WOOD DUCK - AIX SPONSA

Taxonomy: Kingdom: Animalia Phylum: Chordata Class: Aves Order: Anseriformes Family: Anatidae Genus: Aix Species: A. sponsa

Habitat:

Biomes: Wood Ducks thrive in bottomland forests, swamps, freshwater marshes, and beaver ponds. They are also common along streams of all sizes, from creeks to rivers, and the sheer extent of these make them an important habitat. Wood Ducks seem to fare best when open water alternates with 50–75% vegetative cover that the ducks can hide and forage in. This cover can consist of downed trees, shrubs such as alder, willow, and buttonbush, as well as emergent herbaceous plants such as arrowhead and smartweeds.

Elevation Ranges: 200 m (660 ft) above sea level

Flight Ceiling: *NOT SPECIFIED, USE ANOTHER DUCK*

Temperature: Best suited for habitat temperatures and incubation temperatures at around thirty-five (35) degrees Celsius. Incubation temperature in these species does affect the survival rates.

Precipitation Levels: Lives in some wetlands and marshes, so can tolerate a lot of precipitation in a short amount of time.

Distribution:

In US: Mostly on the eastern half of North America, with a lower region of Canada, the entire Eastern portion of the US and Central Mexico. Also, on the California and up West Coast ONLY.

In Other Countries: No definitive records of wild birds outside North America. Records outside North America are believed to involve escapes.

Holistic Description: The Wood Duck is one of the most stunningly pretty of all waterfowl. Males are iridescent chestnut and green, with ornate patterns on nearly every feather; the elegant females have a distinctive profile and delicate white pattern around the eye. These birds live in wooded swamps, where they nest in holes in trees or in nest boxes put up around lake margins. They are one of the few duck species equipped with strong claws that can grip bark and perch on branches.

Species Richness: NOT VERY RICH, 0 SUBSPECIES

Population Dynamic: NONE

Evolution and Systematics:

Evolution: Differentiation of most recent anatid genera occurred by the mid-Miocene (Olson and Feduccia 1980b). Earliest known fossils of this species are from Pleistocene deposits in Kansas (Stettenheim 1958), Florida (Woolfenden 1959, Ligon 1965), and New Mexico (Howard 1971b).

Systematics: The order Anseriformes is speciose lineage of familiar birds, the ducks, geese, and swans (Anatidae), as well as the less familiar trio of screamers (Anhimidae) of South America and Anseranas semipalmata, the Magpie Goose (Anseranatidae) of Australia and New Guinea. Within the waterfowl lineage, Aix, a tiny genus with but two species, and eight other genera constitute the tribe Cairinini, the perching ducks, a tribe nearest to the Tadornini, the shelducks. By virtue of the small genus, the nearest relative to A. sponsa is A. galericulata, the equally colorful Mandarin Duck of Australasia. These two species have hybridized in captivity (McCarthy 2006), where A. sponsa has hybridized with at least twenty other duck species, although mixed pairs with Anas platyrhynchos, the widespread and familiar Mallard of the Holarctic, have been noted in the wild. None of the hybrids, captive or wild, is known to be fertile.

Number of Species: NONE

Number of Genera: NONE

Physical Characteristics:

Size and Length: Length: 18.5-21.3 in (47-54 cm) Weight: 16.0-30.4 oz (454-862 g)

Wingspan: 26.0-28.7 in (66-73 cm)

Coloration: In good light, males have a glossy green head cut with white stripes, a chestnut breast and buffy sides. In low or harsh light, they'll look dark overall with paler sides. Females are gray-brown with white-speckled breast. In eclipse plumage (late summer), males lose their pale sides and bold stripes, but retain their bright eye and bill. Juveniles are very similar to females.

General Body Features: Wood Ducks have a unique shape among ducks—a boxy, crested head, a thin neck, and a long, broad tail. In flight, they hold their head up high, sometimes bobbing it. Overall, their silhouette shows a skinny neck, long body, thick tail, and short wings.

