DOUBLE-CRESTED CORMORANT - PHALACROCORAX AURITUS

Wikipedia showed an oblique-angled picture of this cormorant's head to reveal one crest at a 45 degree angle to the right of the crown of its head and the other crest at a 45 degree angle to the left of its crown. (Reason as to why this bird is known as “Double Crested”)

Taxonomy: Kingdom: Animalia Phylum: Chordata Class: Aves Order: Suliformes Family: Phalacrocoracidae Genus: Phalacrocorax Species: P. auritus

Habitat:

Biomes: Double-crested Cormorants are colonial waterbirds that seek aquatic bodies big enough to support their mostly fish diet. However, they may roost and form breeding colonies on smaller lagoons or ponds, and then fly up to 40 miles to a feeding area. In addition to fishing waters, cormorants need perching areas for the considerable amount of time they spend resting each day. After fishing, cormorants retire to high, airy perches to dry off and digest their meals—rocks, wires, tops of dead trees, ship masts. They tend to form breeding colonies in clusters of trees in or near water. After a while, masses of cormorant guano may kill these trees and the trees may topple, at which point the cormorants may switch to nesting on the ground.

Distribution:

In US: Throughout the United States in every single state. California has the most coastally nested population.

In Other Countries: Canada, Mexico, Azores/Portugal, and England

Holistic Description: The gangly Double-crested Cormorant is a prehistoric-looking, matte-black fishing bird with yellow-orange facial skin. Though they look like a combination of a goose and a loon, they are relatives of frigatebirds and boobies and are a common sight around fresh and salt water across North America—perhaps attracting the most attention when they stand on docks, rocky islands, and channel markers, their wings spread out to dry. These solid, heavy-boned birds are experts at diving to catch small fish.

Species Richness: 5 SUBSPECIES

Population Dynamic: Recently the population of double-crested cormorants has increased. Some studies have concluded that the recovery was allowed by the decrease of contaminants, particularly the discontinued use of DDT. The population may have also increased because of aquaculture ponds in its southern wintering grounds. The ponds favor good over-winter survival and growth.

Evolution and Systematics:

Evolution: Cormorants are quite numerous in the fossil record, extending back to the Oligocene. The present species is represented by Pleistocene and prehistoric records, notably from coastal sites, widely distributed within the present breeding range.

Systematics: Five subspecies, differentiated by body size, overall color saturation, and color and shape of crest during the breeding season. Body size and the color and size of crest (in breeding plumage) vary considerably across the species' breeding range. Size tends to increase with latitude, fitting the expected pattern of Bergmann's rule. Alaskan birds are largest and have the crest long, straight and mostly white. Birds from e. North America are smaller and have the crest short, curled, and black. The smallest individuals are from the Bahamas.

Number of Species: 5 SUBSPECIES

Number of Genera: 5 SUBSPECIES

Physical Characteristics:

Size and Length: Length: 27.6-35.4 in (70-90 cm) Weight: 42.3-88.2 oz (1200-2500 g)

Wingspan: 44.9-48.4 in (114-123 cm)

Coloration: Adults are brown-black with a small patch of yellow-orange skin on the face. Immatures are browner overall, palest on the neck and breast. In the breeding season, adults develop a small double crest of stringy black or white feathers.

General Body Features: Double-crested Cormorants are large waterbirds with small heads on long, kinked necks. They have thin, strongly hooked bills, roughly the length of the head. Their heavy bodies sit low in the water. **Since these outer feathers are wetable, the cormorant must spend time out of water poised, partly spending its wings to dry them, a posture called wing drying.**

