ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Animal Abstract **Element Code:** ABNKA03010
Data Sensitivity: Yes

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Gymnogyps californianus*
COMMON NAME: California Condor
SYNONYMS: *Vultur californianus*
FAMILY: Cathartidae

AUTHOR, PLACE OF PUBLICATION: *Vultur californianus*, Shaw, 1797. Naturalists' Misc. 9. *Gymnogyps californianus*, Shaw. 1978.

TYPE LOCALITY: Monterey, California, USA. 1792.

TYPE SPECIMEN: Unknown

TAXONOMIC UNIQUENESS: Only extant member of the genus *Gymnogyps*. Four fossil species are known. All condors alive today are descended from 14 "founder" condors (Cohn 1993).

DESCRIPTION: Adults have an average wingspan of 9.8 feet (3.0 m), an average body length of 119.0 cm (47.0 in), and an average width of 274 cm (108.0 in). Adult condors can weigh up to 26 lbs (12 kg). Black in overall coloration, adults have white wing linings and orange heads; immature birds have mottled wing linings and a dusky head. By fledging stage, their wingspan is over 8 feet (2.4 m) long and their weight is between 16 and 20 pounds (7.3-9.0 kg). They soar on flat wings, circling for altitude, before giving one deep wing beat to soar off at great speed in search of large carrion (Scott 1987).

AIDS TO IDENTIFICATION: They are the largest flying land bird in North America. Black in overall coloration, adults have white wing linings, orange head; immature birds wing linings are mottled, head dusky. Larger than a turkey vulture, and turkey vultures lack white on wing linings.

ILLUSTRATIONS:
Color drawing (Scott 1987: 183)
Color picture of egg (Baicich 1997: Plate 27)
Color drawing (Sibley 2000)
Color photos (Vezo 2002)
Color photo (USFWS 2017)
Color AZ range map of Condor Non-essential Experimental Population Area (USFWS 2017)

TOTAL RANGE: In prehistoric times, condors occurred in western North America from Canada to Mexico with isolated populations in New York and Florida. Approximately 10,000 years ago, the Pleistocene extinction wiped out many of the large mammals that condors relied on for food. This loss of large prey naturally reduced their range to the Pacific Coast between British Columbia and Baja California. Recent declines in populations were human induced; poisoning, intentional shootings, habitat destruction and egg collection are examples. Today, California condors occur only in three isolated populations; in coastal central California, northern Arizona and southern Utah, and Baja California in Mexico (Cornell University, 2019).

RANGE WITHIN ARIZONA: Few sight records in 1880s, from southeast to northwest. One observed north of Williams on October 3, 1924 (Monson and Phillips 1981). Reintroduced to the Vermillion Cliffs in December 1996, and to the Hurricane Cliffs in 1998. These populations have been supplemented since, and adults from earlier releases have successfully bred. The AZ populations are considered Non-essential Experimental (10j), and their range covers all of northern Arizona north of I-40 except extreme eastern Arizona.

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Life span in wild is likely 50 or 60 years. Their nest is situated either at some distance above bottoms of cliffs or on steep slopes presumably providing air space for birds to approach and leave nests. Using thermal updrafts condors are able to soar to 15,000 feet, fly at 50 mph and travel over 100 miles per day while expending little energy. Condors fly extended distances in the spring and summer. They sun themselves first thing in the morning, to warm up with the suns rising by capturing the sunlight and warmth with extended wings turned to the sun. At watering holes, condors often are observed bathing. Preening and grooming the bare skin on their heads are particularly important because of their carrion diet.

REPRODUCTION: The average age of first reproduction for condors is 8.5 years for females and 9.9 years for males (USFWS 2017). Condors are monogamous, with pair formation taking place in late fall or early winter. During the courtship display, the male stands with his wings partly outstretched, head held down, and his neck arched forward as he slowly turns and rocks from side to side. They also engage in neck wrestling as well as tandem courtship flights. They produce one five-inch long sub-elliptical egg that sits directly on the sand. The egg is smooth with a glossy surface with very fine elongated pits, and is faintly tinted blue. Both parents incubate the egg for 54-58 days. Most eggs hatch from March to May. The nestling is altricial and downy. The down of the first coat is white and the head and neck are bare. The second down is gray and woolly, also extending to head and neck. The nestling slowly feathers between the seventh and twenty-second week. Chicks fledge in approximately six months, generally from October to December. Fledglings are typically dependent on parents through the next fall's breeding period. The pair produces only one chick every other year. A pair may be able to produce young in successive years in optimal conditions where a fledgling is able to join an existing flock, forage is sufficient, and nesting disturbance is low. If the first egg is lost or fails to hatch and it is early enough in the season, the female may lay another and attempt to renest, also referred to as "double-clutching" (USFWS 2017).