Special Features of the Body: BILL AND GAPE: At hatching, upper mandible gray brown; tomia pale dull yellow; lower mandible pale dull yellowish pink; nail reddish brown, paler and pinkish at tip; egg-teeth yellowish white; lower egg-tooth opaque, raised, bilobed (Nelson 1993). Male bill begins changing color at ca. 80 d; becomes brightly colored by completion

of Preformative Molt (140–160 d). In adult, upper mandible yellow at base; scarlet with black patch over nares, the scarlet grading distally to white; nail black; conspicuous white lines along sides of upper mandible in winter; lower mandible usually black with some flesh-colored areas. Colorful bill of male is retained throughout year. In females, by 90 d white line adjoins side base of bill and by end of Preformative Molt, bill has indistinct pattern of grays, muted fleshy or rose, black, and white.
Special Features of the Head and Sensory Organs: IRIS: At hatching, irides are brown or grayish brown (Nelson 1993). Male irides begin to turn red by 60 d; completely red by 140–160 d; adult male iris scarlet, brightest in fall, dullest in summer when undergoing Prealternate Molt. Adult female iris dark brownish. BARE SKIN ON HEAD: At hatching, eyelid rims dark brownish gray (Nelson 1993). Adult eyelids red in males; yellow in female (Palmer
Dentition: Has lamellae, which are small, comb-like structures along the inside of the bill act like sieves and look like teeth, even though ducks and geese don't chew food. When ducks are searching for food, nonfood items such as mud and water can be expelled while seeds, bugs, or other food items are retained by the lamellae.
Special Features of the Limbs and Digits: LEGS AND FEET: At hatching, legs and toes brownish with yellow highlights; webs black. Adult male legs and feet mostly vivid orange-yellow in fall, paling to yellow by spring; webs dusky. Adult female legs and feet more-or-less yellowish with webs dusky to nearly black. Has claws on the feet that make them adapted for perching
Any Special Internal Anatomy: NONE
Sexual Dimorphisms: The brownish to gray female Wood Duck is distinguished by a pronounced white patch around the eye, white throat, and gray crest. Males in Basic (Eclipse) plumage and juveniles resemble adult females.
Differences Between Juvenile Stage and Adult: The brownish to gray female Wood Duck is distinguished by a pronounced white patch around the eye, white throat, and gray crest. Males in Basic (Eclipse) plumage and juveniles resemble adult females.
Behavior:
Diurnal, Nocturnal, or Crepuscular: Diurnal
Activity: Few data; dense cover makes birds difficult to observe. In Missouri, breeding females spent more time feeding (73%) than males (34%), but about the same amount of time was spent by males (22%) and females (27%) in maintenance activities (i.e., sleeping, loafing, swimming, and comfort movements); males spent the remainder of their time (44%) alert (Drobney and Fredrickson 1979). In Illinois, Bellrose and Holm (Bellrose and Holm 1994) also reported that prelaying, mated pairs differed in time spent in various activities. Females spent more time feeding than males: 34 and 23%, respectively. Time spent swimming and/or walking was similar for females (21%) and males (24%). Males spent more time alert (16%) than females (8%), but time spent in maintenance activities was the same for the sexes (8%).
AND
Wood Ducks feed by dabbling or short, shallow dives. They are strong fliers and can reach speeds of 30 mph. Wood Ducks are not territorial, with the exception that a male may fight off other males that approach his mate too closely. Courting males swim before a female with wings and tail elevated, sometimes tilting the head backwards for a few seconds. Males may also perform ritualized drinking, preening, and shaking movements. Both members of a pair may preen each other. Egg-dumping, or "intraspecific brood parasitism" is common in Wood Ducks—females visit other Wood Duck cavities, lay eggs in them, and leave them to be raised by the other female. This may have been made more common by the abundance and conspicuousness of artificial nest boxes; in some areas it happens in more than half of all nests. Individual females typically lay 10-11 eggs per clutch, but some very full nests have been found containing 29 eggs, the result of egg-dumping.
Locomotion: Wood Ducks walk with a fast gait, more erect than dabbling ducks; often feed on land near water's edge. Females frequently move with young over land to brood-rearing areas. Partially grown young have been timed at 8.9-11.4 km/h (Stewart 1958a). Birds commonly perch and walk on branches, especially when searching for nest site. Ducklings are adept at walking, hopping, and climbing when leaving nest cavity; nesting adults probably are also to some extent. Rises quickly from water with rapid wingbeat. Maneuvers well flying through thick woods. Flight speed of 51 km/h recorded in migration. Adults and young are excellent swimmers; occasionally dive for food but seldom deeper than 1 m. Young birds escape disturbance and predators by diving. When diving, advanced ducklings and adults are observed using the partial opening and closing of wings and feet to swim underwater.
Communication and Perception: Female makes loud "oo-eek, oo-eek" when disturbed and taking flight. Male has thin, rising and falling zeeting whistle.
Home Range: NONE
Degree of Sociality: Generally not in large aggregations except at roosting areas in fall and winter. Typical groups may number 15-50 in late summer and 200-1,000+ at roosting areas. Less gregarious in breeding season than in nonbreeding

