

Alaska Region
Landscape Scale Ecosystem Assessments
Background Information
February 18, 2004

Introduction

Assessments provide the foundation of independent information upon which to build conservation strategies and management decisions and against which alternative approaches can be evaluated and modified. (Committee of Scientists 1999)

Three documents guide our vision of landscape assessments in the Alaska Region. They are:

1. The Committee of Scientists' report,
2. The FY2001 Program Direction for Inventory and Monitoring (also the Program Direction for subsequent years),
3. A Guidebook for Integrated Ecological Assessments by Mark E. Jensen and Patrick S. Bourgeron printed in 2001, which was commissioned by the WO EMC Staff.

We have extracted sections of these documents that provide information regarding Landscape Assessments. These are presented below.

The Committee of Scientists' Report

In December 1997, the Secretary of Agriculture convened a 13 member Committee of Scientists to review the Forest Service planning process and to offer recommendations for improvements within the statutory mission of the Forest Service and the established framework of environmental laws. The Committee's charter was to provide technical and scientific advice on land and resource planning on the National Forests and to address such topics as biological diversity, use of landscape assessments in land and resource management planning, spatial and temporal scales for planning, public participation processes, sustainable forestry, and interdisciplinary analysis.

The Committee of Scientists issued a final report on March 15, 1999, entitled *Sustaining the People's Lands – Recommendations for Stewardship of the National Forests and Grasslands into the Next Century*. This report, among other things, provides information on the role of assessments in land and resource management planning.

Assessments Provide a Credible Foundation of Information

Within a collaborative planning process, credible information emerges from collaborative scientific assessment processes at both large and small scales. A critical component of the framework proposed by the Committee, is that assessments are not decision documents and should not be made to function under the NEPA processes associated with decision making. Rather, assessments provide the foundation of independent information upon which to build conservation strategies and management decisions and against which alternative approaches can be evaluated and modified. (Committee of Scientists 1999)

Conduct Assessments at the Bioregional Scale and at a Smaller Scale, like a Watershed

The Committee envisions two primary scales of assessments. Assessments over large areas ("bioregions"), such as the Sierra Nevada or the spotted-owl region, will generally be needed to provide the context for landscape-level strategic planning. Assessments at the more local level, such as watersheds, will be needed to help translate strategic plans for large landscapes into site-specific management actions. In some cases where the bioregional assessment is at a very large scale, for example the Columbia River Basin assessment, an intermediate scale of analysis may be needed. (Committee of Scientists 1999)

Key Element of the Planning Process

The planning process is built upon assessments. It initiates a joint public-scientific inquiry that provides the knowledge base for planning and the relationships for stewardship.

Independent information that is considered an objective and realistic portrayal of conditions provides a critical and credible foundation upon which planning can proceed. Assessments, the assembling of a shared and scientifically grounded body of information, provide the foundation of information from which policies, strategies, and decisions can be built, evaluated, and changed. Assessments are conducted as a joint inquiry undertaken by scientists and other knowledgeable people from the federal agencies, other governments, relevant nongovernmental or private organizations, and the public.

The purpose of assessments is to understand the current conditions and trends regarding the land, resources, and people in an area in light of their history and the forces of change. Assessments should address all lands within the geographic area being studied. Considered within the Forest Service's legal framework, these assessments should meet the expectations of the RPA by creating "coordinated public and private research" relationships to "promote a

sound technical and ecological base” of information. Two primary scales are needed: bioregional assessments are essential for defining desired future conditions and developing broad conservation strategies, and small-scale assessments provide the site-specific information needed to design effective management activities that fit the history and conditions of the place as well as the social and cultural characteristics of the area.

As part of the assessment process, scientists should help develop strategies for determining and measuring all aspects of sustainability: ecological, economic, and social. In addition, they need to suggest measures of ecological integrity, procedures for obtaining these measurements, and ways to assess whether ecological systems are being sustained. Social and economic assessments are also critical elements in the assessment processes at both large and small scales. The assessment of social, cultural and economic conditions and trends should provide a useful synthesis of current information regarding demographic changes and migration patterns, economic patterns and relationships, social organization, current institutional arrangements, and historical context relevant to national forests and grasslands. Such an assessment will allow planners to have an independent “picture” of the social environment, which can be refined and become more “place-based” in the planning process. (Committee of Scientists 1999)

Organized as a Separate Task

Independent information that is an objective and realistic portrayal of conditions is required for policies, strategies, and decisions to be built, evaluated, and changed in a scientifically credible manner. In the past, the analysis of ecological and social conditions and trends was performed as part of regional guidance and forest planning. The Committee believes that assessments have such an important role in providing a credible information base for policy development and decision-making that they should be organized as a separate task. Most critically, assessments do not produce decisions and, therefore, should not be made to function under the NEPA processes associated with decision making. When assembling information is distinct from decision-making, everyone involved focuses more easily on conditions, trends, problems, and risks instead of on the options for decisions.

