

Liberty Wildlife Rehabilitation Foundation



Liberty Wildlife

Education Program's Natural History



**Golden Eagle
Phoenix**



Golden Eagle (*Aquila chrysaetos*)

Range: The Golden Eagle is the most widely distributed eagle in the world. It inhabits a range throughout the Northern Hemisphere spanning Europe, Asia and northern Africa from the British Isles and Scandinavia to China and Japan and from Israel to Egypt.

In North America, the Golden Eagle is found mainly in the west, from Alaska south to central Mexico. In the United States, it is found mainly in the Western states and only rarely found in the eastern states. The estimated population in the U.S. (excluding Alaska where there is no good estimate of the population) is between 18,000 and 70,000. One estimate was as high as 100,000, but this count seems to be subject to much criticism. (Johnsgard) A July 2008 U.S. Fish and Wildlife Service report estimated the Golden Eagle's North American population at 80,000. This report also noted that "while the information for the golden eagle is uncertain, it appears populations may be declining in portions of the range."¹ In Mexico, the Golden Eagle is designated as an Endangered Species.



1. Distribution of the Golden Eagle in North America.

Habitat: The Golden Eagle is found in a variety of habitats from arctic to desert. It can be found in mountainous canyon land and rimrock terrain of the open desert, tundra, shrub lands, grasslands, and conifer forests. Essentially, it needs only a favorable nest site (usually a large tree or cliff), a dependable food supply, and broad expanses of open country for hunting. In North America, the Golden Eagle favors remote mountainous or hilly terrains that provide drafts to assist in take-off and soaring. Nesting Golden Eagles choose locations with embankments or cliffs and areas with scattered large trees for nesting sites. (Wheeler) The ideal habitat consists of deeply cut canyons rising to open or sparsely treed mountain slopes and crags. (Johnsgard)

Description: The Golden Eagle is one of the largest birds of prey in North America, exceeded only by the California Condor and similar in size to the Bald Eagle. It is dark brown with a golden or light brown nape, broad wings with dark linings, and dark beak. Iris color will range from yellow to medium brown. Rarely will the iris be dark brown. The tail is brown with 2 to 4 indistinct gray bars. It is considered a "booted" eagle having feathers on its legs to its talons. Immature Golden Eagles have a patch of white on the tail. On an average, the Golden Eagle

¹ "Proposal to Permit Take Provided Under the Bald and Golden Eagle Protection Act," H. Dale Hall, July 2008



measures 30 to 40 inches in length, with a wingspan between 6 and 7 feet. The female is noticeably larger than the male with the female weighing between 8.5 and 13.5 pounds and the males weighing 6.5 to 10 pounds. Adult plumage is usually attained as a five-year-old in its sixth year. (Wheeler) Juveniles are somewhat longer than older eagles because of their longer tails and broader secondary feathers to assist them as they develop flight techniques. (Wheeler) Most juveniles have conspicuous white patches at the base of the flight feathers.

Hunting/Prey: The Golden Eagle is a perch and aerial hunter. It uses 3 hunting techniques: soaring, still-hunting from a perch, and low contouring flight. High soaring typically is used on sunny and windy days and in open terrain. Perch hunting is commonly used on overcast, calm or rainy days. Contouring flight is used in broken terrain to surprise prey that may escape to a burrow. For its size, the Golden Eagle has astonishing speed and maneuverability. In a vertical dive, it can reach speeds between 144 and 192 mph. (Cornell) Mammals provide 80 -90% of the Golden Eagles diet. Primarily these include hare, rabbits, ground squirrels, prairie dogs and marmots. Birds such as pheasants, grouse, and quail are a secondary food source. In North America, in addition to the mammals, primary prey includes Canada Geese, Great Blue Heron, Cranes, and American Bitterns. Occasionally, the Golden Eagle will kill large prey including mountain goats Dall Sheep, deer, pronghorns, swans, turkeys, Whooping Cranes and livestock such as sheep, goats, calves and poultry. These large mammals are killed by landing on the prey's back or neck and killing it with the eagle's talons inserted near or under the spine and riding the prey until it dies. (Cornell) They will also eat carrion particularly in the winter. (Wheeler) Because of their size and the need for assistance of thermals to take off, typically, the Golden Eagle can carry prey about ¼ its weight; approximately 2 to 4 pounds, although one was seen carrying a jackrabbit that weighed almost 7 pounds. (Johnsgard)

