



## **TITLE: Eagle Watch**

**THEME:** Bald Eagles migrate to northern Colorado in the winter because food is available here. The availability of food and eagle's gregarious nature in the winter allow us to see large groups of them at Fossil Creek Reservoir Natural Area.

## **INTRODUCTION**

- Welcome to the Natural Areas Department and Fossil Creek Reservoir Natural Area.
  - Fossil Creek Reservoir was jointly purchased by the City and the County in the mid-1990s for bird habitat. It is an *Important Bird Area* as designated by the National Audubon Society. The City Natural Areas Department manages it; Larimer County Rangers have an office here. Open dawn to dusk.
- Restrooms
- Theme and preview main points
  - Intro to bald eagles in context with other eagles around the world.
  - How to identify; different ages.
  - Bald eagles are opportunistic feeders.
  - Some natural history facts help to appreciate eagles.
  - America almost lost bald eagles to DDT and overhunting.
  - bald eagles are the symbol of America and part of our cultural and natural heritage.
- Eagles in Context
  - Show range map and discuss world wide distribution. 74 species of eagles in the world: 60 in Eurasia, two in North America, nine in Central and South America, three in Australia. Golden eagles are worldwide in the Northern Hemisphere. Bald eagles occur only in NA.

## **BODY**

### **How to Identify and Comparison with Golden Eagles:**

From birth to about 4-5 years old, bald eagles are mostly brown with white on the underside of wing. They look kind of blotchy. Adults have black body, large white head and tail, large yellow bill, yellowish eye, broad wings.

### **Golden vs Balds:**

- Only two eagle species occur in Colorado: Golden and Bald.
- They are about the same size; golden eagles are more streamlined and have a smaller head.
- Juvenile bald eagles are easily mistaken for golden eagles; distinguish from golden eagle by feathers on legs and bill size. Show photos of golden and bald and point out bill size and color.

- Tarsus (lower legs) – Golden have feathers all the way to the feet. Balds have “bald” (naked; no feathers) tarsus. This is an adaptation for fishing.
- Bills – Golden smaller than bald.
- Habitat – Golden are eagles of the prairies, canyons, cliffs, and foothills. Balds are eagles of coasts, rivers, lakes and reservoirs. Balds also hunt or scavenge on prairies in winter. Golden nest in the mountains and winter on the plains.
- Food – Golden hunt rabbits, rodents, reptiles. Balds specialize on fishes, prairie dogs and other small mammals, including carrion. Neither eagle can kill livestock, but balds may scavenge on any dead thing or pirate prey from other raptors. Golden may also scavenge but not nearly as much as balds.
- Timing – Both are here year round. There’s more balds here in winter and they are more noticeable due to their group roosting behavior.
- Range – Golden are worldwide in the Northern Hemisphere. Bald eagles occur only in NA. They are truly an American eagle. Show range maps.
- Numbers – There are about 700 pairs of nesting golden in Colorado, and about 70 bald eagles nesting pairs.
- Behavior – Golden are much more solitary than balds. In non-nesting seasons golden remain mostly solitary or in pairs. In non-nesting season balds are very gregarious. Balds practice piracy constantly– golden hardly ever.
- Flight – In flight, both hold wings very flat and there’s little flapping.

### **Why are eagles here in winter?**

- Colorado has relatively mild winters and there are lots of large reservoirs that retain some open water and with abundant fish and waterfowl. They also hunt on prairie dogs (black-tailed prairie dogs do not hibernate).
- 1,200 or more travel to Colorado to spend the winter. There are about 70 nesting pairs in the summer. Most leave in February and March and head north to their breeding grounds.

### **It’s about food!**

This is what drives migration. Cold weather, day length, iced-over rivers influence the specific timing. bald eagles come here for the balmy winters. They scavenge dead fish and waterfowl on the ice as well as actively hunt live prey.

They pirate (steal food) from hawks, osprey (summer only), mammals and other eagles. To steal food from another bird, they will dive from above to scare it into dropping the item and then will catch it as it falls. It seems as soon as one catches a fish several others descend on it to try to steal it away.

They often use the behavior of other hawks as a cue to food.

Bald eagles are raptors – birds of prey, rapa=grasping. This has to do with the method of catching and killing prey with their talons. They have up to 1,000 lbs of pressure/in<sup>2</sup> in their feet so they are well-equipped to catch, squeeze, and carry a variety of prey.

Beaks are hooked and sharp to rip and tear into food.

## **Migration:**

Compare range maps of balds and goldens.

Migrate south in winter to find open water (i.e. Fossil Creek and many other manmade lakes in area).

Likely these eagles are from MT, ID, southern Canada.

