

ANHINGA - ANHINGA ANHINGA

Taxonomy: Kingdom: Animalia Phylum: Chordata Class: Aves Order: Suliformes Family: Anhingidae Genus: Anhinga
Species: A. anhinga

Habitat:

Biomes: Adult male Anhingas are black with silvery to white streaks on the back and wings. Females and immature have a pale tan head, neck, and breast. The bill, legs, and feet are yellowish orange.

Distribution:

In US: Eastern half of Texas, easternmost Oklahoma, Arkansas, Tennessee, Mississippi, Alabama, Georgia, North Carolina, South Carolina, Gulf Coast, Florida.

In Other Countries: NONE, Mexico.

Holistic Description: A dark body stealthily swims through a lake with only a snakelike head poking above the surface. What may sound like the Loch Ness monster is actually an Anhinga, swimming underwater and stabbing fish with its dagger-like bill. After every dip, it strikes a regal pose on the edges of shallow lakes and ponds, with its silvery wings outstretched and head held high to dry its waterlogged feathers. Once dry, it takes to the sky, soaring high on thermals stretched out like a cross.

Species Richness: 2 SUBSPECIES, 3rd IS HIGHLY DEBATED

Population Dynamic: NONE

Evolution and Systematics:

Evolution: Evidence of fossil remains from New and Old World from Miocene onward; fossil remains of darters known from Florida from 18 million years ago; remains of this species from the Pleistocene of Florida. The Anhingidae probably diverged from other Pelecaniformes (cormorants) at least 30 million years ago. Systematics

Systematics: Subspecies designations remain speculative and confused; need study. At present, 2 forms recognized, on basis of size (leucogaster smaller), extent of buffy neck plumage in female (less in leucogaster), and degree of terminal light coloration on tail feathers (smaller band in leucogaster).

Number of Species: 2 SUBSPECIES, 3rd IS HIGHLY DEBATED

Number of Genera: 2 SUBSPECIES, 3rd IS HIGHLY DEBATED

Physical Characteristics:

Size and Length: Length: 29.5-37.4 in (75-95 cm) Weight: 46.7-47.6 oz (1325-1350 g)

Wingspan: 42.9 in (109 cm)

Coloration: Adult male Anhingas are black with silvery to white streaks on the back and wings. Females and immature have a pale tan head, neck, and breast. The bill, legs, and feet are yellowish orange.

General Body Features: Anhingas are large and slender waterbirds with long fanlike tails that resemble a turkey's tail. They have a long S-shaped neck and a dagger-like bill. In flight, Anhingas look like a flying cross; the wings are held out flat and the neck and tail stick straight out. They have slim bodies and look rather flattened in flight.

Special Features of the Body: Anhingas swim with their webbed feet and pursue their prey, fish, under water and spear their prey by rapidly stretching out their neck. They come up to handle and swallow fish. Unlike ducks, ospreys and pelicans which coat their feathers with oil from their uropygial gland, the anhinga does not have waterproof feathers. Their feathers get soaked upon immersion in water. Therefore, they cannot stay floating on water for long periods of time. Their dense bones, wetted plumage and neutral buoyancy in water, allows them to fully submerge and search for underwater prey.

Special Features of the Head and Sensory Organs: Generally swims slowly, more usually stalking prey than pursuing it. Holds bill partially open while swimming, allowing use of upper or both mandibles in spearing

Dentition: Lamellae and Gizzard

Special Features of the Limbs and Digits: Reduced webbing between third toe and hallux (by comparison with cormorants) may be adaptation for more efficient roosting. Legs are set well back on body; legs and feet are adapted for climbing up to perches and for perching. Claws are longer and more curved than in cormorants, and hindtoe is more opposed. Although wings may be slightly open underwater, they are not used for propulsion, and both wings and tail may be used as stabilizers in slow swimming. Skeletal adaptations and musculature of tail allow intricate movements and large range of motion

Any Special Internal Anatomy: Buoyancy may be regulated by inflation of some air sacs, specifically by altering wing position to regulate size of opening to subpectoral diverticula, which may function as buoyancy tanks. In addition, the large surfaces of wings and tail are used to counteract any tendency to sink. When partially submerged at surface, tends to move in bobs and jerks, perhaps because strokes of feet are the only force counteracting the tendency to sink.

Sexual Dimorphisms: The male is a glossy black-green with the wings, base of wings, and tail a glossy black-blue. The tip of the tail has white feathers. The back of the head and the neck have elongated feathers that have been described as gray or light purple-white. The upper back of the body and wings is spotted or streaked with white. The female anhinga is similar to the male except that it has a pale gray-buff or light brown head, neck, and upper chest. The lower chest or breast is a chestnut color and as compared to the male, the female has a more brown back.

Differences Between Juvenile Stage and Adult: The hatchling starts out bald but gains tan down within a few days of hatching. Within two weeks the tan down is replaced by white down. Three weeks after hatching, the first juvenile feathers appear. Juveniles are mostly brown until they first breed usually after the second or third winter.

