

NORTHERN JACANA - JACANA SPINOSA

Taxonomy: Kingdom: Animalia Phylum: Chordata Class: Aves Order: Charadriiformes Family: Jacanidae Genus: Jacana
Species: J. spinosa

Habitat:

Biomes: Jacanas live on floating vegetation in swamps, marshes, and ponds.

Distribution:

In US: Resident breeder from coastal Mexico to western Panama, and on Cuba, Jamaica and Hispaniola. It sometimes breeds in Texas, United States, and has also been recorded on several occasions as a vagrant in Arizona.

In Other Countries: NONE

Holistic Description: The Northern Jacana is a resident in the lowlands of Mexico and Central America from Sinaloa and Tamaulipas to western Panama, where it is replaced by the Wattled Jacana (*Jacana jacana*). It also occurs sporadically in the U.S. on the coastal plain of Texas from south of Houston, where it formerly bred, westward to San Antonio and southward to the Mexican border. In recent years, most sightings in Texas have been of juveniles. Throughout this species' range its preferred habitat is freshwater marshes covered with floating or floating-emergent vegetation, where these birds feed and breed. Dense stands of tall emergent aquatic plants are not typically used, except as escape cover. The Northern Jacana may feed in wet "grassy" areas and even in dry upland grasslands if these areas have a low profile. Bright-yellow carpal spurs, bill, and frontal shields of the adults contrast sharply with the black head and neck and reddish-brown body. **Greatly elongated toes allow the birds to walk on sparse floating vegetation, where they forage for insects and other aquatic prey.**

Species Richness: NO SUBSPECIES

Population Dynamic: Northern jacanas appear to be common throughout most of their range, but could become vulnerable with loss of wetlands.

Evolution and Systematics:

Evolution: A large jacana was reported from middle Pliocene in Florida; 3 species and 2 genera, all extinct, were reported from Oligocene formations in Egypt.

Systematics: Monotypic. No comprehensive study of geographic variation available, and slight differences in coloration and size have been attributed to individual variation. Genus *Jacana* is restricted by most taxonomists to American members of family Jacanidae, which includes 8 species, ranging from Africa, se. Asia, and n. Australia to the Americas. Two species make up the genus *Jacana*, although some authors have treated Northern and Wattled jacanas as conspecific. The 2 species are sympatric only in e. Chiriquí of w. Panama. No definite hybrids are known, contrary to frequent citations of hybridization

Number of Species: NO SUBSPECIES

Number of Genera: NO SUBSPECIES

Physical Characteristics:

Size and Length: Length: 24.1 cm (9.41 in) Weight: F(145.4g) M(86.9g)

Wingspan: 50.8mm (20 inches)

Coloration: The northern jacana has a dark brown body with a black head and neck. In addition its bill has yellow patches and its forehead has a yellow wattle. Its bill has a white base. When a jacana is in flight, its yellowish-green primary and secondary feathers are visible. Also visible are yellow bony spurs on the leading edge of the wings, which it can use to defend itself and its young. The greenish colour of the wing feathers is produced by a pigment, rather rare in birds, called zooprasinin, a copper containing organic compound.

General Body Features: The jacanas are a group of wetland birds, which are identifiable by their huge feet and claws which enable them to walk on floating vegetation in the shallow lakes that are their preferred habitat.

Special Features of the Body: Shorebirds are designed, or adapted, to survive in open habitats. Their brown, rust, black, and white plumage makes them less conspicuous to predators. Their bi-coloration, dark on the back and lighter on the belly, further camouflages them from predators. Their light bellies blend in against the light sky when seen from below. When observed from above, by a falcon for example, their dark backs blend in with the beach or mudflat below

Special Features of the Head and Sensory Organs: Their bills are highly adapted tools for finding food. Some species will probe for invertebrates in mud or water, poking their bills up and down in rapid succession like a sewing machine until they feel something to eat. Others have bills perfectly adapted to swishing through the water to filter food from the water column

Dentition: BEAK/LAMELLAE/GIZZARD

Special Features of the Limbs and Digits: Shorebirds have long legs for wading. Their long toes give them the stability they need for their seemingly endless walking and running along the water's edge and in soft mud.

