

## American White Pelican

*Pelecanus erythrorhynchos*

### **REGULATORY STATUS**

USFWS: Migratory Bird  
USFS R2: No Special Status  
USFS R4: No Special Status  
Wyoming BLM: No Special Status  
State of Wyoming: Protected Bird

### **CONSERVATION RANKS**

USFWS: No special status  
WGFD: NSS4 (Bc), Tier II  
WYNDD: G4, S3S4  
Wyoming Contribution: LOW  
IUCN: Least Concern  
PIF Continental Concern Score: Not ranked

### **STATUS AND RANK COMMENTS**

American White Pelican (*Pelecanus erythrorhynchos*) has been assigned a range of state conservation ranks by the Wyoming Natural Diversity Database because of uncertainties about the species' abundance and population trends in Wyoming.

### **NATURAL HISTORY**

#### **Taxonomy:**

There are no recognized subspecies of American White Pelican.

#### **Description:**

Identification of American White Pelican is possible in the field. Males and females are nearly identical in appearance and appearance remains largely the same year round. The species is 1.2–1.6 m in length, has an all-white body, black wing tips, and orange head and feet. The bill is very large, with a distensible pouch underneath. During the breeding season, a horn-like keel is present on the top of the upper mandible <sup>1</sup>. Juveniles have a dusky-brown head, neck, and back, with scattered dusky-brown feathers on the wings and tail. The species takes three years to reach full adult plumage <sup>2</sup>. The species is unlikely to be confused with any other species in Wyoming.

#### **Distribution & Range:**

During the breeding season, American White Pelican is patchily distributed across western North America. Similarly, the species is scattered across Wyoming during the breeding season, potentially occurring wherever appropriate habitat exists. American White Pelican has been documented in all of Wyoming's 28 latitude/longitude degree blocks, with confirmed breeding occurring in only 4 of those degree blocks <sup>3</sup>. The species migrates to southern North America for the winter. Range contractions or expansions have not been observed. However, some breeding colonies have been lost in Washington and California, while new breeding colonies have been

established elsewhere. In Wyoming, breeding colonies have been documented in Yellowstone National Park and in Fremont, Carbon, and Albany counties<sup>3-5</sup>.

**Habitat:**

Across the species' range, American White Pelican uses various freshwater habitats during the breeding season. These include but are not limited to marshes, lakes, and rivers. Breeding colonies are found on isolated islands within these habitats. Foraging areas typically consist of shallow waters in marshes, ponds, and streams, and are often over 50 km away from the breeding colony. In Wyoming, two of the larger breeding colonies are found on Yellowstone Lake and Pathfinder National Wildlife Refuge. During migration, habitat use is similar to that during the breeding season. During winter, the species is typically restricted to coastal estuarine habitats<sup>4,6</sup>.

**Phenology:**

American White Pelican arrives in Wyoming in April. The nesting cycle begins in late April to early May, and is generally synchronized within a colony. Normally, 2 eggs are laid, and incubation lasts approximately 30 days. Young remain in the nest for 2–3 weeks and then leave the nest to form crèches with other young. Young first begin to fly at 9–10 weeks of age, and fledge from the colony at 10 weeks of age. Fall migration likely begins in late August and lasts through October<sup>4,6</sup>.

**Diet:**

American White Pelican primarily consumes fish during the breeding season. Occasionally, aquatic amphibians and crayfish are taken. Diet during migration and winter is largely unknown<sup>4</sup>.

**CONSERVATION CONCERNS**

**Abundance:**

**Continental:** WIDESPREAD

**Wyoming:** UNCOMMON

Abundance of American White Pelican in Wyoming is difficult to determine due to the nomadic nature of the species and annual variation in occupancy of individual breeding colonies. Since 2001, an estimated 500 to 1,300 individuals have occupied Yellowstone Lake while up to 1,500 individuals have occupied Pathfinder Reservoir. Small colonies and non-breeding individuals are scattered across Wyoming<sup>6,7</sup>. The statewide rank of UNCOMMON is based on the limited area of the state known to be occupied in any given season, and the relatively small coverage of suitable habitat within that area. However, within suitable habitat in the occupied area, American White Pelican appears to be common and is usually encountered during surveys that could be expected to indicate its presence<sup>3</sup>.

