Articles

Anhinga Near Delaware, Ontario

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When Louise McAsh found an adult male Anhinga (*Anhinga anhinga*) in a small marsh near Delaware, west of London,Ontario, at about 2100h on 16 July 2000, she set in motion a major "event" in the province's birding history. By 16 September (the probable last date of observation), a log book maintained by Ann White at the site showed that over 1,600 visitors, from more than 170 Ontario communities, four other provinces, six American states, and four overseas countries, had come to see the bird. Except for a week of vacation time, I was able to be there almost daily during the Anhinga's two-month stay, sometimes for the whole day, and I recorded many interesting aspects of its behaviour.

Location

The marsh is located about 10 km west of London on Brigham Road, near the town of Delaware, which overlooks the Thames River. It was created about 25 years ago by Ducks Unlimited, in conjunction with the Delaware Sportsmen's Conservation Association, who also have a clubhouse on their 53 hectares (130 acres), and use the property for a reserve and to hunt in season, both for waterfowl and mammals. The water sits in a natural depression, where its two outflow areas into nearby Dingman Creek have been dammed with earthen dams. These dams have backed the water up to its current depth of up to about 2 m, which has killed off many trees that are now standing in the water. Many have also fallen into the water, creating excellent habitat for fish and all marsh flora and fauna. The marsh is horseshoe-shaped, and the back of the marsh is not visible from the road because of the trees and cattails in the middle. Two beaver lodges exist, so that the water level is even higher sometimes.

Appearance

The Anhinga has an interesting plumage. It does not appear as smooth as other waterbirds. The feathers were easily fluffed by breezes, and seemed to be more like hair than feathers, especially on the head, neck and body. These and most other feathers were mainly quite black or blackish brown, but many contour feathers appeared to have a glossy green in good light. Primaries

and other wing and tail feathers appeared black and very coarse in nature. The black tail feathers were long and appeared to have ladder rung-like horizontal ridges. The terminal band on the tail was a creamy colour. The bird had a number of long filoplumes, widespread but not too numerous on the neck and head, giving the bird an eye-browed and fuzzy unkempt look.

Its silvery-white feathers located on the wings and upper back seemed to be made of almost a different material than the black feathers. When the bird was up on a perch drying, it was noted that these white feathers appeared to be on a different plane than the other feathers on the wings. They may have dried at a different rate, or stood out more, I am not sure. These coarse feathers, while looking like decoration, may serve to attract females, and could help with camouflage. I noticed that the dark body "disappeared" into the background colouring, especially the dark water of the marsh, which was reflecting shadows and vegetation at most times. The light colours of the other feathers, being mainly vertical, were similar to the barkless, bleached dead branches that were all around the bird. This "broken-up" body feather pattern made it hard to see the bird from a distance when it was still, especially near dusk, when the background contrasts were greater.

As it was sitting still once, near dusk, a Great Horned Owl *(Bubo virginianus)* actually flew over it about 6 m above its head, swooping up into a tree about 100 m away. It may not have noticed the quiet bird due to this "camouflage" pattern. It did take note of the bird only when the Anhinga started to display towards the owl. Thank goodness it did not then attack the Anhinga, or our log would not have had much in it.

The sword-like beak was long and yellowish, although the gape and gular sac appeared orangish, especially when the bird was displaying and light was playing through the skin. The gular pouch was hardly noticeable under the beak at the throat, until the bird displayed. The webbed feet were yellowish-orange and the toes dark.

Its neck was very animated and flexible, as it turned and arced at amazingly odd angles, for preening, fishing, looking in all directions, bowing forward before diving, displaying, flying, scratching, or checking the scenery. It could lower its head backwards onto its mantle, just as easily as it could twist the neck into an S-shape for lounging. The extremely long and slender neck of an Anhinga has "19–20 cervical vertebrae, with articular surfaces of (the) 8th and 9th modified" to allow this flexibility (Palmer 1962).

Roosting

Every time the Anhinga went to roost at dusk, it was seen first thing the next morning in the same spot.

