39 **B. MINIMIZATION AND MITIGATION FOR THE MARBLED MURRELET IN THE FIVE WEST-SIDE AND THE OLYMPIC EXPERIMENTAL STATE FOREST PLANNING UNITS**

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B. Minimization and Mitigation for the Marbled Murrelet in the Five West-side and the Olympic Experimental State Forest Planning Units

Conservation Objective

DNR's objective is to develop a long-term conservation strategy for the habitat of the marbled murrelet that will provide minimization and mitigation for any incidental take of this species. However, attempts to develop such a strategy at this time were unsuccessful because of lack of knowledge about the bird's habitat needs. Instead, this proposal calls for implementation of an interim approach that will lead to a long-term strategy. This approach covers DNR-managed lands in the five west-side planning units and the Olympic Experimental State Forest; the marbled murrelet is not known to inhabit the east-side planning units.

While the amount of scientific information that is available for this species has increased dramatically in recent years, it is still extremely limited. Additionally, no recovery plan for this species has been adopted by the federal government, although a draft proposal has been recently released. A final rule for critical habitat has been published. (See the discussion of these proposals in Chapter II.)

Such factors severely limit a land manager's ability to determine the measures that might best address the marbled murrelet's situation. For example, while it is easy to assume that protection of occupied sites must be a part of any credible long-term strategy, no one knows how to do this with any certainty of success. Consider the following questions:

> Are all occupied sites equally important, or is it possible that murrelets at some sites, such as those below a certain size or farther than some distance from marine waters do not successfully reproduce, making these areas less important to the population?
>
> Once the occupied sites appropriate for protection are identified, exactly what must be done to ensure their longevity? For example, what size protected area is required?
>
> Must a site be a "no entry" area, or can some management activities take place? Must the area be buffered and, if so, how?

Such basic questions remain unanswered for many of the issues that must be considered in a credible long-term strategy. This situation has led DNR to develop an interim approach designed to protect the marbled murrelet on DNR-managed trust lands in the area covered by the HCP while participating in collection of the information needed to develop a long-term conservation strategy.

Interim Conservation Strategy

Step 1. DNR shall identify and defer harvest of any part of a suitable habitat block (see Habitat Definitions below) while conducting Step 2.

Step 2. Within each west-side planning unit and the Olympic Experimental State Forest, DNR shall conduct a two-year habitat relationship study to determine the relative importance, based on murrelet occupancy, of the various habitat types within that particular planning unit.

Step 3. Following completion of the habitat relationship study in each planning unit, marginal habitat types that would be expected to contain a maximum of 5 percent of the occupied sites on DNR-managed lands within each planning unit shall be identified and made available for harvest. However, no know occupied sites will be released; they shall all be protected.

Step 4. In each planning unit, all acreage constituting the higher quality habitat types (i.e., those not identified as available for harvest under Step 3) shall be included in an inventory survey, using Pacific Seabird or other protocol approved by the U.S. Fish and Wildlife Service if available, to locate occupied sites. Outside of Southwest Washington[1], surveyed, unoccupied habitat will be released for harvest if it is not within 0.5 mile of an occupied site and after harvest, at least 50 percent of the suitable marbled murrelet habitat on DNR-managed lands in the WAU would remain. Within Southwest Washington[1], surveyed, unoccupied habitat will **not** be released for harvest unless (a) the long-term plan (see Step 5 below) for the applicable planning units has been completed or, (b) at least 12 months have passed since the initiation of negotiations of the draft long-term plan without completion of those negotiations.

Step 5. After Steps 1-4 are completed for each planning unit, the information obtained during these and other research efforts shall be used to develop a long-term conservation strategy for marbled murrelet habitat on DNR-managed HCP lands within that planning unit. The habitat relationship study, inventory survey, and development of the long-term strategy will occur consecutively within each planning unit - i.e., there will be no time gaps between Steps 2, 3, and 4. Negotiation of the draft long-term conservation strategy for a planning unit will commence with the U.S. Fish and Wildlife Service within 12 months of completion of the inventory surveys for that planning unit. All decisions made in Steps 1-4 above shall be reviewed as part of this process. (For example, it may be that some of the marginal habitat or surveyed unoccupied habitat made available for harvest in Step 3 or Step 4 will be identified as important to protect in the long-term strategy.) Once all individual planning unit plans are complete, a comprehensive review shall be conducted and modifications made if required. DNR will submit its proposal for long-term strategies to the U.S. Fish and Wildlife Service for approval. DNR may convene a multi-agency science team to resolve issues of disagreement over the proposal.

