

# Peregrine Falcon

Scientific Name: *Falco peregrinus*

Federal Status and State Status: the American Peregrine Falcon (*Falco peregrinus anatum*) is endangered and the Arctic Peregrine Falcon (*Falco peregrinus tundrius*) is threatened. Both of these subspecies occur in Texas.

## Description

The use of falcons for hunting was developed around 2,000 B.C. in central Asia. By the twelfth century A.D., falconry was widely practiced throughout Europe. Once reserved only for nobility, the falcon's intelligence, strength, and amazing aerial performance made it a highly prized hunting bird.

A spectacular bird of prey, Peregrine Falcons are 16 to 19 inches long, have a wingspan of 39 to 42 inches, yet weigh only about 2 pounds. Females are slightly larger

are white to shades of buff, with fine black barring. The ends of the tail feathers are tipped in light yellow brown. The beak is slate blue, the legs and feet are yellow, and the talons are blue-black.

Immature birds have a dark brown head and neck with sandy streaking. The upper parts are dark brown with light amber-brown feather edging. They are white to sandy underneath and heavily marked with dark brown vertical streaks. The legs and feet are bluish-gray to greenish-yellow.

The Arctic Peregrine tends to be smaller than the American Peregrine and is lighter in color. Immature Arctic Peregrines have a lighter colored forehead and a thinner wedge on each side of the face.

Peregrine Falcons can be distinguished from similar Prairie Falcons by the black "helmet" and, when in flight, by the lack of contrasting dark and light feathers on the underside or "armpit" of the wing.

## Distribution and Habitat

The Peregrine Falcon is noted for having a wide and diverse distribution.

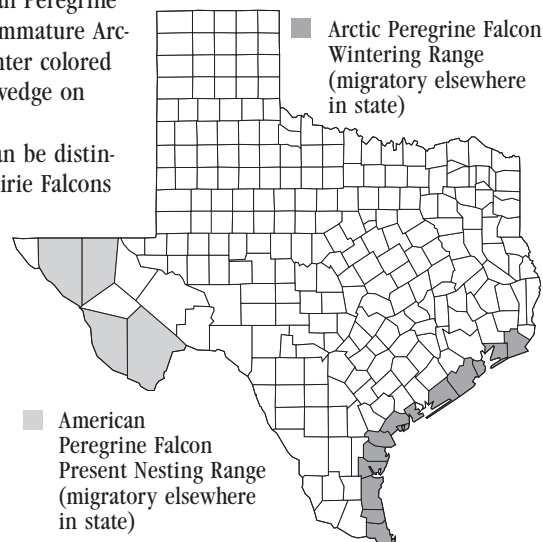
The American Peregrine currently nests in the western United States, Canada, and Mexico. These birds spend the nonbreeding season near their breeding areas or move only moderately southward. In Texas, they are found primarily in the Trans-Pecos region, including Big Bend National Park, and the Chisos, Davis, and Guadalupe mountain ranges.

The Arctic Peregrine nests in the arctic islands and the tundra regions of Alaska, Canada, and Greenland. They are highly migratory, flying over the United States to winter mostly in South America. The Texas coastline plays an important role in the survival of migrating peregrines. During each migration, falcons assemble on the Texas coast, especially on Padre Island, and accumulate stores

of fat to continue their flight. They take advantage of the abundant prey along the open coastline and tidal flats. Some individuals have stayed for as long as a month during either spring or fall.

The Peregrine Falcon nests on coasts, mountains, and canyons of most climatic zones, wherever it locates a suitable high cliff ledge for its eyrie (nest site). Peregrines do avoid some extremes for nesting, however, such as very arid desert regions.

American Peregrines in the Rocky Mountain and Southwest region



Peregrine Falcon  
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than males. Their wings are long and pointed. Adult Peregrines are slate gray to bluish-gray above. With a black crown and nape and a black wedge extending below the eye, the birds appear to be wearing a black helmet. The throat and underparts

nest on mountain cliffs and river gorges. Occupied eyries often exist on dominant cliffs which generally exceed 200 feet in height. Nests are situated on open ledges or potholes. South facing cliffs are preferred in the more northerly latitudes. In Alaska, arctic Canada, and Greenland, Arctic Peregrines nest on cliffs in mountainous regions, and along rivers and coastlines.

In the western United States, Peregrines nest from near sea level to over 9,000 feet. Prey abundance and diversity is thought to be a major factor in eyrie selection. Nest sites are often adjacent to water courses and impoundments because of the abun-

dance of avian prey attracted to these areas.

Before 1950, a healthy but small population of American Peregrines nested in the eastern United States and Canada. The population centers were generally located in the mountainous regions of the East Coast and along major waterways such as the Mississippi, Hudson, Susquehanna, and Connecticut Rivers. Nest sites were generally located on the ledge of a rock cliff or escarpment that provided a clear view of the surrounding area. Despite sharp population declines during the 1950's and 1960's, efforts over the past 15 years to reintroduce Peregrines into former eastern nesting habitats are now paying off. Peregrines are once again occupying cliffs in the eastern mountains and along the coast where they have been absent for 30 years or more.