Assessments are not just “buckets of facts.” Rather, assessments provide the context for proposing ways to achieve long-term goals of sustainability. To inform the development of desired future conditions and develop potential strategies and pathways of management to achieve them, one necessary result of the assessment process is the identification of elements for conservation strategies along with scientifically credible procedures for evaluating the effectiveness of strategies in achieving sustainability. Since sustainability demands an integrated understanding of the ecological, economic, and social conditions and prospective changes, collaborative planning will also require integrated information.

Information is needed at two primary scales: bioregional assessments are essential for defining desired future conditions and developing conservation strategies; small-scale assessments are necessary for choosing treatments and activities to achieve desired goals and conditions.

These assessments need to be timely and so should be completed in a relatively short period of time: within a year or two for a bioregional assessment and within six months to a year for a small-scale assessment. In addition, the trust of participants and nonparticipants alike is enhanced when the assessment process includes independent review as a normal part of the process. For example, in the case of the Southern Appalachian Assessment, a multi-stakeholder group reviewed the scientific and technical adequacy of the assessment. This group included professionals from local and national nongovernmental organizations, which greatly contributed to the perception of independence and openness. Summary information produced by assessments should be widely available. (Committee of Scientists 1999)

Small-scale Assessments

Small-scale assessments, commonly called watershed assessments in many parts of the country, develop integrated information for small, ecologically identifiable geographic areas. One function of these small-scale assessments is to apply the findings of bioregional assessments along with the definition of the desired future conditions from the large-landscape, strategic planning process to a defined geographic area. Boundaries for these assessments range from small river basins, mountaintops, or other landscape units that nest within area of the relevant bioregional assessments and large-landscape planning areas.

Like bioregional assessments, all federal agencies with responsibilities within the area should use a coordinated effort to address all lands within the geographic area being studied. Similarly, small-scale assessments need a collaborative approach to create a mutually understood base of information regarding a specific area, involving relevant federal, state, and local agencies as well as tribes, various organizations, local associations, and citizens. People often think and care about lands and resources at the scale of watersheds or other identifiable geographic places. This "sense of Place" makes it easier to meaningfully engage people in small-scale assessments. A participatory process should be used whereby communities and groups assess their social and economic well being with the larger regional social and economic assessment as a base of information for comparative analysis. When successful, these assessments will also have a collection of stories and reflections from the people of the area in addition to quantitative and qualitative analyses of resources and conditions.

Small-scale assessments generally come after the development of a strategic direction for a larger landscape. They interpret the implications of the large-landscape strategies for specific watersheds or other small landscapes:

- 1) They develop a “place-based” analysis that provides context for small-landscape planning and the actions to implement decisions.*
- 2) They refine the estimates of desired future conditions and current conditions for the watershed that were developed during large-landscape planning by using detailed information for the watershed. Fitting the desired future conditions from large-landscape planning to the uniqueness of individual watersheds is an important first step in bringing the landscape strategic direction home to the local area. Developing improved estimates of the current conditions of important ecological, social, and economic relationships sets the stage for identifying the management necessary to move toward the desired future conditions.*
- 3) They refine the estimates of management opportunities made during large-landscape planning to move the current conditions in the watershed toward the desired future condition. (Committee of Scientists 1999)*

FY2001 Program Direction for Inventory and Monitoring

The FY2001 Program Direction and Initial Operating Plan released in December 2000, provides considerable direction for landscape assessments in the section on Inventory and Monitoring (NFIM) funds. The program direction begins with accountable direction for landscape assessments.

Assessments are characterizations of ecosystems above the project-level, which provide information relevant to a broad range of resource management activities, including LRMP revision or amendment, and ecosystem restoration. They are a primary avenue for implementing the Unified Federal Policy for Watershed Management, the Forest Service Strategic Plan and other policy requirements. This includes the recently revised policy regarding transportation analysis at 36 CFR 212. Assessments evaluate land and resource conditions, including ecosystem function, vegetation structure, ecosystem capabilities and limits to sustain production of goods and services. They contribute information for development of management options, attainable outcomes for resource conditions in the future, and potential production levels. Assessments provide a context for subsequent decision-making.