This bird is often mistaken for the double-crested cormorant due to its similar size and shape, although the two species can be differentiated by their tails and bills. The tail of the anhinga is wider and much longer than that of the cormorant. The bill of the anhinga is pointed, while the bill of the cormorant has a hook-tip.

Behavior:

Diurnal, Nocturnal, or Crepuscular: Diurnal

Activity: The Anhinga swims lower in the water than many other birds due to its reduced buoyancy-a result of wetted plumage and dense bones. When at the surface, it tends to swim low in the water, often with only the neck and head above the water, and sometimes with only the bill exposed. The Anhinga is also an adept soarer. While soaring, it holds its wings flat and straight, its neck outstretched or held with a slight kink; its long, straight tail is conspicuous. Anhingas often use thermals for soaring, and may achieve altitudes of several thousand feet.

Locomotion: **The anhinga cannot fly with wet feathers. If it attempts to fly while its wings are wet, the anhinga has difficulty, flapping vigorously while "running" on the water. Like cormorants, the anhinga stands with wings spread and feathers fanned open in a semicircular shape to dry its feathers and absorb heat. They face away from the sun to dry their feathers. Anhingas lose body heat relatively fast and their posture helps them absorb solar radiation from the sun to balance the high rates of heat loss. Because an anhinga in the drying position resembles a male turkey, it has been referred to colloquially as the water turkey or swamp turkey.** Walks with high-stepping gait or waddle, with wings often partially spread for balance. Clumsy on perches and the ground, and when climbing. Legs are set well back on body; legs and feet are adapted for climbing up to perches and for perching. Claws are longer and more curved than in cormorants, and hindtoe is more opposed. Direct, strong flapping alternating with gliding. Wings held flat in gliding and soaring flight, neck outstretched, though sometimes held with slight kink. Often uses thermals for soaring, and may achieve altitudes of several thousand feet while so doing. Swims with neutral buoyancy as a result of wetted plumage and dense bones. When at surface, tends to swim low in water, often with only neck and head above water, sometimes with only bill exposed.

Communication and Perception: Anhingas are generally silent except when they are near the nest. Males and females make a loud clicking sound during nest exchanges that sounds a little like a treadle-operated sewing machine or a croaking frog with a sore throat.

Home Range: Spacing through aggression is evident in roosting and breeding. When foraging, individuals often exclusively use area 10-20 m around a single perch, though the mechanism of spacing in foraging sites has not been reported. Both sexes vigorously defend nest sites; nearest nests 1.8-4.6 m apart, though aggressive tendencies decline with breeding cycle such that already paired males on nests may allow close approach of displaying males. Though most breeding males display from established territories, some nonterritorial males have been noted in breeding colonies.

Degree of Sociality: Occurs in flocks of up to several hundred birds, particularly in winter, though less social and less inclined to flock than are cormorants. During migration, may soar with conspecifics or with several other species. Within colonies, tends to nest closer to other Anhingas than would be predicted by relative species occurrence.

Level of Aggression: One of the most territorial of the Pelecaniformes toward conspecifics, but usually unaggressive toward other species. Agonistic behavior between males is common in colonies, especially on nest; will approach intruders by hopping along branches of tree with spread wings and open bill. Rarely, contestants stab each other on head and neck, sometimes grappling aggressively. Aggressive encounters between females are uncommon and less intense than those between males.

Migration: Short-distance partial migrant. The northernmost individuals move south within the United States or farther south to Mexico for the winter.

Predators:

Predators: Crocodiles, no references to death of adults by predation.

Anti-Predator Defenses: When in water, may submerge quietly or swim partially submerged with only head and neck out of water. When threatened on perch, often escapes by diving into the water. Retiring, low-perching, and rarely found far from water during molt.

Diet and Nutrition:

Adult Diet: The Anhinga's diet consists of many small- to medium-sized wetland fishes, with very small amounts of crustaceans and invertebrates. It swims slowly underwater, stalking fish around submerged vegetation. Anhingas typically spear fish through their sides with a rapid thrust of their partially opened bill. They usually stab with both mandibles, but may use the upper mandible only on small fish. The side-spearing habit of the Anhinga suggests that the usual hunting method is by stalking rather than pursuit.

Juvenile Diet: ^^^^^

Special Adaptations for Getting Prey: Distal portions of both mandibles have fine, backward-pointing serrations for holding fish. Modifications to eighth and ninth cervical vertebrae allow right-angle kink in neck. This, and unique muscle action of the neck, allows a fulcrum for the straight-line stabbing motion with which this species spears its prey. Darters and Cormorants have a proventriculus with separate diverticula or evaginations, and a uniquely bipartite stomach, for which the pyloric valve is a hairlike plug. The functions of these unique adaptations of the gut are unknown.

Reproduction:

Mode of Reproduction: Monogamous

Mating System: Repeated and lengthy observations of nesting behavior indicate that this species is socially monogamous. No genetic data on relatedness of parents to nestlings, however. No data available on sex ratios.

