

Managing Second-Growth Forests in the Redwood Region for Accelerated Development of Marbled Murrelet Nesting Habitat¹

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The Marbled Murrelet is a threatened seabird that utilizes old-growth forest stands and coniferous trees with very large branches as their nesting habitat. Suitable nesting habitat is currently one of the limiting factors for the species in the Coast Redwood region. Extensive second-growth forests exist within the region that will eventually provide habitat, but natural development of second-growth into suitable trees and branch systems may take several centuries. Consequently, there is interest in the potential of managing some of these second-growth stands so as to accelerate development of suitable nesting habitat.

We conducted a scientific review of issues associated with Marbled Murrelet nesting habitat, including the character of nesting habitat, the level and importance of murrelet egg and chick predation, patterns of forest development in the redwood region, and silvicultural principles for accelerating development of late-successional structural characteristics in second-growth forests, including creation of suitable nesting habitat.

Our review found that there is strong scientific evidence that (1) Nesting habitat is an important limiting factor for murrelet reproduction and (2) predation on eggs and chicks is an important factor limiting nest success. Hence, efforts to accelerate development of suitable nesting habitat in second-growth forests are warranted but must be carried out in a fashion that does not increase rates of nest predation (in other words, densities or effectiveness of predator populations).

We concluded that there were excellent opportunities to accelerate the development of murrelet nesting habitat in highly productive second growth forests of the Coast Redwood region and developed a general silvicultural prescription to guide such efforts. In well-developed stands (for example, 50 to 70 years of age) we recommend a combination of (1) uniform thinning from below to reduce overall stand densities and (2) additional release of selected potential nest trees to stimulate

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the development of existing branches and initiation of new epicormic branch systems. This prescription should be implemented as uniformly as possible to avoid creating structural and compositional diversity and food sources that might attract additional predators. A topic that needs further exploration is treatment of crowns to stimulate development of retired trunks and associated vertical branches or “arms,” since these structures seem to have particular value as nesting habitat.

Details of the proposed silvicultural prescription will be provided in the talk. It must, of course, be adapted to specific stand conditions, so significant variability in the prescription is to be expected both within and between stands.