

## INTRODUCTION: GREAT BLUE HERONS

(excerpts from draft manuscript of *Beaks, Brains and Bones Volume 4, studies of 355 Great Blues admitted for care.*) *Main topic in this article: in August at our latitude of 44° to 45° in Ontario, these herons fledge, and many are soon found injured and starving. Some tips we offer for their care*

The Great Blues are wandering hunters, walkers, constant “grazers,” usually not far from water; tidal flats, creeks, shallow lake or river edges or ponds—salt, brackish or fresh. Local people call them “blue herrings,” or “cranes.” Herons are not in any way related to cranes and despite some similarity in general shape, have very little in common. They can swim, though they don’t often resort to it. I remember one being dive-bombed by a gull and forced down in the lake near our canoe; it floated and swam neatly, ankles lifting out of the water in a bicycling movement.

They have been known to share open-water hunting areas with other herons in early spring if ice is still about and good sites are sparse, and on small islands during haying season there may be several in a field pouncing on the newly-exposed voles (meadow mice, *microtus*). Otherwise, except in their breeding colonies they live a fairly solitary life, as each hunting heron needs a large territory to himself. They are often active after dusk and before dawn, as waterside campers know.

As their hunting targeting is in response to movement, these herons don’t scavenge, but catch live and moving prey, swallowing everything whole and headfirst—fish of many sizes including catfish (how do they do *that?*) grasshoppers, dragonflies, beetles, tadpoles, crayfish, frogs, snakes, small turtles, birds, shrews, mice, young muskrats, and chipmunks. One being watched on someone’s property would station himself near a chipmunk’s routine trail and seize them, one by one, as they scampered by.

Breeding-age herons signal their maturity by their plumage—the classic long plumes flowing from the back of the head, neck and back, the black crown and white sides of face, and black carpals. Immatures for two, even three years, lack most of those accessories and in the field have a short charcoal-gray cap. In hand, some white baby down may be evident.



*Fledgling Great Blue showing a few white natal down hairs still adhering to the tips of the gray crown feathers. Some remain attached as late as November*

## Parental Raising and Feeding of the Young

Both parents share the work equally to raise the three to six young, taking turns to hunt. As they snatch up this and that, they load up their very stretchy esophagi and large, stretchy stomachs with whole, often still living, prey. At first, the returning parent regurgitates a partly digested soft mix to the new chicks who eagerly “milk” the adult beak to encourage the flow. Later the regurgitation becomes a great slither of still-living fish, frogs etc., onto the nest floor for the nestlings to snatch up. *Dumped alive before them, this introduction to prey food is recognized throughout life.* Regurgitation is natural to all herons, either to present food to the young, or when alarmed, to lighten the body before taking flight. It is not vomiting, which in us is an uncontrolled reaction to expel something harmful.

Pre-flight heron chicks are rarely taken into captivity alive; if they fall or are dragged from the nest they die on the ground, as the parents apparently do not recognize them there, or simply cannot respond to such a big separation from the nest and other nestlings. Sadly, the fallen ones can almost never be “rescued” as an intruder’s approach will panic the entire colony into distant flight, leaving all young helplessly exposed.

For over two months the chicks grow, playing sword-fights, chattering, blowing up their necks and beaksnapping at each other in mock threats in their high, unreachable nests over marshy territory.



*Great Blue Heron nest*

## Sudden Independence and Juvenile Mortality

Here in S-E Ontario, full-sized juveniles make their first flights from mid-July to mid-August. After a few experimental trips out and back, they leave the nest forever, having no further parental ties or assistance. They are now entirely on their own, dependent on their inborn hunting instincts and special visual abilities to stalk and grab anything edible that moves.

So we find that late July through September are the greatest months of juvenile injury and mortality because the inexperienced new-fledged young must learn so much in a short time. One of their first problems may be the site at which they first arrive to hunt. Plentiful, easy-to-catch animals such as crayfish and frogs make a good start (even a child can catch a frog!) while learning to catch fish is much

more difficult due to the angle of refraction of the water and the rapid darting of the prey. Mice are hard to catch too, and take practice. If the aquatic site is unsuitable for beginners—too disturbed, over-hunted, murky water, insufficient easy prey,— they may weaken from starvation quite quickly.

