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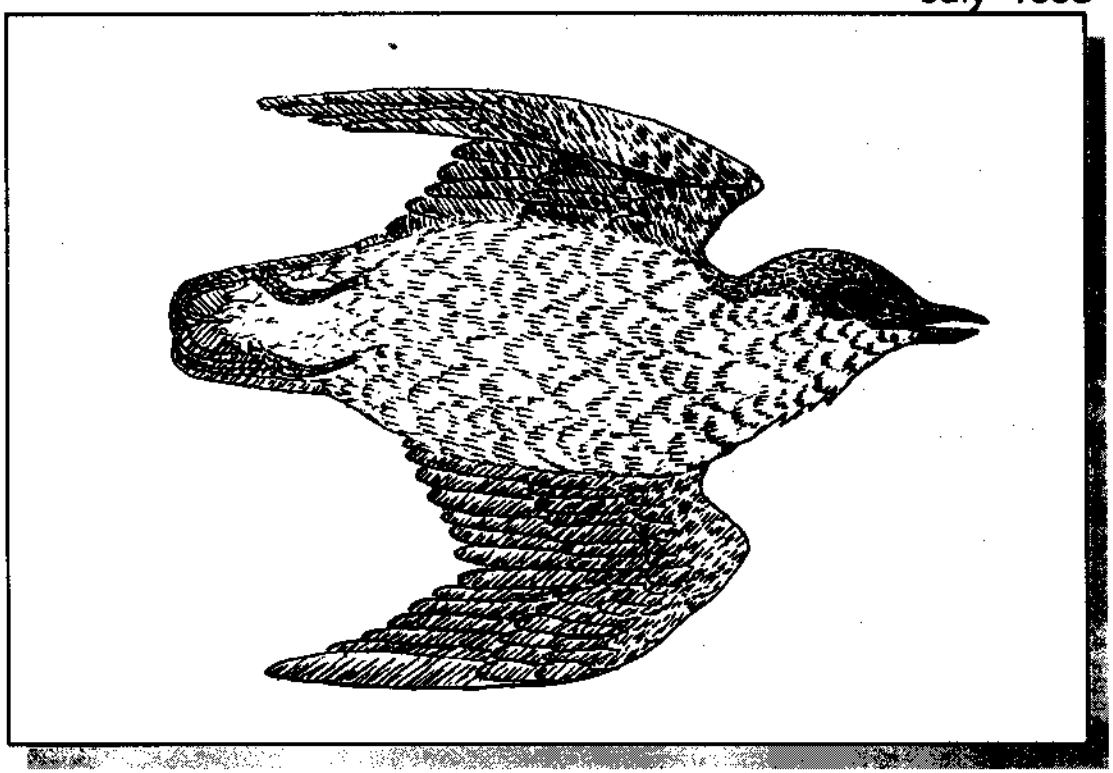
DEPARTMENT OF WILDLIFE

Washington

July 1993



STATUS OF THE MARBLED MURRELET *(Brachyramphus marmoratus)* IN WASHINGTON

Washington
Department of Wildlife
Wildlife Management Division

The Washington Department of Wildlife maintains a list of endangered, threatened and sensitive species (Washington Administrative Codes 232-12-014 and 232-12-011, Appendix B). Species are evaluated for listing using a set of procedures developed by a group of citizens, interest groups, and state and federal agencies (Washington Administrative Code 232-12-297, Appendix B). The procedures were adopted by the Washington Wildlife Commission in 1990. They specify how species listing will be initiated, criteria for listing and delisting, public review, and recovery and management of listed species.

The first step in the process is to develop a preliminary species status report. The report includes a review of information relevant to the species' status in Washington including, but not limited to: historic, current, and future species population trends, natural history including ecological relationships, historic and current habitat trends, population demographics and their relationship to long term sustainability, and historic and current species management activities.

The procedures then provide for a 90-day public review opportunity for interested parties to submit new scientific data relevant to the status report and classification recommendation. During the 90-day review period, the Department holds one public meeting in each of its administrative regions. At the close of the review of the draft report, the Department completes a final status report and listing recommendation for presentation to the Washington Wildlife Commission. The final report, listing recommendation, and any State Environmental Policy Act findings are then released for public review 30 days prior to the Commission presentation.

This report is the Department of Wildlife's final Status Report and listing recommendation for the marbled murrelet. The listing proposal will be presented to the Washington Wildlife Commission on August 14, 1993 at the Colville Community Center, Colville, Washington. Comments on the report and recommendation may be sent to: Endangered Species Program Manager, Washington Department of Wildlife, 600 Capitol Way N, Olympia, WA 98501-1091; or presented to the Wildlife Commission at its August 14 meeting.

This report should be cited as:

Washington Department of Wildlife. 1993. Status of the marbled murrelet (*Brachyramphus marmoratus*) in Washington. Unpubl. Rep. Wash. Dept. Wildl., Olympia.

Status of the

Marbled Murrelet
(*Brachyramphus marmoratus*)

in Washington

July 1993

Washington Department of Wildlife
600 Capitol Way N
Olympia, WA 98501-1091

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ACKNOWLEDGMENTS

The summary and introduction to this document were prepared by Kelly McAllister, Endangered Species Recovery Biologist, Washington Department of Wildlife. Eric Cummins and William Ritchie, Washington Department of Wildlife, assisted in the preparation of the introduction. The cover illustration was done by Siobhan Sullivan. The Department appreciates the interest shown and information provided by individuals who attended the public meetings or wrote letters concerning the status report and listing proposal.

EXECUTIVE SUMMARY

The Washington, Oregon, and California population of the marbled murrelet (*Brachyramphus marmoratus marmoratus*) was federally listed as a threatened species by the U.S. Fish and Wildlife Service on 28 September 1992. The main cause of the population decline and the primary threat to the marbled murrelet in the three-state area is the loss and alteration of nesting habitat, older forests, as a result of commercial timber harvesting. Additional lesser threats are mortality associated with gill-net fishing operations off the Washington coast, predation, urbanization, and the effects of oil spills.

The North American subspecies of the marbled murrelet is a small seabird of the Alcidae family which ranges from Alaska to central California. In Washington it is found in all nearshore marine areas (within 2 km, 1.2 mi of shoreline), with the greatest concentrations in northern Puget Sound.

Marbled murrelets are usually found within or adjacent to the marine environment where they feed primarily on fish and invertebrates. They spend the majority of their lives on salt water, but fly inland to nest. Most marine concentrations are in areas where older forests are present nearby. While marbled murrelets have been recorded up to 83 km (52 mi) inland in Washington, the majority of observations are within 63 km (39 mi) of the coast in the northern Washington Cascades. Marbled murrelets in Washington, Oregon, and California nest in older forests and are solitary to semi-colonial in nesting habit. Of 16 tree nests characterized (5 in Washington, 7 in Oregon, 4 in California), all were located in old-growth trees. The broad, horizontal limbs of older trees are generally needed to support the single murrelet egg which is laid on the limb, without benefit of a constructed nest. However, limb deformities sometimes serve as platforms.

Currently, marbled murrelet populations are estimated at no more than 5,000 birds in Washington, fewer than 1,000 pairs in Oregon, and about 2,000 birds in California. Anecdotal accounts suggest greater numbers historically, particularly in areas where timber harvest has been most extensive.

The quantity of old-growth forest in western Oregon and Washington has been reduced by more than 80% from pre-logging levels. In northwestern California, estimates put the reduction at 45-80%. Forest fragments are less suitable for successful nesting due to losses from excessive wind at stand edges, as well as increased predation, primarily by corvids (jays, ravens, and crows).

In Washington, the factors that contribute to the marbled murrelet's listing under the Endangered Species Act are expected to affect the species through the foreseeable future.

It is recommended that the marbled murrelet be designated as a threatened species in Washington.

INTRODUCTION

The U.S. Fish and Wildlife Service "Final Rule for listing the Washington, Oregon, and California population of the marbled murrelet as a threatened species" provides information on the species description, life history, population status and trend, habitat status and trend, and factors influencing the population. The Final Rule is presented in Appendix A.

Marbled murrelets (*Brachyramphus marmoratus*) are distributed widely in marine waters of Washington, though they are often local in occurrence. Nesting colonies of most other Washington seabird species have been inventoried during the past 2 decades, but there has not been a comprehensive survey of the marine and inland distribution of marbled murrelets.

Early naturalists described murrelets in Puget Sound as "abundant" and "widespread," which is not the current assessment based on limited marine surveys. The current population estimate for Washington is approximately 5,000 birds during the breeding season (Speich et al. 1992). Through the end of 1992, only five nests and 18 nest sites had been located in Washington; there are 474 inland sites where murrelet activity has been documented (Table 1). A sixth nest was found in 1993.

Table 1. Ownership of inland sites where marbled murrelets have been found in Washington through December 1992.

Site Status[a]	Federal and Tribal	State and Local	Private	Total
Nest	5	0	0	5[b]
Nest Site	14	2	2	18
Occupied Site	118	13	8	139
Other	257	27	28	312
Totals	394	42	38	474

[a]Site Status Definitions:

Nest.

Nest Site: Downy chicks or eggs found on ground.

Occupied Site: Murrelets detected in stand or behaviors associated with nesting.

Other: Inconclusive information to assign higher status, or behaviors not associated with stand use.

[b]A sixth nest was located in May 1993.

Little is known about murrelet breeding ecology in Washington. Research and management activities in Washington have been undertaken primarily within the last 15 years (Table 2). Nests have been difficult to find, in part because marbled murrelets generally nest solitarily or in loose colonies high in old-growth coniferous trees. In addition, nests are visited by adults mainly at dusk, dawn, and during the night.

The harvest of remaining low elevation old-growth forest nesting habitat is the greatest threat to the marbled murrelet in Washington. Although there is little known about the inland distribution and nesting habitat requirements of the marbled murrelet in the state, sufficient nesting habitat is not provided by current old-growth habitat conservation areas and areas protected under the U.S. Fish and Wildlife Service "take" guidelines for the spotted owl (*Strix occidentalis*). It is well documented that old-growth nesting habitat has been removed by logging and that this source of habitat loss continues. Timber harvest has occurred in or around most sites where nests, chicks, or eggs have been found.

Oil pollution is a significant threat to marbled murrelets. Murrelets were oiled in Washington during the *Seagate* oil spill in 1956, the *Arco Anchorage* oil spill in 1985, the *Nestucca* spill in 1988, and especially the *Tenyu Maru* spill in 1991. Offshore oil development has been proposed along the Washington coast, which could lead to greater numbers of oiled murrelets in the future. Other marine contaminants also may impact marbled murrelets as they have affected other seabirds in Puget Sound and on the Pacific coast.