Western and eastern populations of the American Peregrine are considered relatively nonmigratory, moving short distances as compared to the Arctic Peregrine. Some western falcons can be seen in the vicinity of their eyries throughout the year. Others move short distances to winter near large rivers or marshes where prey is abundant. There is also evidence that some birds move farther south to winter in Mexico.

As in the west, movements of eastern populations are probably determined by the availability of prey. Movements of eastern falcons are frequently east or west, from the mountains to the coast.

In Texas, American Peregrines once nested in suitable habitat throughout the Trans-Pecos region and part of the Edwards Plateau. Although they no longer nest on the Edwards Plateau, there are reports in the literature (1941 and 1950) of Peregrine Falcons preying on bats emerging from a cave in south-central Texas.

## Life History

With a flight speed in excess of 60 mph, Peregrines can hunt large areas with little effort. Preferred hunting habitats such as meadows, riverbottoms, croplands, marshes, and lakes attract abundant bird life. Peregrines capture a wide variety of birds, including blackbirds, jays, swifts, doves, shorebirds, and song-

birds. Falcons usually strike their prey from above at great speed. The prey is either struck to the ground or killed instantly by the blow from the falcon's talons. Prey species try to evade the falcon's attack by quick aerobatic maneuvers or by diving to cover. If the prey manages to stay above the falcon or reaches cover, it will usually escape. Peregrines are excellent flyers, and rely on maneuverability and surprise as well as speed to capture prey.

American Peregrines nesting at lower latitudes are usually present on nesting cliffs by March, while Arctic Peregrines arrive at their nesting locations by late April or May. The male or female may arrive at a suitable cliff site. While waiting for a member of the opposite sex to appear, the birds drive away all other falcons of the same sex. Quiet perching of the pair in close proximity to each other is an early indication of successful pairing. The falcons soon begin to hunt together, with one bird flushing prey for the other to capture.

The courtship flights of Peregrines are spectacular aerial displays of rapid climbing, spirals, and steep precision dives where the birds sometimes touch in mid-air. On the cliff, courtship behavior includes touching beaks, nibbling at the beak or feet of the mate, and mutual preening. During courtship, the male offers food to the female, both at the cliff and when the pair is in flight. When the female is receptive, she will accept the prey and mating soon follows.

In the United States and much of Canada, a clutch of three or four eggs is laid in April. In Arctic latitudes, Peregrines lay eggs from late May through late June. The female does most of the incubating and all of the brooding, while the male does most of the hunting. Incubation lasts about 33 days. The young remain in the nest for five to six weeks, being fed and cared for by the adults. After they leave the nest, the adults continue to feed and defend their young for several weeks.

Scientists estimate that about 20-25% of adult Peregrines and 55-60% of juveniles die each year of natural causes. The average life expectancy for those young that fledge is probably about 4 years, although maximum life spans of 13 and 17 years have been recorded. In captivity, Peregrines have reached 20



Young Peregrine Falcons  
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years of age. Peregrines do not normally breed until at least 2 years of age.

## Threats and Reasons for Decline

Although habitat loss, human disturbance, indiscriminant shooting, and illegal collection have been identified as contributing to local declines in Peregrine Falcon populations, worldwide declines have been attributed to reproductive failure caused by the widespread use of the pesticide DDT.

The decline of the Peregrine Falcon began in the late 1940's, coinciding with the introduction of DDT in 1947. The decline was first noticed in the northeastern United States, with Peregrine Falcon productivity dropping sharply between 1947 and 1955. Along the Hudson River, which formerly supported one of the healthiest Peregrine populations known, productivity essentially ceased by 1950, and most nest sites were abandoned by the mid-1950's. Surveys in the early 1960's showed that Peregrine productivity in the northeastern United States was near zero.

By the 1950's, it was apparent that declines were also underway in many other parts of North America. Biologists reported widespread reproductive failure and eventual disappearance of breeding pairs. The decline appeared first in the southern parts of the range and moved north. In the more remote Peregrine populations of Alaska and arctic Canada, a more gradual decline took place. Although the loss of breeding pairs in these regions probably began in the 1950's, a dramatic collapse did not occur until 1970.

By 1969, the Peregrine was essentially gone east of the Mississippi River in both the United States and Canada south of the boreal forest, and only 33% of all known nest





*Peregrine Falcon nesting habitat at Black Gap WMA*  
© Glen Mills



*Banding Peregrine Falcons*  
© TPWD Frank Aquilar

sites in the Rocky Mountains were still occupied. In the southwestern United States, pre-1947 populations were largely unknown, but similar declines probably occurred.

