

Forest Econ Inc.
Forest & Natural Resources Economists
Moscow, Idaho

A Critical Review of “Economic Analysis of Critical Habitat Designation for the Southern Selkirk Mountains Population of Woodland Caribou” by Industrial Economics Inc for the US Fish and Wildlife Service

June 8, 2012

Background

On May 31, 2012, the US Fish and Wildlife Service (F&WS) released an economic impact analysis of woodland caribou critical habitat designation. The report is titled “Economic Analysis of Critical Habitat Designation (CHD) for the Southern Selkirk Mountains Population of Woodland Caribou.” It was prepared by Industrial Economics Inc. (IEc) of Cambridge, Massachusetts.

The Idaho State Snowmobile Association (ISWSA) asked Forest Econ Inc. (FEI) to read this report and comment on the completeness, accuracy and relevance of the report content. ISSA chose FEI for the review because we had also just completed an analysis of caribou recovery economic impacts in northern Idaho that have occurred since the injunction requiring habitat designation in 2006.

Two FEI analysts read the IEc report and submitted comments. They were Dr. Dan Green, regional economist, and Dr. Charles McKetta, natural resources economist. The following is a synthesis of their critiques.

F&WS took a narrow view of relevant economic effects.

The time horizon for relevant effects is six years too short

In the F&WS memorandum of analytical instructions,¹ IEc was directed to use an incremental “with and without” CHD impact definition. The baseline was narrowly defined to be subsequent to the date of actual designation of CHD which has yet to occur. IEI defended their narrow incremental estimates with carefully chosen legal citations that marginalized case law requiring a comprehensive effects analysis and emphasized cases and examples where a looking at only incremental effects had been considered a sufficient effort.

¹ Included as appendix C of the IEc report

This limited the relevant time horizon to consider only effects that would occur after a hypothetical “official” CHD sometime in 2012. This approach completely ignores *de facto* and fully functional critical habitat identification and associated land use restrictions that were imposed on F&WS and federal land managers by the judiciary.² A 2012 start date rationalizes away as irrelevant most of the significant community economic effects that began to occur with the *de facto* requirements.

From an economic standpoint, six years of large interim effects and the stigma of CHD eventually making the changes permanent caused real and significant changes in the local recreation opportunity set and in the business that serve tourism. IEc was directed to ignore this entire set of local economic impacts. Our analytical opinion is that economic theory would hold that these interim effects were a relevant part of CHD development and should have been included in the IEc analysis.

Affected sectors and social groups are ignored

Many significant economic sectors are ignored in the analysis of effects. When considering government agencies, most of the costs of interacting with local government and law enforcement were ignored. State agency interaction costs were minimized. The forestry/wood products sector was under-assessed. The tourism sector effects were intentionally defined away. The loss of mining opportunities does not appear. In social considerations, potential limits on Native American and poor Caucasian subsistence hunting and collecting are not considered. Although the potential for additional litigation costs is mentioned, there is no analysis. Finally, there is no measurement of environmental justice, and there should be when the poorer segments of a community would bear the costs of supposed environmental gains.

Normal Impact Analytical Methods were Avoided

IEc rationalized not using Input-Output (I/O) modeling. Their explanations on problems with I/O models are misleading. They improperly dismissed the public policy analysis tool most used by governments. The federal government originally developed the two most widely used IO models IMPLAN and RIMS. I/O models are used in almost every other federal impact analysis study because they provide a detailed view of how impacts would be distributed—identifying who gains and who loses is a vital welfare criterion in public policy decisions.

While I/O models do have only a static view of the economy, the time response to impacts is not relevant to the scale and scope of impacts. IEc also argues that I/O models do not consider that people laid off by impacts find other new jobs elsewhere. Excess labor supply lowers local wages. While laid-off people may find work in other new jobs,

² The original Defenders of Wildlife complaint to the US District Court of The Eastern District of Washington and the stipulated settlement agreement with USF&WS both speak to CHD and the interim management efforts until the official CHD is achieved.

the new jobs would have been filled by someone else. IEc seems to be arguing that USF&WS can take credit for providing lower wage labor to other industries.

