

# Bald Eagle

Scientific Name: *Haliaeetus leucocephalus*

Federal Status: Threatened • State Status: Threatened

## Description

The Bald Eagle is one of nature's most impressive birds of prey. Males generally measure 3 feet from head to tail, weigh 7 to 10 pounds, and have a wingspan of 6 to 7 feet.

Females are larger, some reaching 14 pounds with a wingspan of up to 8 feet. Adults have a white head, neck, and tail and a large yellow bill.



Bald Eagle  
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First year birds are mostly dark and can be confused with immature Golden Eagles. Immature Bald Eagles have blotchy white on the under wing and tail, compared with the more sharply defined white pattern of Golden Eagles. While gliding or soaring, Bald Eagles keep their wings flat, and their wing beats are slow and smooth. In contrast, Turkey Vultures soar with uplifted wings, and they fly with quick, choppy wing beats. Bald

Eagles require 4 or 5 years to reach full adult plumage, with distinctive white head and tail feathers.

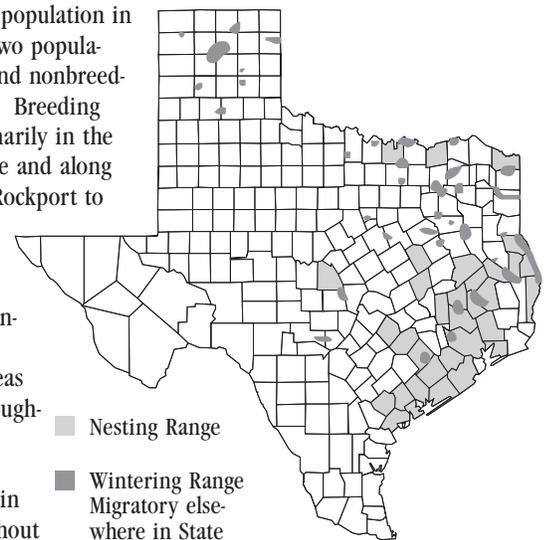
## Distribution and Habitat

The Bald Eagle, our National Symbol, occurs throughout the United States, Canada, and northern Mexico. Bald Eagles are present year-round throughout Texas as spring and fall migrants, breeders, or winter residents. The Bald Eagle population in Texas is divided into two populations; breeding birds and nonbreeding or wintering birds. Breeding populations occur primarily in the eastern half of the state and along coastal counties from Rockport to Houston. Nonbreeding or wintering populations are located primarily in the Panhandle, Central, and East Texas, and in other areas of suitable habitat throughout the state.

The Bald Eagle in Texas formerly nested in the Panhandle, throughout East Texas, and at localized sites in central Texas. Populations declined throughout the lower 48 states during the 1900's with habitat destruction and use of pesticides detrimental to the species. Nesting populations are now increasing in most areas of the country. Active nests in Texas increased from 13 in 1982 to 117 in 2003. Breeding territories are located mostly along rivers and near reservoirs in East Texas, the Post Oak region, and the Gulf Coast. The nesting near reservoirs by Bald Eagles is a rather recent event, since this habitat type was not available to eagles historically. As of 2003, Bald Eagle nests are known to occur in Angelina, Austin, Bastrop, Bell, Bosque, Brazoria, Burleson, Calhoun, Cass, Chambers, Colorado, Fayette, Fort Bend, Freestone, Goliad, Grimes, Harris, Henderson, Jackson, Jasper, Kaufman, Lavaca, Liberty, Limestone, Llano, Marion, Matagorda, Montgomery, Nacogdoches, Navarro, Navesota, Newton, Panola, Polk, Refugio,

Robertson, Rusk, Sabine, San Augustine, San Jacinto, Shelby, Smith, Trinity, Victoria, Walker, Wharton, and Wood counties.

In Texas, Bald Eagles nest in areas along river systems, reservoirs or lake shores with large, tall (40-120 ft.) trees for nesting and roosting. Nests are usually located within 1 mile of water, such as lakes, reservoirs, creeks or rivers, and are often



located in the ecotone or edge between forest and marsh or water. Bald Eagles often build their nests in the tallest trees in an area, providing an unobstructed view and flight path to the nest. Nests are built in a variety of tree species. Eagles nest primarily in loblolly pine in East Texas. Throughout the rest of its Texas breeding range, nests are found in a variety of trees, including bald cypress, water oak, live oak, American elm, cottonwood, sycamore, and pecan. Open water or wetland areas located within approximately 1 mile of nesting habitat are needed to provide feeding areas.

