requirements, or both. With summer job opportunities dwindling for students and with dollar restrictions in the agencies, this program could be an excellent way to meet both student and agency goals.

For fiscal year 1995 (October 1994 through September 1995), volunteers for the Hebo Ranger District

contributed about 6,777 hours of work with an estimated value of \$90,800. The majority of volunteer work was in recreation related projects with 6,280 total hours for an estimated value of \$80,900. Project work in fish and wildlife, range, and timber management contributed to the total with 560 hours for an estimated value of \$9,880.

Volunteers for the Tillamook and Marys Peak Resource areas, BLM, contributed about 26,100 hours of work with an estimated value of \$261,000. The majority of work was performed in recreation related projects with more than 15,000 hours for an estimated value of \$150,000. Volunteers contributed in other functions such as cultural and historical, lands, forestry, watershed and hydrology and wildlife for a total of 11,000 hours for an estimated value of \$111,000.

Youth Programs

Northwest Youth Corps (NYC) is a nonprofit teenage job training program. It provides youth, ages 16 to 19, experience in environmental education. The NYC crews can do a variety of projects, including trail construction or reconstruction and stream cleanup. All recruiting and payrolling is done by NYC and includes all costs associated with hiring an employee. Tools, supervision, and transportation are provided. Programs last from one to five weeks and the cost to a sponsoring unit is \$5,264 per week for a crew of ten teenagers and two staff people.

Apprenticeships in Science and Engineering (Saturday Academy) is designed for high school students entering their sophomore, junior, or senior year and who have potential to excel in science or engineering. Students work full-time for eight weeks, which gives them the opportunity to explore their interests and to make educational and career decisions. This program may also fulfill some requirements of the Certificate of Advanced Mastery. Students are payrolled by Saturday Academy and fully insured before being accepted into the program. Saturday Academy does the initial recruitment and a Forest Service mentor selects and supervises the participant. The cost of the program is \$2,500, but often the Academy has funds to defray some of this cost.

Students are expected to complete productive work or projects. They attend a two-day midsummer conference that includes workshops and seminars on science and engineering. At the end of the summer, the student attends a symposium where all participants share their work and report on their summer experience.

Student Conservation Corps (SCA) is a nonprofit organization that provides opportunities for youths to learn about the principles and practices of resource management and conservation. The two basic programs are the Resource Assistant Program, designed for college-age and adult participants with skills and qualifications to perform activities on natural resource management areas, and a high school program designed for students to participate in work crews for a minimum five-week period on conservation and natural resource management projects. A high school crew with six students and one leader costs about \$8,000 of reimbursable costs and about \$9,000 of non-cash contributions for a five-week program.

Oregon Youth Conservation Corps (OYCC) has as its main purpose to engage youth, ages 16 to 24, in meaningful work in well-supervised, cohesive teams, while enhancing job skills and educational development. Seventy-five percent of the program participants are disadvantaged and at-risk because of poverty, deficiency in family support, or inadequate opportunity for community employment. The OYCC is administered by the Oregon Commission on Children and Families and is fully funded by the state of Oregon. Direct supervision is provided by Forest Service or BLM staff when the work is on federal lands.

Experience International is a nonprofit visitor exchange program to provide young professionals with on-the-job training and career-related work experience. These trainees all have a minimum of two years of practical experience and two years of post-secondary education in a natural resource field. All exchange visitor placements are made for 8 to 18 months. Reimbursement for food and lodging is provided by the receiving agency. In addition, a \$319 initial placement fee and a \$382 quarterly fee are paid for each trainee.

APPENDIX G:

Education and Information Sharing

While searching for new ways to inform and educate AMA stakeholders about natural resources and ecosystem management, we need to continue to make use of existing programs that are effective. The Forest Service and Bureau of Land Management have taken part in many kinds of outreach in recent years.