It is anticipated that “Watershed Scale Roads Analysis Process” required by the Roads Policy will be completed in conjunction with watershed assessments. Further direction regarding Roads Analysis is located in the CMRD section.

The direction goes on to state that Regional Foresters should ensure that work associated with watershed assessments is completed. Special emphasis should be

focused on developing and implementing a schedule to complete all watershed assessments over a 10-year cycle (i.e., 10% of all 5th code Hydrologic Units with 25% or greater NFS lands/year). Those watersheds identified, as high priority by States, Tribes and Federal agencies should be emphasized within the schedule.

Furthermore, the program direction includes accountable direction for inventory work that also pertains to assessments:

Inventories assess resource condition or potential of national forests and grasslands and should be focused on watersheds scheduled for assessment and to support LRMP revision. Increased funding is provided to refresh inventories on a 10-year cycle, and targets were negotiated up-front, which reflect regional priorities, capability, and unit costs. Regional Foresters should ensure inventory work is accomplished as planned.

Special emphasis should be focused on ... developing a regional status and strategy to complete and refine inventories on a ten-year cycle in support of both watershed assessments and LRMP revisions.

The FY2001 Program Direction includes other direction for assessments:

Assessments are characterizations of ecosystems above the project-level, and like inventories can be conducted at a variety of scales. Assessments do not produce decision documents, but do identify options that managers can evaluate during formal planning activities. They provide opportunities for internal as well as external perspectives to be considered prior to initiating formal proposed actions or changes in management direction or proposed programs.

Conducting assessments brings scientists and specialists with diverse expertise across the agency together in ways to promote efficiency by sharing knowledge and skills. Assessments encourage “upfront” collaboration and cooperation with universities and the private sector, as well as with federal, State, local and Tribal governments. Associated partnerships reduce costs and enhance credibility by fostering working relationships and common perspectives on natural resource management issues, and potential solutions. The assessment process helps the Forest Service and all stakeholders pull together existing information and identify what is known and what still needs to be learned about forest and grassland ecosystems.

The FY2001 Program Direction provides additional direction for watershed/landscape assessments. [Unlike the Committee of Scientists, which refer to landscape assessments as “small-scale assessments”, the FY2001 Program Direction refers to “small-scale assessments” as “watershed/landscape assessments” or “ecosystem analysis at the watershed or landscape scale”]

Assessments are an ecosystem analysis at the watershed or landscape scale. Their purpose is to identify and prioritize restoration and land management actions necessary to achieve management objectives for watersheds and landscapes ranging from 40-100,000 acres in size. They include characterizations of ecosystems establishing current and reference conditions, addressing changes in condition and explaining their significance, and identifying management issues and making recommendations based on the assessment.

Assessments will use an Ecosystem Analysis at the Watershed Scale (see <http://www.or.blm.gov/forestplan/watershed/watrtitl.htm>), and are to include an analysis of hydrologic condition and forest roads as part of the assessment process. Hydrologic condition assessments are outlined in "A Framework for Analyzing the Hydrologic Conditions of Watersheds" (USDA-FS/USDI-BLM, June 1998). Use the Roads analysis process in Forest Service publication FS-643, "Roads Analysis: Informing Decisions about Managing the National Forest Transportation System" (August 1999). The roads analysis outlines an integrated, science-based approach to transportation planning and is used to analyze impacts of existing and future management decisions.

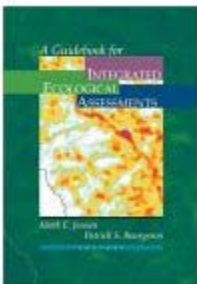
A Guidebook for Integrated Ecological Assessments

This Guidebook was developed over a 3-year period through a collaborative effort involving numerous federal agency, nongovernmental organization, and university personnel. The Ecosystem Management Staff Group and Interregional Ecosystem Management Coordination Group provided the original idea and primary funding.

The Chapters in this Guidebook range from overviews of basic ecological principles, to suggestions concerning ecosystem characterization and analysis, to systematic reviews of selected case studies. In this respect, the guidebook provides both theoretical and practical advice for future ecological assessments given specific land use planning objectives.

A Guidebook for Integrated Ecological Assessments

by [Mark E. Jensen](#) (Editor), [Patrick S. Bourgeron](#) (Editor)



- **Paperback:** 552 pages
- **Publisher:** Springer Verlag; (April 2001)
- **ISBN:** 0387985832
- **Price:** **\$75.48**