

Social and Economic Effectiveness Monitoring
Northwest Forest Plan

2001 Annual Summary Report

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Executive Summary

This report is the first annual summary of activities accomplished by the Social and Economic Module of the Northwest Forest Plan Interagency Regional Monitoring Program. The purpose of the Social and Economic Monitoring Module is to assess the status and trends of social and economic effects of federal forest management upon local communities within the Pacific Northwest. Accordingly, the program must 1) identify indicators appropriate for describing and assessing social and economic change at the local community level, and 2) identify credible links between federal forest management and such change.

During 2001 the Social and Economic Monitoring Interagency Team focused on identifying and refining feasible monitoring options. In this effort, the Team worked with researchers at the University of Washington under a cooperative agreement administered by the US Geologic Survey.

Development of the monitoring program has progressed as a two-part process. During 2001, Phase I was completed. The Phase I report reviews available information, and recommends developing a community-level model and data collection strategy. Work in 2002 will focus on clarifying monitoring objectives, completing and revising the monitoring framework, and finalizing monitoring objectives and data collection and analysis protocols. A final framework document outlining options for monitoring is expected in 2002.

Overcoming incompatibilities between published data and agency information needs has been a constant consideration. Federal and state government agencies including the US Census, US Bureau of Labor Statistics, and state employment departments publish credible data tracking numerous social and economic indicators. Issues of scale and timeliness, however, pose a challenge in using published data to obtain meaningful results. For example, much economic data is reported at the county scale. However, rural residents may not consider county boundaries meaningful in describing their local communities.

Costs and other issues associated with collecting primary data at the local community level has been a second critical issue. During 2001 the Interagency Team carefully considered a community-level individual survey approach, but rejected it as infeasible due to its significant drawbacks.

Table of Contents

Page

1. Title Page	1
2. Executive Summary	2
3. Introduction	4
4. Expectations	4
ROD Monitoring Charge	4
Ten-Year Report	5
5. Monitoring Program Development	5
Phase I	5
Phase II Preliminary Report	6
Monitoring Framework	6
6. Monitoring Program Considerations	8
7. Recommendations for the Upcoming Year	9
8. Literature Cited	10
9. Information Road Map	11
10. Budget Information	12

Introduction

In the early 1990s, forest-associated communities in the Pacific Northwest, still struggling with the legacy of recession and timber industry consolidation in the 1980s, were met with new restrictions for cutting timber on federal lands. Concerns over potential cumulative impacts to local communities led to a focus on human and economic dimensions as a guiding principle for the Federal Ecosystem Management Assessment Team (FEMAT 1993:ii).

Accurately discerning the significance or causes of local economic or social change, however, is problematic. This is particularly true when attempting to determine the impacts of a large-scale, regional forest plan on a large but variable set of local communities, each with its own unique social and economic relationships to federal forest management and larger social and economic trends. The lack of data tracking movement of timber to processing sites in various counties and communities is a central issue. The need to re-aggregate published data, or to gather new data, to describe meaningful community units is also problematic. What is known is that small, rural counties in the Pacific Northwest generally fare worse economically than metropolitan counties (e.g. Sommers 2001).

If appropriately designed, a monitoring effort can be used to meaningfully describe social and economic conditions and changes at the local level. However, there is agreement among social scientists that, rather than attempting to specify the causes of such change, current work should focus on exploring statistical relationships in order to enrich understanding of the links between federal forest management and community-level social and economic conditions.

Further, an operational definition of the term *community* is needed as a basis for monitoring. A core set of indicators suitable for describing and assessing social and economic trends must be selected and embedded in a model positing relationships between these trends as described at the community level and federal forest management. Once this is accomplished, an enhanced understanding of the strength of associations between various facets of forest management, local community characteristics, and local economic and social change can be developed.

Expectations

ROD Monitoring Charge

The Record of Decision for the Northwest Forest Plan (ROD: USDA Forest Service and USDI Bureau of Land Management 1994) requires the implementation of a monitoring strategy to respond to the question:

- *Are local communities and economies experiencing positive or negative changes that may be associated with federal forest management?*

The ROD lists eight types of variables that may be important for monitoring community social and economic conditions and trends. However, neither the ROD nor the Federal Ecosystem Management Assessment Team (FEMAT 1993) specify data collection protocols or analysis methods to respond to the monitoring charge.

Ten-Year Report

Monitoring results and analysis will be made available in a report to be issued in 2004. The report will include and synthesize results from all modules functioning in the Northwest Forest Plan Interagency Monitoring effort.

Monitoring Program Development

Phase I

In 1999 the NWFP Social and Economic Interagency Monitoring Team finalized a cooperative agreement with researchers at the University of Washington to establish a research framework, collect and evaluate readily available data, and estimate the feasibility of developing a monitoring design responsive to the ROD. The agreement was coordinated by the USGS Forest and Rangeland Ecosystem Science Center's Cascadia Field Station.