**Population Trends:**

**Historic:** LARGE DECLINE

**Recent:** UNKNOWN

Population trends are not available for American White Pelican in Wyoming due to a limited distribution in the state and low detection rates during monitoring surveys. Currently, there are no robust North American Breeding Bird Survey (BBS) trend data for American White Pelican in Wyoming due to a limited observation sample size ( $N = 33$  routes; 1968–2013) and data that fall within a credibility category containing important deficiencies<sup>8</sup>. However, BBS trend data for the western region, United States, and survey-wide suggest population increases, although

these data fall within a credibility category containing deficiencies, so must be interpreted with caution<sup>8</sup>. Prior to the 1960s, large, long-term declines were observed<sup>4,8</sup>. Annual monitoring for nesting American White Pelicans occurs in Yellowstone National Park, where one colony exists. In 2014, 307 American White Pelican nest attempts produced 276 fledglings; however, this number has declined since the early 1990s likely due to declines in cutthroat trout<sup>9</sup>.

**Intrinsic Vulnerability:**

**MODERATE VULNERABILITY**

American White Pelican is vulnerable due to restrictive breeding habitat. Specifically, suitable breeding habitat is restricted to islands in various freshwater habitats in Wyoming. Availability of these habitats may limit the species in Wyoming. The species may also be limited by its reproductive capacity. The species is only able to raise one or two young annually. Additionally, nest success within a colony can be highly variable, ranging from complete failure, to nearly complete success. However, the species has a long life expectancy and lifetime reproduction may be relatively high<sup>4</sup>.

**Extrinsic Stressors:**

**MODERATELY STRESSED**

Environmental and human factors can affect populations of American White Pelican, making it moderately vulnerable. The species is highly sensitive to human disturbances at breeding colonies. Boat traffic and low flying aircraft can cause nest desertion. Fluctuating water levels at reservoirs can also negatively affect breeding colonies. Increasing water levels during the breeding season can flood and destroy nests, while decreasing water levels can connect islands where breeding colonies occur to mainland habitats, allowing predators to access nest sites<sup>4</sup>. Naturally occurring runoff and drought conditions may have similar effects on breeding colonies. Effects of both flooding and drought conditions have been observed at Bamforth National Wildlife Refuge in Albany County. Complete colony nesting failure was observed in 1986, 1987, 1989, and 1990. The frequency and severity of droughts may occur more frequently due to climate change, which may threaten the long-term viability of breeding colonies<sup>6,10</sup>.

**KEY ACTIVITIES IN WYOMING**

American White Pelican is listed as a Species of Greatest Conservation Need (SGCN) in Wyoming by the Wyoming Game and Fish Department (WGFD), and as a Level II Priority Species requiring monitoring action in the Wyoming Bird Conservation Plan<sup>11</sup>. Since 1984, WGFD has conducted annual or periodic monitoring at the most important and productive sites for colonial waterbird SGCN to determine species presence and distribution, and to estimate number of nesting pairs. Annual surveys were conducted by state and federal agencies from 2002 to 2006 on colonial waterbirds, including American White Pelican. The goals of these surveys were to estimate breeding colony size and occupancy status<sup>12-16</sup>. The most recent effort was the culmination of a multi-year cooperative agreement between the WGFD and the U.S. Fish and Wildlife Service (USFWS) to conduct an intensive survey of all historic, known, potential, and new colonial waterbird breeding sites statewide as part of a western range-wide effort to track population size, trends, and locations of breeding colonial waterbirds in the western United States<sup>17,18</sup>. A total of 90 sites were evaluated in Wyoming; 86 potential colonial waterbird nesting sites and 4 known nesting sites. A lack of adequate emergent vegetation to provide secure nesting areas for colonial waterbirds was noted at most potential sites visited. In 2014, an online Atlas of western colonial waterbird nesting sites was produced with data collected and submitted by participating states<sup>19</sup>. Every 3–5 years, WGFD personnel visit known colonial

waterbird nesting sites outside of Yellowstone National Park to evaluate water level conditions, determine species present at each site, and estimate the number of nesting pairs of colonial waterbirds. There are currently no research projects designed specifically for American White Pelican in Wyoming.

