

## HERONS OF NEW YORK STATE

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The herons belong to the family *Ardeidae* of the order *Ciconiiformes* which is worldwide in distribution. The family contains 64 species divided into two subfamilies, the true herons and the bitterns. Of the 13 species now found in the United States, 11 have been recorded in New York State. These are the Great Blue Heron, Green Heron, Little Blue Heron, Cattle Egret, Common Egret, Snowy Egret, Louisiana Heron, Black-crowned Night Heron, Yellow-crowned Night Heron, Least Bittern, and American Bittern.

Hérons are long-legged wading birds of marsh and swamp. They have a slender, sharp bill on the end of a long neck which is used as a spear for catching food. The mandibles are also used for pinching food. The diet includes fish, other aquatic animals and insects, although some small mammals and other foods are taken. The neck is kinked in the middle to form a tight S when retracted for flight.

The three toes in front and one behind are at the same level and may be either partly webbed or not webbed. The feet are well adapted for perching and walking on mud. The middle claw has a comb-like serration on the inner side.

It is in the feathering that herons have their greatest distinction. The plumage is generally soft and in the breeding season both sexes of true herons usually have nuptial plumage containing long ornamental plumes on the head and extending from the middle of the back. There is a complete molt in late summer or fall after the breeding season and a partial molt in the spring. The young are covered with a sparse, light colored down when hatched. The juvenal plumage is similar to the adult plumage by fall but the full adult plumage is not assumed until the second fall when the birds are approximately 1½ years old. In some cases traces of juvenal plumage linger until the second postnuptial molt at 2½ years.

There is usually a naked area in the eye region (lores) so the bill appears to run directly to the eyes. There is also a bare spot on the back of the neck which is covered by side feathers.

Powder downs are a typical feature of herons. They are small feathers resembling yellowish patches on the skin obscured by other feathers. They grow continuously and crumble into a kind of talc used in preening the feathers. The bill is used to crumble the powder downs and dust them on the plumage soiled by the slime of fish. They soak up oil and then the pectinated claw is used to comb out the oil-soaked powder. This "dry-cleaning" or dressing process gives a hoary bloom appearance to some dark-colored herons.

True herons are separated from bitterns in the classification system partly on the basis of three pairs of powder down tracts compared with two pairs in bitterns. The three areas are on the lower back over the hips, on the lower belly under the hips and on the breast over the furcula or "wishbone". The bitterns lack the second mentioned pair. True herons have 12 stiff

tail feathers and bitterns have 10 soft ones. There are other characteristics and habits that separate bitterns from the true herons which will be mentioned later.

Except for the Least Bittern, both sexes are similar in plumage. The female is commonly smaller, on the average, than the male.

Most young herons, including bitterns, seem to have a good early climbing ability on leaving the nest. They have strong feet. On falling into the water accidentally before they can fly, the young exhibit ability to swim although they may never need to again.

There is a random wandering and dispersal northward of many species of herons after the nesting season, especially of the immature birds. This poses a fascinating question 'why' inasmuch as all herons are truly migratory and will leave for their winter ranges to the south by late autumn.

Most species of true herons are gregarious and nest in colonies of more than one species called rookeries or heronries.

The Great Blue Heron is known to many country people as the blue crane, although there are no real cranes in New York. Herons fly with their necks curved backward so the head is lying on the shoulders, whereas cranes fly with necks outstretched. The long legs trail behind in flight. The big 70 inch wingspread of the great blue is suitable for landing slowly to protect these slender legs but produces much friction and drag in the air, so it is not a fast flier. The cruising speed has been clocked at 18 to 28 m.p.h. and when pressed has reached 36 m.p.h.

The Great Blue Heron breeds throughout the state. However, due to persecution and destruction of large trees in which it nests, the number and size of its nesting colonies has been considerably reduced during the last seventy years. The heronries are usually in an isolated spot such as an island in a river, lake or swamp.

These herons usually leave the interior of the state during October and November and winter south as far as Bermuda, Panama and northern South America. However, in December and January a few hundred stay on in scattered localities where water remains open and may be seen all winter, especially on Long Island, the New York City region, and near Buffalo. It is our hardiest heron.

Migrant Great Blue Herons return between the second week in March and the second week in April depending on weather and the locality in the state. They are rare to common summer residents, being more common in some northern localities near breeding sources. The adult feeding range may be several miles from rookeries. By late summer some large concentrations occur in favored places and the immatures are scattered throughout the state along shallow bodies of water from August to October.