Mating Season: February to July

Courtship: Both sexes engage in soaring early in breeding season, perhaps as part of courtship; males may soar more often than females. Singly or in groups, repeatedly circle and soar over breeding area, high enough to be almost out of sight; then sail down on set wings to perches. May involve close following by individuals of a courting pair. These aerial displays are accompanied by pulling at twigs and branches. Some courtship may take place away from nesting sites, involving manipulating and tossing of twigs, and aggressive approaches of females by males, followed by sparring.

Mating: Takes place on nest, lasting about 5 s. May be preceded by female's stepping onto nest, male's performing bows, waving wings, and ruffling feathers on branch 1-2 m from nest, followed by female's performing similar displays, and by mutual twig-offering. During copulation, necks are extended, and male takes a stick or female's bill in his; female's head may be pulled upward and backward by male. Pair bond formed with first copulation. Copulation and associated behavior diminish in intensity and frequency after first day; rare by fourth day, although within-pair copulations may continue up to 15 d from female's initiation of incubation.

Nesting: The Anhinga typically nests in loose groups of several to hundreds of pairs, and sometimes with other colonial waterbirds. The nest is usually in a tree near to water or overhanging it. The male begins nest construction before he has a mate, by placing large sticks and green material in the forks of trees. The male collects nearly all the nesting material, and the female then finishes building. The nest is a bulky platform of sticks, somewhat more compact than heron nests. It is often lined with fresh leaves, green twigs, willow leaves, and catkins. Over time, excrement can build up on the outer rim of the nest giving it a white appearance.

Egg-Laying: Clutch Size: 2-5 eggs Number of Broods: 1 brood Egg Length: 1.9-2.3 in (4.7-5.8 cm) Egg Width: 1.3-1.5 in (3.3-3.8 cm) Incubation Period: 26-30 days Nestling Period: 14-21 days Egg Description: Conspicuously pointed at one end, pale bluish green, and overlaid with a chalky coating.

Hatching and Incubation/Gestation: Naked, with eyes open. At hatching, young completely naked and reptilelike in appearance; eyes are open. Within 2 d, white down appears on underparts, followed by darker buff-colored down on upperparts. Nearly altricial; very little coordinated movement at hatching; unable to move about or find food within nest. No data on size at hatching.

Development: While still downy (about 2 wk of age), will jump out of nest and land in water; usually able to swim away, and able to climb back into nest.

Parental Care: Brooding is nearly continuous through 10 d of age. In Mexico, brooding decreased from 12 to 16 d of age, from mean bout time of 3 h to 50 min. Parents no longer are present continuously after 12 d. After day 16, brooding ceased, and parents returned to nest only to feed; males and females brood roughly equal amounts of time. Both sexes collect food and feed by regurgitation. At first, liquefied and digested food is dribbled into chick's mouth, passing along parent's upper mandible and caught by open bill of young. Older chicks obtain solid food by regurgitation; young inserts head and bill into parent's throat.

Lifespan: Around 12 years of age.

Conservation:

Official Federal Status: Least Concern

Special Statutes in Individual States: NONE

Threats: Anhingas are uncommon throughout their range and they reside in areas that can be difficult to reach, thus obtaining a relatively accurate estimate of their population is difficult. The best available estimate of their population comes from the North American Breeding Bird Survey and Partners in Flight. According to the North American Breeding Bird Survey populations increased by nearly 1.5% between 1966 and 2015. Partners in Flight estimates the global breeding population at 83,000 individuals. Based on the population size, distribution, threats, and population trends, the species rates a 9 out of 20 on the Continental Concern Score. It is not on the Partners in Flight Watch List and is a species of low conservation concern. Potential threats to Anhingas include wetland which may reduce available habitat for Anhinga. Discarded fishing lines also pose a threat because the birds can easily get tangled up in them.

Conservation Efforts: ^^^^

Extra Facts:

1. The Anhinga's distinctive shape earned it the nickname "water turkey" for its turkey-like tail, and "snake bird" for its long snakelike neck as it slithers through the water.
2. Unlike most waterbirds, the Anhinga doesn't have waterproof feathers. While that may seem like a disadvantage for their watery lifestyle, their wet feathers and dense bones help them slowly submerge their bodies under the water so they can slyly stalk fish.
3. The name Anhinga comes from the Tupi Indians in Brazil, meaning "devil bird" or "evil spirit of the woods."
4. The oldest recorded Anhinga was at least 12 years old.

Notable Species:

1. **A. a. anhinga:** Breeds in South America from Colombia and Ecuador, Trinidad, Tobago, and Netherlands Antilles, and Amazonia south to Argentina. A few sightings in Tierra del Fuego.
2. **A. a. leucogaster:** Breeds in southern tier of U.S. east of Rocky Mtns. south to Mexico, Central America, and Cuba. Straggler west to Arizona, north to Nebraska and Ontario, and east to Long Island, New York. The precise boundaries between leucogaster and anhinga subspecies are unclear; segregation may occur in n. Colombia or south of Panama Canal.