The most common reasons for avoiding I/O impact analysis, the costs of expertise to build such models and the need to calibrate them with local survey data was not cited. In our own survey of local stakeholders and key informants, we encountered no reference to IEc field operations on this case.

The IEc Administrative Costs are Low

IEc used an Engineering cost approach to estimate the time for interagency and intergovernmental consultation and attached labor costs to the time estimates. They found only 1.5 million in total costs. These are ESA Section 7 consultation costs between federal government agencies only. That amount is not enough to fund two full time federal employees with benefits. These estimates ignore new interactions that would have to occur with Idaho Fish and Game (IF&G), Idaho Department of Lands (IDL), local county government and multiple jurisdictions of law enforcement,

IEc Totally Ignored High Recreation Sector Costs

Most of the north Idaho recreation sector losses already occurred between 2006 and 2012 as a result of the *de facto* caribou habitat designation. The F&WS direction to analyze only new incremental effects rationalized ignoring this largest of impacts sectors. The Selkirk Mountains had been a popular destination for dispersed recreation. The access restrictions caused by the 2006 *de facto* habitat designation virtually ended high country access for many activities. These included dispersed summer motorized access, dispersed winter motorized access, subsistence collections, hunting, hiking, and sightseeing.

At the request of the Idaho State Snowmobile Association (ISSA), FEI analyzed the recreation sector losses associated with only the snowmobile restrictions. We found that the *de facto* designation restrictions had almost completely eliminated snowmobiling as a destination sport and had closed much of the tourist service sector that had supported it. An FEI field study found that only 3 of 13 snowmobile sales operations survived, none of the rental operations still exist, and winter resort and restaurants suffered huge business declines. The impacts were concentrated in the less diversified communities. The hardest hit was Priest Lake where the once thriving winter economy has almost disappeared.

Although F&WS rationalized away the relevance of these effects in their instructions to IEc, FEI measurements indicate that snowmobile restrictions alone caused locally large and regionally significant effects. Across north Idaho, there appears to have been a

regional loss of 894 jobs and earnings of \$21.5 million/year. Other constrained recreation activities such as ATV recreation, hunting and high country gathering were not measured, but would have to be added to this large set of impacts.

The IEc Forestry Sector Estimated Costs are Low

There is a small IEc estimated impact on timber tract owners and logging that would occur after CHD. IEc ignores the NPDES forest road point source permitting requirement that already establishes a federal regulatory nexus for all forest ownerships within the proposed boundary public and private. The basis for imposing new caribou recovery requirements on all state and private forest owners already exists.

There would be forestry impacts that would include the 65.2 thousand acres of the IDL Priest Lake Area on the west that IEc ignored, as well as the 15.4 thousand acres of industrial forest lands to the east that they included. IEc expected only small delays in private harvesting and used a historically low stumpage value to project them as expected future costs. When IDL calculated their own forestry sector impact expectations for F&WS, they estimated a harvest loss of 3.7 mmbf³/year valued at \$2.2 million. FEI reevaluated both the IDL public and IEc private estimates using a cross-constrained harvest reduction instead of a harvest delay approach and expects substantially higher expected effects. The harvest reduction would probably be in the vicinity of 14 mmbf/year and \$3.5 million of timber sale values lost. \$3 million of this is lost for the Idaho School Endowment Fund. A local direct reduction of 75 wood sector jobs becomes 126 total jobs across the region. FEI also found that this would cause a local timber supply constraint that would raise log costs to surviving regional mills.