Special Features of the Body: The inner layer is for insulation, so the bird can stay submerged longer yet still keep warm. The outer layer has a microscopic structure to its feathers that renders the bird less buoyant, so as to facilitate its underwater pursuit of fish.
Special Features of the Head and Sensory Organs: Hatchlings have patent nostrils, but they close up for good as the young cormorant matures. The plugged nostrils in the adult are an adaptation for swimming underwater.
Dentition: Lamellae and Gizzard
Special Features of the Limbs and Digits: Its toes are what is called totipalmate, meaning fully webbed between all four toes, making the feet powerful paddles for chasing fish.
Any Special Internal Anatomy: Cormorants have relatively solid bones which cause them to float low in the water. Another adaptation is its remarkable underwater vision. The cormorant can focus on a fish that is only 3½ inches in front of its eyes, because the lens in its eye can change shape far more than a human's lens can. Females lay their eggs in a staggered period, often days apart. As a result, the older, larger chicks get all the food.
Sexual Dimorphisms: Males slightly larger than females, but regional (subspecific) differences are much greater (see Measurements, below). Adults have black or dark-brown plumage, with a dull greenish or bronze gloss that may be absent from worn feathers. The orange-yellow skin of the face and throat (gular region) is distinctive throughout the year.
Differences Between Juvenile Stage and Adult: The “double crest” is a poor field mark; these feathers are variable and are fully developed for only a short time early in year. This is the only seasonal change. Immatures are duller and variable, usually paler on upper breast and darker on belly, occasionally uniformly pale below.
Behavior:
Diurnal, Nocturnal, or Crepuscular: Diurnal
Activity: Double-crested cormorants are gregarious birds that are almost always near water. Their main two activities are fishing and resting, with more than half their day spent on the latter. When at rest, a cormorant will choose an exposed spot on a bare branch or a windblown rock, and often spread its wings out, which is thought to be a means of drying their feathers after fishing. (Cormorants have less preen oil than other birds, so their feathers can get soaked rather than shedding water like a duck’s. Though this sounds like a liability, this is thought to be an adaptation that helps cormorants hunt underwater more effectively.) When swimming atop the water, cormorants ride very low, and often only their long necks are evident. Before a cormorant takes off in flight, it tends to stretch its neck in the direction it intends to fly. When it comes in for a landing, a cormorant will puff out the orange skin on its neck and, after touchdown, give a ritual little hop. If one cormorant encroaches on the space of another, such as in competition over a nest site, the cormorants will face off, stretch their necks, and open their mouths wide open to show off the blue color inside while shaking their heads and hissing at each other. To attract a mate for the season, a male cormorant will choose a nest site and then stand with his breast down and bill and tail up, showing off the crests on his head and bright colors of his neck and his eyes, grunting and slightly waving his outstretched wings. When a female arrives, she is greeted by the male opening his mouth into a gape, showing off the blue inside.
Locomotion: At rest, holds body nearly vertical, with neck in S-shape and bill tilted slightly upward. On water, similarly tilts bill slightly upward. Clumsy on land. Posture upright, legs relatively short; walks with waddling gait and frequently makes two-legged hops. May use hooked bill to aid in clambering around on rocks and branches (especially young birds). Perches readily on branches, navigational structures and sometimes mast or rigging of boats, or cables and transmission lines. Compared to many other seabirds, cormorants have short wings of low aspect ratio, resulting in high cruising speed and low load-lifting ability; individuals are constrained to forage at relatively short ranges and bring small loads of food for their young. Swims readily and for long distances, but usually leaves water at end of fishing bout. Actively pursues prey underwater. Wings too large to be used as principal means of underwater propulsion, which comes from feet. Morphological adaptations include low buoyancy.
Communication and Perception: The Double-crested Cormorant makes deep, guttural grunts that sound a bit like an oinking pig. They grunt when taking off or landing, or during mating or aggressive displays, but otherwise are generally silent.
Home Range: Variable, but low. At roost reached by flight, perched birds are spaced about a wingspan apart (1 m), but at loafing sites reached by climbing out of water, birds appear to be closer together. Within nesting colony, nests are regularly spaced at about 0.6–2.0 m.
Degree of Sociality: Generally very gregarious throughout the year; typically forms dense nocturnal roosts, diurnal loafing areas, and breeding colonies (hundreds to thousands). Solitary nests are rare. Often forages individually, but readily gathers to form feeding flocks (tens to hundreds). By day often travels singly, or in small parties; travels in larger flocks (may be in the thousands) when approaching or leaving nocturnal roosts, and notably on migration.
Level of Aggression: Fighting reported only at nest sites where nest and pair bonds are not yet firmly established. Use bill to grab opponent by neck, wing, or frequently bill and then shake with sideways movement. Some pecking observed as

individuals join roosts. Adults occasionally attack (but rarely kill) strange chicks; killing of their own chicks has been reported.