Any Special Internal Anatomy: Not only used for finding food, bills are used for preening as well. A special oil gland located at the base of their tails helps to keep their feathers dry. The birds spread the oil from this gland with their bills or the backs of their heads when preening themselves. The oil repels water from the feathers, keeping them warm and dry.

Sexual Dimorphisms: Females larger and significantly heavier than males, and breeders significantly heavier than nonbreeding adult-plumaged birds.

Differences Between Juvenile Stage and Adult: Juveniles have white to buffy-white supercilium and white lores, ear coverts, and throat, contrasting with brown crown and eye-stripe and dark-brown nape. Remaining upperparts are olive brown, with feathers edged cinnamon, or broadly edged on undertail-coverts with pale chestnut. Remaining underparts white, with flanks and undertail-coverts dark brown. Remiges yellow, with broader dark edges than in adults; carpal spurs and frontal shield smaller than in adult.

Behavior:

Diurnal, Nocturnal, or Crepuscular: Diurnal

Activity: Time budgets vary significantly depending on sex, breeding status, time of day, and location. When they have neither eggs nor chicks, territorial males and females forage 70–80% of the time. When incubating eggs or caring for chicks, males spend about one-third less time foraging; females, however, spend only slightly less time foraging when ≥ 1 of her males has eggs or chicks. Foraging is evenly distributed throughout daylight hours, except males who are incubating or caring for young chicks and feed less and incubate more earlier (cooler) and late in the day (more likely to rain). Females rarely incubate, and spend $< 1\%$ of daylight hours brooding chicks, doing so only when rainy weather extends a prolonged time. However, females do spend significantly more time in interspecific aggression in territories containing chicks than under other circumstances. They also spend more time preening and resting in these territories, which allows them to be on the lookout for and to respond more quickly to potential predators.

Locomotion: Walks on floating vegetation, especially lily pads, with weight distributed broadly by elongated toes and claws. Occasionally walks on submerged vegetation, appearing to walk on water. Typical gait is slow, although may move rapidly if startled or if substrate begins to sink beneath it. With each step, elevates foot, brings anterior toes together, then swings foot forward and spreads toes as foot approaches substrate, at which point the other foot commences its upward and forward motion. Hops are always single, and invariably accompanied by wing movements. Appears a weak flyer, flying only short distances. However, does fly between local habitats, and disappears from some during dry seasons; dispersing juveniles appear hundreds of miles from natal areas. When making short flights, hovering flights, flutter jumps, or hops, feet dangle; during longer flights, feet trail behind body and tail. On takeoff, in short flights, and in flutter hops, wing beats are deep; in longer flights, however, wing beats are shallow, and flapping flight is punctuated with short periods of gliding. After landing, typically extends wings vertically and holds this position for up to 2 s before folding wings. Good swimmer, despite thin toes and tarsi. Folded toes pass forward easily and when foot is pushed backward the toes spread, pushing against any submerged vegetation. Young chicks may swim through areas of open water between individual water lily leaves or between suitable foraging areas as they follow male. In response to predators, chicks may dive and remained submerged except for their bills and tops of their heads.

Communication and Perception: Chicks are described as giving peep notes in series; however, no information on development. No evidence of vocal learning. No melodic song; only calls of notes that sound like harsh bursts of noise. Structure of notes is simple; they consist of band of high-energy sound bounded above and below by lower-energy sound.

Home Range: Defends all-purpose breeding territories on freshwater marshes. Individuals feed, perform maintenance activities, breed, and raise their young in these territories. May leave territories to feed in adjacent uplands, but seldom feed so far away that they cannot respond to mate's highly vocal attacks on intruders and potential predators.

Degree of Sociality: Nonbreeders typically feed and fly between feeding areas in loose but cohesive flocks of between 3–5 and ≥ 100 , but observations are few. On most breeding marshes, there are areas unsuitable for breeding, and small loose flocks of nonbreeding individuals forage and rest together in these areas. Juveniles often move into these flocks from their natal territories. Unknown number of individuals disperse into wetlands (tall grasses and other emergents) or short-grass uplands that are unsuitable for breeding, where they feed. Very little is known about this part of the population, but most observations of jacanas in Texas are of 1 or very few birds, 75% of which are juveniles.