Marbled murrelet entanglement in gill nets has been identified as a problem in some areas of British Columbia, Alaska, and California. Gill net fishing is widespread in Puget Sound, but bird mortalities have not been quantified. Hook-and-line mortalities have been observed, but also have not been quantified.

Other factors affecting the continued existence of marbled murrelets in Washington include the species' low reproductive rate, which limits its ability to recover quickly from catastrophic events. Also, the marbled murrelet is one of few seabird species in Washington whose known and suspected nesting habitat is not protected by National Wildlife Refuges.

The factors that contribute to the marbled murrelet decline and resultant listing under the federal Endangered Species Act are expected to affect the species in Washington through the foreseeable future. However, at this time there is insufficient information available to indicate the species warrants classification as a state-endangered species. It is therefore recommended that the marbled murrelet be designated as a threatened species in Washington.

Table 2. Chronology of Washington marbled murrelet research and management activities.

Year(s)	Activity
1978	Washington Department of Wildlife (WDW) Nongame Program gathers data on historic murrelet occurrences. WDW investigates new reports of chicks, eggs, and other inland detections.
1978-1979	National Oceanic and Atmospheric Administration Marine Ecosystems Analysis Program (MESA) estimates 550 breeding pairs of marbled murrelets in northern Puget Sound and the Strait of Juan de Fuca (Manuwal et al. 1979:54).
1985-1986	WDW conducts intensive marine surveys in the San Juan Islands.
1986	WDW chairs the first marbled murrelet workshop/symposium at the annual meeting of the Pacific Seabird Group (PSG), an international ornithological professional society. PSG's Marbled Murrelet Technical Committee is established (still active in 1993).
1987	WDW presents *Status, threats, and distribution of the marbled murrelet in Washington* at a PSG murrelet symposium. Also at PSG symposium, Speich et al. (1992) present estimate of 5,000 murrelets in Washington during the breeding season based on various surveys. Through 1987, there are 16 inland records for murrelets in Washington. The Portland Audubon Society (PAS) and the U.S. Fish and Wildlife Service (USFWS) prepare status reports on the species.
1988-1992	WDW coordinates volunteer/cooperator inland forest stand surveys. Inland occurrence data begin to increase.
1988	The paper industry's National Council for Air and Stream Improvement (NCASI) and WDW experiment with marine capture techniques. NCASI and Seattle Aquarium conduct captive maintenance experiments with two murrelets.
1988	PSG Marbled Murrelet Workshop is chaired by WDW. PAS petitions the USFWS to list the marbled murrelet as a threatened species under the Endangered Species Act.
1989	NCASI experiments with radio telemetry techniques for potential use with murrelets. *Catalog of Washington Seabird Colonies* estimates as many as 5,000 nesting birds, based on 2,417 breeding birds counted during incomplete coverage of marine waters (Speich and Wahl 1989:70).
1990	WDW, with cooperation and supplemental funding from the U.S. Forest Service (USFS), conducts landscape-scale research project in the South Fork Stilliguamish River drainage. First murrelet nest found in Washington by WDW researchers.
1991	After 3 years of review, the USFWS publishes a proposed rule for listing of the murrelet in the Federal Register. A final 1-year review process ensues. WDW, with supplemental funding from the USFWS, Oregon Department of Fish and Wildlife, and Oregon State University, initiates development of the Washington Marbled Murrelet Database (operational late in 1992).

1991-1992	WDW, with supplemental funding from USFS, USFWS, and the Washington Department of Natural Resources (DNR), conducts forest stand analysis of murrelet habitat. USFS initiates murrelet surveys of timber sales and other projects in three western Washington National Forests.
1992	USFWS lists the marbled murrelet as a threatened species. WDW sponsors murrelet biology and survey training workshops for cooperators, volunteers, agencies, consultants, and timber industry staff. WDW coordinates a widened survey effort and provides technical assistance to other surveyors. DNR, with cooperative assistance from WDW, initiates a pilot survey on selected state lands.
1993	Marbled murrelet symposium held in conjunction with the annual PSG meeting.

REFERENCES CITED

Manuwal, D. A., T. R. Wahl, and S. M. Speich. 1979. The seasonal distribution and abundance of marine bird populations in the Strait of Juan de Fuca and northern Puget Sound in 1978. NOAA Tech. Mem. ERL MESA-44, Boulder, Colo. 391pp.

Speich, S. M., and T. R. Wahl. 1989. Catalog of Washington seabird colonies. U.S. Fish and Wildl. Serv. Biol. Rep. 88(6). 510pp.

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Appendix A

Determination of Threatened Status for the Washington, Oregon, and California Population of the Marbled Murrelet

Equipment. Under the NPRM, redesignation of many of the remaining paragraphs of S5.1.1 was also proposed. However, the proposal was made with reference to Standard No. 108 as it remains in effect until September 1, 1993, and did not take into account the amendments which become effective that day. Ford Motor Company, in commenting on the NPRM, related it to the standard as amended by the April 1991 notice, instead of the standard as it currently appears in the CFR, and found certain apparent errors and inconsistencies.

In formulating the final rule on the NPRM, NHTSA is faced with two choices. The first is based on the standard as it currently appears in the CFR. If the agency took this approach, it would issue the final rule with the redesignations as proposed in July 1992, (which would only be in effect until September 1, 1993), relating Ford's comments to the extent possible. At the same time, the agency would amend the redesignations that are scheduled to become effective on September 1, 1993. The second choice is based on the standard as amended by the April 1991 final rule. Under this approach, the agency would accelerate the 1993 effective date for adding the 1991 amendments to the CFR so that the final rule on headlamp markings can adopt a definitive redesignation of paragraphs without further amendments. The agency has chosen this alternative course.

Accelerating the effective date for adding the April 1991 amendments to the CFR results in no substantive burden. No compliance date or text is changed. The mandatory CHMSL provisions of paragraph S5.1.1.27, by their own terms, will still not come into effect for vehicles other than passenger cars until September 1, 1993. The optional CHMSL compliance provisions in Paragraph S5.1.1.28, by their own terms, are still effective only between September 1, 1992, and September 1, 1993. There is no substantive reason why the redesignation of paragraphs of S5.1.1, and the changes to Tables III and IV cannot be made effective immediately. NHTSA also notes that such an amendment with an effective date of October 1, 1992 for adding the amendments to the text of the standard in the CFR, will allow publication of the most current version of Standard No. 108 in the next volume of 49 CFR parts 400–999 revised as of October 1, 1992. The clarity that this will afford is in the public interest.

Accordingly, for the reasons stated and an opportunity for comment are not required for this change, and that an effective date of October 1, 1992 for adding the amendments to 49 CFR 571.108 Motor Vehicle Safety Standard No. 108, published on April 19, 1991, to the CFR is in the public interest. The effective date for adding the amendments of April 19, 1991, to the CFR is changed from September 1, 1993, to October 1, 1992.

Authority: 15 U.S.C. 1392, 1407; delegation of authority at 49 CFR 1.50.

Issued on: September 28, 1992.

Marion C. Blakey,

Administrator.

[FR Doc. 92–23872 Filed 9–29–92; 9:11 am]

BILLING CODE 4910–59–M

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018–AB56

Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Washington, Oregon, and California Population of the Marbled Murrelet

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: The U.S. Fish and Wildlife Service (Service) determines the Washington, Oregon, and California population of the marbled murrelet (*Brachyramphus marmoratus marmoratus*) to be a threatened species pursuant to the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 et seq.). The marbled murrelet is threatened by the loss and modification of nesting habitat (older forests) primarily due to commercial timber harvesting. It is also threatened from mortality associated with current gill-net fishing operations off the Washington coast and the effects of oil spills. This rule extends the Act's protection to the marbled murrelet in Washington, Oregon, and California. Pursuant to an order of the United States District Court, Western District of Washington at Seattle, dated September 15, 1992, this listing takes effect immediately.

EFFECTIVE DATE: September 28, 1992.

ADDRESSES: The complete file for this rule is available for public inspection, by appointment, during normal business hours at the U.S. Fish and Wildlife Service, Portland Field Office, 2600 SE. 98th Avenue, suite 100, Portland, Oregon.

FOR FURTHER INFORMATION CONTACT: Mr. Russell D. Peterson, Field Supervisor, at the above address (503/231–6179).

SUPPLEMENTARY INFORMATION:

Background

Biological Considerations

The marbled murrelet (*Brachyramphus marmoratus*) is a small seabird of the Alcidae family. It was first described in 1789 by Gmelin as *Colymbus marmoratus*, but in 1837 Brandt placed it under the genus *Brachyramphus* (American Ornithologists' Union 1983). The North American subspecies (*B. m. marmoratus*) ranges from the Aleutian Archipelago in Alaska, eastward to Cook Inlet, Kodiak Island, Kenai Peninsula, and Prince William Sound, southward coastally throughout the Alexander Archipelago of Alaska, and through British Columbia, Washington, Oregon, to central California. Some wintering birds are found in southern California. A separate subspecies (*B. m. perdix*) is present in Asia.

Marbled murrelets feed primarily on fish and invertebrates in near-shore marine waters. The majority of marbled murrelets are found within or adjacent to the marine environment, although there have been detections of marbled murrelets on rivers and inland lakes (Carter and Sealy 1986). Marbled murrelets spend the majority of their lives on the ocean, and come inland to nest, although they visit some inland stands during all months of the year. Marbled murrelets have been recorded up to 80 kilometers (50 miles) inland in Washington (Hamer and Cummins 1991), 56 kilometers (35 miles) inland in Oregon (Nelson 1990), 37 kilometers (22 miles) inland in northern California (Carter and Erickson 1988, Paton and Ralph 1990), and 18 kilometers (11 miles) inland in central California (Paton and Ralph 1990). However, marbled murrelets are not evenly distributed from the coast to the maximum inland distances, with higher detections being recorded closer to the coast. Hamer and Cummins (1991) found that over 90 percent of all observations were within 60 kilometers (37 miles) of the coast in the northern Washington Cascades. In Oregon, marbled murrelets are observed most often within 20 kilometers (12 miles) of the ocean (Nelson 1990).