Most of the Bald Eagles seen in Texas breed in the northern states and spend the winter (December through March) in Texas. Wintering populations may occur statewide, but generally are found near large lakes

and reservoirs, such as Lake Meredith, Buffalo Lake, Lake Texoma, Wright-Pattman Lake, Lake O' the Pines, Lake Fork, Lake Tawakoni, Lake Whitney, Lake Fairfield, Toledo Bend Reservoir, Sam Rayburn Reservoir, Lake Livingston, Lake Conroe, Lake Buchanan, Lake Cooper, Lake Palestine, Lake Pat Mayse, Lake Warren, and Palo Duro Lake, or in the rice growing region hunting waterfowl.

Bald Eagle wintering habitat is characterized by abundant, readily available food sources. Most wintering areas are associated with open water or waterfowl concentration areas, where eagles feed on fish or waterfowl. Wintering populations are also found on rangelands of the Davis Mountains, western Edwards Plateau, and the Panhandle, where eagles may take rabbits and feed on carrion.

The availability of night roost sites is often an important characteristic of wintering habitat. Bald Eagles may roost singly or in groups, and the same roosts are used from year to year. Roost trees are usually the oldest and largest trees in an area, and most have large horizontal limbs and open branching that allows plenty of room for takeoff and landing. Eagles generally choose roosts that allow unobstructed visibility to the surrounding areas, with a minimum of human activity in the immediate vicinity. Roost sites are often located near water, but eagles also roost on windbreaks and in secluded canyons well away from water.

## Life History

Bald Eagles are opportunistic predators. They feed primarily on fish, but also eat a variety of waterfowl and other birds, small mammals, and turtles, when these foods are readily available. Carrion is also common in the diet, particularly in younger birds. Bottom-dwelling fish tend to occur more frequently in the diet. It is thought that the downward visual orientation of bottom-feeding fish makes them more vulnerable to eagle attacks than surface sight-feeders, which are more aware of movements from above. Eagles capture fish by extending their talons a few inches below the water's surface. Therefore, live fish are vulnerable only when near the surface or in shallows. Stud-

ies in Texas have shown that eagles commonly eat coots, catfish, rough fish, and soft-shell turtles.

In Texas, Bald Eagles nest from October to July. Nests are constructed primarily by the female, with the male assisting. The typical nest is constructed of large sticks, with softer materials such as leaves, grass, and Spanish moss used as nest lining. Nests are typically used for a number of years, with the birds adding nest material every year. Bald Eagle nests are often very large, measuring up to 6 feet in width and weighing hundreds of pounds. Eagles often have one or more alternative nests within their territories.

Peak egg-laying occurs in December, with hatching primarily in January. The female lays a clutch of 1 to 3 eggs, but the usual clutch is 2 eggs. A second clutch may be laid if the first is lost. Incubation begins when the first egg is laid and usually lasts 34 to 36 days. The young generally fledge (fly from the nest) in 11 to 12 weeks, but the adults continue to feed them for another 4 to 6 weeks while they learn to hunt. When they are on their own, young Bald Eagles migrate northward out of Texas, returning by September or October.

Nest surveys in Texas from 1981-2003 have shown that greater than 80% of the active nesting territories successfully produced young, with production averaging greater than 1 young per active nest found. Studies show that at least 70% of the juveniles survive their first year. Causes of first year mortality include disease, lack of food, inclement weather, and human interference.

