EMPLOYMENT IMPACT OF MARBLED MURRELET LTCS: SCOPE OF WORK

Executive summary

This analysis will use both public and private economic models to estimate the impacts of an amendment to the State Trust Lands Habitat Conservation Plan for the marbled murrelet long-term conservation strategy on:

- the volume and value of timber harvested,
- the volume and value of lumber produced,
- the number of jobs across Washington and in specific counties by impacted sector,
- the state-wide and county-wide economic output, and
- annual revenue to DNR and to trust beneficiaries.

These will be estimated both state-wide and at the county level for three particularly timber-dependent counties—those immediately impacted by the marbled murrelet LTCS—and be presented with a range of the likely impacts.

Background

In December, 2016, the Washington Department of Natural Resources, together with the U.S. Fish and Wildlife Service, published a draft environmental impact statement (DEIS) on alternative amendments to DNR's 1997 State Trust Lands Habitat Conservation Plan, as required by both SEPA and NEPA These alternatives would replace the interim conservation strategy for the marbled murrelet with a long-term conservation strategy (LTCS). On November 7, 2017, the Board of Natural Resources (Board) selected a preferred alternative to be analyzed in a revised draft environmental impact statement (RDEIS). As a part of the RDEIS DNR will analyze the socioeconomic impacts of the preferred alternative. DNR and USFWS expect to release the RDEIS summer 2018. The Board expects to make a final decision on a marbled murrelet long-term conservation strategy amendment late 2019.

At the November 7, 2017 Board meeting, Commissioner of Public Lands Hilary Franz also directed staff to conduct an economic analysis on the impacts to jobs and the economic vitality in areas affected by the preferred alternative for the marbled murrelet long-term conservation strategy. This information was to support the work of the "Solutions Table," a forum for conservationists, businesses, economic development organizations, and state trust beneficiaries to come together to propose policies that will (1) mitigate impacts to, and create new economic opportunities in, our resource-dependent communities, and (2) identify proposals to further assist marbled murrelet recovery.

Subsequent to the November 2017 Board meeting, the legislature passed HB 2285. Among other things, HB2285 requires (1) that DNR prepare an economic analysis of the "losses and gains" of the proposed alternative by December 1st 2018, and (2) that the CPL create a marbled murrelet advisory committee (essentially, the Solutions Table that the CPL had already proposed).

The results of the economic analysis will complement the RDEIS, meet the needs of the HB 2285 economic analysis, and will inform the Solutions Table/advisory committee.

Losses and gains analysis

The legislation requesting information about the economic impacts of the marbled murrelet LTCS is unclear about exactly what is required. For instance, HB 2285 requests a 'losses and gains analysis'. However, there is no common understanding of what a 'losses and gains analysis' entails: it could mean a full cost benefit analysis or something more narrow. **DNR has interpreted the request as an analysis of the employment and wage impacts of the LTCS as well as the impacts on DNR and trust revenue.** Future iterations of this analysis can build from this core work to comprehend more impacts, if desired.

Project goal

The goal of this project is to provide useful economic insights on the effects of the proposed marbled murrelet LTCS to several groups of decision makers: the legislature, the Solutions Table, and the Board.

Scope

The report will compare jobs by sector and DNR/trust revenue under the interim strategy to those under the preferred LTCS alternative. The analysis will be done for the first 10 year period of the proposed LTCS, discounted to the fifth year. It will cover both the whole state as well as three counties identified as particularly susceptible to changes in timber output in the DEIS.

The economic analysis will use several approaches in order to compare model estimates. First, the Washington Input-Output model will be used to estimate the state-wide impacts on employment and wage income. These estimates will then be apportioned to counties using some reasonable metric (likely the share of the timber harvest reduction that will happen in those counties). This will be repeated using an IMPLAN state-wide model.

Finally, the analysis will also be done using the county level input-output models from IMPLAN. These will be done at the county level, so there will be no apportionment step.

Specifically, the analysis will include estimates of the change in:

- the volume and value of timber harvested,
- the volume and value of lumber produced,
- the number of jobs across Washington and in specific counties by impacted sector,
- the state-wide and county-wide economic output, and
- annual revenue to DNR and to trust beneficiaries.

Analysis method overview

The economic analysis will be primarily undertaken by the Economics Group (EG) of DNR, but will be dependent upon data supplied by the Forest Resources Division (FRD) of DNR. A forest estate model will be used by Forest Resources Division to generate a timber harvest volume projection. This model will generate estimates of volume, revenue, and net present value for western Washington state trust lands. Some finer scale estimates can be generated from this model. These data will be available in tabular form.