Marbled murrelets are semi-colonial in their nesting habits, and simultaneous detections of more than one bird are frequently made at inland sites. Nesting marbled murrelets are often aggregated

Washington in 1990 were located only 46 meters (150 feet) apart (Hamer and Cummins 1990).

Marbled murrelets do not reach sexual maturity until their second year. Like other alcids, adult marbled murrelets produce 1 egg per nest. Alcids typically have a variable (not all adults may nest every year) reproductive rate, and marbled murrelets exhibit this same trend. Adult/juvenile ratios from counts along the central Oregon coast indicated a recruitment rate of less than 2 percent per year over the past 4 years (1988–1991) (Nelson, *in litt.*, 1992).

Adult marbled murrelets lay one egg in the limb of an old-growth conifer tree. Nesting occurs over an extended period from mid-April to late September (Carter and Sealy 1987). Incubation lasts about 30 days and fledging takes another 28 days (Hirsch *et al.* 1981, Simons 1980). Both sexes incubate the egg in alternating 24-hour shifts (Simons 1980, Singer *et al.* 1991). Flights by adults are made from ocean feeding areas to inland nest sites most often at dusk and dawn (Hamer and Cummins 1991). The adults feed the chick at least once per day, carrying one fish at a time (Carter and Sealy 1987; Hamer and Cummins 1991; Singer *et al.* 1992; Nelson, OR Coop. Wildl. Res. Unit, pers. comm., 1992). The young are altricial, and remain in the nest longer than young of most other alcids. Before leaving the nest, the young molt into a distinctive juvenile plumage. Fledglings appear to fly directly from the nest to the sea, rather than exploring the forest environment first (Hamer and Cummins 1991).

In California, Oregon, and Washington marbled murrelets use older forest stands near the coastline for nesting. These forests are generally characterized by large trees (> 80 centimeters (32 inches) dbh), multi-storied stand, and a moderate to high canopy closure. In certain parts of the range, marbled murrelets are also known to use mature forests with an old-growth component. Trees must have large branches or deformities for nest platforms (Binford *et al.* 1975; Carter and Sealy 1987; Hamer and Cummins 1990, 1991; Singer *et al.* 1991, 1992; Nelson, *in litt.*, 1991). Marbled murrelets tend to nest in the oldest trees in the stand.

Twenty-three tree nests have been located in North America; five in Washington, seven in Oregon, four in California, two in British Columbia, and five in Alaska (Binford *et al.* 1975; Quinlan and Hughes 1990; Hamer and Cummins 1990, 1991; Kuletz 1991; Singer *et al.* 1991, 1992; Nelson *et al.* [illegible]

were located in old-growth trees that ranged in diameter at breast height (dbh) from 88 centimeters (35 inches) to 533 centimeters (210 inches) with a mean of 203 centimeters (80 inches). Nests were located high above ground and usually had good overhead protection; such locations would allow easy access to the exterior of the forest. Nest sites were located in stands dominated by Douglas-fir (*Pseudotsuga menziesii*) in Oregon and Washington, and in old-growth redwood (*Sequoia sempervirens*) stands in California. Nests were mostly placed in older Douglas-fir trees within these stands.

It is difficult to locate individual nests for a species that may only show activity near its nest one time per day, and may do so under low light conditions. Therefore, occupied sites or suitable habitat become the most important parameters to consider when evaluating its status. Active nests, egg shell fragments or young found on the forest floor, birds seen flying through the forest beneath the canopy, birds seen landing, or birds heard calling from a stationary perch are all strong indicators of occupied habitat. Biologists have documented 154 occupied sites in the Oregon Coast Ranges, all in old-growth forests or mature forest stands with an old-growth component.

Marbled murrelets more commonly occupy old-growth forests compared to mixed-age and young forests in California, Oregon, and Washington. In California, the species is restricted to old-growth redwood forests in Del Norte, Humboldt, San Mateo, and Santa Cruz Counties (Paton and Ralph 1988). In surveys of mature and second-growth forests of California, marbled murrelets were only found in these forests where there was nearby old-growth, or where residual older trees remained; murrelets were absent from 60 percent of the second-growth forests examined (Ralph *et al.* 1990). In northwest Washington, marbled murrelets are mostly found at old-growth/mature sites (Hamer and Cummins 1990). In Oregon, marbled murrelets occupy stands dominated by larger trees (averaging greater than or equal to 82 centimeters (32 inches) dbh) more often (statistically significant) than those dominated by smaller trees (Nelson 1990).

Stand size is also an important factor for marbled murrelets. These birds more commonly occupy larger stands (greater than 202 hectares (500 acres)) than smaller stands (less than 40 hectares (100 acres)) in California; marbled murrelets are usually absent from

not occur in isolated stands of coastal old-growth forest in California (CDFG, *in litt.*, 1992). In Washington, marbled murrelets are found more often when the percent of available old-growth/mature forests makes up over 30 percent of the landscape. Similarly, fewer murrelets are found when clearcut/meadow areas make up more than 25 percent of the landscape (Hamer and Cummins 1990). Nelson (1990) found that a statistically significant lower number of detections were noted in the highly fragmented Oregon Coast Range, compared to detection rates documented by Paton and Ralph (1988) in a less fragmented area in northern California.

Concentrations of marbled murrelets offshore are almost always adjacent to older forests on-shore. Nelson (1990) and Ralph *et al.* (1990) found marbled murrelets were absent offshore where on-shore older forests were absent. Large geographic gaps in offshore marbled murrelet numbers occur in areas such as that between central and northern California (a distance of 480 kilometers (300 miles)), and between Tillamook County, Oregon, and the Olympic Peninsula (a distance of about 190 kilometers (120 miles)), where nearly all older forest has been removed near the coast. Small rafts of marbled murrelets may be found associated with remaining insolated stands of older forests (e.g., the Nemah site). Historically, records for California indicate that marbled murrelets were found "regularly" and were "plentiful" along the coast from Monterey County north to the Oregon border (Grinnell and Miller 1944; Paton and Ralph 1988). Historical records of marbled murrelets also showed significant numbers during the nesting season near the mouth of the Columbia River in Clatsop County, Oregon. Marbled murrelets are rarely found in this area, where extensive harvesting of older forests has also occurred (Nelson *et al.*, in press).

Population size for marbled murrelets is most accurately estimated by counting the numbers of birds observed in the marine environment. Washington's breeding population is estimated to be a maximum of 5,000 birds (Speich *et al.*, in press). The current population estimates for Oregon and California are fewer than 1,000 pairs (Nelson *et al.*, in press); and about 2,000 birds (Carter *et al.* 1990), respectively. By extrapolating from known population numbers in relation to the remaining available nesting habitat, it has been

The principal factor affecting the marbled murrelet in the three-state area, and the main cause of population decline has been the loss of older forests and associated nest sites. Older forests have declined throughout the range of the marbled murrelet as a result of commercial timber harvest, with additional losses from natural causes such as fire and windthrow. Most suitable nesting habitat (old-growth and mature forests) on private lands within the range of the subspecies in Washington, Oregon, and California has been eliminated by timber harvest (Green 1985; Norse 1988; Thomas *et al.* 1990). Remaining tracts of potentially suitable habitat on private lands throughout the range are subject to continuing timber harvest operations (see Factor A). Mortality associated with oil spills and gill-net fisheries (in Washington) are lesser threats adversely affecting the marbled murrelet.

Distinct Population Segment

The Act defines "species" to include any subspecies of fish or wildlife or plants, and any distinct population segment of any species or vertebrate fish or wildlife which interbreeds when mature (16 U.S.C. 1532 (6)). As discussed under Factor D in the Summary of Factors Affecting the Species section of this rule, existing legal mechanisms are not adequate to protect the marbled murrelet in California, Oregon, and Washington. The three states encompass roughly one-third of the geographic area occupied by this subspecies, comprising a significant portion of its range. The amount of nesting habitat has undergone a tremendous decline since the late 1800s (most of which has taken place during the last 20 to 30 years), especially in the coastal areas of all three states.

At the time of proposing to list the marbled murrelet in Washington, Oregon, and California, the Service considered the murrelets in these States to constitute a distinct population segment comprising a significant portion of the eastern Pacific subspecies of the marbled murrelet. While the Service continues to believe that existing legal protection is not adequate to ensure survival of murrelets in the three-state area, some question remains whether the population listed in this rule qualifies for protection under the Act's definition of "species."

Compliance with a court order required a final decision on listing to be made at this time. Based on the information now available to the Service, the only supportable decision that can be reached within the limits imposed by the court is to list the population as proposed. Nevertheless, the Service intends to reexamine the basis of recognizing this population of murrelets as a "species" under the Act. Within 90 days, the Service will announce the results of this examination and at that time may propose a regulatory change that would alter the listing of the murrelet as a threatened species.

Previous Federal Actions

The National Audubon Society submitted a petition to the Service on January 15, 1988, the list the Washington, Oregon, California population of the marbled murrelet as a threatened species. Section 4(b)(3)(A) of the Act requires that, to the maximum extent practicable, within 90 days of receipt of a petition to list, delist, or reclassify a species, a finding be made as to whether substantial information has been presented indicating that the requested action may be warranted. The 90-day finding stating that the petition had presented substantial information to indicate that the requested action may be warranted was published in the Federal Register on October 17, 1988 (53 FR 40479). Because of the increased research efforts and the amount of new data available, the status review period was reopened, with the concurrence of the petitioners, from March 5, 1990 through May 31, 1990 (55 FR 4913).

The marbled murrelet has been included in the Service's Notice of Review for vertebrate wildlife as a category 2 candidate species for listing since 1989 (54 FR 554). A category 2 candidate is one for which information contained in Service files indicates that preparation of a proposal to list the species is possibly appropriate but additional data is needed to support a listing proposal. The best available scientific and commercial data were analyzed and evaluated as a result of the status review mentioned above. The review included the pertinent data available from both published and unpublished sources. Unpublished sources included solicited progress and final reports, file data, meeting notes, letters, and personal contact with agencies, organizations, and individuals. These data elevated the marbled murrelet to category 1 candidate status and contributed to the information on which the decision to propose this species for listing was based. A category 1 candidate is one for which the Service has sufficient data in its possession to support a listing proposal. On June 20, 1991, the Service published a proposal to list the marbled murrelet as a threatened [illegible] California (56 FR 28382). This proposed rule constituted the 12-month finding that the petitioned action was warranted, in accordance with section 4(b)(3)(B) of the Act.