FOOD HABITS: A scavenger of large wild (elk, pronghorn, and deer) and domestic animals (cattle and sheep), condors use visual cues to find food, rather than olfactory sense, like vultures. Condor can travel 48-96 miles (80-160 km) per day in search of food (USFWS 2017).

HABITAT: In Arizona, condors roost and nest in steep terrain with rock outcroppings, cliffs, and caves. In California, condors inhabit lower elevations and typically roost in caves or on ledges, but can be found in trees as well. High perches are necessary to create the strong updrafts the bird requires to lift into flight. Open grasslands or savannahs are essential to condors for searching for food. In the recover area the established flock maintains a well-established primary range, within the experimental population area. Generally condors concentrate in southern Utah, using Zion National Park and the Kolob Plateau from spring through fall, and wintering in Arizona, using the Kaibab and Paria plateaus and the Colorado River Corridor west of Marble Canyon. Tracking shows that tagged birds make occasional movements outside of the experimental population area (USFWS 2017).

ELEVATION: 2,000 - 6,500 feet (610-1981 m).

PLANT COMMUNITY: Great Basin Desertscrub and Mohave Desertscrub (Brown, 1982).

POPULATION TRENDS: Increasing. In the 1980's the California condor population declined to just 22 birds. The decision was made to bring all of the wild condors into captivity to begin a captive breeding program. The last wild condor was secured in April of 1987. After several years of a successful captive breeding program in Los Angeles and San Diego, the first two condors were reintroduced to a California wild sanctuary in 1992. In 1992, the Recovery Program began releasing condors back into the wild. Releases in Arizona began in 1996. By the summer of 1998, there were more than 150 condors in existence. In 2001 and 2002, condors in Arizona began breeding but nests were unsuccessful. In 2002, three condor eggs hatched in California but the chicks died before fledging. In August of 2003 the first condor chick in Arizona in more than 80 years was documented. As of 2016, 29 wild-hatched condor chicks had been produced, and 20 of these chicks had died (USFWS 2017).

As of 2010, 73 condors were extant in the Grand Canyon region, the world's total population of California condors was 384, with 186 individuals in free flying populations in Arizona, Utah, California and Mexico (AGFD 2010). As of August 2020, 102 condors were extant in the Grand Canyon experimental population area, and the world's total population was over 500 individuals, with more than half occurring in free flying populations in Arizona, Utah, California, and Mexico (USFWS 2020).

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: LE, XN (USDI, FWS 1967), Arizona population is listed as a 10(j) Non-essential, Experimental Population (USDI, FWS 1996).

STATE STATUS: 1 (AZGFD, AWCS 2022)

[1A (AGFD SWAP 2012)]
[WSC (AGFD, WSCA 1996 in prep)]
[Endangered (AGFD, TNW 1988)]

OTHER STATUS:

Bureau of Land Management Sensitive (BLM AZ 2017)
Category P, (Diario oficial de la federacion, 1994, 2010 NORMA Oficial Mexicana NOM-059-SEMARNAT-2010)
Group 4 (NNDFW, NESL 2005, 2008)

MANAGEMENT FACTORS: Lead contamination is the primary factor hindering recovery of the condor (USFWS 2017). Lead poisoning is the primary cause of diagnosed mortality in California condor populations (55% of diagnosed mortalities of condors were due to lead toxicosis) (Church et al. 2006, Chelsey et al. 2009, Hunt et al. 2009, Stroud and Hunt 2009, Finkelstein et al. 2012, Rideout et al. 2012). Lead poisoning occurs mostly in fall and winter months, associated with big-game hunting seasons within condor range. The period of highest lead-associated mortality occurs in December and January due to the latent exposure effect. From 2011 to 2016 59-80% of the population annually had likely recent lead exposure, and 25-42% of the population annually required treatment for lead poisoning. Other diagnosed causes of mortality in California condor populations include predation (24%), shooting (9%), starvation (5%), impaction (3%), collisions (3%) and infection (1%) (USFWS 2017).