Presentations

- Presentations on a variety of natural resource issues are offered to local clubs, organizations, schools, and interest groups. Presentations are typically tailored to the needs of the group. Topics may include forestry, ecology, fire management, wildlife biology, fisheries, cultural and historical resources, and others.
- The agencies offer open houses at agency offices and public meetings in the local communities.
- Tours are conducted, focused on natural resources issues or specific projects.
- The agencies participate in local parades.
- The Oregon State Fair BLM cabin provides an opportunity for fairgoers to learn more about the agencies and to ask questions or receive information.
- A BLM booth is staffed at the Polk and Benton County Fairs to provide an opportunity for fairgoers to ask questions about BLM activities. Hebo Ranger District provides information about Forest Service activities at the Tillamook County Fair (BLM could take the opportunity to join this effort), and the Siuslaw National Forest and the PNW Research Station in Corvallis have a booth together at the Benton County Fair.
- Job fairs offer opportunities to share information about careers in natural resources.
- The BLM, USFS, and ODF&W cooperatively participate and offer activities during National Fishing Week (June) at Hebo Lake and at Cedar and Fall Creek Fish Hatcheries.
- Each spring, surplus seedlings are donated to several nonprofit organizations and school groups with BLM fliers explaining BLM's forestry and tree planting program.

Publications

The Forest Service Regional Office in Portland publishes an AMA quarterly report highlighting various activities in each of the ten AMAs. Copies are available at National Forest Supervisor's Offices, Forest Service District offices, and BLM Resource Area offices.

- The Salem District and Siuslaw National Forest publish Project Update (BLM, biannually; USFS, quarterly), which briefly describes proposed projects, planning stage, and how people can participate. Additional information about proposals can be obtained from the contact person associated with the project; the contact person's name and phone number are listed in the publication.
- BLM News is a statewide newsletter whose readers include Oregon-wide media, all Oregon and Washington employees and retirees, BLM offices across the country, and others interested in receiving a copy of the publication.
- BLM and Forest Service public affairs officers fax news releases to area media about newsworthy activities. The media regularly requests information.
- Brochures, notices, and maps are available at agency offices. Developed campgrounds and visitor centers may also have information or bulletin boards.
- The BLM-produced videos, such as "Forests for the Future," have been shown on cable TV stations, targeting tourists to the Oregon Coast. Salem's CCTV has also run several BLM videos. A new video is available, titled "Continually Correcting Course--a Tale of Adaptive Management."

Education

- Hebo Ranger District offers SMILE (Science Math Investigative Learning Experience) to 6th graders in Willamina and Grand Ronde schools. The students learn about reforestation, planting a tree, stream erosion, and GIS applications.
- The Heritage Education Program, developed by the BLM, has been distributed statewide. The program consists of a teacher's guide for 4th to 7th grades, three one-week workshops for teachers, a field school in partnership with WOSC, one-day seminars, and in-service days.

- Oregon Archeology Week promotes education about archeology. The BLM targets schools and the public at large with displays, artifact exhibits, and other events.
- Outdoor School in Tillamook County is a cooperative effort by federal and local agencies for students to learn about natural resources in an outdoor setting. Tillamook BLM, Hebo Ranger District, and the Oregon Department of Forestry jointly sponsor a forest communities curriculum at the annual Tillamook County Outdoor School. Sixth-grade students receive a one-week educational camp experience at Camp Meriwether, a boy scout camp south of Cape Lookout.
- Another outdoor school is conducted at Minto-Brown Island Park in Salem as a cooperative venture between Marion County Parks and Recreation Department, Salem District BLM, and other organizations.
- Yamhill County Soil and Water Conservation District sponsors an annual Woodland Tour. on the property of Mr. and Mrs. Dave Cruikshank. Fifth-grade students in Yamhill county participate in eight interpretive stations with topics ranging from insects and disease to fire prevention and safety. Partners include Oregon Department of Forestry, USDA Forest Service, Natural Resource Conservation Service, Tillamook and Salem BLM, Yamhill Sheriff Department, Oregon Department of State Police, Stimson Lumber Company, McMinnville Fire Department, and McMinnville Future Farmers of America.
- As part of a business partnership with Sprague High School, students shadow Salem BLM employees to get a better idea about careers in natural resources. In 1995, about 50 high school students participated.
- As part of a business partnership with Pringle Grade School, Salem BLM employees mentor an at-risk child from Pringle. In 1995, eight employees participated.

- Salem BLM has participated in the Resource Apprenticeship Program for Students (RAPS) for the past 3 years. The high school students spend the summer job shadowing BLM employees.

Internet

- A home page on the World Wide Web has been developed for the Northern Coast Range AMA as

well as all other AMAs. This home page will be an important way of publicizing what's happening in the AMA and, more importantly, how people can participate.