Migration: Resident to medium-distance migrant. Populations in the continental interior and northern Atlantic Coast migrate to the southern and southeastern U.S.; western populations migrate to the Pacific Coast; Florida, coastal Pacific Northwest, and coastal Mexican populations do not migrate.

Predators:

Predators: Gulls, Corvids, Grackles, Coyotes, Foxes, Raccoons, Bald Eagles, Great Horned Owl, Caiman, Brown Pelican

Anti-Predator Defenses: Responds to individual crow or gull with threats and pecks; may stand and vomit fish. When large predator (or human) appears, adults leave colony and circle overhead; then most settle on water nearby until intruder has left. Adults that remain on their nests successfully threaten Great Black-backed Gulls (Larus marinus) seeking regurgitated fish or eggs. In British Columbia, nests on steeper sites and at the center of colonies suffered less predation from crows and gulls than those on flatter peripheries. Responses to mammalian predators include nesting in trees rather than on the ground, but reactions to presence of predator (other than human) not reported. Colonies move if subjected to repeated predation.

Diet and Nutrition:

Adult Diet: A cormorant's diet is almost all fish, with just a few insects, crustaceans, or amphibians. They eat a wide variety of fish (more than 250 species have been reported), and they have impressive fishing technique: diving and chasing fish underwater with powerful propulsion from webbed feet. The tip of a cormorant's upper bill is shaped like a hook, which is helpful for catching prey. When cormorants happen to catch a crustacean like a crayfish, they exhibit a little flair in eating it—hammering the prey on the water to shake its legs off, then flipping it in the air and catching it headfirst for easy swallowing.

Juvenile Diet: ^^^^^

Special Adaptations for Getting Prey: Grasping of fish is aided by hooklike nail at tip of maxilla (upper half of bill) and by muscles attached to occipital style (xiphoid). This pointed bone, articulating at posterior part of skull, is present only in cormorants and anhingas. Wide jaw-opening is facilitated by nasal-frontal hinge at junction with cranium. Small prey may be swallowed underwater; those noticed at the surface are likely to be large or otherwise difficult to handle, such as eels, flounders, or spiny fish.

Reproduction:

Mode of Reproduction: Monogamous

Mating System: Apparently monogamous. Infrequent large clutches (> 5 eggs) may be laid by > 1 female, but nest attendants not known. No information on sex ratio.

Mating Season: April - July

Courtship: After finding nest site, male advertises repeatedly with conspicuous Wing-Waving Display: Stands with breast down, tail cocked upward and forward, and bill pointed upward. This posture emphasizes the brightly colored and species-specific patterns of head and neck: crests, gular pouch, and eye. Raises and lowers wing-tips about 1.7 times/s, with synchronized head movements, pulsations of cloaca, and loud ugh-ugh-ugh sounds. Display ceases as soon as mate (or potential mate) arrives. Next, male gives recognition display (Gape), when standing or sitting. This display can be seen throughout year, given by either sex, and resembles threat, except that movements are slow and stylized. With mouth wide open, revealing the bright blue lining, stretches neck and waves head slowly forward and obliquely upward while giving the call ah-r-r-r-r-t-t.

Territoriality: Reported only at nest, where small area within beak range is defended. Average length of full stretch 0.38 m.

Mating: Copulation occurs on the nest, preceded by female giving modified recognition display. Male holds female by the neck with his bill. No distinctive post-copulation display. Occurrence of reverse mounting has not been examined. Pair bond persists through breeding season; not known if mate is retained in succeeding years. Nest reliefs during incubation are often accompanied by much caressing. Yearlings are known to form pair bonds and to build and guard nests, but not to lay fertile eggs.

Nesting: The male chooses the nest site and then attracts a female. Nests can be on the ground, on rocks or reefs with no vegetation, or atop trees, which may be alive when a cormorant colony first forms but typically die after a few years from the guano build-up. Nests are built in the center of a colony first, then expand outward. Both Double-crested Cormorant mates work on the nest, with the male bringing most of the material and the female doing the building. The nest is mostly made of finger-size sticks, with some seaweed and flotsam, and lined with grass. Nests are 1.5 to 3 feet in diameter and 4 to 17 inches high; ground nests tend to be wider than tree nests, but tree nests have deeper interiors. Breeding cormorants readily steal nesting materials from a nearby nest that's not guarded.