Historic threats included shooting, egg collection, quill collection, and ceremonial use. Current threats include collisions with human-made structures, electrocution on powerlines, and poisoning from lead, DDT, cyanide, and anti-freeze.

PROTECTIVE MEASURES TAKEN: A Recovery plan was completed in 1974, and revised in 1996. Critical habitat is designated in California. The Arizona population of California condors is listed as a 10(j) Non-essential, Experimental Population, allowing the reintroduced population to be managed with greater flexibility than fully endangered populations. The bounds of the experimental population are defined by Interstate 40 to the south, Highway 191 on the east, Interstate 70 to the north, and Interstate 15 to Highway 93 to the west (USFWS 1996).

Captive-bred birds are vaccinated against West Nile Virus before release, and wild-hatched birds are vaccinated when trapped for health checks. Before release, captive-bred birds undergo aversive conditioning to electrical structures and are outfitted with radio or GPS transmitters. Dairy calf carcasses are deposited at the release sight every three to four days. This provides food for newly-released condors and facilitates trapping of individuals to replace transmitters and collect blood for lead analysis. If blood-lead level is high, the bird is removed for treatment. Birds which exhibit a lack of avoidance of humans are hazed in an effort to use negative stimuli to move them away from potentially harmful situations. If undesired behaviors cannot be corrected, condors are returned to the captive flock (USFWS 2017).

AGFD and UDWR have implemented voluntary big-game lead reduction programs within the range of the condor. In Arizona, this effort began in 2003, and is a combination of targeted educational outreach, a free non-lead ammunition program within the range of the condor, and a gut pile raffle to incentivize removal (Sullivan et al. 2007, Sieg et al. 2009). Since 2007, 80-90% of big-game hunters in the Arizona portion of the condor range have participated in lead reduction programs, and the percentage of Utah hunters participating has been 78-90% since 2013. Pre-program this percentage was estimated at less than 5% (USFWS 2017). However, although the amount of lead available to condors in Arizona and Utah has significantly decreased, there has been no corresponding reduction in lead exposure rates among condors (Green et al. 2008, Stieg et al. 2009). Modeling based on the California population predicted that if only 0.5% of carcasses are contaminated, there is an 85-98% probability that an individual condor would feed on a contaminated carcass over a 10-year period (Fickelstein et al. 2012). Future projects include expanded outreach to small game, fur bearer, and predator/varmint hunters in an attempt to reduce the amount of lead introduced into the environment (USFWS 2017).

A partnership was formed among the U.S. Fish and Wildlife Service, Bureau of Land Management, National Park Service, U.S. Forest Service, Arizona Game and Fish Department (AGFD), Utah Division of Wildlife Resources (UDWR), The Peregrine Fund, Navajo Nation, Kaibab Band of Paiute Indians, and Arizona Center for Nature Conservation/Phoenix Zoo. Collectively, these agencies, tribes, and organizations form the Southwest Condor Working Group (SCWG). The SCWG operates under a Memorandum of Understanding which provides framework for cooperation and participation among SCWG members. The cooperators meet or confer regularly each spring and fall and with less formal communications throughout the year as needed (USFWS 2017). Additionally, this working group works to secure additional funding for condor outreach and management, and multiple cooperators participate in educational outreach. AZGFD's California Condor Coordinator works with The Peregrine Fund biologists on day-to-day management.

SUGGESTED PROJECTS: The recovery strategy for the California condor in the experimental population area continues to focus on; releasing captive-bred condors to the wild, minimizing condor mortality factors, including the effects of lead ammunition, maintaining habitat for condor recovery through management and protection of nesting and roosting areas, and implementing condor information and education programs (USFWS 2017). To reclassify the condor to threatened, there must be at least two non-captive populations which must each comprise at least 150 individuals, contain at least 15 breeding pairs, and be self-sustaining with positive population growth. Each population must be spatially distinct and contain individuals descended from each of the 14 founders (USFWS 1996).

LAND MANAGEMENT/OWNERSHIP: BIA – Navajo Nation; BLM - Arizona Strip Office; NPS - Grand Canyon National Park; USFS - Kaibab National Forest (north and south of the Grand Canyon) Hopi Reservation (Hopi Tribe).

