

Great Gray Owls: Flying Ultralights

photo courtesy David Wilkins

Our experiences with thirty of the injured

These exciting, beautiful big boreal owls only visit our latitude (circa 45°) every 9-12 years or so, probably coinciding with a low cycle of northern lemming populations. There were a lot of Great Grays down in the winter of 1983-1984 and again in 1995-1996, and now this winter of 2004-2005.

Through the years most of the injured we received were from January through April, with one in May, one in August (!) and one in December. The August one came from Fenelon Falls, Ontario, thin, with a week-old fractured coracoid and a shoulder laceration; he/she was later released. Why there in August I have no idea.

Like most wildlife, they do not understand vehicles and most of them are hit on the road while swooping down for voles in— or back across the road from— the nearby ditches. As listed on Page 3, head injuries were the most common injury.

Because they are born in habitat where most do not encounter humans while they are learning

what to fear, they don't fear us. None of ours showed any aggression, though of course like all wild creatures they hated to be handled. They demonstrated a sociable, friendly nature towards other Great Grays in captivity, sometimes preening each other and dozing together, heads touching, or perching close together in groups of three. In 1996 we had 18, giving us a great opportunity to watch their interactions.

When they are reported, bird-watchers and tourists sometimes tramp in groups to see and photograph them. I disagree with this thoughtless behaviour. Not only are farmers annoyed by strangers clambering over their fences and so on, but the owls are diurnal; that is, they are day-hunters and need to be able to hear and even glimpse voles, shrews and moles that live under the snow. No hope of *that* with even one person around, as the voles freeze in fright and the owls, unable to hear over the chattering voices and crunching boots, go hungry. It is a selfish attitude. If reporting to a hotline or a website, by all means state that the owls have been seen, but don't say where they are currently! Same goes for all the other owls. In the woods they may be still-hunting, or else they are resting for the night activities. Leave them alone!



Two close together in one of our aviaries, early spring

Life and Death of our 30 Great Grays

3 DOA

3 died

9 given euthanasia

3 transferred to the Owl Foundation,
Vineland, Ontario

12 released. Rate of release of those
admitted alive =44% (which is as good
as it gets when assessing injured
raptors and not including release of
healthy young.)

Gender and weight

Recording weights is routine baseline data—think of the vet; think of the doctor. How else to know if the patient is gaining or losing? But remember, raptor weights are quickly altered by well-filled stomachs.

Knowing gender is important for many things; again, think of the vet; think of the doctor. Imagine either treating a patient of unknown sex! So each opportunity to check and **measure the gonads**



-just the tail to go! Great Gray swallowing a mouse

It is good science to record whatever can be recorded without being intrusive

should be taken, recorded, even photographed. As in several other raptors, even in this small proven subset of 17, we had a lot more females than males. What could this mean, if anything?

Weights of those gender-proven—4 males— 735g – 1090g

13 females –940g — 1700g

Wing-chords

This is the measure from the carpal joint to the tip of the longest primary on the closed wing, without flattening the natural curve (the chord) of the primaries. It is done with an ordinary ruler (I use a set of them, one for small birds, one medium, and a metre-stick for really long wings) with a right-angle stop attached at the end against which the carpal joint is rested. The stop can be a piece of wood, a right-angle metal bracket or a piece of firm plastic taped to the end. The longer the wing, the less reliable the measurement. Both wings should be measured, as there is often a difference. It is preferable to have the same person do the wing-chords each time, as there is not only a variation in wings, but in how different people hold the ruler and the wing itself. I remember a group banding Saw-whets passing one of the small owls around the table for everyone to take a wing-chord, and the measurements were nearly all different. I did think it was insensitive to the much-stressed little owl.

It is also worth noting that *alive* is one measurement, but *immediately after death*



For wing-chords. Cheap plastic ruler & piece of wood taped on for a carpal stop

the tendons and ligaments relax and the chord lengthens a few millimetres; after the wing is *dry and shrunken*, as in taxidermy, the soft tissues shrink and harden, so the chord contracts and is even shorter than when the bird was alive. Some well-known bird books that give wing-chords have used museum specimens.

A chord is a straight line joining the ends of an arc, so the primaries are not flattened. In some countries the wing *is* pressed flat against the ruler, giving quite a different measurement. This is not a chord. To compare measurements given in someone's data, one needs to know whether the bird was alive or dead and whether it was a true chord or not.