Figure 1: Anhinga at marsh near Delaware, Ontario, 18 July 2000. Photo by *Alf Rider*.

It was nearly always in its preferred roost tree. This was an 8 m dead tree, about 300 m out from the main viewing area overlooking the marsh, and situated about 10 m past a Wood Duck box which faced away from observers. One of the back branches of the tree, nearest to the cattail edge, was broken down and drooped into the water. This allowed the bird to slip out of the water after a fishing trip. Once up on this branch, it could balance and dry itself and then work its way by hop-flying up to the next branch and so on until it arrived near the top which curved slightly over and allowed the bird to overhang the open water, and easily drop down into it. At that perch, the Anhinga would spread its wings for drying and basking and would preen and scratch for hours. It would usually roost overnight on the top curved branch of the tree, also. Anhingas are known to exhibit a "daily pattern of perching and hunting from (the) same perch" and to return to roosts habitually (Frederick and Siegel-Causey 2000).

Feeding Behaviour

The feeding actions began when the bird leaned forward with wings spread. It then tipped off its perch and flew down to the water, landing with feet out. It did not float, but rather, immediately sank beneath the water until only its head and neck were showing. It then pulled its head and neck underwater, either straight down or by lowering it downward. Sometimes, it would land on a floating log first, then tip its head down into the water a few times, appearing to be looking underwater, and then tip forward into the water, head first. The fact that the bird became totally soaked allowed it to easily remain underwater and not have to work to remain submerged. "Unlike most aquatic birds, Anhingas have fully wettable plumage and dense bones, adaptations that allow them to achieve neutral buoyancy in water" (Frederick and Siegel-Causey 2000). It could stalk its prey rather than go after it. After variable time, from just a few seconds to almost a minute, it would bring its head up, perhaps 75 per cent of the time with a fish. It might be right where we last observed it, or sometimes many metres away. It appeared to manoeuvre with its feet and push sometimes with its wings, although most of the action was underwater and not visible to us.

The catch would be impaled on the upper or lower mandible, or at times on both mandibles. Sometimes it held the captured fish between the mandibles, the distal portions of which "have fine, backward-pointing serrations for holding fish" (Frederick and Siegel-Causey 2000). With a flip of its head, it would toss the fish into the air and catch it head first in its open mouth so that the fish would slide down its throat. It sometimes had to

flip a few times as the fish was stuck on its beak. I saw it miss the catch about once each fishing endeavour, but usually when the fish landed in the water, it would strike at it and repeat the process. The movements of the toss and catch were rather fast so the exact manoeuvre can only be guessed at, but I suspect that skill may have a lower importance than just getting good height. Gravity would allow the fish to have its weightier head drop down first no matter how it was tossed, like lawn darts. The number of fish caught during a fishing trip varied from about 20 to 50. Almost all fish caught were less than 15 cm long, at times just barely fitting on the impaling mandible because they were so small. The fish consumed were mainly catfish, minnows, and bass. There are other species in the pond, such as sunfish, and even goldfish, but I did not see the Anhinga eat those. Once, as the Anhinga was sitting on a snag about 12 m above the water, I saw it eat what appeared to be a large black beetle. It pulled the insect out of the top of the snag, and after smashing it, tossed the beetle into the air and gulped it down. Other prey, such as frogs and larger fish were available, but I did not observe it eating those.

Once I saw the Anhinga pull off a small bit of wood from the top of a dead tree, almost the same size as a small fish. Sometimes it would pull at some inanimate object like the tree snag when it appeared to be agitated, and a bit of wood came off this time. Anyway, the Anhinga took the piece of wood and tossed it into the air and tossed it again. The bird dropped it on about the seventh toss, and leaned over to watch it disappear into the cattails below. It never made any attempt to swallow the stick or drop off the perch to retrieve it.