The lowest point in most North American populations was reached in the mid-1970's. By 1975, only 324 nesting pairs of Peregrines could be confirmed on the continent. After several years of study, the low reproduction of Peregrine Falcons and other birds of prey was linked to widespread use of insecticides such as DDT and Dieldren. These insecticides were used extensively in agriculture and forestry beginning in 1947. As DDT entered the environment, it became part of the food chain, and was stored as DDE in the fatty tissue of animals. As Peregrine Falcons 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, or produced thin eggshells that broke during incubation. Eggs that did not break were often addled (rotten) or contained dead embryos, and the young that hatched often died. Abnormal or inattentive behavior by adults sometimes resulted in nest abandonment or loss of young. In 1972, the EPA banned the use of DDT in the United States. Since the ban, DDE residues in Peregrine Falcon eggshells have dropped significantly, and a slow recovery of falcon productivity has occurred. Although most populations in the United States now appear to be producing chicks at a healthy rate, falcons in west Texas are still reproducing at relatively low levels. There is concern that high pesticide levels continue to affect Peregrine Falcon reproduction in west Texas.

Prior to the mid-1940's, it is estimated that the North American continent contained 7000-10,000 Peregrine nesting territories, of which probably 80-90% were occupied in any given year. Although never common when compared with other birds of prey breeding in North America, Peregrine Falcons were much more numerous historically than they are today.

Recent surveys have confirmed the existence of at least 1,153 breeding pairs on the continent, and many more probably exist in unsurveyed portions of Alaska and northern Canada. The 1992 breeding season estimates for Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Texas, Utah, Washington, and Wyoming show a total of 591 breeding pairs. Although Peregrines are recovering well in many areas, they are still largely absent from most of Canada south of the boreal forest, the Rocky Mountains of the northern United States, the southern half of California, and the northern Pacific coast of Baja California.

## Recovery Efforts

Throughout the United States, scientists are conducting breeding and population surveys to determine occupancy of eyries and reproductive success. Eggshells are being collected and tested for thickness, and contaminant levels are being assessed. Continued research on population

dynamics, movements, and contamination will provide wildlife managers with the information needed to assist the Peregrine Falcon on its road to recovery.

Since human disturbance can be a serious threat to reproductive success, parks such as Big Bend National Park have visitor use restrictions during the nesting season. Activities such as rock-climbing can be particularly disturbing to nesting Peregrines.

The Peregrine Fund, Inc. in cooperation with the U.S. Fish and Wildlife Service and state wildlife agencies, has released captive-reared chicks into suitable unoccupied habitat. A technique 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 successfully in many areas, primarily in the eastern United States, to increase Peregrine numbers.

In Texas, the greatest challenge for the future will be to protect breeding habitat in the western part of the state, and coastal habitat which is so important to migrating Peregrines. Texas Parks and Wildlife Department, in cooperation with the National Park Service and U.S. Fish and Wildlife Service, is continuing to monitor Peregrine Falcon populations and nesting success. Monitoring of nesting success is particularly important in detecting any problems associated with contaminants in the environment.

Finally, appropriate management of nesting and feeding habitat must be a priority if we are to achieve and maintain an upward trend in Peregrine Falcon numbers in Texas.

## Where To See Peregrine Falcons

The best place to see Peregrine Falcons is along the Texas coast during the spring or fall migrations of Arctic Peregrines. Mustang Island State Park and Padre Island National Seashore, in particular, are good places to see Peregrines. The birds

arrive by the hundreds, taking time to feed and rest before continuing their lengthy migration. In fact, the Texas Gulf Coast is the only known spring staging area for Peregrine migration in the Western Hemisphere.

## How You Can Help

If you see a Peregrine Falcon or its nest, remember that they are vulnerable to disturbance, particularly when nesting or hunting. Observers should remain a safe distance away from the nest or perch (100 to 300 yards, depending on the sensitivity of the individual bird) and keep noise and other human impacts to a minimum. Landowners and others are encouraged to report sightings or nests of Peregrine Falcons to Texas Parks and Wildlife Department or the U.S. Fish and Wildlife Service at the numbers listed below. Since nesting in Texas is still quite rare, it is important to note the location (county and approximate distance and direction to nearest town), habitat type, behavior, and take a photograph if possible. Well-documented observations will help experts verify your sighting.

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. Part of the proceeds from the sale of these items are used for endangered species habitat management and public information. Conservation organizations in Texas also welcome your participation and support.

History has taught a sobering lesson concerning the effects of pesticide contamination on wildlife. You can help by doing your part to insure that household and agricultural chemicals are used, and the containers and rinse water disposed of, in accordance with label directions.

Finally, you can encourage and support private landowners who are managing their land to protect habitat for Peregrine Falcons and other birds of prey.

## For More Information Contact

Texas Parks and Wildlife Department  
Endangered Resources 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



*Immature Peregrine Falcon feeding along the Texas coast*  
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*Immature Peregrine Falcon*  
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