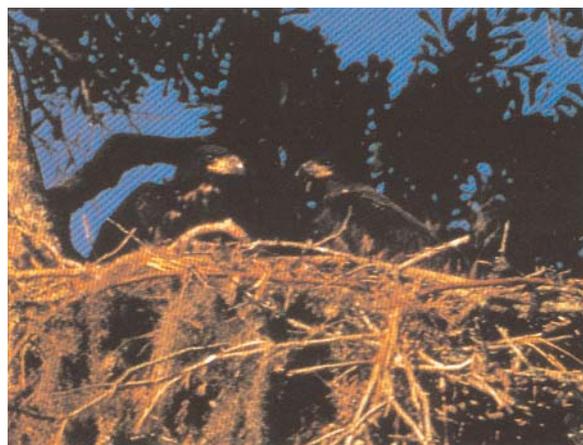
Bald Eagles reach sexual maturity at 4 to 6 years of age; however, they have been known to successfully breed at 3 years. They are monogamous and are believed to mate for life; however, if one of the pair dies, the surviving bird will accept another mate. Bald Eagles are believed to live up to 30 years or more in the wild.

## Threats and Reasons for Decline

Habitat loss over the past 200 years is the factor most consistently associated with declines in Bald Eagle populations. Unfortunately for eagles, people also like to live and spend their leisure time near water. In recent decades, the accelerated pace of devel-



Mature Bald Eagles  
© USFWS



Young eagles in nest  
© TPWD Jim Whitcomb

opment along the coast and near inland rivers and waterways is a primary cause of habitat loss. There are, however, encouraging signs in Texas that a significant amount of new habitat has been created in the form of man-made reservoirs. Most reservoirs in eastern Texas, especially those bordered by national forests, are used by nesting eagles, and are also used to some degree by wintering birds. Hopefully, if human disturbance is kept to a minimum, a redistribution of nesting to reservoirs may offset some habitat loss in other areas.

Shooting has long been recognized as a major human-caused factor in the decline of Bald Eagles. Although primarily fish and carrion eaters, eagles were thought to be a major threat to chickens, livestock, and game animals. As a consequence, many were killed by farmers, ranchers, and hunters. In 1940, Congress passed the Bald Eagle Protection Act,



*Bald Eagle nest*  
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*Juvenile Bald Eagles*  
© TPWD Mark Mitchell

which made it illegal to shoot or harass eagles. In 1969, Bald Eagles gained further legal protection under federal endangered species laws. With heightened public awareness and sensitivity to the plight of the Bald Eagle, coupled with strict laws, shooting mortality has declined from 62% of total reported deaths from 1961-1965 to 18% from 1975-1981. Although this downward trend is encouraging, shooting mortality could still be a limiting factor, particularly in remote areas.

Human disturbance can also be a cause of population decline. Activities such as logging, oil exploration and extraction, construction, and recreational activity certainly do disturb

eagles in some instances. However, the impact of these disturbances is highly variable, depending on the activity, its frequency and duration, its proximity to areas used by eagles, the extent to which the activity modifies the habitat or its use, and timing in relation to the reproductive cycle. Also, some birds are more tolerant of disturbance than others, with adults generally less tolerant than immature birds. Despite this variability, disturbance near nests has caused nesting failures.

Finally, the most dramatic declines in Bald Eagle populations nationwide resulted from environmental contaminants. Beginning in 1947, reproductive success in many areas of the country declined sharply, and remained at very low levels through the early 1970's. After several years of study, the low reproduction of Bald Eagles and many other birds was linked to widespread use of the insecticides DDT and Dieldren. These insecticides were used extensively in agriculture and forestry beginning in 1947. As DDT entered watersheds, it became part of the aquatic food chain, and was stored as DDE in the fatty tissue of fish and waterfowl. As eagles and other birds of prey fed on these animals, they accumulated DDE in their systems.

Although occasionally causing death, DDE mainly affected reproduction. Some birds affected by the chemical failed to lay eggs, and many produced thin eggshells that broke during incubation. Eggs that did not break were often addled or contained dead embryos, and the young that hatched often died. Dieldren killed eagles directly rather than causing thin eggshells, but compared to DDT, Dieldren was probably not as important in overall Bald Eagle declines. In 1972, the EPA banned the use of DDT in the United States. Since the ban, DDE residues in Bald Eagle eggshells have dropped significantly, and a slow recovery of eagle productivity has occurred. Most populations appear to be producing chicks at the expected rate.

Of more recent concern is evidence that lead poisoning may be a significant cause of death in eagles. Chronic low levels of lead can produce nervous system disorders, affect behavior and learning, cause anemia, and increase susceptibility to disease. As laws requiring the use of steel shot to hunt waterfowl become effec-

tive, accumulation of lead in the food chain is expected to decline.