Level of Aggression: Physical agonistic interactions range from running or flying chases in which one bird simply pursues another, to aerial attacks on an individual on the substrate, to outright fights in which there is extended physical contact, including wing strikes, metacarpal spur strikes, and bill-jabbing. An aerial attacker swoops down and attempts to strike the opponent with its feet. Both sexes engage in chases and aerial attacks, but only females engage in outright fights.

Migration: Year-round resident, even at limits of breeding distribution, wherever water levels and ecological conditions are sufficiently stable to maintain suitable floating vegetation. Where dry seasons reduce marshes, however, species moves locally to more permanent bodies of water that provide floating vegetation.

Predators:

Predators: Purple Gallinules, Turtles, Nocturnal Snakes, Caimans.

Anti-Predator Defenses: Responses to potential predators vary. Purple Gallinules elicit greater and more immediate responses than other species. Proximity to the clutch or chicks is important; adults with chicks spend 5–6 times more time in overt antipredator behavior than when they do not have chicks. Reproductive status is important regardless of where the birds are in the territory. If the jacanas have recently interacted with other conspecific or heterospecific intruders, they tend to react more strongly. Most attacks are initiated by male, but his loud Repeated-Note Calls typically attract his mate, which joins the attack. Behavioral acts are similar to those directed against conspecific intruders, except aerial attacks are more frequent. Shallow, aerial dives on intruding Purple Gallinules are most effective when feet are swung down in an attempt to strike the gallinule.

Diet and Nutrition:

Adult Diet: The northern jacana feeds on insects on the surface of vegetation and ovules of water lilies. It also consumes snails, worms, small crabs, fish, mollusks, and seeds. The jacana competes with birds of a similar diet like the sora. Gleans insects from vegetation and aquatic invertebrates from floating vegetation; some seeds and aquatic vegetation. May also run bill along blades of grass, dislodging seeds, which it then ingests

Juvenile Diet: ^^

Special Adaptations for Getting Prey: While foraging, may walk in upright posture looking for food, but more often searches with head and bill lowered toward substrate and back and neck angled down while walking quickly over substrate. Obtains most prey with single, quick stab of bill and swallows it immediately; larger prey, such as fish, beetles (Coleoptera), or snails (Gastropoda), may require additional manipulation and more effort to swallow.

Reproduction:

Mode of Reproduction: Polyandrous

Mating System: Simultaneous polyandrous mating system. Ultimate cause for evolution of polyandry is not clear, but very high nest-loss rates and abundant food (at least temporarily) characterize extant polyandrous systems. Sex ratio of breeding birds is probably not a consequence of a skewed sex ratio. In every study done, there are more birds available to breed than there are territories available. No one has inventoried the entire population available to use a particular breeding area.

Mating Season: Rainy Season (MAY-OCTOBER)

Courtship: A male, tied to his territory, pairs with whichever female excludes other females from his territory. When a new female supplants his mate, male threatens her and calls in vain to his previous mate. New female stands upright and otherwise does not appear to respond to male. If he persists, however, female eventually behaves aggressively toward him and stands upright, pecking down at his back while he behaves submissively, crouching on substrate. Female walks slowly in full upright posture; male follows in partial crouch. Within few hours, female starts soliciting, and within 1–2 d male starts mounting her; usually by next day, copulation occurs. Throughout this exchange, male remains tied to his territory. Female typically accepts a replacement male, although she may initially attack him, in which case he responds with submissive crouching

Territoriality: Defends all-purpose breeding territories on freshwater marshes. Individuals feed, perform maintenance activities, breed, and raise their young in these territories. May leave territories to feed in adjacent uplands, but seldom feed so far away that they cannot respond to mate's highly vocal attacks on intruders and potential predators.

Mating: . Solicitation posture is similar to foraging position: Back angled down, and head, neck, and bill directed toward substrate. Solicitation, however, is stationary, and bill is held parallel to substrate. Either sex initially solicits, but females initiate about 5 times as often. Mate ignores, walks toward, or flies to soliciting bird and often assumes same position and both birds solicit. Initially immobile, male starts lifting his feet alternately while shuffling toward female's tail. He bends his heels and, with toes hooked over female's wings, lowers ventral surface toward her back as he swings his abdomen over one side. She simultaneously elevates her tail and swings it toward the other side. Male lowers himself and brings his cloaca into contact with hers while fluttering his wing rapidly. Mounting and foot-shuffling take 1–1.5 min, but cloacal contact takes from <1 s to slightly more. Male continues rapid wing beats and flies forward over female's head. As he pulls forward, their abdominal areas are briefly stretched as if their vents were stuck together. He usually lands immediately in front of her, but sometimes a couple of feet away.