### **ECOLOGICAL INFORMATION NEEDS**

Abundances of American White Pelican have been increasing and new breeding colonies have been documented in portions of the species range, and new colonies continue to be found in the state. Breeding productivity and sizes of these new colonies in Wyoming are unknown.

### **MANAGEMENT IN WYOMING**

*This section authored solely by WGFD; Andrea C. Orabona.* American White Pelican is classified as a SGCN in Wyoming due to a restricted breeding distribution and limited information on population trends. The colonial nature of American White Pelican and other waterbirds makes these species particularly vulnerable across their range to loss or degradation of nesting sites, stochastic weather events such as drought and flooding, changing land use practices, pollution, and climate change. Two separate but compatible survey programs are in place to monitor populations of many avian species that breed in Wyoming; the BBS<sup>8</sup> and Integrated Monitoring in Bird Conservation Regions<sup>20</sup> programs. While these monitoring programs provide robust estimates of occupancy, density, or population trend for many species in Wyoming, colonial waterbirds are one of the species groups that warrant a targeted, species-specific survey method approach to obtain these data. WGFD conducted inventories of nesting colonial waterbirds, including American White Pelican, from 1984–1986<sup>21, 22</sup>. In 1990, WGFD summarized all information presently known on colonial nesting waterbirds in Wyoming<sup>23</sup>. Since 1984, WGFD has conducted annual or periodic monitoring at the most important and productive sites for colonial waterbird SGCN. Results have shown American White Pelican nesting consistently at three sites in Wyoming; Bamforth Lake near Laramie, Pathfinder Reservoir near Casper, and Yellowstone Lake in Yellowstone National Park<sup>3</sup>. Due to their sensitivity to human disturbance during the nesting season, the survey technique used for colonial waterbirds is minimally invasive and provides only an estimate of the number of breeding pairs and coarse habitat associations of each waterbird species present in the colony. Actual nests, eggs, or young are not located or counted to prevent colony disruption and reduce predation risk. From 2009–2012, WGFD and USFWS cooperated to conduct a rigorous survey of all historic, known, potential, and new colonial waterbird breeding sites statewide as part of a western range-wide effort to track population size, trends, and locations of breeding colonial waterbirds in the western United States<sup>17, 18</sup>. A total of 90 sites were evaluated in Wyoming; 86 potential colonial waterbird nesting sites and 4 known nesting sites. A lack of adequate emergent vegetation to provide secure nesting areas for colonial waterbirds was noted at most potential sites visited. An online Atlas of western colonial waterbird nesting sites was produced with data collected and submitted by participating states<sup>19</sup>. Best management practices to benefit American White Pelican include maintaining large, high quality wetland complexes; keeping water levels stable during the nesting season; maintaining ample foraging areas within range of nesting colonies; installing and maintaining nesting islands where needed; protecting any colony site used by American White Pelican; keeping human disturbance to a minimum during the breeding season and maintaining a minimum disturbance-free buffer zone of 100–180 m; and

monitoring colony sites every 3–5 years to determine American White Pelican presence and estimate number of nesting pairs<sup>11</sup>.

## **CONTRIBUTORS**

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Figure 1: Adult American White Pelican in summer plumage in Weld County, Colorado. (Photo courtesy of Bill Schmoker)