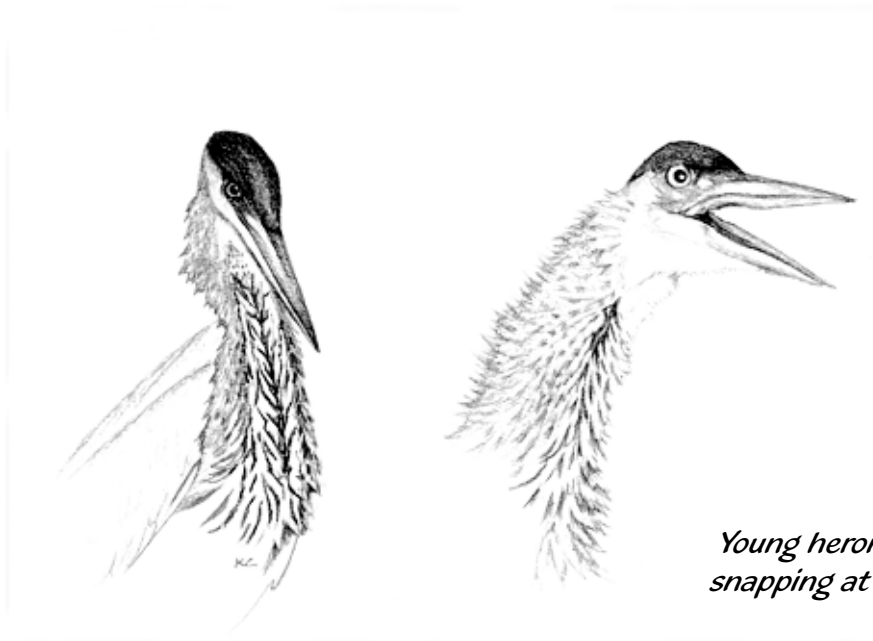
Yet we receive only a few that are starved with no apparent injury; most are injured by dangers they have not had time to learn about including guns, traps, fishline, and collisions with high-power wires and vehicles. Especially vehicles on roads which bisect a marsh. The heron is stalking in the marsh when he arrives at the edge of a road. What is this flat strange thing? Better fly over it. The heron's push-off into flight takes several seconds to get airborne control as the extended neck and dangling legs are being retracted for balance, and meantime along comes a vehicle...the heron is still low, his long, 70cm (about 28 inches) legs hanging down. *Smush*. We have found fractures of wings (humerus, radius, ulna and metacarpal) legs (femur, tibia and tarsus) as well as fractures of pelvis, coracoids, and vertebrae in such collisions. Especially the legs: we have had 51 Great Blues with very compounded leg fractures, ten of them bilateral. Most of the compounded tibias and tarsal fractures resulted in dead legs.

Admissions of hatch-year young here after September are more likely to have stored fat and full stomachs, showing that they have learned to hunt. Injured adults are seldom brought to us, suggesting that despite their small brains, they do learn about some dangers as well.

### The Injured and Starved in Hand

I love these birds—so gangly yet graceful, so vulnerable, yet so excellently fitted to their niche—and I find each one a constant challenge to reduce their fear and to reduce our handling, to allow them to eat the most and panic the least. Most people are afraid of them, but we have never found them to be aggressive but rather, predictable due to their terror of people.

The juveniles are particularly endearing; they carry over behaviours from nest life and often blow up their throats and make loud bluff “beaksnapping” strikes. Though that youngster's big beak coming at you looks intimidating, curiously, it never reaches its target, as the young heron is inhibited from carrying it out. I have sat on the ground near them and been “huffed and bluffed” repeatedly as I wriggled closer, yet have never been touched, even though I was lower than they. Of course that is what takes place with siblings in the nest; they play and “beak-wrestle” and practice, but if the strike gesture was truly intended to injure we would have few Great Blues left, and many would have brain and eye injuries. (Of 355 Great Blues, we have had only three with an eye injury, one of which was an adult and one an immature that had just hit a power-wire.No fledglings.)



