## Basis for Analysis

Designation of critical habitat focuses on the primary constituent elements within the designated habitat units and their contribution to the species' survival and recovery. The evaluation of actions that may affect proposed critical habitat for the marbled murrelet would consider the effects of a Federal action on any of the factors that were the basis for determining the habitat to be critical, including the primary constituent elements of potential nest trees, and surrounding forest.

The range of the marbled murrelet has been subdivided by the Recovery Team into six Marbled Murrelet Conservation Zones, as discussed in the Previous Management Efforts section (USFWS 1995). These subdivisions were not based on identification of separate populations of marbled murrelets, but rather on the need for differing recovery actions in portions of the marbled murrelet's range, and the need to maintain well-distributed populations. Marbled murrelets within the conservation zones are likely to interact across zone boundaries at some level.

For a wide-ranging species such as the marbled murrelet, if multiple critical habitat units are designated, each unit would have a local, regional, and rangewide role in contributing to the conservation of the species. The loss of a single unit may not jeopardize the continued existence of the species, but may significantly reduce the ability of critical habitat to contribute to recovery. In some cases the loss of a critical habitat unit could reduce local population levels. This could have a detrimental effect on the stability of the conservation zone, or at the least on that portion of the zone where the loss occurred.

The basis for an adverse modification opinion would be related to adverse impacts on a conservation zone identified in the recovery plan (USFWS 1995). The loss of populations in one or more conservation zone, or even a major part of a conservation zone, could lead to genetic and demographic isolation of parts of the population. Analysis of impacts to individual units must consider the effects to the local area (both the unit and surrounding units), conservation zone, and the overall range of the marbled murrelet in Washington, Oregon, and California.

## **Examples of Proposed Actions**

Section 4(b)(8) of the Act requires, for any proposed or final regulation concerning critical habitat, a brief description and evaluation of those activities (public or private) that may adversely modify such habitat or may be affected by the critical habitat designation. Regulations found at 50 CFR 402.02 define destruction or adverse modification of critical habitat as a direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species. Such alterations include, but are not limited to, alterations adversely modifying any of those physical or biological features that were the basis for determining the habitat to be critical.

A variety of ongoing or proposed activities may adversely impact the proposed marbled murrelet critical habitat. Examples of such activities include, but are not limited to, forest management, conversion, and roadbuilding that have the following effects on the primary constituent elements:

(1) Removal or degradation of individual nest platforms or trees with a potential nesting platform that results in a significant decrease in the value of the trees for future nesting use. Removal or degradation of support trees adjacent to trees with potential nesting platforms that provide habitat elements essential to the suitability of the potential nest tree or platform, such as trees providing cover from weather or predators.

(2) Removal or degradation of forested areas surrounding and contiguous to potential nest trees with canopy height of at least one-half the site-potential tree height, including removal or degradation of trees currently unsuitable for nesting that contribute to the structure/integrity of the potential nest area (i.e., trees that contribute to the canopy of the forested area). These trees provide the closed canopy and stand conditions important for marbled murrelet nesting.

(3) Removal or degradation of forested areas within critical habitat with canopy height of at least one-half the sitepotential tree height, regardless of the presence of potential nest platforms. These forests provide a landscape more conducive to nesting marbled murrelets.

Activities that do not affect the primary constituent elements in the forest are unlikely to be affected by the proposed designation. Such activities would include, but are not limited to, certain recreational use and personaluse commodity production (e.g., noncommercial mushroom picking, Christmas tree cutting, rock collecting, recreational fishing along inland rivers).

Activities conducted according to the standards and guidelines for Late-Successional Reserves, as described in the ROD for the Northwest Forest Plan would, in most cases, be unlikely to result in the destruction or adverse modification of the proposed marbled murrelet critical habitat. Activities in these areas would be limited to manipulation of young forest stands that are not currently marbled murrelet nesting habitat. Also, these manipulations would be conducted in a manner that would not slow the development of these areas into future nesting habitat, and should speed the development of some characteristics of older forest.

Section 10(a)(1)(B) of the Act authorizes the Service to issue permits for the taking of listed species incidental to otherwise lawful activities. Incidental take permit applications must be supported by a habitat conservation plan (HCP) that identifies conservation measures that the permittee agrees to implement for the species. The issuance of an incidental take permit is a Federal action and is subject to the consultation requirements of section 7 of the Act. The Service expects that HCPs that contribute to the conservation of the murrelet would be consistent with the proposed critical habitat designation.

Several HCP efforts are currently underway in areas proposed for murrelet critical habitat designation, such as State lands in Washington, the Elliott State Forest in Oregon, and Pacific Lumber lands in California. Any lands within critical habitat that are included in an HCP that addresses conservation of the marbled murrelet will be subsequently excluded from critical habitat designation upon approval of the HCP by the Service.

## **Economic Analysis Summary**

Section 4(b)(2) of the Act requires the Service to consider the economic and other relevant impacts of specifying any particular area as critical habitat. The Secretary may exclude areas from critical habitat if he/she determines that the benefits of such exclusion outweigh the benefits of specifying such area as critical habitat, unless failure to designate a specific area would result in extinction of the species. The Service contracted with ECONorthwest, a consulting firm in Eugene, Oregon, to conduct an economic analysis of the potential economic effects of designating critical habitat for the marbled murrelet. As required by the Endangered Species Act, the report addresses only the economic consequences of the proposed critical habitat. It does not address the consequences of listing the species or other actions that have been proposed or taken to protect marbled murrelets.

The proposed designation of critical habitat for the marbled murrelet would