In early 2001 the Team received the report, entitled *Monitoring Social and Economic Trends in the Northern Spotted Owl Region: Framework, Trends Update, and Community-Level Monitoring Recommendations* (Sommers 2001). The document establishes that the relevant literature provides no generally accepted theoretical model or framework specifying links between federal forest management and social and economic change at the local community level. Accordingly, the author proposes to examine published data in the context of a regional economic framework. After specifying a regional model, the author examines available county-level data to determine whether they confirm some key linkages proposed in the model.

The examination of the data does not reveal any systematic association between county-level timber harvest trends, and forestry and wood products employment at the county level. Interpretation of this finding is complicated by a lack of published data measuring timber flows across county lines. The report does however identify an association between timber harvest and mill output at the regional level. This association is also difficult to interpret due to probable interaction between employment, rapidly changing technology, and overall market conditions. The author verifies that metropolitan counties in the Pacific Northwest consistently performed better than rural counties in terms of employment growth and wage changes from 1989 to 1997.

Given these findings, the author proposes a revision of the model to be applied at the community level. Testing such a model requires assembling community-level data

measuring economic flows into and out of particular communities. Previous research in the field indicates that such an approach is feasible (e.g., Robison 1996, Gibson and Glenn 1999). A community-level data collection research strategy would be essential to such an approach to directly measure economic flows.

Phase II Preliminary Report

Based on the Phase I findings, the Team modified the research agreement to include a second document, a preliminary report for Phase II of the strategy. The report is intended to outline a potential community-level data collection and research strategy to measure forest-related economic flows into and out of local communities.

Data collection methods for a proposed indicators approach were tested in Forks, Washington in October 2001. The researchers interviewed 18 long-time residents, and assembled readily available economic and social data. The test confirmed the difference in results yielded by county-level vs. community-level inquiry. For example, residents identified a “West End” area of the Olympic Peninsula as their home community, rather than associating themselves primarily with the Forks Census designation. A draft report was issued, and peer review completed in early 2002. A final report is expected in July 2002.

Monitoring Framework

In 2002 the Team will complete the framework for finalizing the monitoring strategy. The document will provide a basis for decision-makers to compare the technical, operational, and fiscal merits of several possible monitoring designs. Options developed in the framework will provide answers to the following key questions, based on the monitoring charge in the ROD:

- *Are local communities and economies experiencing significantly positive or negative conditions or trends that may be associated with federal forest management?*

Consistent with the original charge to the Assessment Team, a key objective of the program may be to identify local communities that are faring particularly well, as well as those that are suffering. An innovative approach to delineating local communities, developed through USFS PNW research, and based on US Census block group aggregates, may be adopted. Benchmarks may be developed for key social and economic variables. Response variables may include unemployment, income, poverty, and other socioeconomic attributes. Consistent with Civil Rights legislation, analysis strata where possible will include those based upon demographic attributes.

Potential sub-questions

- Is community well-being significantly higher or lower than benchmark?

- Is the community's economic base significantly stronger or weaker than benchmark?
 - Potential response variables
 - Wood-products-associated unemployment
 - Total unemployment
 - Per-capita income or income disparities
 - Level of poverty and poverty intensity
 - Potential analysis strata
 - Community racial and ethnic composition and change
 - Community age composition and change

- *Have changing federal forest management and change in local economic and social trends been significantly associated?*

This part of the effort can help agency planners to better understand the degree to which change in Pacific Northwest communities has been associated with changing federal forest management. Variation in economic and social trends for specified community types during the study period can be reported for use in adaptive management. Findings can be integrated into testing of a community typology (below), and can also be integrated into an improved model linking federal forest management with social and economic effects at the community level.

Potential sub-questions

- Have local trends in community well-being changed significantly during implementation of the Northwest Forest Plan?
- Have local trends in community economic base changed significantly during implementation of the Northwest Forest Plan?
 - Potential response variables
 - Wood-products-associated unemployment
 - Total unemployment
 - Per-capita income or income distribution
 - Level of poverty and poverty intensity
 - Potential analysis strata
 - Population size
 - Degree of rurality
 - Degree of proximity to public lands
 - Amount of local NWEAI relief
 - Mill presence

- *Are the differing economic and social conditions and trends experienced by Pacific Northwest communities significantly associated with certain community characteristics?*

This facet of the monitoring effort can identify community types where economic and social impacts may be more likely – or unlikely -- given changes in federal forest management. Relative degrees of association between community characteristics such as population, rurality, proximity to public lands, and federal relief; and local socioeconomic change can be determined. Data associations can be reported, and used in refined hypothesis testing.