Arrive in late November; migrate north to nesting grounds in mid February-March

## **Natural History Tidbits:**

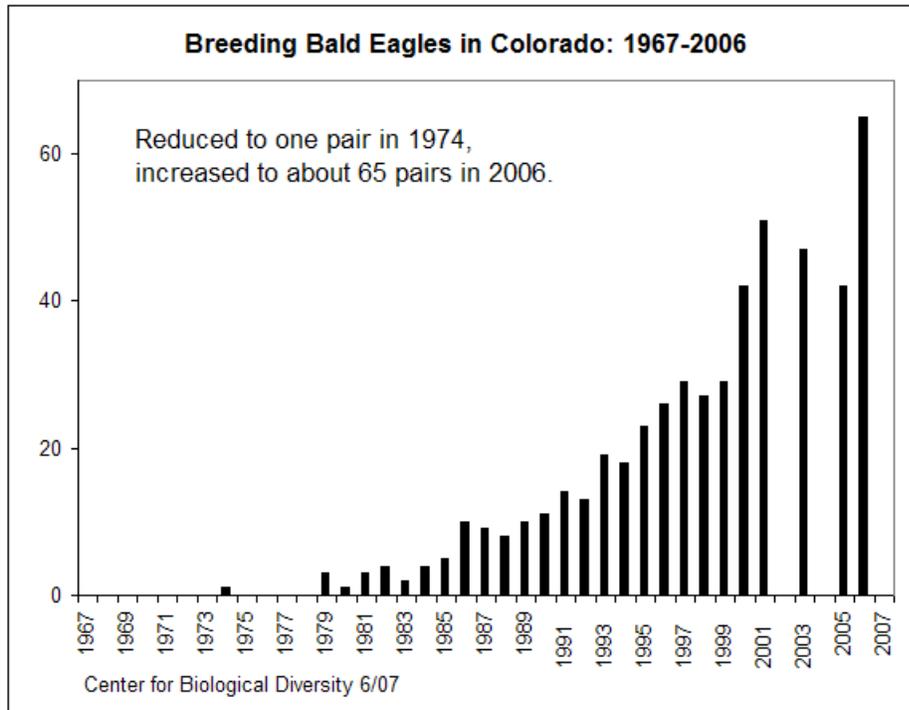
- **Size of eagles** – in comparison to other birds:
  - **Wingspans:**
    - Goldens and balds – 6-8'
    - Red-tailed Hawk: 4-5'
    - Turkey Vulture: 5-6'
    - American White Pelican: 8-9'
    - Sandhill Crane: 6-7.5'
  - **Weight:**
    - Balds: 9-16 pounds
    - Goldens: 10 pounds
    - Tundra swan: 23 pounds!
    - Bald eagles can carry prey of only 1-3 pounds so it's impossible carry off livestock or children!
- **Eyesight** – Like most raptors, bald eagles eyesight is very good. Size of eye is comparable to human eye but they see at least 4-7 times better than a human. Eyes are fixed in the socket so they move their heads around to see (as most birds do). Eagles can see forward and to the side at the same time; they can spot fish in water from several hundred feet above. "Stern look" caused by bony protrusion over eyes which may shield them from sun.
- **Maturity** – 3-5 years to adult plumage, but sexually mature (able to reproduce) at 2-3 years.
- **Breeding** – In Colorado in 1979 there were on three nesting pairs of bald eagles. In 1986 there were ten pairs; in 1995 there were 23 pairs; currently there are about 70 pairs. Bald eagles are monogamous and mate for life. Pairs are often together outside of breeding season.
- **Courtship** – The mating ritual involves aerial flights: one bird flips upside down, touching or grasping talons with other bird, both tumble towards the ground and break off. Show courtship flight photos.
  - Also sit close to each other at the nest site, may preen each other.
  - Mate for life if successful.
- **Nests** – are massive, made of sticks, nesting pairs return annually and add to nest. Nests can weigh up to 1,000 lbs! Hatch one brood per year. Lay two-three eggs, several days apart. First egg to hatch has an advantage. Incubate 35 days, then about 2.5–3 months to fledge. Generally, the stays in the nest and the male hunts and brings food. Pairs will re-nest in same nest over many years.

- There was a nesting pair on the north side of FCR in 2014. There is also an active nest directly east of Fossil creek near River Bluffs Open Space. The nest seemed fragile so Colorado Parks and Wildlife rebuilt installed a rebar basket for the eagles to put sticks in.
- **Name** – They are not bald. The term may come from an old English word, *balde*, which means white.
- **Voice** – Compare to red-tailed hawks (play on device if available) and explain that movies and TV often use the RT call as it is more dramatic. Bald eagle call is kind of wimpy.
- **Life Span** – 30-40 years in the wild; average 15-20 years. Longest in captivity was 48 years, zoo in NY.

**Transition:** Despite these adaptations and amazing abilities, there was a time when Bald Eagles were in danger of extinction.

**Bald Eagles nearly didn't survive due to hunting, DDT, and poisoning:**

- DDT was used on crops and would enter ecosystem and accumulate in fish which eagles ate.
- Eggshells became thin and were crushed.
- 1967 protected by legislation, prior to ESA
- Status: Declared an Endangered Species in 1967; in 1995 bald eagles came off Endangered Species List and in 2007 they were removed from the Threatened Species List. In lower 48, numbers went from 500 nesting pairs in 1963 to 10,000 nesting pairs.
- Still protected by Migratory bird act, and the Bald/Golden Eagle protection act.
- Lead poisoning is still an issue from lead shot (bullets used to shoot ducks which eagles scavenge).