Breeding/Nesting: Most Golden Eagles do not acquire a nesting territory until they are at least 4 years old. This territory is approximately 12 to 18 square miles. Because of the Golden Eagle's worldwide wide range, mating and nesting times depend upon the location and elevation. In their southern U.S. range, nesting may begin in January. In Alaska or Canada, nesting will begin in June. In other regions throughout their worldwide range, nesting may not begin until August. (Wheeler & University of Michigan) Those pairs that remain in their territory throughout the year may begin to mate as early as December. For the migratory eagles, courtship and breeding typically begins between February and mid-April. Golden Eagles are monogamous and will remain together generally for the life of either bird. If a mate dies, the surviving eagle will find a new mate. Both the male and female build the stick and vegetation nest which may take 4 to 6 weeks to build. Pairs may have up to 14 nests in their established territory which they will use year after year. They usually build the nest on a cliff or in a tree, but may also use an artificial structure or on the ground. The largest recorded nest measured 20 feet tall and 8.5 feet wide. (University of Michigan) The female typically lays between 2 to 3 eggs and rarely 1 or 4. Eggs are laid in intervals of 2 to 4 days, which results in substantial difference in the size of the young. Occasionally, when food is limited, the older will kill the younger eaglet. This is more likely to occur when the first to hatch is a female before a male. (Cornell) Incubation is generally done by the female and lasts 41 to 45 days. (Cornell and Wheeler) Once the eggs hatch, both parents bring prey to the nest, but the male rarely feeds the young. The young fledge as early as 45 days but



generally in 63-77 days, and they will remain dependent on the parents for food for an additional 11 weeks. (Wheeler and Cornell and Johnsgard)

“Golden Eagles in Arizona”

Arizona Wildlife Views, September-October 2007
Kyle McCarty of Arizona Game and Fish Department

Nest-building and courtship: November–February

Egg-laying: February–April

Number of eggs: 1 to 3 (usually 2)

Time to hatch: 6 weeks

Hatching: April–May

Fledging: May–July

Age at fledging: 9.5 to 10 weeks old

golden eagles nest on the deschutes river,
oregon

APR 2013



Lifespan: The average life expectancy of the Golden Eagle varies according to its habitat. In North America the oldest wild banded Golden Eagle was almost 24 years. In Europe the life span of a captive Golden Eagle was 46 years and in the wild, 32 years. The average life expectancy of wild Golden Eagles in Scotland is 39 years and in Germany, 12 years. (Cornell)

Threats: Being at the top of the food chain, the Golden Eagle has few natural predators. Most recorded deaths (70%) result from human-related causes: collision with vehicles, power lines, and buildings (27%) is the leading cause of death followed by electrocution (25%), gunshot (15%), and poisoning meant for varmints (6%). Other factors include lead poisoning and diseases such as aspergillosis (13% of 30 Golden Eagles being treated at the University of



Minnesota Raptor Center had aspergillosis) and trichomoniasis. Fires, urbanization, and farming have caused habitat loss. Human disturbance at nesting sites can result in breeding failures.

Other Golden Eagle Facts:

- The Golden Eagle is Mexico's national bird.
- There are several ways to distinguish an immature Bald Eagle from a Golden Eagle: In flight, an eagle with dark wing linings and no white on the head is probably a Golden Eagle; Perched: A Golden Eagle's legs are entirely feathered while an immature Bald Eagle's lower legs are bare.
- Some experienced falconers hunt with the Golden Eagle.
- The Golden Eagle is more closely related to hawks like the Red-tailed Hawk than to the Bald Eagle. In turn, the Bald Eagle is more closely related to kites.
- An eagle can exert upwards of 300 - 400 pounds per square inch with its closed talons; about 10 times stronger than the grip of an adult human hand. (HawkQuest)
- Golden Eaglets weigh three ounces when hatched.
- There are 5 or 6 subspecies of Golden Eagle worldwide. Only the *Aquila chrysaetos canadensis* is found in North America. (University of Michigan & Cornell)
- In flight while soaring or gliding, the Golden Eagle's wings are held in a low dihedral.
- The Golden Eagle is generally silent but may issue a high-pitched yapping when approaching the nest with food.
- In height and wingspan, the Golden Eagle is larger than the Bald Eagle, but is about the same in weight. The Golden Eagle's head is smaller than the Bald Eagle's while its tail is longer than the Bald Eagle's.
- It is also called the American War Bird, Bird of Jupiter, Black Eagle, Brown Eagle, Calumet Eagle, Canadian Eagle, Mountain Eagle and Royal Eagle.
- In translation, its Latin name *Aquila chrysaetos* means "a golden eagle."
- The Golden Eagle has no color morphs.
- With the amendment of the Bald Eagle Act in 1962, the Golden Eagle received federal protection which included the nesting sites and young.
- Golden Eagles have been observed in what may be called play: carrying a stick or other object to a great height, dropping it, then diving after it.
- Between 1941 and 1961, 20,000 Golden Eagles were shot from airplanes in the southwest because they were thought to predate upon domestic sheep.
- The Golden Eagle did not suffer from the effects of DDT poisoning as occurred with the Bald Eagle. This was attributed to the difference in diets. The Golden Eagle's primary food is mammals while the Bald Eagle's is fish. DDT spilled from the land that was treated to the water and was ingested by the fish. The Bald Eagle's ingestion of this contaminated food caused thin eggshells which often broke during incubation, reducing the population.
- Scientists recognize four groups of eagles:
 - The 12 species of serpent or snake eagles that perch on trees and feed on snakes, frogs, and lizards such as the flamboyantly marked Bateleur of Africa ;
 - The 6 forest dwelling giant eagles that prey on large mammals like deer including the South American Harpy Eagle;
 - The 30 "booted" eagles, called so because feathers grow down the legs and cover the toes, including the widest-ranging eagle of them all - the Golden Eagle;



- The 11 sea or fish eagles, including the Bald Eagles, that tend to specialize in eating fish and water birds

Several websites that offer videos of Golden Eagles

Golden Eagle and baby in nest

<http://www.youtube.com/watch?v=RvMqBNpWcfc>

Golden Eagle hunting a rabbit

<http://videos.howstuffworks.com/discovery/35324-eagle-kills-rabbit-video.htm>

Golden Eagle drags goats off cliff

http://www.youtube.com/watch?v=VklTs-Tid_I&NR=1

Golden Eagle killing a deer

<http://www.youtube.com/watch?v=xAsXtDKdU0Q>

Sources: Raptors of Western North America by Brian Wheeler, Hawks, Eagles, and Falcons of North America by Paul Johnsgard, Cornell Lab of Ornithology, The Peregrine Fund, University of Michigan Museum of Zoology, Snake River Birds of Prey, The University of Minnesota Raptor Center, American Bald Eagle Information site, HawkQuest, Carolina Raptor Center, *Arizona Wildlife Views* September–October 2007



Apache



Apache was rescued in 1989 near Rye, Arizona. According to his rescuer, Ezekiel Good Buffalo Eagle, who witnessed the accident, Apache was standing at the side of Beeline Highway, probably eating road kill, when a semi-truck approached him. As he flew to avoid the truck, Apache cleared the cab, but hit the trailer. The impact knocked him unconscious. Ezekiel Good Eagle Buffalo, a member of the Apache tribe, stopped his vehicle and wrapped the injured eagle in a sleeping bag and brought him to the valley for aid. At Liberty, Apache remained in intensive care for several weeks with two broken wings and severe concussion. When he recovered, he could not extend his right wing where the fractures occurred at the joints, precluding Apache's ability to fly. Having a good disposition, Apache worked well with Joe Miller and became Liberty's first education eagle. He continues in this new role visiting schools and events impressing people with his majesty and beauty.





Anasazi "Sazi"

Anasazi was brought to Liberty Wildlife as a 3-week-old nestling (see baby pictures above) on May 9, 2011 by an Arizona Game and Fish officer. AG&F obtained Sazi from a Lakeside rehabber, who had been told by the person who brought Sazi in, that he found her on his steps and had fed her deer meat. It was obvious that Sazi arrived imprinted and was experiencing breathing difficulties. The x-rays showed that Sazi was suffering from folding fractures to her ribs, right tibia and left humerus. Such injuries result from a diet that provides inadequate bones in the food. This calcium deficiency did not allow her bones to develop properly, resulting in her weakened bones bending under the weight of her rapid growth. Despite immediate steps to improve her diet, the damage was too extensive for her release. Her compressed ribcage limits her air intake which in turn limits her ability to fly the long-distance flights necessary for hunting.