Potential sub-questions

- To what degree have various community population sizes been significantly associated with different local socioeconomic trends?
- To what degree have various degrees of rurality (as measured by service center order) been significantly associated with differing local socioeconomic trends?
- To what degree have various levels of proximity to public lands been significantly associated with differing local socioeconomic trends?
- To what degree have various amounts of relief locally delivered via the Northeast Economic Adjustment Initiative been significantly associated with differing local socioeconomic trends?
- To what degree has local mill presence or absence been significantly associated with differing local socioeconomic trends?
 - Potential response variables
 - Community well-being
 - Economic base
 - Potential explanatory variables
 - Population size
 - Degree of rurality
 - Degree of proximity to public lands
 - Amount of local NWEAI relief

Monitoring Program Considerations

One of several options carefully considered by the researchers and the Interagency Team during 2001 was the implementation of longitudinal surveys of individual community members. Such surveys could track economic change at the level of a fundamental economic unit, the local business. Surveys could also be used to track socioeconomic change at the level of a fundamental social unit, the household. By linking individual economic experience with household outcomes, the survey method would be likely to yield meaningful results. However, the administration of community surveys would be prohibitively expensive, would potentially miss significant portions of the community, and raises concerns over individual privacy. The use of longitudinal surveys to monitor change would also require a means of tracking large numbers of individuals moving among communities or into and out of the region. Given these significant drawbacks, the Team found the survey approach to be infeasible.

Recommendations for the Upcoming Year

Preliminary review of results to date indicates a need to clarify monitoring objectives, as well as the theoretical or conceptual framework of economic and social change to be applied using an indicators approach. An operational definition of the term *community* needs to be developed and applied in order to delineate the full population of communities across the Pacific Northwest. A tightened and complete framework is needed to provide a solid basis for identifying meaningful indicators to be monitored, as well as data sources at the appropriate reporting scales, measures, and frequencies. Monitoring program development can then focus on finalizing data collection and analysis protocols for an indicators approach to be implemented at the community level.

Literature Cited

[FEMAT] Forest Ecosystem Management Assessment Team. 1993. Forest Ecosystem Management: An Ecological, Economic, and Social Assessment. USDA Forest Service, USDC NOAA National Marine Fisheries Service, USDI Bureau of Land Management, USDI Fish and Wildlife Service, USDI National Park Service, and US Environmental Protection Agency. July 1993.

Gibson, Lay James, and Glenn, Erik. 1999. The Round Valley region economic base study: A generic case study of three hypothetical communities. Economic Development Review, Fall 1999, pp. 53-62.

Robison, M. Henry. 1996. "Community Input-Output models for rural area analysis: with an example from central Idaho." Moscow: Economic Modeling Specialists, October 1996.

Sommers, Paul. 2001. Monitoring Socioeconomic Change in the Northern Spotted Owl Region: Framework, Trends, and Community Level Monitoring Recommendations. Technical Report. USGS Forest and Rangeland Ecosystem Science Center, Cascadia Field Station, College of Forest Resources, Seattle, Washington. February 2001. (full document posted at www.reo.gov/monitoring)

[ROD] USDA Forest Service and USDI Bureau of Land Management. 1994. Record of Decision for Amendments to Forest Service and Bureau of Land Management Plans Within the Range of the Northern Spotted Owl. Washington, D.C. April 13, 1994.

Information Road Map

Key Partners

USGS Forest and Rangeland Ecosystem Science Center
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Website

Descriptions of the monitoring modules are available to clients and the general public through an Interagency Regional Monitoring website at <http://www.reo.gov/monitoring>.

A brochure featuring highlights of Monitoring Program elements is also available from USDA Forest Service, Pacific Northwest Region, Public Affairs Office.

Budget Information

1.a Cooperative Agreement between USGS and the University of Washington for development of a socio-economic monitoring plan for the NWFP.

The agreement was reached in order to establish a research framework, collect and evaluate readily available data, and estimate the feasibility of developing a monitoring design at the community level.

USGS Cooperative Agreement 1434-98HQAG2200 Subagreement 98200HS005

Obligated: FY99 - \$27,000

Final Report: Sommers, Paul. 2001. *Monitoring Socioeconomic Trends in the Northern Spotted Owl Region: Framework, Trends Update, and Community Level Monitoring Recommendations*. Technical Report. USGS Forest and Rangeland Ecosystem Science Center Cascadia Field Station. College of Forest Resources, Seattle, Washington. February 2001.

1.b Assistance Modification to Cooperative Agreement between USGS and the University of Washington for development of a socio-economic monitoring plan for the NWFP.

The cooperative agreement was modified to detail and test an appropriate community-level monitoring methodology. The change agreement added \$25,000 to the budget for additional work in an amended statement of work.

USGS Cooperative Agreement 98HQAG2200 Subagreement 98200HS005

Obligated: FY01 - \$25,000

Draft Report: Sommers, Paul, Lee, Robert G., and Jackson, Elizabeth. 2002. *Monitoring Economic and Social Change in the Northern Spotted Owl Region: Phase II - Developing and Testing an Indicators Approach*. Draft Technical Report. USGS Forest and Rangeland Ecosystem Science Center Cascadia Field Station. College of Forest Resources, Seattle, Washington. January 2002.