SOURCES OF FURTHER INFORMATION

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MAJOR KNOWLEDGEABLE INDIVIDUALS:

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Chris Parish, The Peregrine Fund, Marble Canyon, AZ.
Allen Zufelt, Condor Program Coordinator, Arizona Game and Fish Department, Flagstaff, AZ.

ADDITIONAL INFORMATION:

The following is a 2008 informative piece by Chad Olson with the National Park Service.

Grand Canyon breeding ground for condors
By Chad Olson NPS
Wildlife Extra.com
December 15, 2008

Two California condor chicks fledged from their nests in the Grand Canyon in December, bringing the world's population of endangered California condors now flying free in the wild to 169. This is the first time since the few remaining condors were taken into captivity in the 1980's that there are more free flying condors than are in captivity for breeding purposes.

"This shows that we are making real progress in bringing this ecologically significant bird back from the brink of extinction," said Bill Heinrich, who oversees the condor recovery program for The Peregrine Fund. "I am thrilled that these two chicks appear to be doing well and I hope they will survive to become productive members of the flock."

327 condors alive today - 158 in captivity

Currently, the total number of California Condors is 327, with 158 in captivity. Of the 169 condors in the wild, 67 are in Arizona and 83 are in California. There also are 19 California Condors flying free in Mexico. The goal is to produce at least 150 members in each of the U.S. populations, including at least 15 breeding pairs.

8 chicks in California

The Peregrine Fund breed condors at its World Center for Birds of Prey in Boise and releases them to the wild in northern Arizona. Eight wild condor chicks also hatched this year in California, where a geographically separate population is being produced by zoos, along with The Peregrine Fund.

Condor facts
• Prior to reintroduction, the last wild condor in Arizona was sighted just south of the Grand Canyon in 1924.
• Condors reach maturity at about six years of age. They usually produce one egg every other year.
• Recovery and reintroduction cooperators include The Peregrine Fund, Arizona Game and Fish Department, Utah Division of Wildlife Resources, Bureau of Land Management, National Park Service and U.S. Fish and Wildlife Service.

Just 22 left in 1980's
California Condors are some of the world's rarest birds. Their numbers had dropped to just 22 individuals when the recovery program began in the 1980s. Because condors eat carrion, they help fulfill the role that scavengers play in the environment by consuming dead animal carcasses that might otherwise spread disease and foul land and water resources.

Grand Canyon
The Grand Canyon chicks, which hatched in May, were produced by two sets of condor parents nesting in the canyon's remote ledges and caves. The chicks were first observed testing their wings with short flights in September and October. One of the chicks was produced by the same adult pair that in 2003 hatched the first wild condor chick in the Grand

Canyon in more than 100 years. The other chick belongs to first-time parents. The adult female is the last bird remaining from the group that was released when the Arizona recovery program began in 1996.

This month's fledglings make a total of nine wild chicks hatched in the Grand Canyon since 1996. Eight are still alive.

Condor in the Grand Canyon. Credit Grand Canyon NP.

Lead poisoning
The largest survival challenge facing the two new chicks and all condors is lead poisoning from lost or un-retrieved remains of animals that have been shot with lead ammunition. The Peregrine Fund works with the Arizona Game and Fish Department and local hunting groups on an awareness campaign that has produced a dramatic increase in the number of hunters using copper bullets or other non-lead alternatives in condor country, with a corresponding drop in condor deaths due to lead poisoning.

"We are grateful to all the hunters who are valued partners in restoring California Condors to their historic range," Heinrich said.

Every condor tested twice a year for lead
Nevertheless, every condor must be captured twice each year and tested for lead poisoning. Because they are social eaters, it is possible for just one carcass to poison several birds. Condors are treated with chelation, a process that removes lead from a bird's body, and re-released to the wild. None treated this year have yet died from lead poisoning.

"Until we significantly reduce the amount of lead they are exposed to, we will never have a self-sustaining population of condors," Heinrich said. "We look forward to the day when they no longer need us to survive."

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1997-02-27 (SMS)
2004-07-02 (AMS)
2004-07-06 (ASR)
2004-07-08 (AMS)
2004-07-08 (ASR)
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