On January 30, 1992, the Service published a notice in the Federal Register (57 FR 3804) that reopened the comment period on the proposed listing for 30 days. This action was taken to gather the most updated information on the marbled murrelet. Having considered all the information presented during the comment periods, the Service now determines the marbled murrelet in Washington, Oregon, and California to be a threatened species.

Summary of Comments and Recommendations

In the June 20, 1991, proposed rule (56 FR 28382) and associated notifications, all interested parties were requested to submit factual reports or information that might contribute to the development of a final decision. The comment period originally closed September 18, 1991. Appropriate state agencies, county governments, Federal agencies, scientific organizations, and other interested parties were contacted and requested to comment. No requests for public hearings were received. On January 30, 1992, the Service published in the Federal Register (57 FR 3804) a notice that reopened the comment period for 30 days to solicit additional biological information on the status of the marbled murrelet.

During the comment periods, totaling 120 days, 52 letters on the proposal were received. Five additional comments were received shortly after the official comment period closing dates. Of the 57 comments received, 30 (53 percent) supported the proposal, 8 (14 percent) opposed the proposal, and 19 (33 percent) were neutral. Opposing comments were received from various companies and organizations that are directly or indirectly related to the timber industry, and from individuals who rely on a timber-supported economy. The California Department of Fish and Game (CDFG) and Oregon Department of Fish and Wildlife (ODFW) submitted biological information on the status of the marbled murrelet and supported Federal listing. The Washington Department of Wildlife submitted biological information, but did not state a position on the proposed listing. The Forest Service, Bureau of Land Management (Bureau), and U.S. Department of the Navy presented biological information on the murrelet but did not state positions on the

commenters submitted additional date that has been incorporated into this rule.

Written comments obtained during the comment periods are combined in the following discussion. Opposing comments and other comments questioning the rule can be placed in a number of general groups, organized around specific issues. These categories of comment and the Service's response to each are listed below.

Issue 1. Current Regulatory Mechanisms

Comment: Some commenters disagreed with the conclusion that adequate regulatory protection does not exist for the marbled murrelet in California. They stated that the majority of known marbled murrelet habitat in California is located in State or National Parks that is protected from timber harvesting. In addition, the small but significant amount of murrelet habitat found on private timberlands in California is adequately protected through the evaluation and review process conducted by the California Board of Forestry (Board). California environmental statutes provide sufficient protection for the bird in that state.

Another commenter stated that the Service failed to assess the degree to which current regulatory mechanisms will maintain a viable sub-population of marbled murrelets and that land allocations and projected forest conditions described in the Final Forest Service Land Management Plans (Forest Plans) were not analyzed. Through wilderness, critical habitat for the northern spotted owl (*Strix occidentalis caurina*), and other non-timber harvest "set asides," final Forest Plans in Oregon and Washington have left only 18 percent of the original land base that was primarily available for timber production.

Service Response: The Service considered all the existing applicable regulatory mechanisms that deal with timber harvest and marbled murrelets on private, State, and Federal lands in California, Oregon, and Washington. These issues are discussed in the Summary of Factors section, Factor D. The Service concludes that existing management plans pertaining to timber harvest and marbled murrelets are inadequate to ensure the survival of the species. The management direction for the northern spotted owl, in many cases, will not adequately provide for marbled murrelets (see Factor D). Furthermore, Forest Plans are flexible and could be altered in the future, and thus protection afforded to marbled murrelets may be temporary.

Comment: The Siuslaw National Forest's Land and Resource Plan provided adequate protection for the marbled murrelet because the age class inventory of acres that marbled murrelets can utilize increases over time.

Service Response: The Siuslaw National Forest is highly fragmented at present; and it is only a small part of the marbled murrelet's range. The Siuslaw National Forest Plan (USDA 1990) estimates only 6 percent (13,680 hectares (33,900 acres)) of the forested land base remains as older forest. Of this total, 32 percent (4,330 hectares (10,700 acres)) is non-reserved. The Forest Plan estimates that 1,200 hectares (3,000 acres) of the non-reserved old-growth will be harvested during the next 10 years and the remaining within the next 50 years (p. III-3). The Service will continue to work with the Siuslaw National Forest to evaluate the value of the forest for marbled murrelets and encourage actions that are of benefit to the species.

Issue 2. Insufficiency of Scientific Data

Habitat Association

Comment: Several commenters thought that too few nests had been discovered to date to be able to make the assumption that nesting habitat consisted of old-growth and mature forests, and the small set of marbled murrelet nest sites did not provide substantive evidence (with a statistically valid sample size) that the marbled murrelet prefers late stage vegetation in the Pacific States.

Service Response: The Act requires the Service to base its decision upon the best scientific information available. As discussed in the Background section of this rule, nests sites comprise a small part of the information the Service has used to determine habitat preferences and use. A larger sample size of nests would be helpful in providing a more detailed description of nesting habitat and nest site selection. Surveys have been conducted in forests of all age classes; and marbled murrelets do not occupy stands lacking old-growth characteristics. Furthermore, 8 of 10 downy young and 20 of 31 fledglings from throughout the range were located in old-growth coniferous forests, with the remainder being adjacent or near to old-growth forests (Carter and Sealy 1987). Since the publication of the proposed rule, the number of known nests has more than doubled; all nests have been in old-growth trees.

Comment: One commenter stated that surveys in forests in California, Oregon, and Washington suggest, but do not verify, that marbled murrelets require larger areas of old-growth or mature forests for nesting. Also, statements indicating that fragmentation has a negative impact on nesting are not backed by sufficient scientific data.

Service Response: The Service's conclusions regarding the murrelet's preference for old growth, and vulnerability, are based upon numerous studies comparing the findings of marbled murrelets in various stand age classes, sizes, and structure. All studies show a strong affinity/dependence on larger older forest stands. A statistically significant higher rate of marbled murrelet detections has been observed in old-growth forests compared to mixed-age and young forests in California, Oregon, and Washington.

In a few instances murrelets have been found in mature stands, but always in close association with residual older trees. These stands had recovered naturally following a natural disaster. The structural characteristics of the surrounding stand, size and configuration of the timber stand, existing condition of adjacent timber stands, distance to and abundance of a prey source, and density of and vulnerability to predators are all very likely important aspects of marbled murrelet nesting habitat. The marbled murrelet's semi-colonial social structure may dictate some nest site characteristics as well.

Comment: Some commenters stated that attempts to correlate general observations of marbled murrelets along coastlines or bodies of water with adjacent mainland old-growth must not be misconstrued as a cause-and-effect relationship. These aggregations could be the resultant effect of historical groupings, prey base availability, or coastline features such as estuarine environments or topographical features that offer protection from prevailing winds, rather than necessarily being "old growth" driven. Furthermore, the conclusion that widespread timber harvesting may have caused dramatic declines in marbled murrelet populations cannot be considered unequivocal because past populations may have been limited by food availability and/or winter mortality rather than availability of nesting habitat. In addition since we do not know how breeding marbled murrelets were distributed over the forest landscape historically, we cannot know if they are different today.

Service Response: The Service determines species to be endangered or threatened using the best scientific information as the basis for such decisions. The Service agrees that prey

commenters submitted additional data that has been incorporated into this rule.

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Service Response: The Service determines species to be endangered or threatened using the best scientific information as the basis for such decisions. The Service agrees that prey

availability probably influences the offshore distribution of marbled murrelets; however, murrelets are absent from some areas where prey species are abundant. Therefore, the absence of marbled murrelets offshore from most areas where older forests have been extensively depleted strongly suggests that offshore abundance of marbled murrelets is correlated with adjacent mainland mature and old-growth forests, particularly given historical accounts of birds located in these areas prior to extensive logging. As discussed in the Background section of this rule, current research has shown that marbled murrelets are strongly associated with older forest habitat.

Comment: Although the density of nesting pairs may be low in managed forests, the vast acreage involved possible could include a considerable number of marbled murrelets.

Service Response: As discussed in the Background section of this rule, current research has shown that marbled murrelets are strongly associated with older forest habitat. Second-growth forests lack marbled murrelets except in those rare instances where residual old-growth trees remain.

Comment: One commenter stated that although the conclusion that marbled murrelets are linked to old-growth and mature forests for nesting is supported by field observations, it is unknown if the forest as a whole promotes successful nesting or if structural conditions found within such forests determine use of forests. Two examples suggested that required nesting structures may not necessarily include extensive old-growth or mature forest. One such example was the area along the Nemah River near Willapa Bay, Washington. Although it is not known conclusively if marbled murrelets nest in the area, birds are consistently observed there during the nesting season. The commenter stated that this area was selectively harvested about 50 years ago, and now consists largely of remnant old-growth trees (Sitka spruce, 366 centimeters (144 inches) dbh; western red cedar, 427 centimeters (168 inches) dbh; in a forest area now largely composed of about 60 year-old trees. A second example presented was the Brandy Bar study area reported by Varoujean *et al.* (1989) from coastal Oregon; however, no descriptive information was provided for this site.

Service Response: The Service obtained information on the Nemah River site, an isolated stand in southwest Washington, from Washington Department of Wildlife personnel who have been conducting area (Hamer, Wash. Dept. Wildl., pers. comm., 1992). The Nemah site is an unmanaged stand that naturally regenerated after fire and windthrow. The majority of trees in the stand are approximately 70 years old and grew back naturally after severe windstorms that occurred during 1921. Remnant old-growth trees are scattered throughout the stand. Although no nests have been discovered to date, high numbers of detections indicate occupancy. The Brandy Bar site in coastal Oregon is also a naturally regenerated stand. The majority of trees in the stand, which are approximately 80 years old, grew back naturally after fire. Similar to the Nemah stand, large remnant old-growth trees are scattered throughout the site. These observations are consistent with the information on habitat preference presented in the Background section of this rule.

Life History Information

Comment: Some commenters questioned life history parameters presented and indicated that a sample size of so few nests was insufficient to draw such conclusions. Such issues included the number of eggs laid per nest and the semi-colonial behavior of the bird.

Service Response: The Service has continued to collect information on the marbled murrelet in the three-state area. We have information from twice as many nests as were known at the time of the proposal. New observations continue to indicate that marbled murrelets lay one egg per nest and are semi-colonial in nesting areas. None of the commenters provided data or observations that refuted statements regarding the life history strategy of marbled murrelets.

Population Estimates and Trends

Comment: One commenter stated that the Service should clearly define the threshold, such as population level, for a species such as the marbled murrelet to be delineated as threatened. Without supplying a minimum population threshold level it considers viable, the Service has no way to determine that sufficient habitat is not available.