The home page for the AMA network is:

<http://www.teleport.com/~amanet/>

The home page for the Northern Coast Range AMA is:

<http://www.fsl.orst.edu/coops/ama/ncama/index.htm>

- The Government Information Locator Service (GILS) is an electronic directory of public information available from the federal government that can be easily accessed. Access to GILS can be made either direct through the Internet, or through an intermediary, such as one of the 1,400 Federal Depository Libraries. Quick electronic access can be obtained through the following:

World Wide Web: <http://www.usgs.gov/gils>

Government Printing Office: http://www.access.gpo.gov/su_docs/gils.html

U.S. Dept. of Commerce, National Technical Information Service (NTIS) Federal World

Information Network: <http://www.fedworld.gov>

- The Econet Western Lands Gopher (WLG) provides text files on land use issues that affect Western lands in the United States. Examples include forests, wilderness, public lands, rivers, mining, ecology, wildlife, timber, agriculture, sustainable development, and environmental justice. The WLG is a free service to anyone with Internet access:

gopher.igc.apc.org

Contributions are encouraged and can be sent for upload to wlg@igc.apc.org

Agreements

The Forest Service and Bureau of Land Management have developed the following partnerships and volunteer agreements that are helping to meet the Northern Coast Range AMA objectives:

- A Memorandum of Understanding between the Northwest Trail & Sand Patrol and the Hebo Ranger District for the Sand Lake Recreation area provides for awareness, safety, and information about all-terrain vehicle travel.

- Tillamook BLM entered into a cooperative agreement with the Applegate Rough Riders motorcycle club. The Club is authorized to construct up to 50 miles of trails in the Bald Mountain area. Each trail route is approved by BLM before construction, and the Club agrees to maintain the trails to prevent resource damage and promote safety for users.
- Volunteer Agreement with the Central Coast Chapter of Northwest Steelheaders to gather physical and biological information on trapped fish at the Schooner Creek fish trap for the Hebo Ranger District.
- Volunteer Agreement with an individual to develop a list of birds found within the areas around Hebo Lake and Mt. Hebo on the Hebo Ranger District. Work began in 1992.
- Volunteer Agreement with various individuals for assistance with the Forest Service recreation program. Work includes maintaining recreation facilities and hosting at the developed campgrounds
- Challenge Cost-Share Agreement between Rocky Mountain Elk Foundation and the Siuslaw National Forest for meadow management, which includes noxious weed control and slashing or mowing encroaching vegetation.
- Challenge Cost-Share Agreement between the Nature Conservancy and the Siuslaw national Forest for monitoring silverspot butterfly populations and habitat quality.
- Volunteer Agreement with Oregon Hunter's Association for maintaining meadows.
- Tillamook BLM is a member of the Tillamook County Fire Prevention Cooperative, which serves as a vehicle for coordinating fire prevention and fire suppression programs on lands managed by various government agencies, as well as private lands.
- The BLM and the Forest Service provide technical input and resource information to several watershed councils in the Northern Coast Range AMA, including the Nestucca River basin and Yamhill River basin.
- The BLM and the Forest Service are cooperators with the Tillamook Bay National Estuary Project (TBNEP), and have contributed data, information, and other input to many TBNEP programs, including the ongoing Kilchis River watershed analysis.

- A Cooperative Agreement exists between Salem BLM, Siuslaw National Forest, and Sheridan Federal Prison. The program includes a six-man prison crew performing various jobs such as brushing, tree pruning, thinning, test site maintenance, pulling tansy ragwort, and landscape and park maintenance.
- Challenge Cost-Share Agreements between Tillamook BLM and Berry Botanic Garden for monitoring and ecological study of *Dodecatheon austrofrigidum* (a rare primrose) on the Trask River peninsula and *Erythronium elegans* (fawn lily) near Roselodge.
- Challenge Cost-Share Agreement between Oregon State University and Tillamook BLM for a lichen diversity study in selected areas in the Coast Range.
- Challenge Cost-Share Agreement between Salem BLM and Oregon Department of Fish and Wildlife for fish trapping in the Siletz River to allow only summer steelhead access to its historical range.
- Salem District BLM has partnerships and volunteer agreements with:
 - MacClaren School for Boys*, whose students have built campground shelters, tent sites, and trails.
 - Goodwill Industries*, whose clients assist at the BLM reception desk and with administrative work and carpentry.
 - Mid Willamette Valley Jobs Service*, providing a Resource Apprenticeship Program for Students (RAPS). The students job shadow and assist with such work as administration, survey, and general forestry.
 - Apprenticeship in Cooperative Experience (ACE)* of Marion County. High school students on the ACE crew do interior and exterior maintenance at the BLM State Fair Cabin.
 - Apprenticeship in Sciences and Engineering (ASE)* Academy of Sciences. The apprentices assist in field and office work in BLM's botany program.
 - Cooperative work experience* is provided through Chemeketa Community College. Students assist Salem BLM in fields such as autocad (computer assisted drafting), forestry, and engineering.

