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Thesis Abstract

Bald Eagle Nesting Ecology and Habitat Use: Lake McDonald, Glacier National Park, Montana

Management of bald eagle (*Haliaeetus leucocephalus*) breeding areas requires information on nesting chronology and habitat use. I documented nesting activity, perch tree and roost site use at Lake McDonald in Glacier National Park, Montana from 10 January 1986–13 August 1987. In April 1986, after 18 d of incubation, the nest failed as an indirect result of food stress. Female mate replacement occurred in April 1987, but no egg was produced.

In March 1986, I equipped the adult male eagle with a radiotransmitter and telemetry locations were used to determine defended territory (12.6 sq km), nesting home range (235 sq km) and regional range (over 3000 sq km), and to document nearly 3000 perch sites. Seasonal maps show the male eagle's relative frequency of specific perch site use. Foraging perches at Lake McDonald were concentrated at inlets, points and shallow bays. Long-range movements to southeastern British Columbia (144 km from Lake McDonald) were documented in summers 1986 and 1987. The Primary Use Zone, the area where the eagles did most of their foraging and loafing, was mapped based on 3266 hr of observation. Roost sites were in proximity to the nest site during nesting and to foraging sites during nonnesting.

Threats to the resident pair include human disturbance, food stress, habitat loss, collision with vehicles or trains, shooting, poisoning and trapping. All five stream inlets on the territory are influenced by human activity and facilities. Human disturbance compounds the negative effects of the marginal prey base at Lake McDonald. Recent removal of old-growth vegetation along the lakeshore and at Lake McDonald Lodge has accelerated habitat deterioration Site-specific management recommendations stress reducing human disturbances at foraging sites and maintaining old-growth and screening vegetation at nest, forage and roost sites. Reduction of human disturbance and an increase in foraging opportunities at the head of Lake McDonald during the critical nesting season (1 Mar–15 May) and during autumn kokanee salmon (*Oncorhynchus nerka*) spawning runs (1 Nov–31 Dec) may improve bald eagle productivity at this breeding area.—**Richard E. Yates. 1989. M.S. thesis, Department of Wildlife Biology, University of Montana, Missoula, MT 59801 U.S.A. Present address: U.S. National Park Service, Glacier National Park, West Glacier, MT 59936 U.S.A.**