Service Response: The Act does not establish such thresholds, nor does it require the Service to set thresholds. The Service has information indicating that the marbled murrelet population has undergone a decline, and that the primary cause of that decline, loss of nesting habitat, is likely to continue. Lesser threats of oil spills, gill-net fisheries, and predation also contribute

Comment: One commenter stated that surveys that have occurred were concentrated in older forests, thereby biasing the data in favor of the dependence of marbled murrelets on older forests. The commenter stated that population trends cannot be established using such data. The Service assumed that populations have declined but lacks demographic studies upon which to verify this trend. The Service lacks historical population data to compare to current population levels.

Service Response: Many studies have surveyed a variety of forest age classes to avoid any survey bias towards older forests. The anecdotal historical information suggests a precipitous decline in total numbers (from an estimated 60,000 birds in California to 9,000 for the three-state area). Although demographic information could contribute to our understanding of the decline, it is not needed to validate the trend.

Issue 3. Decision is Political, Not Biological

Comment: One commenter stated that the decision process was being driven by politics and threatened legal pressure from the Sierra Club, National Wildlife Federation, etc. and was not based on facts.

Service Response: The Service bases its decisions on the listing of species solely upon biological information, as required by the Act.

Issue 4. Critical Habitat

Comment: One commenter asked why, if old-growth and mature forests are critical for the viability of the marbled murrelet, didn't the Service list all old-growth and mature forests within the range of the species as critical habitat according to section 4(a)(3) of the Act during the rule development. Another commenter stated that due to the strong commitment of the private timberland owners in California, the vast quantity of public land presently being managed for the murrelet, and the legally protected status of the species in California, they did not feel it was necessary or prudent to designate critical habitat in California. Several commenters urged designating critical habitat for the marbled murrelet at the time of listing.

Service Response: During the comment periods on the proposed listing, the Service sought additional agency and public input on critical habitat, along with information on biological status and threats to the species. The Service must also take into

specifying any particular area as critical habitat (16 U.S.C. 1533(b)(2)). The Service will continue to analyze information and will propose critical habitat to the maximum extent prudent and determinable, within the timeframes specified in the Act. The Service's process in determining critical habitat for the marbled murrelet is discussed in more detail in the Critical Habitat section of this rule.

Issue 5. Alternate Listing Status Recommended

Comment: ODFW recommended that it may be more appropriate to list the marbled murrelet as endangered in California and Oregon and threatened in Washington.

Service Response: After a thorough status review, the Service proposed threatened status for the population. Although the status of the murrelet is not uniform throughout its range in Washington, Oregon, and California, the overall picture presented is one of a threatened species. Recovery planning will consider the status of the marbled murrelet within the individual states and smaller sub-regions.

Comment: One commenter suggested that the species should be considered for listing as threatened in Alaska as well. They presented data on logging practices in southeast Alaska, in particular, on the Tongass National Forest. They also expressed concern for the marbled murrelet population in Prince William Sound that experienced high losses as a result of the Exxon Valdez oil spill and is also subject to pressures from logging of adjacent private old-growth forests. They suggested that the marbled murrelet should be listed as threatened in Alaska until it could be demonstrated conclusively that planning for logging (including accurate forest inventories), had fail-safe provisions to assure that marbled murrelet nesting habitat would not be significantly diminished.

Service Response: This rule presents the final determination that the proposal (56 FR 28362) to list the marbled murrelet in Washington, Oregon, and California as a threatened species is warranted. Alaska was not included in the proposed rule; therefore, it cannot be included in this final rule for listing. The Service will continue to evaluate the status of the marbled murrelet and its habitat in Alaska.

Issue 6. National Environmental Policy Act

Comment: One commenter stated that the Service should prepare an Environmental Impact Statement (EIS), Policy Act (NEPA), on this rule. A decision to list the marbled murrelet is a major Federal action significantly affecting the quality of the human environment that must be accompanied by an EIS under NEPA.

Service Response: The Service has determined that preparation of an EIS is not required in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended (see National Environmental Policy Act section of this rule). The Service's reasons for this determination were published in the Federal Register (see 48 FR 49244).

Issue 7: Distinct Population Segment

Comment: The Service failed to explain how it determined the marbled murrelet in California, Oregon, and Washington to be a "distinct population segment". The commenter questioned the significance of the area selected.

Service Response: This issue is discussed in the Distinct Population Segment section of this rule. In summary, no comments were received indicating that the marbled murrelet in Washington, Oregon, and California is more widespread, more common, or under lesser threats than indicated by previous analyses.

Summary of Factors Affecting the Species

After a thorough review and consideration of all information available, the Service has determined that the Washington, Oregon, and California population of the marbled murrelet should be classified as a threatened species. Procedures found in section 4 of the Act and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act were followed. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their application to the Washington, Oregon, and California population of the marbled murrelet (*Brachyramphus marmoratus marmoratus*) are as follows:

A. The Present or Threatened Destruction, Modification, or Curtailment of the Species' Habitat or Range

Current estimates of 1.4 million hectares (3.4 million acres) of old-growth forest throughout western Oregon and Washington represent a reduction of approximately 82.5 percent from prelogging levels (Booth 1991). Old-growth forests in the Douglas-fir/mixed conifer region of northwestern of about 45 to 80 percent since the mid-1800's (Laudenslayer 1985, California Department of Forestry and Fire Protection 1988). Estimates of the amount of reduction of coastal old-growth redwood forests in California (all formerly marbled murrelet habitat) range from approximately 85 to 96 percent (Green 1985, Fox 1988, Larsen 1991). The marbled murrelet occurs along the coastline, occupying only a small fraction of area that was formerly dominated by older forests, and a small fraction of the area that still contains older forests.

In addition, reduction of the remaining older forest has not been evenly distributed over western Oregon, Washington, and northwestern California. Harvest has been concentrated at the lower elevations and within the Coast Ranges (Thomas *et al.* 1990), generally corresponding with the range of the marbled murrelet. Reduction of these older forests is largely attributable to timber harvesting and land conversion practices, although natural perturbations, such as forest fires and windthrow, have caused considerable losses as well.

The geographic distribution of the marbled murrelet along the west coast of North America is discontinuous. The gap in the present distribution in the southern portion of the range in California was apparently the result of extensive clearcutting of forests in the earlier half of this century that eliminated most nesting habitat (Paton and Ralph 1988, Carter and Erickson 1988). Other local breeding populations, especially between the Olympic Peninsula in Washington and Tillamook County in Oregon, were very likely eliminated through loss of their nesting habitat (Nelson, pers. comm., 1991).

Some of the old-growth areas that have been lost through natural perturbations such as forest fire and windthrow still provide habitat suitable for marbled murrelets. Mature forests, naturally regenerated from such perturbations, that retain scattered old-growth trees and a diversity of structure are sometimes occupied and used for nesting, but less commonly than large stands of old growth forests. That is particularly true in coastal Oregon where there has been extensive fire history. No occupied sites have been located in young stands or clear-cuts, or young/mature mixed forests that lack remnant old-growth trees (Nelson, pers. comm., 1992). Mature second-growth does not support breeding when it occurs isolated from older forest or residual (fragmented) older forest stands

Forests generally require approximately 200 years to develop old-growth characteristics. The older trees within these stands have large horizontal limbs used by nesting murrelets. However, forests in Washington, Oregon, and northern California have been subjected to, and are proposed for, intensive management with average cutting rotations of 70 to 120 years to produce wood at a non-declining rate (USDI 1984, USDA 1988). Cutting rotations of 40 to 50 years are used for some private lands. Current preferred timber harvest strategies on Federal lands and some private lands emphasize dispersed clearcut patches for even-aged management as the pattern of harvest. Although recently both the Forest Service and the Bureau announced that their respective agencies intend to de-emphasize clearcutting in their future timber sale planning efforts, alternate methods of timber harvest vary greatly in terms of how they will modify marbled murrelet habitat. For example, timber harvest methods such as the shelterwood and seed tree methods, in addition to "new forestry" techniques, remove a varying amount of trees from a particular area. Although the remaining trees and habitat components left by these alternate harvest methods may help decrease the amount of time it would take an area to again become suitable habitat for marbled murrelets, the harvest methods would not provide suitable habitat over the short-term. Thus, public forest lands that are intensively managed for timber production (cutting rotations of 70 to 120 years) are, in general, not allowed to develop old-growth characteristics. As a result of this short rotation age and the continued harvest of old-growth and mature forests, loss and fragmentation of remaining suitable nesting habitat for marbled murrelets will continue throughout the forested range of the subspecies under current management practices, except in reserved areas.

Most remaining nesting habitat within the petitioned states is on Federal and State owned lands, as most nesting habitat on private lands has been eliminated. Under current forest management practices, logging of the remaining older forests is likely to continue, except in areas with mandated protection. In Oregon, 8 of 154 forest stands in which marbled murrelets are found, have been eliminated or greatly modified by logging practices. Additionally, 10 or more stands with occupied sites are likely to be modified or eliminated due to timber harvest in

B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

Not known to be applicable.

C. Disease or Predation

Predation is an additional threat to the continued existence of the marbled murrelet. Of the 23 tree nests located, 8 were successful, 13 failed (10 from predation, 2 from human interference, and 1 from edge effects (wind blew the chick out of the nest)), and the status of the remaining 2 was indeterminable (Nelson, *in litt.*, 1992). Great horned owls (*Bubo virginianus*), Stellar's jays (*Cyanocitta stelleri*), common ravens (*Corvus corax*), peregrine falcons (*Falco peregrinus*), and sharp-shinned hawks (*Accipiter striatus*) are known predators. Additional suspected predators include gray jays (*Perisoreus canodensis*) and common crows (*Corvus brachyrhynchos*). Predation at 10 of 23 (43 percent) nests is high and could have a substantial effect on the viability of this species. There is a substantial amount of information on the effects of forest fragmentation on depredation of bird nests by corvids (jays, ravens, crows). Corvid predation on nests (eggs and chicks) increases with the fragmentation of older-aged forests (Yahner and Scott 1988), and avian nesting success is lower in small forest fragments than larger intact forests because of predation and decreased fecundity (Ambuel and Temple 1983, Andren *et al.* 1985, Wilcove 1985, Temple and Cary 1988).