Why should this measure be taken? *It is good science to record whatever can be recorded without being intrusive.* Though the use of such recordings may not clear at first without a lot of them, that is the point—take every one to get a lot. If you don't use them, someone else will. To many ornithologists it helps define gender as well as the limits of size, especially in combination with beak and tarsal measurements, weight (taken several times over the course of treatment) behaviour and vocalizations. Even geographically, some species differ in size.

The public's general measure "wingspan" is a useless measurement, hugely elastic. Try it yourself with a (dead) bird—you can stretch and stretch the wings out; when do you stop? On a living bird it might be painful or even damaging.

The public also try to describe a bird by height, which is even more useless, as a bird varies a lot in height depending on what it is doing. They all have at least 14 vertebrae in their necks—some as many as 27—and so the neck may be folded down to apparent necklessness, or extended to a great height. The legs too change a bird's height greatly; the femurs are usually folded up against the bird's sides, but when they lower them, the legs extend and are suddenly a lot longer.

w/c of our proven males 350mm - 420mm
proven females 410mm - 445mm

Causes of their injury

- 1 in barbed wire
- 2 shot
- 22 vehicle collisions
- 5 unknown



Injuries sustained by the Great Grays:

(Fx= fracture). This gives an idea of what injuries we found most common in this species.

Some birds had several of the injuries listed below.

barbed wire—1 owl only. Torn patagium (see # 1378)

shot— two owls:

1 Fx phalange

1 with 13 shots in body including an eye, fractured ulna, body and foot See #

vehicle collisions:

8 had braindamage/head injuries

4 Fx metacarpals

4 Fx hum

2 Fx ulna

2 coracoidal injuries, later released

2 Fx radius-and-ulna concurrently

2 Fx tibias, one of them bilateral (Of 26 bilateral tibias in database, most were vehicle collisions)

1 Fx radius

1 Fx scapula (hit side of truck) rare fracture to find

1 dislocated elbow

1 Fx pelvis

1 Fx femur

1 Fx toe and talons. Impression that northern owls have softer talons

1 spinal damage

1 Fx lower mandible

7 had internal haemorrhages

1 had two accidents; first a Fx humerus, then days later while still at the site, she was backed over by a truck.

Note re starvation

of 30 Great Grays, only four had been starved. One came from another rehab centre where the term “starved” had not been defined by weight or sternum plumpness, so was a possibly unreliable subjective assessment. The three others were certainly starved, but all had old, compound fractures when they were found—that will do it! Otherwise, 25 of the owls were in good condition—“good flesh” while we judged one to be “reasonable”—half-way between “good” and “thin.” Most likely the first four had been in good flesh before their accidents too. This contrasts with our 50 Snowy admissions—22 (44%) were starved. Perhaps some biologists working in the north have explanations for this; we don’t see much of the big picture of their lives.

Ingesta

Findings in one admission casting, one X-ray film and five stomachs that had prey in them: small rodent skulls that were probably voles. Two of them were so fresh they had hardly begun being digested and were definitely voles. There was also a shrew and a mole (see # 5801, below.) In the stomach of one that was brought to me in May I found a grasshopper hind leg.

Two stomachs held three little rodents each and weighed 62g and 90g. The huge casting had remains of four small rodents. First post-admission castings, by the way, are worth watching for to examine the contents.

Cases of interest

#5801 Great Gray vs Porcupine?

Several years ago when Peter Whelan had his well-known bird column in the Toronto *Globe & Mail*, he used to call me up late at night when story-searching, and one night I told him about a Great Gray Owl corpse found on a snowbank. Apart from being stone dead, he was in fine plump health (though only 920 grams!) but I had noticed a puzzling feature: at the back of his heels there was a light sprinkling of porcupine quills.

Though Great Grays are routinely billed as “the largest owls in North America,” this only refers to height and wingspan, for under all the thick, northern-protective feathering is a very small body. Note how in David Wilkin’s photograph the owl is perched lightly on a very slender branch. I have weighed several plump ones, both male and female, who topped the scales at 800 grams, which is below that of desperately emaciated Great Horned Owls. The female Great Gray is generally bigger than, and up to twice as heavy as the male, but she is still quite a lightweight hunter, armed with small feet and talons.

But these lemming, vole and small-bird eaters don't pick arguments with such big beasts as porcupines. So how did the owl get the prickles?

Well-known naturalist-author Jim Duncan explained. First, the porcupine had been killed by a vehicle, and then in the darkness of night the tiniest of all mammals, a shrew, had crept out of the ditch to feed on the corpse. Finally, the owl sailed down to feed on the shrew, and was himself killed by a vehicle, his body flung onto a nearby snowbank.