The EG will use the data from FRD as a basis for the analysis. In order to use the I-O model appropriately, the EG will need to estimate the total value of delivered logs. This means adding an estimate of the harvest and hauling costs to the stumpage estimates provided by FRD.

All of the change in timber output will be coming from DNR lands, meaning that the entire volume would not be available for export and would have otherwise gone to local mills. This means that the most appropriate impact to model is from a decrease in wood processing production. This will most likely be modelled by finding the level of wood processing output that demands the level of timber output found in the FRD output. This will likely mean that different levels of wood processing output are used for the different I-O models. The validity of this estimation method will need to be verified with I-O model experts.

The analysis will be done for a 10-year period (see the limitations section for the rationale for this decision). This will be done by using nominal annual estimates for the 10 year period and then discounting them to the fifth year and aggregating them. This will give, essentially, an average discounted value for the entire period.

Deliverables

Phase	Activity (responsible group)	Deliverable	Due Date
Phase 1: Estimate basic physicals (FRD)	• Estimate changes in harvest volume and value (FRD) • Work with Economics Group to ensure appropriate data structures (FRD)	• Estimates of the volume, revenue, and net present value for western Washington state trust lands	June 22, 2018
Phase 2: Brief and collect feedback from Solutions Table	• Brief Solutions Table on project scope. • Collect feedback from Solutions Table on project scope and make necessary adjustments to scope.	• July conference call to brief Solutions Table and collect feedback. • Adjust scoping document based on comments	TBD
Phase 3: Initial impact estimates (EG)	• Estimate changes in delivered log values based on stumpage revenue estimates from the FRD modelled harvest volumes and values at county and state level(EG) • Implement I-O models (both Washington I-O and IMPLAN) to find level of changes in wood processing output consistent with the change in delivered log values at ***state*** level(EG) • Apportion county impacts using county level proportion of log stumpage revenue changes from FRD data (EG)	• Outline of impacts, described in tables or graphically • Description of methods and models •	TBD
	• Implement I-O models to find level of changes in wood processing output	Outline of impacts, described in tables or graphically	TBD

	consistent with the change in delivered log values at ***county*** level(EG) • Compare impacts between I-O models and state and county estimates		
	• Draft introduction and background material for report (FRD) • Draft description of methods and models for report (EG) • Draft findings of modelling (EG)	• Draft report	TBD
Phase 4: Draft report	• Review and comment on initial draft (FRD)	• Comments and suggested changes to draft	TBD
	• Incorporate comments into updated draft (EG)	• Revised draft report delivered to DNR executives for review	TBD
	• Comments from executives on draft report	• Comments and suggested changes to draft	TBD
	• Incorporate feedback into final report	• Final report	TBD
Phase 5: Incorporate feedback and submit report (EG and FRD)			TBD

Limitations

There are a number of limitations to this analysis that should be kept in mind when reviewing the end analysis and this scope of work.

Input-Output models can be very useful models of economic impact for situations where an analyst is looking at situations where the only change in the economy is the one that is being modelled and that the size of the impact is not large enough to significantly change prices or change the purchasing relationships between industries. In the case of the LTCS analysis, this is a reasonable assumption for the state, but may not be entirely appropriate at every county level.

County level results should still be indicative of the impact of the changes due to the LTCS. However, the I-O models could overstate them if we don't explicitly include alternative potential revenue—such as recreation. Alternatively, it could understate them if the change in allowable timber harvest causes a threshold impact on an economy—for instance, if the decline in the amount of available timber in an area causes a mill to shut down entirely, instead of just decrease production.

Input-Output models specify the relationships between industries in the given year that they are produced, so analysis based on these types of models are essentially anchored to that year. The models are not capable of showing changes in the relationships between industries or between capital and labor that economists know happen over the long term. For instance, if an I-O model was run in the early 1990s attempting to estimate the economic impact of a mill opening up in rural Washington, it would wildly overstate the impact on employment in the area because it wouldn't have allowed for the technological advancements that allow mills to produce wood products with fewer employees. This is the primary reason that this analysis is limited to a 10-year period.

Other specific limitations include:

- No estimate of benefits of the LTCS
- No estimate of the potential changes to economic activities, such as increase recreation
- No estimate of the tax implications to counties or trusts
- No estimate of the revenue implications for specific trusts
- Estimates will be point estimates only, they will not provide a range of possible or likely outcomes

These considerations may be included in the future, if so desired.