

**Excerpted Changes to the State
Trust Lands Habitat
Conservation Plan Amendment
As Permitted by USFWS**

The following two pages are excerpts from Appendix Q of the *Marbled Murrelet Long-term Conservation Strategy Final Environmental Impact Statement*. Appendix Q is DNR's proposed Amendment to the *State Trust Lands Habitat Conservation Plan*.

Changes that DNR staff made and submitted to U.S. Fish and Wildlife Service (USFWS) are summarized below and highlighted in yellow on the following two pages.

- Addition of one phrase and a new sentence on Page 10 to state that the analytical framework developed by DNR and USFWS provides methods for calculating adjusted acres for both take and mitigation.
- Addition of one phrase on Page 20 to clarify that implementation monitoring will include a summary of mitigation acres in both gross and adjusted acres.

DNR staff have determined that these changes will not result in substantive changes to the original language but will provide clarity.

murrelet habitat model, P-stage, to represent forest stands that express a likelihood of being occupied by murrelets. P-stage is based on a separate logistic regression model of marbled murrelet nesting habitat as it relates to stand development in natural forests (Raphael and others 2008). P-stage attempts to generalize and classify levels of habitat quality as they relate to forest stand characteristics. P-stage is constructed and used in a way that incorporates the uncertainty between occupancy and actual nest sites. For example, it groups stands with varying probabilities of occupancy into six classes (.25, .36, .47, .62, .89, and 1) (refer to Appendix C, Attachment C-3). Direct and indirect impacts described in this Amendment are related to their impact on existing and future murrelet habitat.

DNR's activities cause direct and indirect impacts to marbled murrelets. Timber harvest and thinning can remove current or potential future habitat and increase deleterious edge effects on nearby habitat. Roads and trails built for access to and through DNR-managed HCP lands can cause direct impacts by removing habitat and also increase disturbance effects by creating forest edges. Other disturbance effects including audio-visual disturbance, predator attraction, and impulsive noise can cause both direct and indirect impacts to nesting murrelets. Cumulatively, these impacts can result in reduced habitat quantity and quality (DNR and USFWS 2019). The Long-term Strategy described in this Amendment protects murrelet occupied sites and adds new areas in which murrelet habitat will be protected and developed over the life of the 1997 HCP, with the expectation that these areas will be occupied at some future time by murrelets.

5.2 Anticipated Take of the Covered Species

For purposes of this Amendment, take is described in terms of habitat as a surrogate for take of individual murrelets. "The marbled murrelet was federally listed as a threatened species mainly due to the substantial loss of older forest nesting habitat" (USFWS 1997, p. 4). It would not be practicable—and less meaningful—to attempt to express take as a number of individual murrelets. Methods used to enumerate individual murrelets contain weaknesses, due to the murrelet's small size, secretive nesting behaviors, and the vast plan area (1.38 million acres of DNR-managed HCP lands within the 55-mile inland range of the marbled murrelet).

The Long-term Strategy's use of habitat as a surrogate to express the anticipated level of take of individual murrelets is consistent with the *Habitat Conservation Planning and Incidental Take Permit Processing Handbook* (USFWS 2016). (Refer to Section 5.1 of this Amendment for a description of P-stage, the habitat model used in this Long-term Strategy). There are approximately 207,066 acres of marbled murrelet habitat on DNR-managed lands. To describe and compare habitat losses and gains over time and among diverse geographies within the plan area, habitat of various qualities and configurations was quantitatively adjusted according to the analytical framework to account for probability of occupancy, edge effects, location, and timing (refer to Appendix C, Attachment C-1). The calculation of take and mitigation for this Amendment is based upon the analytical framework and is represented as "adjusted acres." This

6.4 Adaptive Management

DNR's adaptive management obligations are not changed by this Amendment. Section 24.5 of the IA describes and governs DNR's adaptive management commitments under the 1997 HCP, including this Amendment. "Adaptive management provides for ongoing modifications of management practices to respond to new information and scientific developments. The monitoring and research provisions of the 1997 HCP are in part designed to identify modifications to existing management practices" (DNR 1997, p. B.10). Section 24.5 of the IA identifies two murrelet-specific adaptive management practices, one that was completed during the Interim Strategy ("the habitat definitions will be refined for each planning unit as a result of DNR's habitat relationships study") and another that will be completed when the Long-term Strategy is adopted ("the interim conservation strategy will be replaced with a long-term management plan upon completion of the inventory survey phase") (DNR 1997, p. B.11).

Section V of the 1997 HCP ("Plan Implementation") states DNR's expectation "to determine whether the Amendment is implemented as written" (DNR 1997, p.V.1). "Implementation monitoring will document the types, amounts, and locations of forest management activities carried out on DNR-managed lands in each HCP planning unit, both inside and outside areas addressed by the conservation strategies. Activities in areas addressed by the HCP will be described in sufficient detail to document compliance with the requirements of the conservation strategies" (DNR 1997, P. V.2).

Implementation monitoring of the Amendment will periodically describe changes in landscape-level habitat conditions in areas managed to provide murrelet habitat. Implementation monitoring will include a summary of the quantity and quality of habitat (P-stage) in occupied sites, occupied site buffers, SHAs, and areas of LTFC not included in the preceding categories, by HCP planning unit **in gross and adjusted acres**. Natural disturbance that occurs in these areas will be tracked through the reporting of salvage activities. In addition, during the first decade of implementation, DNR will report on the delay of 5,000 adjusted acres of habitat (refer to "Metering" in Section 6.3.4 of this Amendment). These summaries and activities will be documented in the HCP Annual Report.

Section V also states DNR's expectations "to initiate [murrelet] effectiveness monitoring in all planning units where murrelet nesting habitat is a management goal once the long-term murrelet conservation strategy has been designed and implemented" and "to initiate [murrelet] validation monitoring in the OESF once the long-term murrelet conservation strategy is in place." (DNR 1997, p. V.3).

"Effectiveness monitoring will document changes in habitat conditions, including general forest structure, specialized habitat features (e.g., in-stream large woody debris, marbled murrelet nesting platforms), and spotted owl prey populations, that result from timber harvest and other forest management activities carried out pursuant to the 1997 HCP. Only habitat areas addressed