

Fallen Bear - Economic Report

James McFarland

September 15, 2008

Introduction

The management of the Idaho Panhandle National Forests (IPNF) has the potential to affect local economies. People are an important part of the ecosystem. Use of resources and recreational visitation to the Forest generate employment and income in the surrounding communities and counties and generate revenues that are returned to the federal treasury. This section presents concepts used to delineate an affected area and methods used to analyze the economic effects of the project, including the project feasibility, financial efficiency, and economic impacts.

Regulatory Framework

NEPA requires that consequences to the human environment be analyzed and disclosed, based on issues. NEPA does not require a monetary benefit-cost analysis. If an agency prepares an economic efficiency analysis, then one must be prepared and displayed for all alternatives [40 CFR 1502.23].

OMB Circular A-94 promotes efficient resource use through well-informed decision-making by the federal government. It suggests agencies prepare an efficiency analysis as part of project decision-making. It prescribes present net value as the criterion for an efficiency analysis.

The development of timber sale programs and individual timber sales is guided by agency direction found in Forest Service Manual (FSM) 2430. Forest Service Handbook (FSH) 2409.18 guides the financial and, if applicable, economic efficiency analysis for timber sales.

Analysis Area

The analysis area for the efficiency analysis is the Idaho Panhandle National Forests. The analysis area for the affect on jobs and income is comprised of Boundary, Bonner, Kootenai, Benewah, and Shoshone Counties in Idaho.

Affected Environment

The combination of small towns and rural settings, larger towns such as Coeur d'Alene, Idaho, and the urban area of Spokane, Washington create a diverse social environment for the geographical region around the Idaho Panhandle National Forests. Local residents pursue a wide variety of life-styles, but many share a common theme, an orientation to the outdoors and natural resources, especially within the smaller communities. This is evident in both vocational and recreational pursuits including employment in logging and milling operations, outfitter and guide businesses, hiking, hunting, fishing, camping and many other recreational activities.

Timber, tourism and agricultural industries are important to the economy of local areas. Despite the common concern for, and dependence on, natural resources within the local communities, social attitudes vary widely with respect to their management. Local residents hold a broad spectrum of perspectives and preferences ranging from complete preservation to maximum development and utilization of natural resources.

Timber management activities within the project area have the potential to impact the economic conditions of local communities and counties. To estimate the potential effect on jobs and income, a zone of influence (or impact area) was delineated. Counties were selected based on commuting data suggesting a functioning economy and where the timber is likely to be processed (log flows). Recent data on log flows from the IPNF was provided by the University of Montana's

Bureau of Business and Economic Research. The zone of influence for this project is comprised of Boundary, Bonner, Kootenai, Benewah, and Shoshone Counties in Idaho.

A comprehensive socio-economic analysis and social assessment was completed during the revision of the forest plan. See the social and economics section of Chapter 2 of the Analysis of the Management Situation for the revised Forest Plan (March 2003) and the Social Assessment for the Idaho Panhandle National Forests (Parker and others 2002) for a description of the employment, income and social composition of the counties comprising the analysis area and the impact on each county from management of the Idaho Panhandle National Forests. These assessments indicate the counties within the analysis area are affected by timber management on the forest.

Analysis Methods

Project salability relies on the Region 1 Transaction Evidence Appraisal (TEA) System. The TEA uses regression analysis of recently sold timber sales to predict bid prices. The most recent appraisal model for the area of interest was used to estimate the stumpage value (expected high bid resulting from the timber sale auction) for the timber project. The estimated stumpage value for each alternative was compared to the base rates (revenues considered essential to cover regeneration plus minimum return to the federal treasury) for that alternative. The project is considered to be feasible if the estimated stumpage value exceeds the base rates. If the feasibility analysis indicates that the project is not feasible (estimated stumpage value is less than the base rates), the project may need to be supplemented with contributed funds if actual bids do not exceed base rates. There would also be an increased risk that the project would not attract bids.

Financial efficiency considers anticipated costs and revenues that are part of Forest Service monetary transactions. Present net value (PNV) is used as an indicator of financial efficiency and presents one tool to be used in conjunction with many other factors in the decision-making process. PNV combines benefits and costs that occur at different times and discounts them into an amount that is equivalent to all economic activity in a single year. A positive PNV indicates that the alternative is financially efficient.

Economic efficiency uses the cost and revenue estimates included in the financial analysis and adds other economic costs and benefits that are not part of Forest Service monetary transactions. This analysis considers the quantifiable market and non-market benefits and costs associated with implementing each alternative. As with financial efficiency, a PNV is calculated to determine efficiency. An example of a non-market benefit or cost is an increase or decrease in recreation. A value for recreation visitor use would be derived from local or regional studies. An economic efficiency analysis is not required (FSH 2409.18, 30), and would only be included in this analysis if it was a public issue and there are predicted changes to quantifiable non-market benefits or costs from the project.

Many of the costs and benefits associated with a project are not quantifiable. For example, the benefit to wildlife from habitat improvement or the cost associated with the degradation of visual quality from a project is not quantifiable. These costs and benefits are described qualitatively, in the individual resource sections of this document. Title 40, Code of Federal Regulations for NEPA (40 CFR 1502.23) indicates "For the purposes of complying with the Act, the weighing of the merits and drawbacks of the various alternatives need not be displayed in a monetary cost-benefit analysis and should not be when there are qualitative considerations."