Preening and Basking

After its fishing trips, the Anhinga would rise out of the water onto some branch that was going down into the water, almost walking out. It was often the preferred tree that was used for loafing. This waterbird is not waterproof as are others with a more developed oil gland. "The breast feathers lack hooklets that interlock barbules, allowing water to penetrate to the skin" (Frederick and Siegel-Causey 2000). It usually shook water off by shuddering somewhat dog-like. Then it would flap its fully stretched wings, alternately with its fanned tail, thereby bouncing, but balancing well on its perch. Sometimes it did this very rapidly. Next it would preen by drawing practically every feather separately through its bill. This could take hours. At times, the Anhinga would scratch itself on various body parts with such finesse and precision that it was comical to watch. For instance, it would lower its head to just below where its feet were on the perch, then rotate its neck so that the head was towards

the feet and just lift the foot, to scratch the top of its upside down head vigorously. On several occasions, it moved its head slightly to see something that caught its attention, without stopping the foot movement. After a few seconds, when it lost interest in the interruption, it then put its head back under the still moving foot.

The Anhinga often would sit on a perch with its wings outstretched, its tail somewhat fanned, and with its back to the sun for basking. This occurred not just after coming out of the water, but also in early morning or before its flight. Anhingas use this "spread-wing" stance to dry, but primarily to regulate the body temperature (Frederick and Siegel-Causey 2000). Due to the absence of oils in the feathers and a low metabolic rate, Anhingas need to gain radiant heat to avoid excess cooling and the need for shivering which would use up valuable energy maintaining body temperature. Spreading the black wing and tail feathers helps in this heat gathering. When it was drying, the wings were so spread out that spaces could be seen between the flight feathers, but when basking, the wings were not held quite that way, not as much space was noted between feathers, and the tail was not as widely splayed either. It is thought that the Double-crested Cormorant *(Phalacrocorax auritus)*, which also maintains this open-wing stance, can inhabit areas farther into the north, as its wing opening is exclusively for drying, whereas the Anhinga needs to maintain body temperature as well. It is suggested that the metabolic rate could not be maintained adequately in the north (Frederick and Siegel-Causey 2000). Yet this bird at the Delaware Marsh seemed to do well, even though this summer was particularly low in available heat due to the rainy conditions. Throughout the day, the bird would rotate through a half circle, following the sun with its back, basking regularly. However, even on a particularly cool day, it would still maintain its regular activities.

Display

The bird sometimes became agitated and when it did, it often "displayed". This consisted of a fanning of the tail and an expansion of the wings, in conjunction with a radical movement of the head and neck, usually with the head mostly elevated. The gular sac, under the chin, puffed out and its mouth opened. The neck swayed back and forth. The gape and gular sac appeared bright orange in good light. Although they are "generally silent" (Frederick and Siegel-Causey 2000), I heard a somewhat low "aaaag" sometimes. It usually performed at specific times, especially when a supposed antagonist or predator was in the immediate area. This appears to be the "threat display" described by Frederick and Siegel-

Causey (2000).

The Anhinga displayed on two separate occasions for hot air balloons flying over the marsh, several times for Great Blue Herons *(Ardea herodias)*, once for a Great Horned Owl, and once when it saw something below in the marsh which we could not see. A couple of times, it appeared to do the display when nothing precipitated it, and soon after, flew out on its morning flight, leading me to believe that the flights as well as the displays may at times be related to territorial expression.

Flight

Soon after the discovery of the bird, it was noted that it would fly out of the marsh in suitable conditions and either return right away or at times not until the next day. Often, it was not in the marsh from 1000h to about 1500h. The bird appeared to leave for good on 25 July after its usual flight. Many disappointed birders arrived and left on 26 July, but interestingly, the bird returned later in the afternoon on 27 July and again roosted in the preferred tree. It left on overnight jaunts at least two other times.

When gone for a long time, it was supposed that it landed elsewhere. I followed it by car one day, but could not catch up to it nor keep it in sight for long. It was at least 5 km away before I lost it over the horizon. I watched long enough to know that it did not land anywhere close. There are other somewhat similar ponds in the area, and the Thames River, but none exactly like the marsh. Sometimes when it was missing overnight, people actually saw it fly back into the marsh, usually from the south or west and usually in the afternoon. However, sometimes it may have flown into a secluded part of the marsh and may not have been gone overnight. While it was extremely visible most times on its roost tree, many times it was out of sight in the marsh, either behind some obstruction, or in the water. With only the head and neck showing at times it could not easily be found. Because of the nature of the marsh, it was best seen only in its favourite tree, which thankfully was most of the time.