Since 1981, Texas Parks and Wildlife Department has conducted extensive aerial surveys to monitor Bald Eagle nesting activity. The 2003 survey identified 117 active nests which fledged at least 144 young. This compares with only 7 known nest sites in 1971. Midwinter Bald Eagle counts coordinated by TPWD and conducted by birding enthusiasts throughout the state reported 325 eagles in 2002. From 1986-1989, midwinter counts averaged less than 15 Bald Eagles per survey site. Since 1990, the average number of eagles per survey site has increased to 18. These numbers show encouraging trends for Texas. With continued vigilance, protection, and informed management, today's Texans can insure that future generations will have the opportunity to enjoy the sight of our majestic national symbol – the only eagle unique to North America.

## Recovery Efforts

During the 1970's and 1980's, major efforts were directed toward captive breeding and reintroducing young birds into the wild. A total of 124 Bald Eagles were hatched at the Patuxent Wildlife Research Center in Maryland from 1976-1988. These captive-hatched eaglets were an important source for restocking wild populations. One successful reintroduction program placed young eaglets in the nests of adults whose own eggs were infertile or failed to hatch. The "foster" parents readily adopted the chicks and raised them as their own. Another method, called "hacking" places young birds on man-made towers in suitable habitat where populations are low. The nestlings are kept in an enclosure and fed by humans that stay out of sight. When they are able to fly, the enclosure is opened and the birds are free to leave. Food is still provided at the release site until no longer used or needed by the young birds. Hacking has been used very successfully in at least 11 states.

In Texas, the greatest challenge for the future will be to prevent further destruction of habitat and retention of sufficient creek and river flows to support a food base for breeding and wintering eagles. The Texas

Parks and Wildlife Department, in cooperation with landowners, other agencies and conservation groups, is continuing to monitor breeding and wintering Bald Eagle populations. Monitoring of nesting success is particularly important in detecting any problems associated with contaminants in the environment.

Finally, appropriate management of nesting, feeding, loafing, and wintering habitat must be a priority if we are to maintain the current upward trend in Bald Eagle numbers in Texas.

## Where To See Bald Eagles

There are a number of State Parks where visitors have the opportunity to see and learn more about Bald Eagles. These include Lake Brownwood, Lake Livingston, Lake Texana, Lake Whitney, and Possum Kingdom State Parks. The Vanishing Texas Rivers Cruise, a privately operated excursion boat, also provides visitors with excellent opportunities to see wintering eagles on Lake Buchanan in Burnet and Llano Counties.

Because the Bald Eagle is a protected species and sensitive to human disturbance, birders and other observers should carefully follow certain viewing ethics. Recorded calls of prey species should not be used to attract birds. Also, observers should be careful not to approach too closely or otherwise disturb or stress birds.

## How You Can Help

If you see a Bald Eagle nest, remember that eagles are vulnerable to disturbance throughout the nesting period (October to July in Texas), and are easily disturbed particularly during the first 12 weeks of nesting activity. Observers should remain a safe distance away from the nest (at least 750 feet) and keep noise and other human impacts to a minimum. Private landowners are encouraged to report new Bald Eagle nests to Texas Parks and Wildlife Department.

You can be involved in the conservation of Texas' nongame wildlife resources by supporting the Special Nongame and Endangered Species Conservation Fund. Special nongame stamps and decals are available at Texas Parks and Wildlife

Department (TPWD) Field Offices, most State Parks, and the License Branch of TPWD headquarters in Austin. Conservation organizations in Texas also welcome your participation and support. Finally, you can encourage and support private landowners who are minimizing nest disturbance and managing their land to protect Bald Eagle habitat.

## For More Information Contact

Texas Parks and Wildlife Department  
Wildlife Diversity Branch  
4200 Smith School Road  
Austin, Texas 78744  
(512) 912-7011 or (800) 792-1112

or

U.S. Fish and Wildlife Service  
Ecological Services Field Office  
10711 Burnet Road, Suite 200  
Austin, Texas 78758  
(512) 490-0057

Management guidelines are available from Texas Parks and Wildlife Department or the U.S. Fish and Wildlife Service for landowners wishing to protect and manage Bald Eagle habitat.



Placing wing tags on Bald Eagles  
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