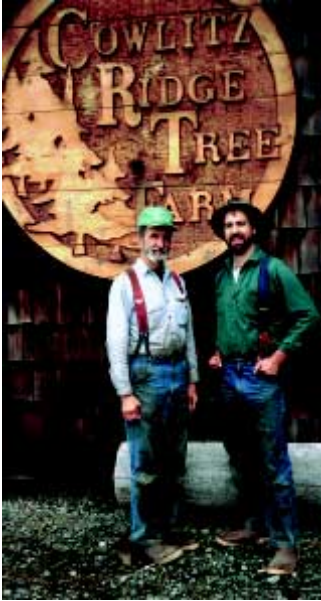


The Changing Face of HCPs

by Marj Nelson



Steve Stinson, right, pictured with his father Doug at their family's Cowlitz Ridge Tree Farm, is spearheading the development of an innovative HCP for Lewis County, Washington. This HCP will utilize adaptive management strategies to allow for continued timber harvest and other economic activity while conserving habitat for a variety of species, including the threatened northern spotted owl, pictured on opposite page.

Photo by Fae Marie Beck

Section 10 of the Endangered Species Act (ESA), as originally enacted in 1973, authorized permits for the taking of listed species by non-federal entities only under very limited circumstances.¹ These permitting provisions were not flexible enough to address situations in which a private landowner's otherwise lawful activities might result in limited incidental take of listed species, even if the landowner was willing to plan activities carefully to be consistent with the conservation of the species. As a result, Congress amended the ESA in 1982 to authorize the issuance of permits for incidental take of listed species in accordance with an approved Habitat Conservation Plan (HCP). By minimizing and mitigating the impact of the permitted incidental take, HCPs contribute to the long-term conservation of both listed and unlisted species.

As an incentive for non-federal property owners to make use of the HCP approach, the Fish and Wildlife Service and National Marine Fisheries Service developed the "No Surprises" policy to give economic and regulatory assurances on the overall cost of species conservation and mitigation. This policy states that an incidental take permittee will not be required to provide additional mitigation in the future beyond what was agreed to in the HCP, provided that the affected species were adequately covered and the permittee was properly implementing the HCP. The Services codified the No Surprises policy as a final rule in the February 23, 1998, *Federal Register*.

¹"Take" is defined in the Endangered Species Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."

Adaptive Management

In the June 12, 2000, *Federal Register*, the Services amended the HCP Handbook, both to reflect the No Surprises rule and to further enhance the HCP process through improvements in five areas: permit duration, public participation, monitoring provisions, establishment of clear biological goals, and adaptive management. As it is used here, the term "adaptive management" refers to an integrated method for addressing uncertainty in natural resource management (Holling 1978, Walters 1986, Gundersen 1999). It was adopted for natural resource conservation by Holling (1978), who described adaptive management as an interactive process that not only reduces, but benefits from, uncertainty. It may also be described simply as a structured process for learning by doing. A structured examination of alternative management strategies helps to address the potential uncertainties in achieving biological goals of an HCP.

At first glance, the concept of No Surprises assurances for permittees might seem to be at odds with the flexibility gained from incorporating alternative measures and adaptive management into HCPs. However, the No Surprises final rule solidifies the use of contingency planning in HCPs. The potential for "changed circumstances," a term formally defined in the No Surprises final rule, is considered during the development of HCPs. In addition, the addendum to the HCP Handbook emphasizes the up-front development and earnest implementation of a structured monitoring program within and between HCPs. Because the Service and the applicant provide these ele-



ments in the HCP and are aware of what will be required, they are consistent with the assurances of No Surprises.

HCPs that use adaptive management must contain the key components that make the adaptive process meaningful. These components include identifying potential uncertainties in the HCP, incorporating a range of alternatives for addressing those uncertainties, implementing a monitoring program to determine the success of the alternatives, and establishing a feedback loop from the monitoring program that allows for change in the management strategies, if needed.

Adaptive management may increase the complexity of an HCP. However, adaptive management strategies should be commensurate with the scope of the HCP (e.g., the smaller the scope or impacts, the less complex the HCP and any adaptive management strategy that may be warranted). Permit applicants and the Services can use adaptive management as a tool to meet the

statutory and regulatory criteria for HCP approval and the issuance of an incidental take permit. Adaptive management is also a means for increasing the flexibility of an HCP for permit applicants. Creating an HCP that is based on achieving results rather than fulfilling a list of prescriptive actions not only increases flexibility, it promotes desired biological outcomes. A results-oriented implementation program (such as adaptive management) allows a permittee to use a number of different methods for achieving a certain goal, rather than adhering to an inflexible list of prescriptions. In addition, a results-oriented program actually provides certainty to the permittee by establishing the framework for possible modifications in the HCP. Results are periodically assessed, and, if shortcomings are evident, previously agreed-upon alternative strategies are implemented, thereby streamlining discussions between the Services and permittee.

Northern spotted owls
USFWS photo



The Balcones Canyonlands Preserve in Travis County, Texas, has an area targeted for acquisition of habitat for the golden-cheeked warbler (*Dendroica chrysoparia*), above, black-capped vireo (*Vireo atricapillus*), and other species. Within the identified area, a target number of acres must be acquired for proper implementation of the Balcones Canyonlands HCP. Because the preserve is assembled over time, establishing a larger area from which to make acquisitions increases flexibility within the boundary while still meeting the conservation objectives of the HCP.