D. Inadequacy of Existing Regulatory Mechanisms

Marbled murrelets are protected from "take" by the Migratory Bird Treaty Act (16 U.S.C. 703 *et seq.*). The marbled murrelet is identified as Sensitive by the Forest Service and the Bureau. The States of California, Oregon, and Washington have legislative mandates and acts specific to listing and protecting species determined to be endangered or threatened.

The marbled murrelet was listed as endangered within the State of California by the CDFG. Under provisions of the California Endangered Species Act, the California Department of Forestry (CDF) must consult with CDFG if a proposed timber harvest plan for private or State lands has the potential to adversely affect the marbled murrelet or its habitat. However, most of the marbled murrelet habitat in California is Federally controlled (National Parks and Forest Service) and does not fall under the protection of the

does not require that a recovery plan be developed, in contrast to a federally listed threatened or endangered species. The CDF, responsible for regulating the harvest of commercial timber from private and State timberlands in California, adopted emergency rules to protect the marbled murrelet that became effective on June 28, 1991. These emergency rules required surveys for marbled murrelets in potential habitat and required feasible mitigation to reduce or avoid a significant adverse impact on the species in known activity areas. These emergency rules expired on March 2, 1992. Proposed permanent rules promote consistency and conformity with the State Act which prohibits "take" of an endangered species. The specific protections under the State Act extended to habitat protection for the marbled murrelet are unclear at this time.

In Oregon, the marbled murrelet is classified as Sensitive by the ODFW, which provides no mandated protection. The Oregon Board of Forestry is currently reviewing a proposal, submitted by the Portland Audubon Society in late November 1991, to list the marbled murrelet as a species that uses sensitive nesting sites. Until final rules are adopted, timber harvests within known marbled murrelet sites on State-owned forest land are being examined on a case-by-case basis. Although affording some protection to known occupied sites, the proposed rules would not require surveys in potential marbled murrelet habitat prior to conducting activities that could impact the habitat.

In Washington, the marbled murrelet is also listed as Sensitive by the WDW. Under its State Forest Practices Act, the Washington Department of Natural Resources (WDNR) is responsible for regulating harvesting of commercial timber from private and State DNR managed timberlands in Washington. The WDW does provide management recommendations to WDNR on proposed harvests within known marbled murrelet areas; however, WDNR has no rules that provide legally mandated protection for the marbled murrelet.

The National Forest Management Act of 1976 and its implementing regulations require the Forest Service to manage National Forests to provide sufficient habitat to maintain viable populations of native vertebrate species, such as the marbled murrelet. These regulations define a viable population as one which " * * * has the estimated numbers and distribution of reproductive individuals

distributed in the planning area" [36 CFR 219.19].

A system of Habitat Conservation Areas (HCAs) was developed as part of a conservation strategy for the northern spotted owl (Thomas *et al.* 1990). These areas have been recommended as "no harvest" areas. Currently neither the Forest Service nor the Bureau are harvesting timber in these areas. However, neither agency has made a final decision on the long term management of these areas. Some portions of these HCAs occur within the range of the marbled murrelet in all three states. The HCA's were designed to support a pair target of northern spotted owls in the future, and may not currently support sufficient habitat for the target number of owls.

These HCAs were modified to produce the Designated Conservation Areas (DCAs) in the draft recovery plan for the northern spotted owl. The DCA lines are only recommendations. Final decisions on HCA or DCA lines will be determined by the individual agency's land management planning process.

Category 4 HCAs are a maximum of 2 hectares (80 acres) in size, and may not be large enough to support reproductively successful marbled murrelets. In addition, sites on the edge of protected areas may experience the adverse effects of forest fragmentation.

On January 15, 1992, the Service finalized designation of 2.8 million hectares (6.88 million acres) as critical habitat for the northern spotted owl in Washington, Oregon, and California (57 FR 1796). These critical habitat areas include most of the HCAs and add areas found and between them. Acres in spotted owl critical habitat, in addition to HCAs and other protected land allocations, equal approximately 78 percent of the suitable marbled murrelet habitat managed by the Forest Service in the Mount Baker-Snoqualmie, Olympic, Siuslaw, and Siskiyou National Forests (Gunderson, Forest Service, pers. comm., 1992), examining areas up to 80 kilometers (50 miles) inland.

In Washington, Oregon, and California, the HCAs, plus other protected areas (primarily managed for northern spotted owls), encompass approximately 67 percent of the suitable marbled murrelet habitat managed by the Forest Service (Gunderson, pers. comm., 1992). However, about 29 percent of the known occupied sites within the four Forests are located within Forest plan allocations where timber harvest will occur. These estimates used 50 miles inland as the boundary of marbled murrelet habitat. In the Mount Baker-Snoqualmie National Forest, over 90 percent of all inland observations have been within 60 kilometers (37 miles) of the coast (Hamer and Cummins 1991). In Oregon, the majority of detections and number of marbled murrelets occur within 40 kilometers (25 miles) of the coast (Nelson, pers. comm.). The Service concludes that although the marbled murrelet will be afforded some amount of incidental protection through the management of HCAs for the northern spotted owl, this protection is not adequate.

Although these critical habitat areas and other designations for the northern spotted owl may provide some incidental protection for the marbled murrelet, such areas do not provide adequate protection for marbled murrelets. For example, critical habitat designation for the owl does not necessarily preclude timber harvest or other project activities from occurring within critical habitat boundaries. Northern spotted owls use various age classes and structures of forest habitat, and critical habitat boundaries encompass all types of habitat used by spotted owls. Spotted owls use forests for nesting, roosting, foraging, and dispersal. Although nesting habitat for spotted owls and marbled murrelets may be somewhat similar, spotted owls can use younger stands for activities such as foraging and dispersal. Marbled murrelets use older forests solely for nesting purposes. Roosting and foraging take place in the marine environment. Federal agencies are required to consult with the Service on any actions they authorize, fund, or carry out that may affect spotted owl critical habitat. Habitat requirements and impacts specific to marbled murrelets are not addressed during consultation on spotted owl critical habitat. The results of such consultations may provide for owl dispersal or foraging habitat, or other forest structures that are not used by marbled murrelets. Moreover, spotted owls may be more adaptable in their nest site selection than are marbled murrelets. For example, in approximately 7 percent of the range of the northern spotted owl (i.e., northern California), owls use comparatively young second-growth redwood forests, whereas marbled murrelets do not (probably because redwoods do not provide the large horizontal limbs needed by marbled murrelets for nesting). Spotted owls use some second-growth forests where inefficient logging practices left remnant patches of older trees. Marbled murrelets have a high but only where residual old-growth trees remained. Forests may recover more rapidly from natural disasters (e.g., windthrow, fire) because fallen trees decay and nutrients are returned to the soil, and more older trees may be spared.

In California, only about 28,300 hectares (70,000 acres) (3.5 percent) of the original old-growth coastal coniferous forest remains (Larsen 1991). Of these remaining hectares, 24,300 (60,000 acres) are in State or Federal parks, where logging is precluded. The remaining 4,000 hectares (10,000 acres) are under private ownership as commercial timberland and are eligible for harvest. Marbled murrelets would not be adequately preserved by depending solely on remaining old-growth coastal coniferous forest maintained on parkland (Larsen 1991). In a park situation where human food and garbage are readily available, the population levels of corvids are unnaturally high and may lead to increased nest predation. Tree cutting and the removal of large horizontal branches and snags through safety pruning operations in picnic areas and campgrounds may also adversely affect the marbled murrelet (Singer, *in litt.*, 1991).

E. Other Natural or Man-made Factors Affecting its Continued Existence

Mortality from gill-net fishing and oil spills has had a negative impact on the marbled murrelet. Although California and Oregon no longer allow gill-net operations, gill-net fishing is an annual occurrence in Washington. For example, about 1,200 gill-net licenses are issued each year in Washington (Marshall 1988). Gill-net fisheries occur in areas of marbled murrelet concentrations in Washington, but the mortality rate is unknown. One study conducted in British Columbia along Vancouver Island documented gill-netting as responsible for killing approximately 8 percent of the potential fall population of marbled murrelets (Carter and Sealy 1984). In a 1990 study of incidental take in the Prince William Sound salmon gill-net fishery, marbled murrelets were the most frequently caught seabird (Kuletz 1992). By extrapolation, an estimated 1,200 (95 percent CI–702–1,764) murrelets, or 1.4 percent of the Prince William Sound population, were taken. These studies suggest that the gill-net fishery in Washington may negatively affect marbled murrelet numbers there.

Marbled murrelets have a high

feeding in local concentrations close to shore. In a paper presented at the 1975 Symposium on Conservation of Marine Birds of North America, the marbled murrelet was given one of the highest oil spill vulnerability ratings of any Northeast Pacific seabird (King and Sanger 1979). Oil spills are chance events but, depending on the location, extent, and season of spill, could have significant adverse effects on local or regional populations of marbled murrelets. The *Exxon Valdez* oil spill of 1989 occurred in Prince William Sound, Alaska, and adversely affected local populations of marbled murrelets (Piatt *et al.* 1990). The number of carcasses recovered after the spill was from 612 to 642. Identified *Brachyramphus* murrelets, most of which were probably marbled murrelets, represented 11.6 percent of the Prince William Sound carcasses recovered. At the time of the spill, marbled murrelets were estimated to be 6.3 percent of the seabirds present in Prince William Sound and, thus, proportionally more murrelets were killed than were at risk (Piatt *et al.* 1990, Kuletz 1992). For the three-state area of this proposed rule, Puget Sound in Washington is a special concern.

Marbled murrelets are found both during the nesting season and during winter within areas affected by oil shipments. If approved, proposed oil exploration, possibly leading to production and increased movement of oil along the near-shore marine environment in Washington, Oregon, and California would increase the degree of threat from oil spills. Oiled marbled murrelets have been reported in several Washington oil spills, including the *Seagate* oil spill of 1956, the *Arco Anchorage* oil spill of 1985, the *Nestucca* oil spill of 1988, and the *Teenyo Maru* oil spill of 1991 (Leschner and Cummins 1990; Momot, U.S. Fish and Wildl. Serv., pers. comm., 1992). Several instances of marbled murrelet mortality due to oil spills have been documented in California as well (Carter and Erickson 1988, Carter *et al.* 1990). Oil spills are random events that would adversely affect marbled murrelets in the local area of the spill. Because the populations in Oregon, Washington, and California are small and locally concentrated, oil spills could result in local extirpations.

The marbled murrelet's reproductive strategy offers little opportunity for the population to rapidly increase in number. Murrelets probably do not reproduce every year, and pairs only lay one egg in a nest. Such a low reproductive rate would not yield a can easily recover once numbers have been depleted.