season. Drobney and Fredrickson (Drobney and Fredrickson 1979) reported Wood Ducks feeding in pairs or small groups. Apparently they also migrate in small (6-12 individuals) groups (Grice and Rogers 1965, Kirby et al. 1989).
Level of Aggression: Not very aggressive but will defend its territory when it is prompted to by another rival or predator.
Temperament: Defense of mates by males sometimes includes chasing, pecking, and hitting with opened wings when other males approach too closely (Korschgen and Fredrickson 1976). When several males persist in courting a paired female, aggressive interactions ensue between unpaired and paired males. Feathers may be grabbed in various areas from head to tail, and wings frequently are used to strike opponents. Such bouts rarely last more than a moment before the intruder gives up and swims away.
Migration: Moves southward from northern breeding areas in early fall (Bellrose 1976a). Migratory movements of southern-breeding birds are relatively short (Nichols and Johnson 1990) and depend on local conditions (Hepp and Hines 1991). Band recoveries suggest that in e. U.S. about one-third of Wood Ducks are permanent residents, the others migratory (Bellrose and Holm 1994). Zone of permanent occupancy extends south from N. Carolina, Tennessee, and central Arkansas to s. Florida and Gulf of Mexico. Almost 75% of Wood Ducks in Pacific Flyway are nonmigratory; this zone extends from Butte Sink in California south to the Mexican border.

Predators:
Predators: Eggs - Rat snakes, racoons, fox squirrels, minks, various woodpeckers. Young - Great Horned Owl, mink, snapping turtle, bullfrog, predaceous fish, largemouth bass, pike, bowfin, gar, alligator, red-shouldered hawk, great-blue heron, barred owl, cottonmouth. May be preyed on by egg predators before leaving nest. Adults - Great Horned Owl, mink, racoon, red fox, gray fox, and alligator. Raccoons are the most important predator of eggs and incubating females over most of the range. In some areas of s. U.S., rat snakes are the most important predator of eggs but seldom kill incubating females
Anti-Predator Defenses: Where raccoon activity prevails around nest sites, females increasingly flush from nests at the slightest disturbance (Bellrose and Holm 1994). Alarm Calls from mother result in ducklings skittering across water to cover while female swims or feigns broken wing in a different direction. Young instinctively dive when cover is unavailable.
Parasites: Blood parasites include Haemoproteus nettionis, Leucocytozoon simondi, Plasmodium circumflexum, P. polarae, and microfilaria Types I and II (Thul and O'Brien 1990, Odell and Robbins 1994). H. nettionis and L. simondi are the dominant parasites, occurring in 95 and 22% of birds, respectively (Thul and O'Brien 1990).

Diet and Nutrition:
Adult Diet: Wood Ducks eat seeds, fruits, insects and other arthropods. When aquatic foods are unavailable they may take to dry land to eat acorns and other nuts from forests and grain from fields. Diet studies indicate a lot of variability, but plant materials make up 80% or more of what the species eats. Examples of food eaten include acorns, soybeans, smartweed, water primrose, panic grass, duckweed, millet, waterlily, blackberries and wild cherries, as well as flies, beetles, caterpillars, isopods, and snails.
Juvenile Diet: As juveniles, they eat a lot of invertebrates and occasionally a small fish. As they near maturity, wood ducks switch to a diet more focused on plants. They eat seeds, nuts, and plant matter. Wood ducks will also eat aquatic and land invertebrates.
Special Adaptations for Getting Prey: They have webbed feet, making them excellent swimmers. Additionally, they have sharp claws that enable them to easily move on the ground and perch in tree branches. They have powerful wings and can fly at speeds of thirty miles per hour. Their short, broad wings and broad tails enable them to change direction quickly while flying. This adaptive feature allows them to fly at great speeds in woods and forests.

Reproduction:
Mode of Reproduction: Male wood ducks are monogamous, but will find different mates each year.
Mating System: Monogamous. Because of long breeding seasons (5-6 mo) and no male care of young, males may be serially monogamous at southern latitudes (Fredrickson and Graber 1990). Sex ratio is 1:1 at hatching (GRH). In fall, Atlantic Flyway has 56% males, Mississippi Flyway 54% males (Bellrose and Holm 1994). Banding in winter revealed 57% males (Henny 1970). Hunters select males, but females are vulnerable to predators while nesting, resulting in sex ratio skewed to males.
Mating Season: UP
Courtship:
Turn-the-back-of-the-head. Figure 3B . Female may or may not Incite (see below) as male swims in front of her while performing this display. Wings and tail are held high; tail is tilted away from female. Most common display noted by Korschgen and Fredrickson (Korschgen and Fredrickson 1976); apparently functions to strengthen pair bond. Combination of Inciting by female and Turn-the-back-of-the-head by male is the most important display in pair-bond maintenance (Johnsgard 1965).
Chin-lift. Performed alone or in combination with Turn-the-back-of-the-head. Head is held tilted slightly back for several seconds, exposing white chin to female

Drinking. Ritualized; occurs frequently during courtship. Similar to regular drinking, but lifting of head is slightly exaggerated. Always precedes Preen-behind-the-wing.