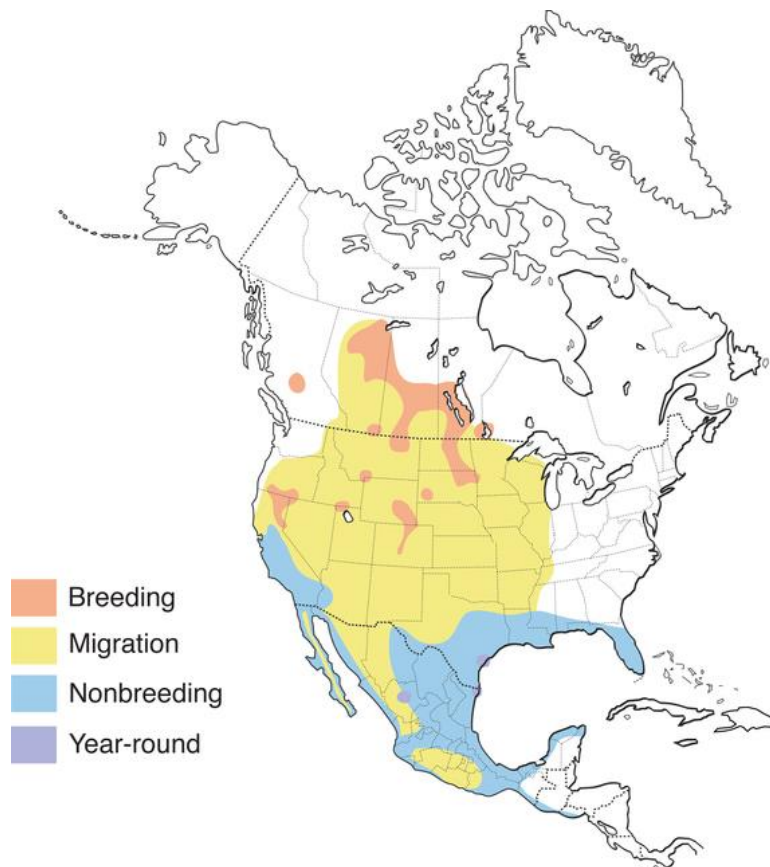


Figure 2: North American range of *Pelecanus erythrorhynchos*. (Map courtesy of Birds of North America, <http://bna.birds.cornell.edu/bna>, maintained by the Cornell Lab of Ornithology)





Figure 3: American White Pelican foraging habitat at the A & M Reservoir in southwest Wyoming. (Photo courtesy of Lusha Tronstad)

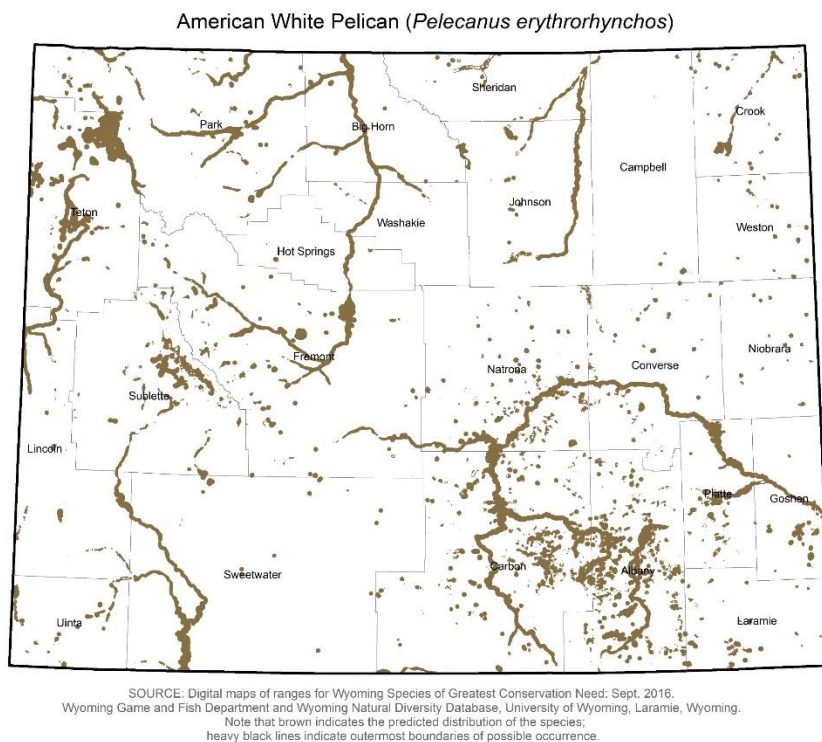


Figure 4: Range and predicted distribution of *Pelecanus erythrorhynchos* in Wyoming.





Figure 5: Adult American White Pelican in breeding condition (note keel on upper mandible) in Laramie County, Wyoming. (Photo courtesy of Pete Arnold)