The amazing thing was that on post-mortem I found that the owl's stomach was greatly distended with 90 grams of prey— a large mole, a mouse, and right on top, a fresh shrew. Jim was absolutely correct. More reasons for stopping to shovel corpses off the road!

Shrews, by the way, are not rodents (which are vegetarians) but insectivores, living mainly on arthropods, earthworms and insects they encounter mainly in underground tunnels; some of their prey they find by echolocation, like bats. However, they do not hesitate to kill and eat a mouse that gets in the way, and often scavenge meat from the safety of the underside of a dead corpse. A Screech Owl

we had had a single porcupine quill hooked on its back skin, neatly aligned with his feathers; probably acquired snatching a shrew under a porcupine.



1376 central nervous system damage—dysfunctional legs

1376: a case of central nervous system damage

A fresh car collision had knocked the owl into a ditch. On admission, still bleeding from blow to cere (the soft part just above the beak); the bash to the head had left her unable to stand, though at first her legs were strong with kick and grip, so nursed in a “nest-box” carton full of soft pine-needles. Day 2 alert, round-eyed, strong, eager to get out, and like many owls she escaped, “tobogganning” around the

floor.

Over the next five days she became increasingly restless, trying to get about without the use of her legs, often ending up rolled over or upside-down, which is bad for the lungs, situated as they are on the back. Though she had sensation in her feet still, her legs gradually became stiffly extended and she tugged and tore the cardboard of her box in frustration. During all this time she ate well, either swallowing whole mice or accepting chopped parts offered by us. We noted that her droppings were stale-smelling (see column on Broken Backs). By the sixth day dyspnea and loss of appetite began, and soon after she died.

On post-mortem the lungs had some blood in them, and though they otherwise looked reasonable, I sent away lung tissue for pathology exam and the report came back “congested – probably aspiration pneumonia”. This would be from being unable to stay upright. She had a large clot of blood under the skin at the base of her cerebellum, which is at the top of the spinal cord (or the bottom of the brain, depending which way you look at it). Looking at her case *post-hoc* now, I think she probably had a damaged spinal cord (partially transected?) that worsened as inflammation and pressure increased at the site. This of course affected her bowels too. I have found other cases of blood collections at the base of the brain, some of which were, or soon became, quadriplegics.

#1378. April. Barbed wire

These owls are used to flitting through branches, so the strands of wire had no reason to appear threatening as she was busy catching mice in the long grass usually found under fences. A length of barbed wire was still tangled in her wing, and though only one barb did the damage I had to cut it out. There was a large dorsal rip near the patagium, exposing anatomy beneath, and a ventral rip too, through which feathers peeked through from the dorsal side. Cleaned, sutured and glued them, applied some topical antibiotic and covered it with thin, transparent, stretchy medical tape called Tegaderm. I wanted to prevent the area from drying out if I could.

I did not attempt to give any fluids but presented a bowl of water; owl did not eat, but later served herself from the bowl. This was a plump bird weighing 1450g. Three days later she made a huge round casting of four (wild) small rodent skulls plus all the fur, bones etc.

Day 16 amazing! Ventral surface undisturbed, the tegaderm was still in place, so left it. Dorsal tegaderm had come off, leaving a clean, open ellipse about 10mm x 30mm. Rinsed with gentomycin, left open. She was very active. On Day 32 ventral wound closed leaving two tight scars that puckered the patagium and slightly reduced the full use of elbow. Dorsally there was some bare skin and a large scab about to fall off. Banded and released her with a little party of well-wishers—fine long flight, no visible asymmetry.

Barbed wire usually punctures and rips the thin double layer of patagial skin, which is like the web between our thumb and forefinger, but thinner and much larger. Whenever this happens, no matter how careful the suturing or gluing was done, the dorsal and ventral layers healed to each other, leaving a hole. However, in owls with big wingspans, a moderate hole in the patagium is not a handicap; feathers usually cover it anyway to hold air. Though any reduction in the span of this web is bound to reduce the wing extension on that side, for birds with huge well-feathered wingspans, this insult is of little or no consequence.

Because we have seen so few wound infections in birds, I rather think that if I had done nothing but promptly band and release the owl, it probably would have healed itself just as well, and she could have spent that month being in natural surroundings. The only reason we got her in the first place was because she was stuck in the fence.

Broken Beaktip

Found in middle of road 6:30 am today, easy to pick up. R ear bruised deep within, right lower lid only partly raised (a branch of the trigeminal nerve) yet the right side of his face was very sensitive to touch. Posture and head low. Could clutch, stand but stunned attitude. Fresh blood clogging nostrils and a lot in back of mouth. Beaktip broken, but the end still hanging on. Rinsed the beak gently, gave few sips of water to wash down blood, put into p/n box. Small owl.