IEc Treatment of CHD Benefits is Cursory

The IEc economic analysis was characterized as an economic efficiency analysis. Their economic efficiency evaluation is qualitative. It reaches the almost tautological conclusion that CHD must be desirable because it is a necessary step in endangered species recovery efforts required by the ESA.⁴

Social Welfare is maximized when Pareto conditions⁵ are met. The economic efficiency criterion for a particular public action is generally tested with some form of a benefit to cost comparison to evaluate expected changes in Net Social Welfare (NSW). This can be measured either in absolute terms or in marginal gains. IEc did neither. They calculated a restricted set of low costs and

³ Mmbf is millions of board foot Scribner scale

⁴ Endangered Species Act of 1973

⁵ A socially beneficial change is one that benefits some people without making others worse off. As most policy changes have some redistribution effects, there are also compensation criteria.

presumed that the potential benefits of an endangered species recovery outweighed them. There was no quantified test for NSW optimality. Their benefits enumeration generally referenced other studies on species existence values based on contingent valuation. Existence values are unique to specific cases. There was no specific analysis to substantiate the benefit values of this particular species listing or CHD.

In the north Idaho caribou case, a positive net social value (NSV) is not a foregone conclusion. Determination of positive returns to effort would have required some additional in-depth analysis. In CHD and continuing herd recovery efforts, F&WS will be investing a land asset worth half a billion dollars, innumerable person hours, and large recovery project budgets on what some biologists suggest may be a wasted effort. Somewhere in the vicinity of \$25 million in annual benefits, even if non-pecuniary, would be necessary to offset such substantial costs.

For that annual benefit stream to equilibrate with costs, the probability of recovery success would have to be 100%. Costs are certain, but the previous 28 years of significant investment in caribou habitat management and herd recovery attempts has ostensibly failed. There is extensive scientific debate on the viability of the remnant herd, their food and cover requirements, and their ineffective relationship with also endangered predators. The reviewers are not biologists and leave that resolution to experts.

In public or private project evaluation, the benefit of recovery has to be multiplied by the probability of success to get the expected value of the CHD. In this case, the low apparent probability of caribou recovery would significantly lower any level of expected annual benefits. As reviewers, we are not saying that the risk adjusted rate of return on further caribou investment is negative. We observe only that the IEC document does not present any substantive evidence that it is indeed positive.

Odd Insights on How a Regional Economy Functions

IEC posits that business adapts to regulatory impact. We agree, but that does not make the adaptation any less economically destructive. In past local responses to endangered species recovery, local business adaptation mechanisms included: permanent closures of sawmills in response to timber supply losses; resort, recreation services, and sales curtailments or closures; permanent reductions of land management staff and seasonal workers; increased unemployment, increased poverty, and spatial migration of workers.

An idea that regulation altering trade flows reduces impacts is also an odd one. In this case, fewer destination snowmobilers will visit, so less money will be spent on recreation or trip expenditures. Local sawmills will have to import more logs at higher costs lowering profitability and market competitiveness.

Synopsis

F&WS limited the IEI analysts to only the incremental analysis of a single paperwork step in what has otherwise been a long and costly recovery effort. Numerous sectors of an entire regional economy have already been negatively affected, and more will be. By artificially focusing on;y on the official dotting of i's and crossing of t's on a CHD document, this analysis has been reduced into a trite accounting of administrative consultation costs between bureaucracies.

In evaluating policy choices such as caribou recovery, there are two important questions that should have been asked. First, is social efficiency. Does this continuation of a species recovery process in converting *de facto* CHD into official CHD constitute a net gain in U.S. social welfare? Second, social equity. Who gains and who loses from the process?

A necessary and sufficient economic analysis would have met three criteria: (1) answer both questions completely including all the interests and communities affected by ongoing caribou recovery under either *de facto* or official CHD; (2) evaluate the recovery effort costs and benefits in cumulative terms (as required by NEPA⁶ and other rulings) rather than looking only at artificial and infinitesimal incremental steps such as issuing an artificial official CHD; and (3) quantify the results to the extent scientifically possible. This F&WS analysis violates all three criteria. FEI finds that caribou CHD, and the long on-going species recovery efforts have yet to be subjected to substantive economic analysis.

⁶ National Environmental Policy Act of 1969