Flight time seemed to be quite regular, at about 1000h, but at times, perhaps for different reasons, it would fly out later. If it had not flown by 1300h, it would not leave the marsh that day. The flight appeared to coincide with some conditions. It had to be a bright day, with thermals being created by the sun. Clouds could be tolerated, but never totally overcast or rainy skies. Wind could be light or fairly strong, but not gusty. After it had received direct sun, when the sun rose over the tree height and bathed the outstretched wings, it would get ready to fly. Rarely did it fly before basking like this. Only a few times did it go in fishing first before its flight. Then, it would dry and bask before flying. Frequently, after its sunning,

it would first take short flights within the marsh from tree to tree. Sometimes it would display as it perched on each succeeding tree. Then it would take a more ambitious flight. Alternately flapping and gliding like an accipiter, it wheeled around inside the confines of the marsh, gaining altitude as it circled, and then it would head out of the marsh. Sometimes it flapped continually until it rose above the tree level also. The neck and head were held out in front of the body, but the head was often slightly lower than the body, somewhat like a flying loon. Once higher, the head rose to a more level plane.

The overall effect during flight, due to body and wing proportions, was that of a "flying cross". The wings were held in a slight dihedral as it began to soar in larger arcs, catching the thermals above the marsh, seldom flapping when at high altitudes. Often it rose until it was just a speck in the sky against some puffy cloud. Some days, it disappeared far to the southwest or west. Sometimes its high flight was rather short in duration. We could see the speck in the sky turn one last time and then pull back its wings like a stooping hawk, and swiftly drop straight back to the marsh, losing altitude quickly and then wheeling as it arrived over the marsh. As it circled back it would continue to drop, much more slowly, and often would "side-slip" like landing Canada Geese, until it could safely approach and land either in the water, or more likely onto a branch, even its own roost tree.

Birder Behaviour

The members of the Delaware Sportsmen's Conservation Association were very accommodating, encouraging birders and allowing me to access the property to check on the bird's status. They even put up signs to prevent hunting when it was thought that the Anhinga might stay into the waterfowl hunting season. The neighbours were over often to meet and greet new people, and one even sold his car to one of the birders. At one point, there were drinks and snacks available to visitors but the 8-year-old vendor soon tired of the sales pressure and retired to his summer.

There must have been considerable economic benefit to the area during the Anhinga's two-month stay. In order to evaluate this issue, Fred Helleiner posted a request on ONTBIRDS (28 August 2000) for anyone who went to look for the Anhinga to report their expenditures (gas, food, lodging, gifts, and other) in the local area (London/Delaware). Helleiner (pers. comm.) later compiled the data from the 66 respondents to this informal survey. Parties visiting the site reported expenditures in the local area ranging from $0 to $300, and averaging $43.94. These 66 parties contained 130 individuals, and the average expenditure per person was $22.31. If these

respondents were a representative sample of the more than 1,600 Anhinga visitors (which is unlikely), a total expenditure of over $35,000 may have occurred. In any case, it is clear that several thousands of dollars were spent locally as a result of the Anhinga's presence.

The bird was seen until the middle of September, with Saturday, 16 September, probably the last day. The no hunting signs came down about a week and a half later after no more sightings were noticed. The members of the club and the people of the neighbourhood were very impressed that over 1,600 people had visited the little marsh on their road, and had been so responsible. It does our birding group proud that we were able to impact the area so little. Very little garbage was found, and few marsh incursions to get closer to the bird were noted. I cannot think of another bird that has drawn so much attention, and has been so relatively easy to see. The members of the club told me that next year, when it returns, they will be equally pleased to help steward the bird, and even offered the use of their port-a-potties. I like their optimism, and hope to make use of those facilities.

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