Preen-behind-the-wing. Begins when male stops moving; crest is partially erected, head low, and bill resting on breast. Male drinks; moves head laterally very quickly as he points bill toward female. Male lifts wing nearest female, spreads primaries and secondaries, and preens. Usually performed in front of and perpendicular to female. Sometimes performed by females to their mates as they rest or preen. Display is not observed during mate selection; may function mainly to strengthen and maintain pair bonds (Korschgen and Fredrickson 1976).

Display Shake. A ritualized general shake combined with whistling note; analogous to Grunt-whistle of Anas. Considered to be the most elaborate of courtship displays. As display begins, male erects crest, extends and lowers head, and raises breast, exposing white belly. He then moves head quickly up and back. Head is high with bill pointing down and chin touching neck, breast high out of water. Display ends when body is lowered to normal swimming position.

Wing-and-tail Flash. Figure 3A . Performed only by Wood and Mandarin ducks (Johnsgard 1965). Analogous to Head-up-tail-up Display given by male dabbling ducks. Closed wing and tail are raised rapidly as male orients broadside to female. Crest is erect and bill tipped down, exposing entire crest. Both paired and unpaired males perform this display; it probably functions to establish and maintain pair bond (Bellrose and Holm 1994).

Burp. Whistle (pfit) by male is accompanied by vertical stretching of neck and raising of crest. Begins with a quick lateral head shake in which bill is pointed toward female. Functions primarily in pair-bond maintenance.

Bill-jerk. Consists of rapid, upward jerks of bill. Male often give short whistle with the display. Given as greeting, threat, and precopulatory display by both males and females.

Bill-jab. Rapid vertical head movements result in head being jabbed straight down. White chin is not exposed. Used frequently at start of courtship sequence; probably functions more in pair formation than in maintenance. Often performed by males in conjunction with Rush (see below) by female. Apparently used by female to signal her mate to defend her.

Rush. Common component of courting groups used by both sexes; suggests more intense level of courtship activity. Begins when individual lowers and extends head, becoming prone in water then dashing with bill open at nearby conspecific. May be used to signal either sexual or aggressive intention.

Inciting. Used by both sexes. Head is lowered over shoulder as quick, pointing movements are directed toward another bird. Used by paired male when approached by unpaired male. Indicates female preference of a mate. Combination of Inciting by female and Turn-the-back-of-the-head Display by male is important to formation and maintenance of pair bonds.

Mutual Preening. Figure 3C . Both sexes often nibble at feathers of mate's head and neck. Bouts may last several seconds to several minutes and function to strengthen pair bond.

Coquette Call. A loud, penetrating terwee given by females. First given in early Aug, especially at nocturnal roost sites; continues through May as part of courtship. Attracts males, reinforces pair bond, and maintains contact during nest search (Bellrose and Holm 1994).

Copulation And Copulatory Displays

Copulation takes place on the water and occurs in fall and spring (Figure 3D). Male testes are regressed in fall (Drobney 1977); copulation at this time probably functions in evaluating potential mates and strengthening pair bonds. Precopulatory displays involve mutual Bill-jerking by males and females, Bathing, and Drinking by males. Copulation begins when female assumes prone position in the water; male mounts from behind, grasps her nape with his bill, and copulates. After dismounting, male swims away a short distance while performing Turning-the-back-of-the-head Display; then faces female as she Bathes. Males also perform Wing-and-tail-Flash, Preen-behind-the-wing, and Bathing after copulating.

Extra-Pair Copulations. Forced copulation by unmated males occurs, but rarely, when mated male is overwhelmed by aggressors. A female drowned in one such attack (Bellrose and Holm 1994).

Territoriality: Not territorial, but male will defend his mate when approached too closely, resulting in a small moving territory (Grice and Rogers 1965, Jones and Leopold 1967). Lack of territoriality may be an adaptation to breeding in habitats with fluctuating water levels where temporal and spatial distribution of food may vary (Fredrickson and Graber 1990). Because nest site is not defended, breeding-pair densities often are high when nest boxes are provided in a clumped distribution (Haramis 1990). No feeding territories in fall or spring; pairs of birds feed close together without interaction (Drobney and Fredrickson 1979). No information on dominance hierarchies; if similar to other ducks, then males are dominant to females and adults are dominant to young (Hepp 1986).