When you see this magnificent bird standing like a statue in a roadside pond or slowly flapping over a highway, you can readily believe that his four foot height makes him the tallest bird in New York State.

The great blue is a wary bird and does not allow a close approach. It is often considered solitary but several may be seen flying or resting and

feeding together during migration. Most of our herons migrate only at night but the great blue also travels during daylight.

This heron builds a very large nest in a tall tree in a colony of a few to several hundred pairs. There may be several nests to a tree. The nest with an outside diameter of 30 to 60 inches is made of sticks of  $\frac{1}{4}$  to  $\frac{1}{2}$  inch diameter and is lined with finer twigs and grass. It is usually at the end of a branch and may be reoccupied in succeeding seasons when more materials are added.

From three to seven unmarked, pale greenish-blue eggs of an elliptical-ovate shape are laid, although the usual number is four or five. There is only one brood each year sometimes in May or early June. Both parents help during the 28 day incubation period. When adults are disturbed off their nests in rookeries, other smaller nest robbers such as crows may sneak in and eat some eggs before the herons return.

The food of the great blue is mainly fish of whatever kind is most available in shallow water. An extensive survey based on stomach contents found that 43% of the diet was non-game fish, 25% was game and food fish, 8% insects, 8% crayfish and their relatives, 5% mice and shrews, and 4% were frogs, snakes, turtles and miscellaneous.

The fishing methods of most herons are either stalking or standing and waiting. However, a few observers have reported seeing great blues dive into deep water and float on the surface while catching fish. When caught by a quick stabbing motion, the fish may have to be banged off the end of the beak on the shore and if very large will be tossed so as to be swallowed headfirst.

Young herons are altricial, meaning they are born helpless and dependent on the parents. Young great blues stay in the broad nest, (3 feet or more), about four weeks being fed by regurgitation. When a parent returns with a meal it goes into violent contortions of its neck which produces a mass of partially digested food. A youngster grasps the parent bill at right angles with its own bill and the transfer is made after a few more maneuvers. On being startled by an intruder at the nest, the young themselves are very prone to regurgitate their recent smelly repast.

Although usually quiet, Great Blue Herons make a series of low squawks when startled and in flight may make a harsh, loose-like honk described as "frahnk, frahnk, frahnk". Young in the nest make a constant din of barking croaks.

The Green Heron has vernacular names like "fly-up-the-creek" or "chalkline" attesting to the familiarity people have with it. The last name comes from the typical heron trait of letting go a stream of white waste as it becomes airborne when frightened.

This bird is a locally common breeder throughout the state, but is scarce in the Adirondacks and on the Tug Hill Plateau. It winters from extreme southeastern U. S. to northern South America. It arrives in the southern part of the state about mid-April and the northern part about May 1st. The three to six (usually four or five) elliptical pale green eggs are laid in May and incubated by both parents for 17 days. The nest is usually by itself rather than in a colony and is in a low tree or bush near water. It is frail

and made of small sticks loosely put together with an inside diameter of 10 to 12 inches.

Most generalizations about other herons will hold true for this little one. Small fish, crayfish and insects are its food. The young are fed by regurgitation and may themselves regurgitate food when disturbed. The young climb in the tree before they can fly, using bill, neck, wings and feet and, if they fall in the water, can swim. They usually migrate at night and leave the state during October. Its most common call is "kyow".

Of the rarer herons, the Little Blue Heron has been seen most widely in the state, usually in late summer and early fall, e. g. in parts of the Hudson and Mohawk Rivers and at Montezuma Refuge. The Little Blue Heron is not yet well established as a nester on Long Island. The most northerly records for the state have come from Oswego County near the southeastern corner of Lake Ontario. The immature birds are more often seen than the adults and may be confused with Snowy Egrets as both are all-white birds.

For detailed descriptions of any species of herons the reader is urged to consult "A Field Guide To The Birds" by Peterson.

The Cattle Egret of recent fame as an old world immigrant now established as a permanent resident in Florida was first recorded on Long Island in May, 1954. As of June 1, 1960, there are about 20 widespread state records. These are mostly in the spring and, with one exception, are of single birds. One of the most recent was in May, 1960 near Clayton, Jefferson County, showing how far north these birds may wander from the nearest breeding sources.

