SUSTAINABILITY ASSESSMENTS IN FOREST PLAN REVISIONS: BUILDING A FRAMEWORK FOR ASSESSING ECOLOGICAL CONDITIONS TO SUPPORT SPECIES DIVERSITY

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Forest Plan Revisions are beginning in Region 6 of the USDA Forest Service. Planning efforts are underway for the National Forests in Northeast Washington (NE WA) and Northeast Oregon (NE OR). These Forests have the option of developing plan revisions under either the 1982 Planning Direction or the new 2004 Planning Direction. Under either rule, the Forests will need to assess the Plan’s provision for maintaining viable populations (1982) or sustaining native species (2004) that occur in the planning area. Region 6 recognized the need to provide regional guidance for species assessment to help improve consistency and efficiency and reduce cost over the plan revision cycle. A work group has been formed to draft the process for testing on the NE WA planning cluster beginning in the fall of ‘04. Work group members include WO, RO, and NF biologists. A science team consisting of PNW scientists and the WO wildlife ecologist has been convened for the purpose of reviewing the draft process and providing input to its development.

It is expected that diversity for most species will be addressed through broad-scale or coarse filter assessments that address ecosystem diversity. For those species where ecosystem diversity provisions may be inadequate for providing ecological conditions capable of supporting populations, analysis and development of plan direction for species diversity will occur. Much of the information and context needed for the coarse filter ecosystem diversity assessment has already been done and documented in the Interior Columbia Basin Ecosystem Management Project (ICBEMP). This comprehensive, broad-scale assessment evaluated the current ecological conditions of the Basin with respect to historical conditions. For those species where ecosystem diversity provisions may be inadequate for providing ecological conditions capable of supporting populations, analysis and development of plan direction for species diversity will occur.

The assessment process for terrestrial species involves the following steps:

- Develop criteria for selecting species at risk and species of concern
- Identify species
- Group species by habitat associations and risk factors using cluster analysis
- Develop criteria for selecting focal species
- Select focal species based on habitat and risk factors
- Develop BBN model for each focal species
- Develop conservation strategies as part of assessment process
- Develop monitoring strategies

The draft assessment process utilizes habitat associations and risk factors to group and evaluate species. One or more focal species is selected to represent a larger group. It is assumed that if ecological conditions are met for the focal species representing the group, that ecological conditions will be provided for the larger group. Conclusions about habitat sustainability, risk factors and conservation measures for the larger group of species are made from analyzing these parameters for focal species representing the group.

The process employs Bayesian Belief Network models or BBNs. BBNs have been used in a number of assessments and publications (including ICBEMP) to consider empirical information and expert opinion together in an analysis framework that is transparent and repeatable. BBN models are developed using environmental parameters (e.g. habitat quality, quantity) and threat or risk factors (e.g. road density). Conservation approaches that influence parameters in the BBNs can vary by planning alternative and influence outcomes of the analysis. In
this way, current conditions and projected future conditions under various management scenarios can be compared and evaluated in the analysis. It is expected that the BBNs will be used to monitor ecological changes through the planning cycle.

Monitoring will be issue driven (e.g. uncharacteristic disturbance regimes; habitats outside of HRV; anticipated management activities such as prescribed fire). Monitoring priorities for species and habitats will be based on levels of risk and uncertainty from the analysis using a decision tree that factors in current and future management conditions and risk factors. In this approach, species and habitats with the highest degree of risk or uncertainty will be given the highest priority for monitoring. Not all species or habitats will be monitored. Monitoring strategies must be feasible, appropriate for the scale of risk, and designed within resource capabilities. In a majority of cases, it is assumed that monitoring can be accomplished by re-running BBN models at periodic intervals coincident with plan amendments or revisions.

SYNTHESIS REPORT - Conservation Approaches

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