Notes:

(1) While the habitat relationship and inventory surveys described in Steps 1 and 2 above are being conducted, DNR shall participate in cooperative regional research efforts to the extent possible with available funding. Information regarding prioritization of research is included in the federal Draft Recovery Plan (USDI 1995).

(2) Any occupied site identified prior to or during any of the process outlined above shall be protected until the long-term plan is developed and implemented.

[1]For the purposes of the marbled murrelet strategy, Southwest Washington is defined as that portion of the Columbia Planning Unit west of Interstate 5 and that portion of the South Coast Planning Unit that is located south of Highway 8.

Habitat Definitions

For the purposes of DNR's mitigation for the marbled murrelet, terms in italics have special meanings that are defined in this subsection. Suitable marbled murrelet habitat is referred to as a *suitable habitat block*. This

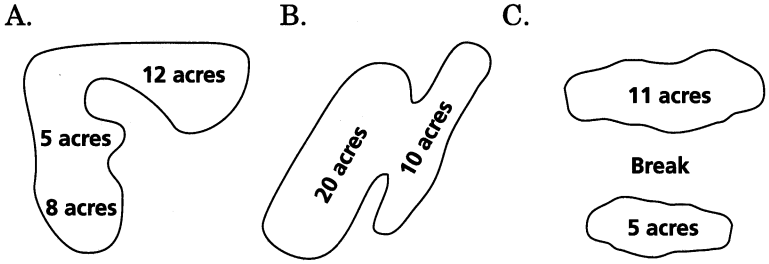
term is used to avoid the word "stand". A single silvicultural "stand" may include areas that do contain the features thought to be important to marbled murrelets as well as areas that do not contain such features. Likewise, a single contiguous area of forest containing structures important to murrelets (i.e., a single suitable habitat block) might consist of all or parts of several silvicultural stands. A suitable habitat block is defined as a *contiguous forested area* meeting all of the following three criteria:

(a) *at least five acres in size* and

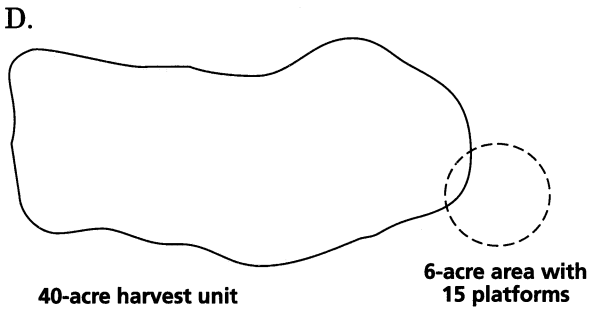
(b) containing an average of *at least two potential nesting platforms* per acre and

(c) *within 50 miles of marine waters.*

Contiguous forested area — Once a 5-acre area whose characteristics meet the other criteria is identified, all adjoining acres that also contain such criteria would be included in the suitable habitat block until there is a 300-foot or wider "break" (an area that does not meet the criteria) that completely encircles the block. Examples: In diagram A, the 5-acre, 8-acre, and 12-acre areas are part of the same suitable habitat block. Likewise, in diagram B, the 10-acre and 20-acre areas are part of the same suitable habitat block. However, in diagram C, the 5-acre and 11-acre areas are two separate suitable habitat blocks because they are separated by a 300-foot or wider break.



At least five acres in size — This refers to the size of the suitable habitat block, not to the area of the silvicultural stand or harvest unit that the block is a part of. For example: In diagram D, a 40-acre harvest unit includes part (2 acres) of a 6-acre area that contains 15 platforms. There is a suitable habitat block here because there is a 5-acre or larger area that has an average of at least two platforms per acre. The 2 acres that are part of the 6-acre area are considered suitable habitat. The point being stressed here is that the entire harvest unit should not be evaluated as a whole and considered non-suitable because it does not contain at least 80 platforms. Rather, any suitable habitat blocks wholly or partially contained in the harvest unit must be recognized and protected, or the sale can be redrawn to omit the suitable habitat block.