The Service has carefully assessed the best scientific and commercial data available and concluded that the marbled murrelet in California, Oregon, and Washington is threatened due to loss of mature and old-growth forests that provide suitable nesting habitat. Secondary threats include gill-net fisheries in Washington, predation, and oil spills. The species' intrinsically low reproductive rate makes it unlikely that it will rapidly increase in number. The degree of threat facing the marbled murrelet does not suggest that extinction is imminent, but continued loss of nesting habitat throughout the forested portion of its range, indicates the species is likely to become endangered within the foreseeable future throughout a significant portion of its range. Under these circumstances, listing as threatened is appropriate.

Critical Habitat

Section 4(a)(3) of the Act requires, to the maximum extent prudent and determinable, that the Secretary designate critical habitat at the time a species is determined to be endangered or threatened. Critical habitat is defined as the specific areas within the geographical area currently occupied by a species on which are found the physical or biological features essential to the conservation of the species and that may require special management considerations or protection (16 U.S.C. 1532(5); 50 CFR 424.02(d)). Designations of critical habitat must be based on the best scientific data available and must take into consideration the economic and other relevant impacts of specifying any particular area as critical habitat (16 U.S.C. 1533(b)(2)).

When prompt listing of a species is essential to its conservation, but sufficient information to perform required analyses of the impacts of a critical habitat designation is lacking, the Service may go forward with a final listing decision without designating critical habitat. A critical habitat determination, to the maximum extent prudent, must then be completed not later than 1 year after the listing. The Service is continuing to gather information to be used in these analyses, and to evaluate the benefits (if any) of designating critical habitat for this species.

The Service currently lacks sufficient information to perform required analyses of the impacts of a critical habitat designation for the marbled murrelet. The Service must evaluate several aspects of a critical habitat The marbled murrelet nests in older forests, but roosts and forages in the marine environment. The Service must determine whether or not designation of critical habitat in the marine environment is prudent. The Service must also carefully study all known occupied sites and other suitable areas, in order to determine which physical or biological features are in fact essential to the conservation of the murrelet. Ongoing studies will help refine the Service's knowledge of the marbled murrelet's association with timber stands of varying size and structure, and of the surrounding landscape conditions.

In addition, in order to analyze the economic impacts of a critical habitat designation, the Service must obtain information about the costs of such a designation over and above costs associated with listing. The Service must have information on the costs associated with a designation of critical habitat in the marine environment. Such information would include the possible increased costs associated with oil spill contingency plans, changing oil tanker routes, and a possible alteration of fishery practices. Such information will be gathered by coordinating with appropriate Federal agencies. The restrictions on timber harvest for a critical habitat designation for the marbled murrelet would be different from those associated with critical habitat for the northern spotted owl. The costs associated with timber harvest reductions in critical habitat for the murrelet would be different from those associated with critical habitat for the owl.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain activities. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. The protection required of Federal agencies and the prohibitions against certain activities are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat if any is being

this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(2) of the Act requires Federal agencies to insure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service. Regulations governing these consultations are found at 50 CFR 402.14.

The Forest Service and Bureau have active timber sale programs in Washington, Oregon, and California, whereby private timber companies bid for timber on Federal land. A substantial portion of these timber sales occur in older forests. The Forest Service and Bureau would review and assess the potential impacts of these timber sales on the murrelet, and would be required to consult with the Service on these sales to ensure compliance pursuant to section 7 of the Act. Other Federal agencies that are likely to have projects that may affect the marbled murrelet include the Bureau of Indian Affairs (timber harvest) and the Army Corps of Engineers (waste disposal and dredging/fill operations).

The Act and implementing regulations found at 50 CFR 17.21 and 17.31 set forth a series of general prohibitions and exceptions that apply to all threatened wildlife not covered by a special rule. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States, to take (defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect; or to attempt any of these activities), import or export, transport in interstate or foreign commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce, any threatened species not covered by a special rule. It also is illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Certain exceptions apply to agents of the Service and State conservation agencies.

Permits may be issued to carry out otherwise prohibited activities involving threatened wildlife species under certain circumstances. Regulations governing threatened species permits are provided in 50 CFR 17.32. Unless otherwise provided by special rule, such permits are available for scientific purposes, to enhance the propagation or survival of the species, for economic hardship, zoological exhibition, educational purposes, special purposes consistent with the Act, and/or for incidental take in connection with otherwise lawful activities. Information on permits to take federally listed species may be obtained by writing to the Office of Management Authority, U.S. Fish and Wildlife Service, 4401 N. Fairfax Drive, room 432, Arlington, Virginia 22203–3507 (703/358–2104, FAX 703/358–2281)

National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the Federal Register on October 25, 1983 (48 FR 49244).

References Cited

A complete list of all references cited herein is available upon request from the Field Supervisor, U.S. Fish and Wildlife Service, Portland Field Office, 2600 S.E. 98th Avenue, suite 100, Portland, Oregon 97266.

Authors

The primary authors of this rule are Janet L. Stein and Gary S. Miller, U.S. Fish and Wildlife Service, Portland Field Office (see ADDRESSES section); telephone 503/231–6179.

List of Subjects in 50 CFR Part 17

Endangered and threatened Species, Exports, Imports, Reporting and recordkeeping requirements, and Transportation.

Regulation Promulgation

PART 17—[Amended]

Accordingly, part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations is amended as set forth below:

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1544; 16 U.S.C. 4201–4245; Pub. L. 99–625, 100 Stat. 3500; unless otherwise noted.

2. Amend § 17.11(h) by adding the following, in alphabetical order under Birds, to the List of Endangered and Threatened Wildlife:

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Species							
Common name	Scientific name	Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
*	*	*	*	*	*		
BIRDS							
*	*	*	*	*	*		
Murrelet, marbled	*Brachyramphus marmoratus marmoratus.*	U.S.A. (CA, OR, WA, AK); Canada (British Columbia).	WA, OR, CA	T	479	NA	NA
*	*	*	*	*	*		

Dated: September 17, 1992.

[illegible]y L. Gerst,

[illegible]ting Director, U.S. Fish and Wildlife [illegible]rvice.

[illegible]R Doc. 92–23804 Filed 9–28–92; 12:00 pm]

Appendix B

Washington Administrative Codes

WAC 232-12-297, 232-12-011,232-12-014

WAC 232-12-297 Endangered, threatened, and sensitive wildlife species classification.

PURPOSE

1.1 The purpose of this rule is to identify and classify native wildlife species that have need of protection and/or management to ensure their survival as free-ranging populations in Washington and to define the process by which listing, management, recovery, and delisting of a species can be achieved. These rules are established to ensure that consistent procedures and criteria are followed when classifying wildlife as endangered, or the protected wildlife subcategories threatened or sensitive.

DEFINITIONS

For purposes of this rule, the following definitions apply:

2.1 "Classify" and all derivatives means to list or delist wildlife species to or from endangered, or to or from the protected wildlife subcategories threatened or sensitive.

2.2 "List" and all derivatives means to change the classification status of a wildlife species to endangered, threatened, or sensitive.

2.3 "Delist" and its derivatives means to change the classification of endangered, threatened, or sensi-

2.4 "Endangered" means any wildlife species native to the state of Washington that is seriously threatened with extinction throughout all or a significant portion of its range within the state.

2.5 "Threatened" means any wildlife species native to the state of Washington that is likely to become an endangered species within the foreseeable future throughout a significant portion of its range within the state without cooperative management or removal of threats.

2.6 "Sensitive" means any wildlife species native to the state of Washington that is vulnerable or declining and is likely to become endangered or threatened in a significant portion of its range within the state without cooperative management or removal of threats.

2.7 "Species" means any group of animals classified as a species or subspecies as commonly accepted by the scientific community.

2.8 "Native" means any wildlife species naturally occurring in Washington for purposes of breeding, resting, or foraging, excluding introduced species not found historically in this state.

2.9 "Significant portion of its range" means that portion of a species' range likely to be essential to the long term survival of the population in Washington.

LISTING CRITERIA

3.1 The commission shall list a wildlife species as endangered, threatened, or sensitive solely on the basis of the biological status of the species being considered, based on the preponderance of scientific data available, except as noted in section 3.4.

3.2 If a species is listed as endangered or threatened under the federal Endangered Species Act, the agency will recommend to the commission that it be listed as endangered or threatened as specified in section 9.1. If listed, the agency will proceed with development of a recovery plan pursuant to section 11.1.

3.3 Species may be listed as endangered, threatened, or sensitive only when populations are in danger of failing, declining, or are vulnerable, due to factors including but not restricted to limited numbers, disease, predation, exploitation, or habitat loss or change, pursuant to section 7.1.

3.4 Where a species of the class Insecta, based on substantial evidence, is determined to present an unreasonable risk to public health, the commission may make the determination that the species need not be listed as endangered, threatened, or sensitive.

DELISTING CRITERIA

considered, based on the preponderance of scientific data available.

4.2 A species may be delisted from endangered, threatened, or sensitive only when populations are no longer in danger of failing, declining, are no longer vulnerable, pursuant to section 3.3, or meet recovery plan goals, and when it no longer meets the definitions in sections 2.4, 2.5, or 2.6.

INITIATION OF LISTING PROCESS

5.1 Any one of the following events may initiate the listing process.

5.1.1 The agency determines that a species population may be in danger of failing, declining, or vulnerable, pursuant to section 3.3.

5.1.2 A petition is received at the agency from an interested person. The petition should be addressed to the director. It should set forth specific evidence and scientific data which shows that the species may be failing, declining, or vulnerable, pursuant to section 3.3. Within 60 days, the agency shall either deny the petition, stating the reasons, or initiate the classification process.

5.1.3 An emergency, as defined by the Administrative Procedure Act, chapter 34.05 RCW. The listing of any species previously classified under emergency rule shall be governed by the provisions of this section.

5.1.4 The commission requests the agency review a species of concern.

5.2 Upon initiation of the listing process the agency shall publish a public notice in the Washington Register, and notify those parties who have expressed their interest to the department, announcing the initiation of the classification process and calling for scientific information relevant to the species status report under consideration pursuant to section 7.1.

INITIATION OF DELISTING PROCESS

6.1 Any one of the following events may initiate the delisting process:

6.1.1 The agency determines that a species population may no longer be in danger of failing, declining, or vulnerable, pursuant to section 3.3.