Nesting: Either sex solicits copulations at from 1–5 sites scattered in the central part of their territory. The male nest builds at these sites creating small copulation platforms. Female usually selects 1 of these for laying. It is not always possible to predict which one she will select, but sometimes she begins soliciting only from the site where she will lay. Her solicitations

of copulations from a site not selected by male lead to his building on that site. Nest is built on floating vegetation within territory. Male pecks at substrate, grabbing stems of larger plants or clumps of smaller floating vegetation and pulling them while backing up toward developing platform. He may jerk and pull on more tenacious pieces. Male also picks up vegetation and throws it over his shoulder in direction of future nest.

Egg-Laying: Egg Shape: Short Oval Egg Length: 30.2mm Egg Width: 23.1 mm Egg mass: 7.7g Egg Color: medium tan (rare) to mustard brown (common), often with greenish tinge. Eggs marked with thin to medium-width, irregular dark-brown and black lines. Occasionally lines broaden to form distinct blotches. Clutch Size: 4 eggs Incubation Period: 28 days

Hatching and Incubation/Gestation: Hatchlings are covered with down that is white ventrally and tawny brown dorsally. The dorsal tawny brown is lightly spotted with dark brown. Black postocular and crown stripes merge on nape and continue down back of neck, back, and rump and onto outside of legs. Bill is yellowish pink, with distinct white egg tooth. Legs and feet are gray; toes pinkish gray. Within 1 or 2 h of hatching, the precocial chicks are dry and can stand briefly, but they are extremely feeble and may lie in nest for hours, occasionally raising their heads. When they first stand and walk they often fall; their first venture from the nest sometimes results in tumble into water, where they may lie for some minutes before crawling out. Within 24 h chicks are alert and active, displaying well-coordinated walking and running and rudimentary feeding behaviors.

Development: ^^^^

Parental Care: Chicks hatched first may be ignored by male as he continues to incubate, or they may brood beneath incubating male. Some males invite hatchlings to brood beneath wing as they continue to incubate unhatched eggs. Females brood about 4% of daylight hours during week 1; after that, they rarely spend >1% of their time brooding. Males may spend ≤36% of daylight hours brooding for ≤9 wk after hatching. Males do not feed, nor do they appear to lead chicks to food, but they accompany their chicks while they feed. Males feed at a much slower pace when accompanying chicks than when they feed alone. Chicks walk and feed faster when they feed with their father than when they feed without him. Young chicks abandoned by their father starve.

Lifespan: Around 4.8 years.

Conservation:

Official Federal Status: Least Concern

Special Statuses in Individual States: NONE

Threats: This species has an extremely large range, and hence does not approach the thresholds for Vulnerable under the range size criterion (Extent of Occurrence <20,000 km² combined with a declining or fluctuating range size, habitat extent/quality, or population size and a small number of locations or severe fragmentation). The population trend is not known, but the population is not believed to be decreasing sufficiently rapidly to approach the thresholds under the population trend criterion (>30% decline over ten years or three generations). The population size is very large, and hence does not approach the thresholds for Vulnerable under the population size criterion (<10,000 mature individuals with a continuing decline estimated to be >10% in ten years or three generations, or with a specified population structure). For these reasons the species is evaluated as Least Concern.

Conservation Efforts: ^^^^^^

Extra Facts:

1. In Jamaica this bird is also known as the 'Jesus bird', as it appears to walk on water.
2. The Northern Jacana is very similar to the Wattled Jacana, with which it overlaps in Panama, and was formerly considered conspecific with that form.
3. They are quarrelsome and often engage in combat with one another, using sharp spurs on the bend of the wing.
4. In dangerous situations, the chicks can hide underwater with only the tip of their bills sticking out above the surface.
5. Jacanas have an unusual mating system called polyandry, meaning that one female mates with multiple males.
6. Nests are built on small loose floating islands of marshy vegetation over deep water. They are partially submerged, with about 2 centimetres appearing above the surface.

Notable Species: NONE