**Transition:** It would be a tragedy to lose such a powerful symbol of the Americas.

### **Bald Eagles are an important cultural symbol**

- Native Americans - The Bald Eagle is a sacred bird in some North American cultures, and its feathers, like those of the Golden Eagle, are central to many religious and spiritual customs among Native Americans. Eagles are considered spiritual messengers between gods and humans by some cultures. Many pow wow dancers use the eagle claw as part of their regalia as well. Eagle feathers are often used in traditional ceremonies particularly in the construction of regalia worn and as a part of fans, bustles and head dresses. The Lakota, for instance, give an eagle feather as a symbol of honor to person who achieves a task. In modern times, it may be given on an event such as a graduation from college. The Pawnee considered eagles symbols of fertility because their nests are built high off the ground and because they fiercely protect their young. The Kwakwaka'wakw scattered eagle down feathers to welcome important guests. The Choctaw consider that the bald eagle has direct contact with the upper world of the sun and is a symbol of peace.
  - Symbolized power and might.
  - Ojibiwa believed they were intermediaries to creator.
  - Talons served as amulets of protection.
  - Eagle feathers were awarded to those who did great deeds in battle.
  - Eagle feathers still used today by various tribes in ceremonies.
  - Traditionally, Lakota used notches, dyes, and tufts of horsehair to show whether the wearer had counted coup, been wounded in battle or killed enemies. Quite often, during battles, warriors would seek out enemies wearing many eagle feathers to prove their bravery.

- Current eagle feather law stipulates that only individuals of certifiable Native American ancestry enrolled in a federally recognized tribe are legally authorized to obtain Bald or Golden Eagle feathers for religious or spiritual use. The constitutionality of these laws has been questioned by Native American groups on the basis that it violates the First Amendment by affecting ability to practice their religion freely.
- USA's National Symbol (symbols and pictures)
  - 2<sup>nd</sup> Continental Congress selected the bald eagle as the symbol of the new nation in 1782.
  - Represented freedom – high flying, unrestrained.
  - Eagles were roused from roosts during early morning revolutionary battles, soldiers identified with them, shrieking for freedom.
  - Ben Franklin wanted the wild turkey because eagles were of “bad moral character.” It's thought that he may have been referring to their adaptation of piracy and scavenging. He wrote this to his daughter only – he did not express it to the congress.
- What does the eagle represent to you?
  - Pop Culture
  - Colorado Eagles
  - Sam the Eagle (Muppet Show)
  - The Eagles (rock band)
  - Eagle sounds vs. red Tail sound – movies often depict the bald eagle and give it a powerful call...but is that really an eagle?

**Transition:** All these amazing things about bald eagles make our community extremely lucky to have a chance to seem them up close like this.

## **CONCLUSION**

Restate theme and drive home the uniqueness of eagles.

Remind visitors of upcoming eagles watches and other programs as appropriate.

Thank visitors for coming, tell them you'll stick around for a few minutes and leave scopes up for them to continue viewing.



## Bald Eagle Fast Facts

**Scientific name:** *Haliaeetus leucocephalus* (from the Greek for “sea eagle”; “leucos” = white; “kephalus” = head)

**Physical Characteristics:**

Wingspan = 6’–8’

Length = 30-31”

Adults have black body, large white head and tail, large yellow bill, yellowish eye, broad wings.

**Range:** Breeds in Alaska, most of Canada except upper Arctic, northern US, northern half of Pacific coast, Virginia coast, Gulf coast and Florida.

**Habitat:** Coasts, lakes, reservoirs, rivers.

**Breeding Territory:** Mid-March–mid September will defend territory around nest from other eagles, other large birds, mammals such as coyotes and foxes. Humans may cause eagles to abandon the nest. They need at least ¼ mile buffer from human disturbance. Nest sites may be about 1-2 miles apart; sometimes closer if food is abundant. Prefer to remain on or near territory year round but may be impossible due to weather and food supply, and competition from other eagles.

**Courtship:** Mid-March through April. Aerial courtship: one will flip over in flight so talons are facing each other. They may touch or even lock talons and spin, breaking apart before they hit the ground. Also chase each other in air. Pairs sit close to each other on perch or at the nest. Mutual preening and peck at each others’ bills. Long term pair bond and the pair may remain together year round. If not, they re-establish the bond during nesting season at the nest site.

**Nest building:** mid-March-mid July. Nests are large stick platform 6’ wide 4’-10’ tall, in large tree or on cliff side. Male and female both build nest.

**Young:** 2-3 eggs are laid a few days apart. The first hatched as the advantage. Both parents incubate and bring food to the young. Fledge (leave nest) at about 70-100 days. One brood per year.