At least two potential nesting platforms — Nesting platforms are defined as any large limb or other structure, such as a mistletoe broom, at least 50 feet above ground and at least 7 inches in diameter. Platforms are counted only in conifer trees and only if located within the live crown. When trained staff are counting platforms for the number per acre calculation, all platforms fitting this description should be included. Structures should not be excluded from the count because of some perceived usability/non-usability factor such as orientation of the platform, overhead cover of the platform, etc. This follows the method used in collecting the original data from which the two platforms-per-acre figure was obtained (Hamer et al. 1994).

Within 50 miles of marine waters — Distance should be considered from the Pacific coast, from Puget Sound, or from Rice Island (located in the Columbia River upstream from the Astoria bridge), whichever is closest to the site.

Following the completion of the habitat relationship surveys, the habitat definitions may need revision based on new information.

Possible Components of a Credible Long-term Conservation Strategy

This section describes a possible process for developing the long-term conservation strategy for marbled murrelets. This discussion is based on current information that may be subject to change. Because a long-term strategy for the murrelet's habitat does not have to be undertaken until after the habitat relationship models are developed and additional research is completed, detailed management and protection guidelines do not have to be devised immediately. Instead, this subsection discusses the general factors that would likely be considered in developing the long-term strategy and provides an idea of the kinds of approaches expected to be included.

As reviewed in Section B of Chapter III on marbled murrelet ecology, current research indicates that several primary biological factors influencing marbled murrelet populations should be addressed when developing plans to protect occupied sites. Habitat loss appears to be the major cause of population declines (Ralph et al. 1995; USDI 1995; USDI 1992). Additional incremental losses of nesting habitat due to windthrow, fire, and other natural processes will be a persistent problem, even with the benefits of an HCP. Research also indicates that predation at nest sites may be reducing nest success and adult survivorship (USDI 1995; Beissinger 1995; Nelson and Hamer 1995). Furthermore, disturbances at nest sites during the breeding season are known to reduce reproductive success of other alcids, and marbled murrelet nest success is suspected to be affected by forest management activities during certain stages of the nesting cycle (Cummins et al. 1993; Federal Register v. 57, no. 191, p. 45328).

Marbled murrelets are highly social birds, nest semi-colonially, and probably show a high fidelity to nesting areas (Divoky and Horton 1995). Their ability to colonize new habitat or currently suitable unoccupied habitat has not been determined. Due to their dependence on both forest and marine habitats, catastrophic events occurring in either environment (fire, windthrow, clearcut harvesting, oil spills, El Niño) can have significant negative effects on the population. Therefore, protecting multiple colonies within a reasonable distance of each other in each Watershed Analysis Unit and maintaining a well-dispersed population will help overcome and minimize these effects.

On the basis of these current premises, the primary factors and obstacles that may need to be considered when implementing protection strategies for occupied sites will likely include:

- developing a method for defining the perimeter of the breeding area for each occupied site;
- providing sufficient habitat for breeding areas;
- examining the entire landscape within a planning unit to determine which sites are most in need of protection and to consider landscape-level problems;
- reducing fragmentation of remaining nesting habitat;
- providing interior forest conditions;
- providing buffers to minimize the effects of windthrow and micro-climate changes within the habitat, to help increase the amount of interior forest provided, and to reduce the amount of edge which has been associated with certain predator species;
- minimizing disturbance at breeding sites during the nesting season;
- preventing the isolation of breeding colonies and maintaining a well-distributed population; and
- protecting all occupied sites in certain critical planning units that have small populations and little remaining habitat.

The first step in developing a long-term conservation strategy for murrelets will be to assemble a planning team that includes biologists with expertise in the biology and ecology of marbled murrelets, silviculturalists, geographic information system (GIS) specialists, foresters, and planning staff familiar with other components of the HCP. The team will review current literature about marbled murrelets and the survey and research data collected by DNR from each planning unit. The GIS staff will provide maps that depict the size and location of occupied sites on DNR-managed lands and on adjacent ownerships and the location and extent of suitable habitat.