*Young heron bluff-snapping at me*

## Catching Them

As with most birds, it is easiest to drop a towel, jacket or whatever is handy over their eyes before trying to pick them up. When suddenly they can't see, they often slow down or stop moving, and herons often collapse into a surprisingly small heap. When I've got that far I then fold the wings and legs, sometimes actually kneeling lightly astride the heron for better control. ***Never hold or tape the beak*** as this will close the wide, flat nostrils and cause either asphyxiation or aspiration of regurgitated food. Both cause death.

Meantime, I fold the wings and legs, sometimes actually kneeling lightly astride the heron to achieve safe control. Suddenly they seem small and helpless and can be gathered up and carried easily under the arm with a hand controlling the neck under the chin. When I arrive at the clinic or wherever I am going to do the exam, treatment or banding, and need to remove the towel, I often turn to my second favourite weapon: a large baggy cotton sock. When rolled gently down over the head and neck, it does not rub the corneas, it allows breathing through the material, it reduces the panicky struggles, and prevents bites. The sock calms during transport, exam, and even for X-ray. Note that the sock will not come off without help, so it must be removed before release.

Healthy-feeling adults will sometimes strike at the intruder in self-protection if they feel they are truly cornered, and for them I use both hands to hold a large towel or small blanket in front of me as I approach. If the heron should strike at the towel, it takes a few seconds for the head to resume the strike position again. I have never been struck, nor any of my students.

I have been bitten often, however, especially when trying to put on that sock. Fish-eaters—herons, gulls, terns, cormorants, loons—have such fast, accurate aim and serrated beaks that my wrists and forearms are criss-crossed with thin scars. Not wearing gloves is worth it, though; much better grip, sensitive fingers free to explore nearby skin and limbs for abnormalities such as very small scabs over shot entries, which are seldom seen. If by chance a hand or wrist gets clamped in a heron's beak, instead of reflexly jerking away, push *with* the serrations towards the softer gape where the serrations cease and clamping force is reduced.

I no longer use a net to try to catch a heron. A helper netted one with an excited swing and broke its tibia so easily that we did not even know it at the time, only finding out when we got to the marsh release site. (it healed in a walking cast later). If the heron is flying about, I just keep slowly approaching until the heron, panicking, misses a perch and tumbles to the ground where I can seize it with less danger of damaging those long legs. In very high aviaries I do occasionally raise a small, long-handled pool-skimmer net like a stop sign to direct the heron, hawk, or owl to where I wish it to go. These fine mesh nets, though wiffly, can make a capture and do not tangle the claws or flight-feathers. They are very useful for small birds, as are butterfly nets.

## Transporting Them

Hérons travel very well if they are laid down on an old sheet, straightened out, and with the beak at the edge, rolled up as one would roll up a rug, with just the very tip of their beak showing at one end of the roll. As long as the tip of the beak is exposed they can breathe well but not see, the darkness is calming, they can't flap, kick or further damage themselves, droppings stay enclosed, and the long bundle be neatly laid belly-down on the back seat of a car or even propped in position in the trunk. The sock can be on as well. If a sock *is* on, regurgitation must be watched for.

A few wraps of a thin sheet are reasonable, but no blanket or other heat-retaining material should be used, as herons can suffer hyperthermia when they cannot cool themselves. If overheated, the heron will gular-flutter in an effort to reduce its body heat. Again, a reminder that it is vital to never tape the beak as it can lead to suffocation. Belly-down is also vital; one heron that wasn't positioned this way died en route of a large lump of aspirate that blocked his trachea.

In the heat of summer it is best to travel in an air-conditioned vehicle or at least be sure to keep the heron out of the sun, especially if it is in a cardboard box. Sun on a box makes an oven.

Before being unrolled for release, be sure to pull off the sock! We have released 87 of them this way and all survived the trip, and most of the 353 we have admitted came to us sheet-shrouded too.

## Immediate Euthanasia

Here at our Foundation we continually encourage people to save and bring the dead for study, so our DOAs amount to about 9% of all Great Blues. We never keep or 'trade' any unreleasables. Of our living admissions, 53% ended up having euthanasia; *71% of all heron euthanasias were immediate*. Examinations, X-rays, photographs and post-mortems followed to confirm our diagnoses and to see what else there was to learn.