Mating: Begins in late summer and continues into fall and winter; most birds in se. Missouri are paired in Jan (Armbruster 1982, Heitmeyer and Fredrickson 1990). Birds arriving in early spring at northern breeding sites are mostly paired (Grice and Rogers 1965). Variation in timing of pair formation may be related to age (Korschgen and Fredrickson 1976) and hatching date

Nesting: Breeding pairs search for nest cavities during early morning. The male stands outside as the female enters and examines the site. They typically choose a tree more than 1 foot and often 2 feet in diameter, with a cavity anywhere from 2–60 feet high (higher sites seem to be preferred). These cavities are typically places where a branch has broken off and the tree's heartwood has subsequently rotted. Woodpecker cavities are used less frequently. Wood Ducks cannot make their own cavities. The nest tree is normally situated near to or over water, though Wood Ducks will use cavities up to 1.2 miles from water. Nest cavities can have openings as small as 4 inches across, and these may be preferred because they are harder for predators to enter. Wood Ducks sometimes use much larger openings, up to a couple of feet across. Cavity depths are variable; they average about 2 feet deep but in rotten trees can be 15 feet deep (the young use their clawed feet to climb out). Nest boxes of many designs have proved very popular and successful with Wood Ducks, though plastic nest boxes can overheat in strong sun. The female lines the nest with down feathers she takes from her breast.

Egg-Laying: Clutch Size: 6-16 eggs Number of Broods: 1-2 broods Egg Length: 1.8-2.4 in (4.6-6.1 cm) Egg Width: 1.4-1.6 in (3.5-4.2 cm) Incubation Period: 28-37 days Nestling Period: 56-70 days Egg Description: Glossy creamy white to tan.
Hatching and Incubation/Gestation:
Development:
Parental Care: Only females incubate eggs. Incubation constancy averages 86.9% (SE = 0.6, n = 44; Manlove and Hepp 2000) and 81.3% (SE = 0.8, n = 40; Folk and Hepp 2003). Females take 1.9 recesses day-1 (SE = 0.04; Manlove and Hepp 2000) and 2.2 recesses day-1 (SE = 0.3; Folk and Hepp 2003) usually leaving the nest to feed in early morning and late afternoon. Morning recesses are shorter than mid-day and late afternoon recesses, averaging 86.6 min (SE = 3.4), 104.3 min (SE = 7.6), and 114 min (SE = 3.9), respectively (Manlove and Hepp 2000). Females lose 1.3 g day-1 (SE = 0.1, n = 72), but varied greatly among females (Harvey IV et al. 1989). Females lose 2-3% of body mass during incubation, but heavy females lose more body mass than light females (Manlove and Hepp 2000, Hepp et al. 2005). Widowed and paired females have similar incubation behavior and reproductive success (Manlove and Hepp 1998). Corticosterone plays an important role in energetics of incubating females (DuRant et al. 2013a).
Lifespan: Their average lifespan ranges between 3 years and 5 years in wild. However, they have a much longer life expectancy in captivity which extends up to 15 to 20 years.
Conservation:
Official Federal Status: Least Concerned
Special Statuses in Individual States:
Threats: Wood Duck populations increased between 1966 and 2015 according to the North American Breeding Bird Survey. This is good news considering their dramatic declines in the late 19th century. Wood Ducks can be found throughout the year in the U.S., with some individuals breeding in Canada, and some wintering in Mexico. Wood Duck rates an 8 out of 20 on the Continental Concern Score, and is not on the 2016 State of North America's Birds' Watch List.
Conservation Efforts: UP, Threats include DDT, Trapping, degradation of habitat and disturbance of nesting site.
Extra Facts:
Natural cavities for nesting are scarce, and the Wood Duck readily uses nest boxes provided for it. If nest boxes are placed too close together, many females lay eggs in the nests of other females.
Wood Ducks pair up in January, and most birds arriving at the breeding grounds in the spring are already paired. The Wood Duck is the only North American duck that regularly produces two broods in one year.
The Wood Duck nests in trees near water, sometimes directly over water, but other times over a mile away. After hatching, the ducklings jump down from the nest tree and make their way to water. The mother calls them to her, but does not help them in any way. The ducklings may jump from heights of over 50 feet without injury.
The oldest recorded Wood Duck was a male and at least 22 years, 6 months old. He had been banded in Oregon and was found in California.
Pet Information: NONE
Notable Species: NONE