Key Federal Agency Staff -

APPENDIX H: Northern Coast Range AMA

The following list is current as of January 1, 1997. Please contact any of these persons for more information about the Northern Coast Range AMA or its activities.

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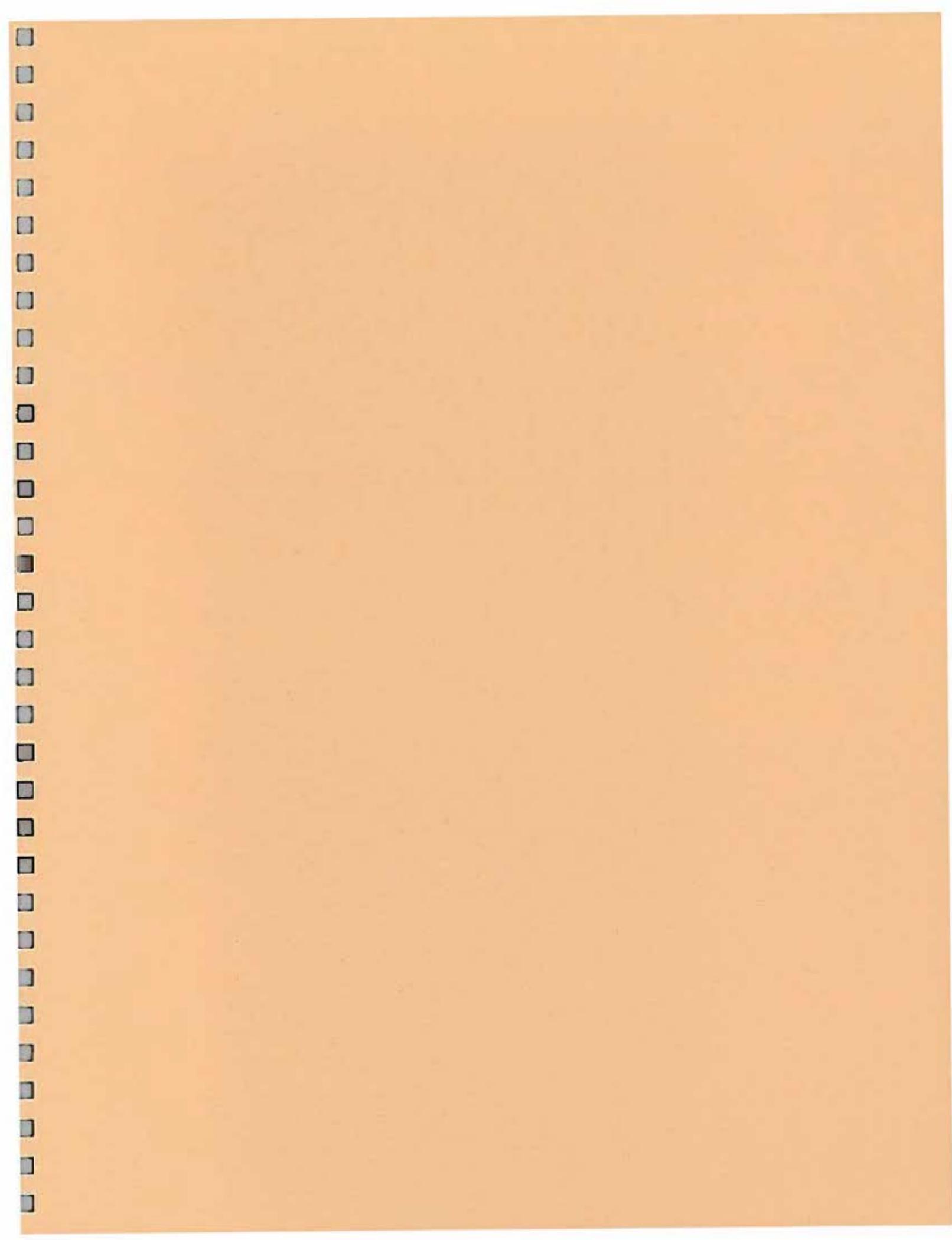
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BUREAU OF LAND MANAGEMENT**

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