The Common Egret (American Egret) nests on Fishers Island and at Jamaica Bay and Jones Beach on Long Island. These herons usually arrive between the second and fourth weeks of April and nest in June and early July. Although they may be seen near water in spring almost anywhere in the state except extreme northern New York and mountainous areas, they are usually not seen until mid July and August. These egrets leave inland areas in late September and October. They remain in the marine area of Long Island into early December and a few stay into early winter. The largest concentrations inland have occurred at Montezuma Federal Waterfowl Refuge and in the lower Hudson River when 40 to 100 individuals are seen in the post-breeding season. It has been seen north to Jefferson County.

The Snowy Egret, in recent years is a more numerous nesting species in the Long Island rookeries than the Common Egret but it is never as abundant or widely seen elsewhere in the state. The Snowy Egret is usually not seen as early in spring as the Common Egret and departs for the South earlier in the fall.

The Common and Snowy Egrets were saved from probable extinction resulting from intensive slaughter in the southern rookeries at the turn of the century. The birds were killed for their breeding plumes used in the millinery trade for women's hats. The passage of federal and New York State laws outlawing the plume trade in 1910 and 1913 and protection by the Audubon Society allowed egret populations to recover to their former peak in the 1930's. There is considerable concern once again about the

status of some of the herons, notably the Common Egret, whose numbers have declined rapidly country-wide since the 1930's. Coincident with the decline of southern heronries there has been a northward expansion of the breeding ranges accounting for the appearance in New Jersey and Long Island of new heronries, none as large as the ones in Florida.

Egret is a corruption of 'aigrette' which is the French word for plume applied to the 40 to 50 dorsal feathers that nearly caused the downfall of these magnificent birds.

The Louisiana Heron is essentially a breeding bird of the southern states along saltwater. However, there are several records for New York State in recent years mainly on Long Island in late summer and fall. This heron has been seen in the spring and might become established as a nester on Long Island.

The Black-crowned Night Heron arrives on or is migrating toward its breeding grounds in the state by mid-April. The largest colonies of this species are not in the southeast along with most herons but are in the northern states. The largest, for many years, has been the Barnstable colony on Cape Cod, Mass. There are several sizeable colonies consisting of two or three hundred pairs or less, scattered from Jones Beach, Long Island to the Mohawk River near Schenectady and elsewhere in the State. One of the farthest north is on a small island near Henderson Harbor in Lake Ontario.

This species does not seem to mind man too much as some colonies get started in the midst of busy cities. They can become a nuisance as witness the case of the colony in Elmira where citizens complained for several years about the raucous noise and streets littered with dead fish and excrement. Night herons are not easily driven from their chosen homes but these were finally dispersed with fire hoses and the nests torn down in 1957.

Nests are 15 to 30 inches in diameter and vary in construction from small, crudely built platforms of sticks, lined with twigs, to large well built structures of sticks lined with twigs, roots, grass and pine needles. They are found toward the tips of the branches in very low to quite high trees in a wooded swamp or even in a dry hillside thicket.

The one to seven (usually three to five) pale bluish green eggs are incubated by both sexes from 24 to 26 days. Incubation starts after laying of the first egg. The young are fed first by regurgitation of predigested food in liquid form. After a few days, predigestion of food has tapered off and they are fed more solid food. Night herons feed mainly at night but are active in daylight especially in late afternoon and when the sky is overcast. It is noisy at all times in a rookery. This species is known as the squawk or quawk for good reason.

They eat small fish, crayfish, frogs and other aquatic animals.

The immature birds of the year are great post season wanderers northward. Fall migration south commences in late October and continues through November. A few night herons are still in some areas through December and January, particularly western Long Island and near Buffalo.

As befits a nocturnal bird, the eyes are quite large and unlike other

herons and bitterns which have yellow eyes, the adult night heron has a red iris. The immature birds, which have orange eyes, could be mistaken for young bitterns but they are more spotted with whitish and in flight the shorter legs do not project beyond the tail. They flap their wings slowly and occasionally sail with the wings curved downward slightly.

Black-crowned Night Herons do well in captivity as do most herons, and banding of numerous immature wild birds has established that they may live to be 15 years old.

The Yellow-crowned Night Heron is not often seen in the state outside of Long Island where it breeds and a few may spend the winter. The best place to see these birds is at the large Jones Beach rookery. Young Yellow-crowned Night Herons are similar to young Black-crowned Night Herons which is of significance because of northward dispersal of immature herons.