Consulting our relational database containing all our admissions, it becomes clearer and clearer with mounting cases what conditions need immediate euthanasia. We give it at once for fractured spines (quadriplegia, paraplegia or incomplete cord transections) dead wings, dead legs or dead feet, bilateral leg fractures, loss of all toes, *all* concurrent fractures of the radius and ulna, and *all* fractures of the humerus. These are always smashes—flung open with hopeless destruction of nerves, muscles, tendons, veins and arteries. The destruction of circulation has led so far to 70 herons with dead limbs.

And we give prompt euthanasia for any flight-feather damage requiring over-wintering: too long, snow and ice too hard underfoot, too low humidity here where we live north of 44°.

## Starvation: Nearly Half of All Great Blue Admissions

This is by far the commonest reason for being caught, with many often at the edge of death. On the very day they were admitted, 40% of those 166 starved herons either died, were already dead, or had euthanasia for hopeless traumas. We nearly always found starvation to be secondary to a trauma—87% of those starved had an obvious old injury. Only in a few of those starved was no clear reason discovered even on post-mortem, though it is my guess that something disruptive had happened to most of them anyway; when they are starving out in the marshes for weeks, even months, trying to survive on small or diminishing prey, clues like bruises, cuts and punctures have long disappeared.

## Trying to Revive the Dying

When a starved heron arrives too weak to stand *with pupils dilated and non-reactive*, he is dying.

When we had a heron (without hopeless injuries) that had collapsed, too weak to respond to live mouse or fish in a bucket, we were driven to try tube-feeding or sliding small fish or wet mice down the big gullet. Nearly always our offerings ended up in our shoes, or later proved to not have reached the stomach at all. On a few desperate occasions I just cracked a warm raw egg down the throat—a sort of tube-feed. The egg-snack is unusual, but an egg has good quantities of protein, energy, vitamins, some minerals and fluid too, all concentrated in a small instant packet so contained that it cannot not be inhaled, so slippery it could hardly be regurgitated and in fact was probably not really felt. I would then sit on the floor with the head supported gently against my body to counteract gravity but at this dying stage the poor heron was barely there, past fear, leaning against my warmth, the slick gravity-propelled egg tobogganing in the right direction. Occasionally I have even added a tiny stimulating shot of alcohol such as Vermouth or Drambuie (sorry, no statistics to uphold its restorative properties; Robin and I disagreed hotly on this addition, but then, it was *his* Drambuie). Two, however, did recover after this desperate yet simple combination. But alcohol is probably not a good idea.

After attempts at giving them sustenance against their will, most of the herons died. Some died before there was a chance to try anything, and still others died even after taking a fish on their own. But after each one slipped away, the post-mortem revealed that probably nothing would have staved off death anyway. There were green livers and speckled livers, pericardial effusion, blood in the lungs, foul interiors, ascites, anaemia, and/or low blood volume. Really low—cutting open the liver or large vessels or heart and getting only a few grudging drops. Anaemia is nearly always present in severe starvation. We found small tube-feeds that sometimes got inhaled, and some tube-feeds, mice and fish and even pills that never reached the stomach at all; digestion had stopped altogether. The herons knew it, but we didn't. As death approaches, all internal systems, invisibly to us, gradually fail.

As I've said, we very rarely try forcing or tube-feeding except as that last desperate resort. I hate it, the heron hates it: grabbing, forcing, causing so much terror and discomfort. There is also risk.

Some rehabilitators even do it for their own convenience, or because their peers do it, or to save time. With Great Blues it won't work; *they cannot be rushed; they know what is possible or not possible in their insides and will clearly demonstrate their ability to feed themselves if given space, privacy and opportunity with living prey.*

To us it seems so unreasonable not to give these delicate, highly nervous birds a chance to show whether they can manage to eat on their own or not, before resorting to such an aggressive attempt. The heron is not just a thing to be 'managed,' but a living part of the equation. Imagine being in hospital and being told there was medicine the doctor wanted you to drink, but instead of allowing you the dignity and opportunity to try to swallow it yourself, you were unceremoniously grabbed and held while a tube was forced down your throat!