6.1.2 The agency receives a petition from an interested person. The petition should be addressed to the director. It should set forth specific evidence and scientific data which shows that the species may no longer be failing, declining, or vulnerable, pursuant to section 3.3. Within 60 days,

6.1.3 The commission requests the agency review a species of concern.

6.2 Upon initiation of the delisting process the agency shall publish a public notice in the Washington Register, and notify those parties who have expressed their interest to the department, announcing the initiation of the delisting process and calling for scientific information relevant to the species status report under consideration pursuant to section 7.1.

SPECIES STATUS REVIEW AND AGENCY RECOMMENDATIONS

7.1 Except in an emergency under 5.1.3 above, prior to making a classification recommendation to the commission, the Agency shall prepare a preliminary species status report. The report will include a review of information relevant to the species' status in Washington and address factors affecting its status, including those given under section 3.3. The status report shall be reviewed by the public and scientific community. The status report will include, but not be limited to an analysis of:

7.1.1 Historic, current, and future species population trends

7.1.2 Natural history, including ecological relationships (e.g. food habits, home range, habitat selection patterns).

7.1.3 Historic and current habitat trends.

7.1.4 Population demographics (e.g. survival and mortality rates, reproductive success) and their relationship to long term sustainability.

7.1.5 Historic and current species management activities.

7.2 Except in an emergency under 5.1.3 above, the agency shall prepare recommendations for species classification, based upon scientific data contained in the status report. Documents shall be prepared to determine the environmental consequences of adopting the recommendations pursuant to requirements of the State Environmental Policy Act (SEPA).

7.3 For the purpose of delisting, the status report will include a review of recovery plan goals.

PUBLIC REVIEW

8.1 Except in an emergency under 5.1.3 above, prior to making a recommendation to the commission, the agency shall provide an opportunity for interested parties to submit new scientific data relevant to the status report, classification recommendation, and any SEPA findings.

8.1.2 The agency will hold at least one public meeting in each of its administrative regions during the public review period.

FINAL RECOMMENDATIONS AND COMMISSION ACTION

9.1 After the close of the public comment period, the agency shall complete a final status report and classification recommendation. SEPA documents will be prepared, as necessary, for the final agency recommendation for classification. The classification recommendation will be presented to the commission for action. The final species status report, agency classification recommendation, and SEPA documents will be made available to the public at least 30 days prior to the commission meeting.

9.2 Notice of the proposed commission action will be published at least 30 days prior to the commission meeting.

PERIODIC SPECIES STATUS REVIEW

10.1 The agency shall conduct a review of each endangered, threatened, or sensitive wildlife species at least every five years after the date of its listing. This review shall include an update of the species status report to determine whether the status of the species warrants its current listing status or deserves reclassification.

10.1.1 The agency shall notify any parties who have expressed their interest to the department of the periodic status review. This notice shall occur at least one year prior to end of the five year period required by section 10.1.

10.2 The status of all delisted species shall be reviewed at least once, five years following the date of delisting.

10.3 The department shall evaluate the necessity of changing the classification of the species being reviewed. The agency shall report its findings to the commission at a commission meeting. The agency shall notify the public of its findings at least 30 days prior to presenting the findings to the commission.

10.3.1 If the agency determines that new information suggests that classification of a species should be changed from its present state, the agency shall initiate classification procedures provided for in these rules starting with section 5.1.

10.3.2 If the agency determines that conditions have not changed significantly and that the classification of the species should remain unchanged, the agency shall recom-

10.4 Nothing in these rules shall be construed to automatically delist a species without formal commission action.

RECOVERY AND MANAGEMENT OF LISTED SPECIES

11.1 The agency shall write a recovery plan for species listed as endangered or threatened. The agency will write a management plan for species listed as sensitive. Recovery and management plans shall address the listing criteria described in sections 3.1 and 3.3, and shall include, but are not limited to:

11.1.1 Target population objectives

11.1.2 Criteria for reclassification

11.1.3 An implementation plan for reaching population objectives which will promote cooperative management and be sensitive to landowner needs and property rights. The plan will specify resources needed from and impacts to the Department, other agencies (including federal, state, and local), tribes, landowners, and other interest groups. The plan shall consider various approaches to meeting recovery objectives including, but not limited to regulation, mitigation, acquisition, incentive, and compensation mechanisms.

11.1.4 Public education needs

11.1.5 A species monitoring plan, which requires periodic review to allow the incorporation of new information into the status report.

11.2 Preparation of recovery and management plans will be initiated by the agency within one year after the date of listing.

11.2.1 Recovery and management plans for species listed prior to 1990 or during the five years following the adoption of these rules shall be completed within 5 years after the date of listing or adoption of these rules, whichever comes later. Development of recovery plans for endangered species will receive higher priority than threatened or sensitive species.

11.2.2 Recovery and management plans for species listed after five years following the adoption of these rules shall be completed within three years after the date of listing.

11.2.3 The agency will publish a notice in the Washington Register and notify any parties who have expressed interest to the department interested parties of the initiation of recovery plan development.

11.2.4 If the deadlines defined in sections 11.2.1 and 11.2.2 are not met the department

commission meeting. The intent of this section is to recognize current department personnel resources are limiting and that development of recovery plans for some of the species may require significant involvement by interests outside of the department, and therefore take longer to complete.

11.3 The agency shall provide an opportunity for interested public to comment on the recovery plan and any SEPA documents.

CLASSIFICATION PROCEDURES REVIEW

12.1 The agency and an ad hoc public group with members representing a broad spectrum of interests, shall meet as needed to accomplish the following:

12.1.1 Monitor the progress of the development of recovery and management plans and status reviews, highlight problems, and make recommendations to the department and other interested parties to improve the effectiveness of these processes.

12.1.2 Review these classification procedures six years after the adoption of these rules and report its findings to the commission.

AUTHORITY

13.1 The commission has the authority to classify wildlife as endangered under RCW 77.12.020. Species classified as endangered are listed under WAC 232-12-014, as amended.

13.2 Threatened and sensitive species shall be classified as subcategories of protected wildlife. The commission has the authority to classify wildlife as protected under RCW 77.12.020. Species classified as protected are listed under WAC 232-12-011, as amended.

[Statutory Authority: RCW 77.12.020. 90-11-066 (Order 442), § 232-12-297, filed 5/15/90, effective 6/15/90.]

WAC 232-12-011 Wildlife classified as protected shall not be hunted or fished. Protected wildlife are designated into three subcategories: Threatened, sensitive, and other.

(1) Threatened species are any wildlife species native to the state of Washington that are likely to become endangered within the foreseeable future throughout a significant portion of their range within the state without cooperative management or removal of threats.

Protected wildlife designated as threatened include ferruginous hawk, *Buteoregalis*; bald eagle, *Haliaeetus leucocephalus*; western pond turtle, *Clemmys marmorata*; green sea turtle, *Cheloniia mydas*; loggerhead sea turtle, *Caretta caretta*; Oregon silverspot butterfly, *Speyeria zerene hippolyta*; pygmy rabbit, *Brachylagus idahoensis*.

(2) Sensitive species are any wildlife species native to the state of Washington that are vulnerable or declining and are likely to become endangered or threatened in a significant portion of their range within the state without cooperative management or removal of threats.

(3) Other protected wildlife.

Other protected wildlife include all birds not classified as game birds, predatory birds, or endangered species[,] or designated as threatened species or sensitive species; and fur seal, *Callorhinus ursinus*; fisher, *Martes pennanti*; wolverine, *Gulo luscus*; western gray squirrel, *Sciurus griseus*; Douglas squirrel, *Tamiasciurus douglasii*; red squirrel, *Tamiasciurus hudsonicus*; flying squirrel, *Glaucomys sabrinus*; golden-mantled ground squirrel, *Callospermophilus saturatus*; chipmunks, *Eutamias*; cony or pika, *Ochotona princeps*; hoary marmot, *Marmota caligata* and *olympus*; all wild turtles not otherwise classified as endangered species, or designated as threatened species or sensitive species; mammals of the order *Cetacea*, including whales, porpoises, and mammals of the suborder *Pinnipedia* not otherwise classified as endangered species, or designated as threatened species or sensitive species. This section shall not apply to hair seals and sea lions which are threatening to damage or are damaging commercial fishing gear being utilized in a lawful manner or when said mammals are damaging or threatening to damage commercial fish being lawfully taken with commercial gear.

[Statutory Authority: RCW 77.12.020. 90-11-065 (Order 441), § 232-12-011, filed 5/15/90, effective 6/15/90. Statutory Authority: RCW 77.12.040. 89-11-061 (Order 392), § 232-12-011, filed 5/18/89; 82-19-026 (Order 192), § 232-12-011, filed 9/9/82; 81-22-002 (Order 174), § 232-12-011, filed 10/22/81; 81-12-029 (Order 165), § 232-12-011, filed 6/1/81.]

Reviser's note: RCW 34.05.395 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

WAC 232-12-014 Wildlife classified as endangered species. Endangered species include: Columbian white-tailed deer, *Odocoileus virginianus leucurus*; Mountain caribou, *Rangifer tarandus*; Blue whale, *Balaenoptera musculus*; Bowhead whale, *Balaena mysticetus*; Finback whale, *Balaenoptera physalus*; Gray whale, *Eschrichtius gibbosus*; Humpback whale, *Megaptera novaeangliae*; Right whale, *Balaena glacialis*; Sei whale, *Balaenoptera borealis*; Sperm whale, *Physeter catodon*; Wolf, *Canis lupus*; Peregrine falcon, *Falco peregrinus*; Aleutian Canada goose, *Branta canadensis luecopareia*; Brown pelican, *Pelecanus occidentalis*; Leatherback sea turtle, *Dermochelys coriacea*; Grizzly bear, *Ursus arctos horribilis*; Sea Otter, *Enhydra lutris*; White pelican, *Pelecanus erythrorhynchos*; Sandhill crane, *Grus canadensis*; Snowy plover, *Charadrius alexandrinus*; Upland sandpiper, *Bartramia longicauda*; Northern spotted owl, *Strix occidentalis*.

[Statutory Authority: RCW 77.12.020(6). 88-05-032 (Order 305), § 232-12-014, filed 2/12/88. Statutory Authority: RCW 77.12.040. 82-19-026 (Order 192), § 232-12-014, filed 9/9/82; 81-22-002 (Order 174), § 232-12-014, filed 10/22/81; 81-12-029 (Order 165), § 232-12-014, filed 6/1/81.]