Next am upright, bouncy, and by Day 3 had eaten a lot of mice about 25-30g size, so he must have been swallowing them whole. On that third day I carefully crazy-glued the beaktip back into place and put owl out into aviary in midafternoon, despite his still having a thin stream of bright blood running into his mouth from his choanal slit—still bleeding from somewhere in his brain, but the stress from heat and humans was bad medicine. He promptly climbed into a large cedar bush.

Banded and released on Day 12. His beaktip was firm, though still slightly misaligned, but beaks keep on growing and it would finally be replaced. He was too restless to keep in captivity any longer and could swallow biggest mice very well; Great Grays have a wide jaw and big gullet. He had even gained weight.

Owl # 1378: Owls Betrothed!

This time I have a most gratifying story to tell you. Bound to please. About love. Don't we all re-



*# 1378, Thirteen pellets in his body but survived
(rest in legs, feet)*

spond warmly to a happy ending? It all began in January 1984, one of the winters of famous “owl invasions” when nomadic northern owls visited Ontario and Quebec in record numbers and touristic southern bird-watchers flocked to do the same. It was then that we received our first injured Great Gray, the largest bag of owl-feathers in North America. A Flying Ultralight, this species is, the biggest rarely weighing as much as the smallest Great Horned Owl. One of our early wounded was a car-collision female with *both* wings broken, one of them frozen solid—what a mess. While the fractures were being treated, it was snowing Great Grays at ACRF—we received nine altogether—but though this one was one of three in the same big unit, she was easily identifiable by her loud beak-clopping.

Next door was #1378, a small male we called “Thirteen,” which was the number of shot-gun pellets in him. The poor creature had been deliberately gunned down in broad daylight near Ottawa by father-and-son poachers who then seized the fallen owl and stuffed him under their car seat while they made their getaway. Luckily, shocked citizens reported the shooting and the police caught the men whose frightened, bleeding booty was, astonishingly, still alive.

He survived being switched from poacher’s car, to police car, to Ministry of Natural Resources car, to our driver’s car, and thence to us...but not before the Ottawa Citizen and a host of other newspapers and TV channels

published his photograph and story. (The pair were fined a total of \$700.00—this was in 1984—for “hunting out of season” but probably the more effective punishment was the ensuing flood of angry and threatening phone calls.) But we cared for the owl, and despite two pellets through the eye and brain, two in the neck, five in the abdomen and the others in his body, leg and foot, he came out of it a slightly limited flier blinded in one eye. We introduced him to Clop Clop and they got along very affectionately, but it didn’t seem significant at the time as we found all our Great Grays to be extraordinarily sociable, often crowding three onto a small perch for fun.

Finally I transferred the couple to the Owl Foundation, Vineland, where they maintained such a strong bond for each other that a year later when they were transferred to Vermont Institute of Natural Science where they mated, built a nest and Clop Clop laid eggs. Though in that first nesting the eggs did not hatch, the following spring they had glorious success. It is a sweet story that these two owls, one crippled by man’s greed and the other by man’s speed, raised three delightful healthy owlets. When fully grown, the offspring were



Dozing together. Photo through window

banded and flown to northern Manitoba for release into undisturbed boreal forest. As far as I know, the crippled owls are parenting still.

Post-mortem findings of interest in Great Grays

- ◆ Aspiration pneumonia—(one from being tube-fed at another centre, and # 1376)
- ◆ No disease, no aspergillosis
- ◆ Only endoparasite seen: 1 nematode
- ◆ Long dark green caeca
- ◆ 2 ovaries seen in one owl; probably I did not check the right side of other females. The left ovary is usually the functional or even the only one. No signs of ripening except one, March 31, a female who also had an enlarging, pale fallopian tube. Though it is always present, it is as good as invisible until follicles begin to ripen
- ◆ Second-year male Mar. 28: small cream-coloured testes. Feb 8 4mm long, dark gray, mature male. Testes not seen enlarged in 3 pms
- ◆ Skull is exceptionally easily dented; easy to even leave a finger-nail mark. Saw-whet owls also have this styrofoam-like construction, thick but delicate
- ◆ Note talons seem softer than other raptors, and like Boreals, they wear easily. One Great Gray had 4 talons broken cleanly off by a vehicle collision

Kit Chubb



Great Gray pouncing
photo courtesy Tim Dyson