Caregiver's dilemma with the starved one on the brink:

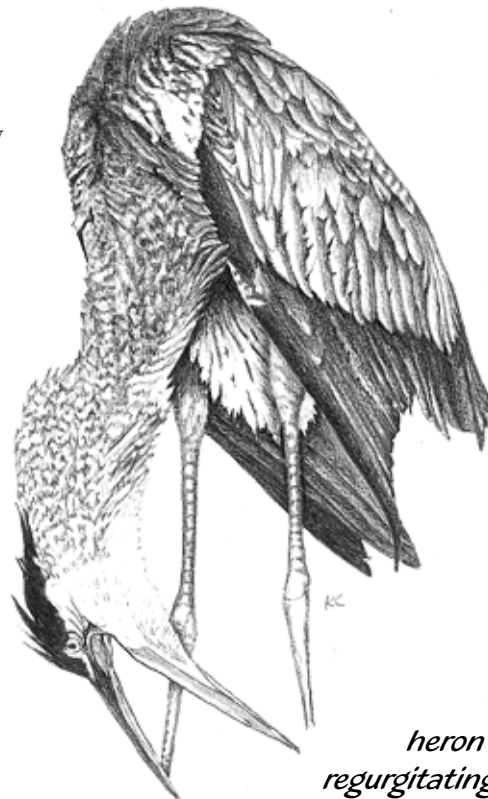
- He is usually difficult to get started eating
- He regurgitates very easily when alarmed
- He is easily alarmed
- Grabbing to force nutrition is most alarming
- Regurgitation almost inevitably follows, or digestion stops altogether
- And so starvation continues or even accelerates

### A Change of Approach Needed?

Instead of routinely grabbing, injecting, blood-taking, tube-feeding and trying to keep a heron in a cage, the interaction between the sick and the caregiver works much better as a co-operative outdoor venture. With gangly, vulnerable Great Blues, whose instinctive terror and panic level on a scale of 1-10 is about 12, I have strived over the years to give each heron the opportunity to show me what he is capable of. In people terms, we treat each one with the respect one would accord to a high-ranking client.

After a quick exam, each of these instinctive hunters is let loose in a large aviary among the trees with a deep water-container of live minnows, or perhaps a live mouse rustling in a bucket, and left in peace to calm down and to feed himself. After taking that first live prey, dead prey is readily accepted. They must not be disturbed or approached closer than their critical distance can allow, or they will simply regurgitate all they ate. By heeding their special needs, we have been able to reduce enough captive stress that many have had a chance take nourishment and to heal.

The number of days that our starved herons needed to recover varied from one to three weeks. If they were kept longer it was due to other injuries.



*heron  
regurgitating*

### A Few Brief Stats about Starvation in Herons at our Foundation

- Starved (i.e. rated by us as thin or emaciated pectoral muscle at the keel) herons admitted from 1978 to August 2003]: **166 =47% of total 355 admissions**
- Of those 166, there were 9 DOAs, so total of those starved that were admitted **alive =157**
- Of those 157 starved, herons, **29 were given tube-feeds. 8** recovered from starvation = **27.6% recovered with the help of a tube feed**
- Of those 157 starved, **128 received no tube-feeds.** [157 minus 29] **56** recovered from starvation= **44% recovered without any tube-feed**
- Of those 166 admitted starved, only **8** were also dehydrated.
- Of all those starved admitted alive, a third were banded and released.

For more information about on weights, care, post-mortem findings etc., please email; to telephone or write me please include some \$ to cover mailing costs...or wait for the book!

*Kit Chubb*

*updated April 2004*

This column is an introductory collection of bits from my unfinished book *Beaks, Brains and Bones Vol 4, The Great Blue Heron*, that has encountered difficulties getting to a printing press. The problem is me. Truth is, writing for the Web is so much easier and more pleasant; it lets me update any time, as well as use full colour photos from my large collection, which are only black-and-whites in the books.

At present I am undecided about making *The Great Blue Heron* (and some cousins) into a CD; meanwhile chapters from it will appear from time to time in this Website, because I want to share my experiences with this special bird. Comments about current and future presentation would be useful.

*Watch for the next chapter of this book!*