Management of the forest is expected to yield positive benefits, but not necessarily financial benefits. Costs for various vegetation, recreation, wildlife, road and burning activities are based on recent experienced costs and professional estimates. Non-harvest related costs are included in the PNV analysis, but they are not included in appraised timber value.

Environmental Consequences

Project Salability

The estimation of project salability was based on a transaction evidence appraisal model, which took into account logging systems, timber species and quality, volume removal per acre, lumber market trends, costs for slash treatment, and the cost of specified roads, temporary roads and road maintenance (E-8). The estimated high bid (stumpage value) for each alternative is displayed in Table 1-1. The estimated high bid for Alternatives B and C indicate that the project is feasible. The revenue estimates from the salability analysis are used in the financial efficiency analysis discussed below.

Financial and Economic Efficiency

The financial efficiency analysis is specific to the timber harvest and ecosystem management activities associated with the alternatives (as directed in Forest Service Manual 2400-Timber Management and guidance found in the Forest Service Handbook 2409.18) Costs for sale preparation, sale administration, regeneration, and ecosystem restoration are included. The specialists on the project interdisciplinary team developed all costs, timing, and amounts. The expected revenue for each alternative is the corresponding estimated stumpage value from the transaction evidence appraisal equation (Table 1-1). The PNV was calculated using Quicksilver, a program for economic analysis of long-term, on-the-ground resource management projects (E-1). A four percent discount rate is used over the seven year project lifespan (2010-2017). For more detailed information on the itemized cost and benefits see the project file (E-2, 3).

This analysis is not intended to be a comprehensive benefit-cost or PNV analysis that incorporates a monetary expression of all known market and non-market benefits and costs that is generally used when economic efficiency is the sole or primary criterion upon which a decision is made. Many of the values associated with natural resource management are best handled apart from, but in conjunction with, a more limited benefit-cost framework. These values are discussed throughout this document, for each resource area.

Changes to resources like fisheries habitat, wildlife habitat, soils and hydrology were measured using changes to conditions and are not described in financial or economic terms for this project. See the *Fisheries, Wildlife, Soils, and Water* sections of this document. Recreation levels are expected to change, are discussed in the recreation section of this document, and were not included in the economic efficiency analysis.

Planning costs (NEPA) were not included in any of the alternatives since they are cost that are incurred no matter which of the alternatives are chosen.

Table 1-1 summarizes the project feasibility and financial efficiency, including the estimated stumpage value, total revenue, and PNV for each alternative. Because all costs of the project are not related to the timber sale, three PNVs have been calculated. One PNV indicates the financial efficiency of the timber sale, including all costs and revenues associated with the timber harvest. The second PNV includes all costs for proposed ecosystem projects including precommercial timber stand improvement, riparian planting, and culvert replacement. The third PNV includes all costs for each alternative, including desired ecosystem management projects that would occur in conjunction with the timber sale.

Table 1-1 indicates Alternative B is financially efficient for the timber sale and all proposed ecosystem management costs. The No-Action Alternative, Alternative A, has no costs or revenues associated with it. Of the action alternatives, Alternative B has the highest timber sale PNV at \$578,608 and the highest PNV for the timber sale plus other proposed ecosystem management costs, at -\$336,709. Alternative C has a lower timber sale PNV due to the reduced acres of treatment and also has a higher cost of ecosystem projects. The higher cost of ecosystem projects is due to the reduced amount of Road Prescription C and D covered in the timber sale.

A reduction of financial PNV in any alternative as compared to the most efficient solution is a component of the economic trade-off, or opportunity cost, of achieving that alternative. The No-Action Alternative would not harvest timber, plant trees, or take other restorative actions and, therefore, incur no costs. As indicated earlier, many of the values associated with natural resource management are non-market benefits. These benefits should be considered in conjunction with the financial efficiency information presented here. These non-market values are discussed in the various sections this document.

Cumulative Effects

Many factors influence and affect the local economies, including changes to industry technologies, economic growth, international trade, and the economic diversity and dependency of the counties. This project is not expected to have any cumulative effect. However, the jobs and income associated with the action alternatives may bring the local economy some increased relative stability during the life of the project. Alternatives B and C are anticipated to create woody biomass that would be available for the use of the Heyburn Elementary – Forest Woody Biomass for Energy project.

Table 1-1 Project Feasibility and Financial Efficiency Summary (2008 dollars)

		Alternative B	Alternative C
Timber Harvest Information	Acres	483	294
	Volume (CCF)	16,469	9,721
	Predicted High Bid (\$/CCF)	\$38.00	\$43.92
	PNV	\$578,608	\$394,736
Proposed Ecosystem Projects	PNV	-\$915,317	-\$980,872
Timber Harvest & Proposed Ecosystem Projects	PNV	-\$336,709	-\$586,136

Bibliography

Parker Ph.D., Julia, J.D. Wulfhorst Ph.D. and Jennifer Kamn. August 31, 2002. Social Assessment for the Idaho Panhandle National Forest, Final Report. University of Idaho.

USDA Forest Service, Kootenai and Idaho Panhandle National Forest. 2003. Analysis of the Management Situation for Revision of the Kootenai and Idaho Panhandle Forest Plans.