Egg-Laying: Clutch Size: 1-7 eggs Number of Broods: 1-2 broods Egg Length: 2.2-2.8 in (5.6-7 cm) Egg Width: 1.4-1.6 in (3.5-4 cm) Incubation Period: 25-28 days Nestling Period: 21-28 days Egg Description: Unmarked pale blue.
Hatching and Incubation/Gestation: Naked and feeble, eyes closed and barely able to move head. Altricial hatchling is feeble, barely able to move limbs stiffly, lift head and move it from side to side; naked, with shiny, brown translucent skin; eyes closed and egg tooth present.
Development: Young leave ground nests at 3–4 wk, when they are well feathered, but 2–3 wk before flying. At nests in trees or on cliffs, young may remain until able to fly (6–8 wk), although disturbance during this period will cause them to leave prematurely.
Parental Care: Both parents tend young equally. At hatching, adult forces tiny particles of partly digested food into mouths of the blind and helpless nestling. By 3 d, adult slowly and gently places its open mouth over entire head of young, which take food directly from adult. Feeding becomes more frenzied as young grow; young clamor to reach arriving adult first, vigorously insert head into adult's open mouth and pouch to seize whole fishes.
Lifespan: 6.1 years

Conservation:

Official Federal Status: Least Concern
Special Statuses in Individual States: NONE
Threats: Double-crested Cormorant populations have rebounded from persecution and pesticides over the past couple centuries, and today they are a widespread and abundant species. Populations increased steadily between 1966 and 2015, according to the North American Breeding bird Survey. The North American Waterbird Conservation Plan estimates a continental population of over 740,000 breeding birds. The species rates an 8 out of 20 on the Continental Concern Score. Double-breasted Cormorant is not on the 2016 State of North America's Birds Watch List. In the 1800s and early 1900s, cormorants were frequently shot, and their numbers declined with westward settlement. They also suffered greatly from pesticides used in the mid-20th century, such as DDT, which cormorants ingested from the fish they ate. The pesticides caused thin eggshells. Since the 1970s, cormorant populations have grown steadily, even explosively. In the Great Lakes, some cormorant colonies have doubled in periods as short as five years. Some people still regard cormorants as a threat to fishing stocks, and the U.S. Fish and Wildlife Service sometimes issues permits for controlled cormorant shooting to protect fisheries.
Conservation Efforts: ^^^^^^

Extra Facts:

1. From a distance, Double-crested Cormorants are dark birds with snaky necks, but up-close they’re quite colorful—with orange-yellow skin on their face and throat, striking aquamarine eyes that sparkle like jewels, and a mouth that is bright blue on the inside.
2. The double crest of the Double-crested Cormorant is only visible on adults during breeding season. The crests are white in cormorants from Alaska and black in other regions.
3. Cormorants often stand in the sun with their wings spread out to dry. They have less preen oil than other birds, so their feathers can get soaked rather than shedding water like a duck’s. Though this seems like a problem for a bird that spends its life in water, wet feathers probably make it easier for cormorants to hunt underwater with agility and speed.
4. Double-crested Cormorant nests often are exposed to direct sun. Adults shade the chicks and also bring them water, pouring it from their mouths into those of the chicks.
5. In breeding colonies where the nests are placed on the ground, young cormorants leave their nests and congregate into groups with other youngsters (creches). They return to their own nests to be fed.
6. Accumulated fecal matter below nests can kill the nest trees. When this happens, the cormorants may move to a new area or they may simply shift to nesting on the ground.
7. The Double-crested Cormorant makes a bulky nest of sticks and other materials. It frequently picks up junk, such as rope, deflated balloons, fishnet, and plastic debris to incorporate into the nest. Parts of dead birds are commonly used too.
8. Large pebbles are occasionally found in cormorant nests, and the cormorants treat them as eggs.
9. The oldest known Double-crested Cormorant was at least 22 years, 6 months old; it was banded in Ontario in 1984 and found in Louisiana in 2006.

Notable Species: