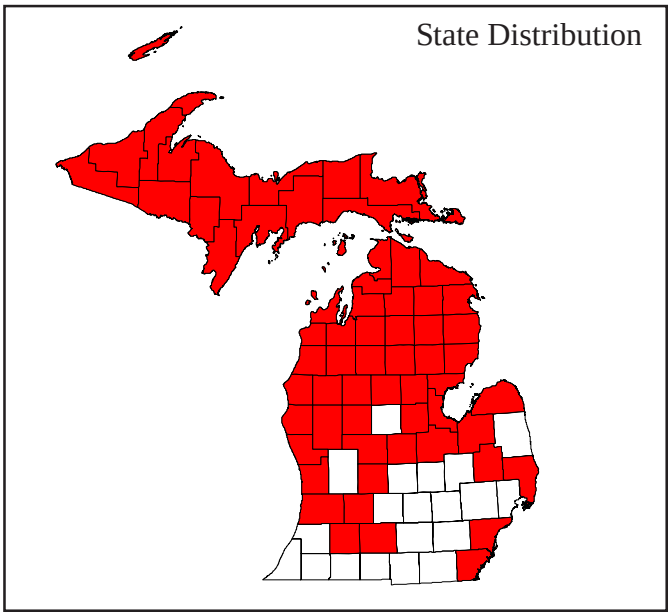
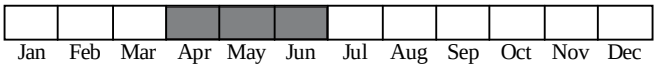
Haliaeetus leucocephalus bald eagle



Best Survey Period



Status: Threatened

Global and state rank: G4/S4

Family: Accipitridae (hawks, eagles)

Range: The bald eagle is found in the southern half of Alaska and most of Canada, south to northern California, the Great Lakes region, and Maine. They are absent from much of the Great Plains and the southeastern United States with exception to coastal areas and riverine areas (American Ornithologists' Union 1998, Buehler 2000).

State distribution: Currently, this species has been documented in all but 20 counties of Michigan, predominantly those counties in which it is absent are in the southern Lower Peninsula. As this species' population continues to grow, and as individuals become more tolerant of human intrusion populations may expand into those counties currently unoccupied (Michigan Natural Features Inventory 2007).

Recognition: The bald eagle is the second largest bird in North America with a wingspan between six and seven feet (1.7 – 2.4 m; Palmer et al. 1988). The adult bald eagle is easily recognized by a white head and a white tail, contrasting with a dark brown body and wings. Bald eagle eyes, beak, and feet are bright yellow. Until bald eagles are approximately four to six years old they show variable white head and tail plumage ranging from completely dark brown to completely white (Sibley 2000). Like most raptors, females are larger than males. The most similar species that occasionally occurs in Michigan is the golden eagle (*Aquila chrysaetos*). This species is larger than the bald eagle and remains dark brown throughout its life. Golden eagles have distinctive white plumage on the base of their tails and on the base of their flight feathers. Juvenile bald eagles may have white on the base of their flight feathers but they also have white on their wing linings or coverts (Wheeler and Clark 1995).

Best survey time: Bald eagles frequently nest along the shorelines in the tops of large trees and their large stick nests are more visible in early spring before tree leaf-out. Given the remoteness of many nests automobiles, aircraft, and watercraft provide more efficient methods of surveying large areas. Nest construction takes place in early spring; therefore, surveys can be initiated in April and continued through the last week in June (Evers 1994). Winter roosting areas are also important to survey. Aircraft are commonly used to detect large flocks of wintering birds

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which typically form after lakes and rivers become ice covered.

Habitat: Bald eagles are heavily associated with aquatic environments. Several researchers determined that larger bodies of water were selected more frequently than smaller bodies of water (Whitfield et al. 1974, Stocek and Pearce 1981, Peterson 1986). Bald eagles typically construct their nests near the tops of large trees, on nest platforms, or utility poles. Anthony et al. (1982) found that one of the most important variables in nest site selection is a relatively clear flight path to areas with water. In Michigan, bald eagles frequently nest in live white pine (*Pinus strobus*), red pine (*Pinus resinosa*), yellow birch (*Betula lutea*), maple (*Acer* spp.), oak (*Quercus* spp.), and aspen (*Populus* spp.) (Evers 1994). During the winter months, bald eagles find access to food via road killed carrion, or fish and waterfowl from remaining areas of open water. Sheltered forest areas provide necessary winter roost areas in Michigan. Historically, bald eagles avoided areas near humans but in recent years they have expanded into areas with higher human densities.

Biology: In Michigan bald eagles increase the amount of time they spend in the nest area starting between the second week in February and the second week in March (Evers 1994). Nests are constructed at this time in the crotch or near the tops of tall live trees; however, frequently nests from previous years are refurbished with new sticks. Over time nests can become rather large with measurements of 12 feet deep and eight feet across (Evers 1994). Bald eagle courtship takes place during nest building and includes a cartwheel flight display. This species forms long-term pair bonds.

Bald eagles lay one to four eggs (mean equals two) and incubate them for approximately 35 days. Upon hatching both the male and female adults care for and feed the young. Fledging occurs at approximately 10 – 12 weeks, but the young remain with the adults for another week to a month. In the fall, juvenile bald eagles migrate south however the adults remain in Michigan (Evers 1994).

Although bald eagles are adept at catching fish, they can be extremely opportunistic and often feed on carrion, waterfowl, and other birds and mammals. Live prey are typically hunted from tall perches near water or from the wing.

Conservation/management: Historically this species experienced severe declines in population levels due to wetland habitat loss and degradation, persecution (shooting, poisoning, etc.), and toxic pollutants (Fraser et al. 1985, Buehler 2000). All of these issues are still present today; however, legislation prohibits or minimizes the majority of the factors. Although the bald eagle appears to be adapting to relatively low levels of disturbance, human activities are still the most influential variable in eagle populations. The most sensitive time periods for bald eagles are the first 12 weeks of the breeding season; therefore, a quarter mile buffer should be established around nests between the second week in March and the last week in June. If necessary, disturbing activities near nests should be planned for August through February. Whenever possible, nest areas and winter roost areas should be protected from degradation by construction, housing development, logging, or motorized vehicle use (ORV, snowmobiles, boats, jetskies, etc.) (Stalmaster and Newman 1978).

Research needs: Many aspects of the bald eagles ecology are well-studied (Beuhler 2000). Although this species appears to be adapting to human disturbance it is important to monitor bald eagle populations as human populations increase and as wetland habitats continue to be degraded. Not only is there a need to monitor densities of eagles but also their productivity and breeding demography, to ensure that populations remain stable or increase. Additional research on the impacts and potential impacts of fisheries management, forest management, and wind energy development on bald eagle populations would also likely benefit the conservation of the species.

Related abstracts: osprey (*Pandion haliaetus*), floodplain forest, Great Lakes marsh, limestone bedrock lakeshore, wooded dune and swale complex

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