Using this information, the planning team will develop long-term conservation objectives for the protection of occupied sites. These conservation objectives will likely be general in nature but based on current information about the habitat needs of the marbled murrelet. The conservation objectives will likely direct a strategy that will be useful in protecting and maintaining habitat, decreasing the risk of loss of suitable habitat, maintaining or increasing the reproductive success of the marbled murrelet, and increasing adult survivorship. DNR expects to apply the long-term conservation objectives and strategy to each occupied site being protected through site-specific implementation procedures.

Because the long-term conservation objectives and the overall strategy will have already been developed, the site-specific implementation procedures are meant to be relatively easy to prepare. For example, DNR envisions that the implementation procedures for each site could be developed in a few days. A day or two would be spent at the site identifying the current problems, setting future objectives for nesting habitat condition, and outlining the specific silvicultural and forest methods and prescriptions that will be used to achieve the desired objectives. Another two days would be

needed to draft the implementation procedures for that site. With such site-specific procedures, nesting habitat conditions for the marbled murrelets on DNR-managed lands will likely improve over time, minimizing and mitigating any take involved in the HCP and contributing to recovery efforts.

While these site-specific implementation procedures are being developed, the team would also make landscape-level management decisions regarding protection of occupied sites. Preventing the isolation of breeding colonies and maintaining a well-distributed population will entail considering the location of occupied sites on adjacent ownerships. Developing landscape-wide management plans in cooperation with adjacent landowners for each planning unit as outlined in the federal Draft Recovery Plan for the Marbled Murrelet (USDI 1995) will be desirable. An optimal outcome of such plans would be to have occupied sites in each Watershed Analysis Unit. If one occupied site were lost, additional habitat for these birds would be available within a reasonable distance, facilitating replacement and establishment of new colonies as the population grows.

The long-term conservation strategy developed by DNR would likely include information on the location of occupied sites, the distribution of habitat in each planning unit, current research results, landscape-level analysis and considerations, and the site-specific management plans developed by DNR. The long term strategy would address such factors as developing habitat where gaps exist, developing or maintaining replacement habitat, and would protect the vast majority of occupied sites. This process should result in a comprehensive, detailed landscape-level plan that would help meet the recovery objectives of the U.S. Fish and Wildlife Service, contribute to the conservation efforts of the President's Northwest Forest Plan, and make a significant contribution to maintaining and protecting marbled murrelet populations in western Washington over the life of the HCP.

Potential Benefits and Impacts to Marbled Murrelets

The marbled murrelet conservation strategy will result in improved conditions for the murrelet over time. All suitable habitat and occupied sites will be retained in the short term through harvest deferral. Known occupied sites will be protected. Surveys will be conducted of all habitat expected to contain up to 95 percent of the occupied sites. This information and additional research about the murrelet's habitat needs will be used to develop a long-term conservation strategy that will conserve the bird's habitat.

However, some specific adverse impacts may also occur. It is impossible at this time to describe completely the potential impacts, positive or negative, of the long-term strategy that will ultimately result from this short-term strategy. In the interim period, adverse impacts to marbled murrelets might occur in the following circumstances:

- If the habitat definition initially used to determine the deferral of proposed harvest areas fails to capture all occupied sites. However, the definition recommended for use is a very conservative one and should minimize adverse impacts. There will likely be a small impact to the population from not including potential habitat on DNR-managed lands beyond 50 miles from marine waters.

- As a consequence of harvest of marginal habitat, which will be released upon completion of the habitat relationship studies in each planning unit. The most marginal habitat will be available for harvest without further survey, except for known occupied sites,

all of which will be protected. Data from the habitat relationship studies will be used to ensure that no more than 5 percent of the occupied sites in each planning unit would be expected to occur in the areas released for harvest. This should expose much less than 5 percent of the individual birds to adverse impacts because (a) only a portion of the released area would be expected to be harvested prior to the development of the long-term strategy, and (b) DNR assumes that the number of birds using the more marginal sites is proportionally lower than the number using better quality sites.

- As a consequence of harvest of surveyed unoccupied habitat, if that habitat were later determined to be critical to the survival and recovery of the species.

- If, due to survey error, occupied sites go undetected and are not considered for protection.