The American Bittern, mudhen, stake driver, thunderpump, plum-pudden etc. is a well-known inhabitant of the cattail marsh. Bitterns are more solitary and retiring than most herons. They are never gregarious and do not nest in communities in trees but in separate pairs on the ground. The eggs do not have the characteristic pale bluish-green color of true herons. The young resemble the adults.

The bittern is a common migrant and summer resident in some areas and an uncommon migrant and summer resident in other areas. The usual spring arrival dates are in early April.

There is an interesting courtship display in which tufts of white scapular feathers are uncovered on the back near the base of the wings. Sometime between mid-May and late June a nest is made in a dense cattail marsh or rarely in a meadow. It is a flat platform of dead cattails a foot or so in diameter raised a few inches above the water or mud. Flags may be arched over the nest. The three to seven (usually four or five) olive-buff eggs matching the color of dead cattails are incubated from 25 to 28 days.

The bittern spends much time standing crouched with its neck laid back on the shoulders looking like a hunchback as it waits for prey or walking slowly and stealthily. When it thinks it is observed by man, its only enemy, it stands rigid and erect with the bill pointed upward and its "low-slung" yellow eyes are directed forward binocularly for danger. The stripes of the underparts blend with the vertical lights and shadows of reeds and flags in this typical "freeze" posture. Even young in the nest will adopt this pose. In a breeze affecting the movement of the cattails it will also sway the body duplicating the effect. I approached within a few feet, a bittern loses confidence in its camouflage and flushes with a croaking note.

The voice box is specially modified in the breeding season when the wonderful thunderpumping is heard. Bill-clicking precedes the pumping notes which have been likened to the sound of a stake being driven into the mud and are accompanied by severe contortions of the neck upon each delivery.

The diet is all animal matter and consists of frogs, small fish, meadow mice, small snakes, crayfish, molluscs, dragonflies, grasshoppers and other insects. The young are fed by regurgitation.

This species leaves for the winter range in late October — early November. Few stay downstate through the winter although an occasional bird is seen in December and January.

Both the Great Blue Heron and the American Bittern if injured or cornered will assume a threatening attitude and are able to inflict considerable damage by driving their sharp beaks at the enemy.

The Least Bittern, smallest of its family, is very secretive but is probably more common than is supposed. Because of its quiet, retiring ways it is seldom seen, as it stays in the inner recesses of cattail marshes. This is the only species of heron in which the sexes are distinctly different in plumage, the female being lighter colored and more streaked. The so-called Cory Least Bittern was once thought a separate species but is a darker, more reddish color phase.

Least Bitterns range throughout the state in suitable habitat but are more common in southern and western New York. They generally arrive about the middle of May.

The nest is a flimsy platform four or five inches deep by six or seven inches across made of grass, reeds and flags just above water. It is sometimes arched over with reeds. The four to seven (usually four or five) bluish or greenish white eggs are laid in late May or early June. Both sexes incubate for 16 or 17 days.

Its food list contains few fish but mainly insects, amphibians and crustacea.

It has many natural enemies in the marsh and the Long-billed Marsh Wren is known to puncture its eggs.

Like the American Bittern it has a stiff hiding pose with the bill pointed in the air, but may abandon this protective mimicry and flush to fly weakly a few yards over the reeds and flop down again.

This little fellow walks or runs about in the marsh most of the time without getting his feet wet by clamboring along the bent and broken stems of vegetation. He can compress his body to pass through rank growth with almost no motion detectable from outside.

The call is a low rapid "coo-coo-coo".

Migrating at night these birds leave in late September and October and winter from Florida south to Colombia.

In the time of Audubon and until much later, we are told that herons were shot for food. During living memory the plume trade nearly wiped out the egrets for milady's hats. Fishermen protest that some herons take too many sport fish and it is true that they may have to be controlled around fish hatcheries. However, screening would be a better protection for the tanks than shooting the birds. Careful research has proven that herons eat only a small percentage of desirable food fish compared to non-food fish and they are one of nature's ways of controlling and keeping the populations

of aquatic animals balanced. They also eat quantities of insects.

Marsh drainage, timber cutting and various land development operations of man have seriously affected the overall population of herons which seems to be diminishing.

All members of the heron family have legal protection under the Migratory Bird Treaty Act passed by Congress in 1918 and separately by Canada and Mexico. And yet we often hear of some misguided person shooting a slow flying Great Blue Heron or Bittern for target practice.

We hope the sight and sounds of herons will long help to gladden the heart of the outdoorsman and marsh visitor.

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