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Bald Eagle

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The American bald eagle is our national emblem. It was selected for that status because of the spirit of freedom and independence it symbolizes. Yet this magnificent bird is in trouble. Our national symbol is an endangered species. Thus, there should be patriotic as well as ecological concern for the well being of this majestic species.

Description

The bald eagle is striking in both size and appearance. As it soars overhead, the bald eagle's uniform dark brown body, contrasting white head and tail, and wingspan of 7 feet is an impressive sight.

Immature birds, however, lack the white head and tail, and their brownish plumage is mottled irregularly with white. The head and tail regions begin to show white after 3 years of age, and may not be completely white until the 6th year. During these years of immature plumage, bald eagles are often mistaken for other large birds of prey.

Distribution

The range of the bald eagle extends over much of North America.

Many local wintering concentrations occur throughout the United States. Most of the time the bald eagle is considered uncommon throughout South Dakota. However during the winter months eagles are locally common in the lakes region of northeastern South Dakota and along the Missouri River below the large reservoirs from Pierre to Yankton.

The Karl E. Mundt National Wildlife Refuge serves as a winter sanctuary for the bald eagle. The refuge contains 1,123 acres bordering the Missouri River near Pickstown, South Dakota, and it is managed by the U.S. Fish and Wildlife Service. Peak populations on the refuge occur in late December or early January, and 100 to 200 eagles have wintered on the refuge in recent years (1974-1979). Because wintering areas are considered as important as nesting habitat, South Dakota makes a significant contribution to the conservation of our national bird.

Food Habits

Bald eagles are almost always found near water, primarily river systems, large lakes, reservoirs, and seashores. The birds' affinity for water is a reflection of their main source of food: **fish.**

Most studies of bald eagles have shown that fish constitute 50 to 90% of the birds' diet, with 80% commonly reported. The species of fish utilized vary with geographic location.

Although bald eagles are well-known for their activities as scavengers, they are also capable of catching live fish near the water surface.

However, eagles are not good fishermen like ospreys, and numerous reports exist of eagles stealing fish from ospreys. The eagle does this by harassing the smaller osprey until the fish is released; and then the eagle snatches the abandoned prey in mid-air. Great numbers of eagles often assemble to feed on large die-offs of fish.

In addition to fish, eagles feed on waterfowl, rabbits, rodents, and other mammals; these are taken mostly as carrion.

Nesting

Bald eagles reach reproductive maturity at 4 to 5 years of age, and pairs mate for life. Nests are usually located in trees and 10 to 150 feet above ground. Occasionally, nests are found on cliffs. Eagles will use the same nests of sticks and assorted debris year after year. They add nesting materials each year and nests can become enormous; one nest was reported to weigh over 2 tons after 35 years of use.

The female will lay one to four eggs, but nests usually contain 2 eggs. Eggs hatch after 35 days of incubation, and young will remain in the nest for approximately 75 days.

Both parents feed the young and protect the nest site from potential predators. Most studies have reported fish to be the main food item brought to the nest. However birds and mammals are also fed to young.

Southeast Alaska probably has the highest nesting density of bald eagles in North America. Admiralty Island, near Juneau, is reported to have two nests per mile for 678 miles of shoreline.

Population changes

Biologists have been greatly concerned about decreasing eagle populations during the past 40 years.

For example, there were 500 active nests in Florida in 1940 and only 80 in 1958. On a broader scale, annual surveys of eagles from 28 states have shown a 31% decrease between 1956 and 1970. Several states have witnessed the virtual extinction of local populations.

In South Dakota, wintering populations have been fairly stable at 300 to 400 birds during the past 5 years (1975-1979).

The U.S. Fish and Wildlife Service, Office of Endangered Species, outlined four primary reasons for the decline of bald

eagles: 1) habitat loss or interference with nesting habitat, 2) loss of traditional nest trees, 3) illegal shooting, and 4) reproductive problems caused by pesticides.

All of these factors are certainly important, but the most notable has been the influence of pesticides.

Studies have shown that organochlorine pesticides, particularly DDT and its breakdown product DDE, are largely responsible for reproductive failure of many eagle populations. Pesticide contamination causes thinning of egg shells, leading to premature egg breakage and death of the embryo.

Pesticides also cause problems for adult birds. In 1969 and 1970, 39 bald eagles were found dead or sick in 13 states and residues of DDE, dieldrin, polychlorinated biphenyls (PCB's), and mercury were found in all 39 birds. Lethal levels of dieldrin were found in the brains of six of these birds.

After pesticides are sprayed, much of the chemical is eventually carried, by drainage, to small streams that feed rivers, lakes, and the oceans. DDT is only slightly soluble in water, but very soluble in fat. Thus DDT and its derivatives accumulate in cellular fat of algae; fish eat the algae; and eagles eat the fish. Of course, many other wildlife species are also threatened by this phenomenon.

Compounding the problem is a process called biological magnification, in which each level of the food chain accumulates greater concentrations of the pesticide.

DDT has a deleterious effect on calcium metabolism in birds and hinders normal eggshell development.

Management and protection

Several programs are underway to help build bald eagle populations. DDT is banned in the U.S. today, but may be used in special circumstances.

Several federal, state, and private groups of biologists have rehabilitation programs for sick or injured bald eagles which are eventually reintroduced into their natural environments. Those individuals with permanent injuries are maintained in captivity and used in breeding programs. The Patuxent Wildlife Research Center in Laurel, Maryland, successfully raised two young bald eagles in 1973, and interest in captive breeding seems to be growing rapidly.

The bald eagle receives complete legal protection under the Bald Eagle Protection Act. This act provides for maximum penalties of $5,000, one year's imprisonment, or both for killing or possessing any eagle or any part, egg, or nest thereof.

And finally, state and federal wildlife biologists are implementing strict management guidelines to protect existing populations. These guidelines generally involve minimizing human disturbance by establishing **buffer zones** where human access is limited or prevented. These buffer zones protect feeding areas, perch trees, nest trees, the general area surrounding active nests, and wintering areas.

On March 16, 1978, the U.S. Fish and Wildlife Service classified the bald eagle as threatened in 5 states (Michigan, Minnesota, Oregon, Washington, and Wisconsin), and endangered in the remaining 43 contiguous states. We will celebrate a magnificent conservation success story on the day the American bald eagle is freed from the classification "endangered."

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ENDANGERED SPECIES