Photo by Steve Maslowski/USFWS

Many HCPs have incorporated contingency planning to some degree. However, they typically have not contained the formal structure for monitoring and feedback that would be part of a good adaptive management approach. Nonetheless, contingency plans do have value in achieving the conservation goals of an HCP. For example, many large-scale reserve-based HCPs outline areas of habitat to be conserved as mitigation for development and other impacts. Frequently, the area shown within the lines on the map is larger than the actual area to be preserved within those boundaries.

Contingency planning is often lumped together with adaptive management, particularly when implemented due to changed circumstances. In order to address changed circumstances, recent HCPs are bridging the gap between loosely structured contingency planning and more tightly structured adaptive management. In the adaptive management section of the City of Seattle's Cedar River HCP in the Pacific Northwest, there are contingency plans to be implemented in the event of various changed circumstances. For instance, in the event of a disease or insect outbreak, the City of Seattle may take measures to restore defoliated forest habitat by reprioritizing HCP funds for forest restoration or precommercial tree thinning.

One of the primary objectives of the HCP monitoring and research program is to assist the adaptive management process by providing information on the species of concern, testing critical assumptions in the plan, and providing a learning experience to refine management decisions. Key to the adaptive strategy are triggers that create the feedback loop from results from the monitoring program to changes in management. HCPs that have structured adaptive management strategies include Plum Creek Timber Company's Native Fish HCP and the Wisconsin Statewide HCP for the Karner blue butterfly (*Lycæides melissa samuelis*).

The Wisconsin Statewide HCP for the Karner Blue (see article in this issue) contains an adaptive management program that creates flexibility in meeting the biological goal of the HCP and the land management goals of the participants. The biological goal of the HCP is to insure the persistence of the endangered Karner blue butterfly on partner lands and work towards recovery on The Nature Conservancy lands and several State properties. Monitoring of Karner Blue populations is the cornerstone to the HCP's monitoring program. Habitat monitoring before and after treatments also play a role in the adaptive management strategy. The monitoring program will also evaluate the status and performance of the ongoing conservation management strategies. If the populations are significantly declining to meet a trigger then the responsible HCP partner may either conduct research or utilize current information to alter management. Changes may be made and the populations will continue to be monitored. Any good adaptive management program continues the feedback and evaluation even after initial management changes and in the Wisconsin Statewide HCP, if the species continues to decline despite initial efforts, other strategies will be put into play.

Newer HCPs are describing triggers and research up-front in order to provide more certainty in the implementation of the HCP. Plum Creek Timber Company's Native Fish HCP (NFHCP) contains a complex adaptive management program to learn and adjust the implementation of the HCP to achieve the biological goals. The biological goals of the HCP are the conservation of native salmonids through the maintenance of four conditions—cold water, clean water, complex habitat, and connected habitat (the HCP's biological goals). These biological goals are then broken down to fifteen habitat objectives. The NFHCP provides commitments to management actions for each of the habitat objectives. These manage-



ment actions are monitored to ensure that management action is implemented properly and that it is achieving its intended result. Thresholds are established to trigger an adaptive management response. The triggers themselves are adaptable through a collaborative management agreement process if they are determined to be either too sensitive or not sensitive enough. This is a simplistic description of the complex adaptive management program that also incorporates research; concurrent to implementation and monitoring of the HCP, Plum Creek will be investigating the effects of various management strategies in anticipation using the results of this research to alter management in the HCP on a larger scale.

We will continue to incorporate contingency planning within all types of HCPs. In the future, HCPs will have improved structure in their adaptive management strategies. While complex, investigative adaptive management strategies are better suited for large, complex HCPs, smaller plans can be designed for adaptability, especially if they are viewed as part of a more comprehensive conservation strategy. Increased structure in adaptive management strategies will require increased vigilance on the part of the permittees and the Service during implementation

of long-term plans; this reflects the nature of the conservation partnership created by HCPs.

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References

- Gunderson, L. 1999. Resilience, flexibility and adaptive management—antidotes for spurious certitude? *Conservation Ecology* 3(1): 7. <http://www.consecol.org/vol3/iss1/art7>.
- Holling, C. S. (ed). 1978. *Adaptive Environmental Management and Assessment*. Wiley, Chichester.
- Walters, C. 1986. *Adaptive Management of Renewable Resources*. Macmillan, New York.
- Plum Creek Timber Company. 2000. Plum Creek Final Native Fish Habitat Conservation Plan http://www.plumcreek.com/environment/hcp_links.html
- Wisconsin Department of Natural Resources. 1999. Wisconsin Statewide Karner Blue Butterfly Habitat Conservation Plan and Environmental Impact Statement. <http://www.dnr.state.wi.us/org/land/er/publications/karner/karner.htm>

Monitoring information obtained while implementing an HCP with Plum Creek Timber Company will improve conservation of the threatened bull trout.

Photos courtesy of Plum Creek Timber Co.