

Northern Saw-Whet

Sunday morning, Oct. 10, 2010, someone walking on the University of Minnesota campus spotted a softball-size bundle of brown and white feathers on the grass below a window of a brick building. Slowly approaching, the person could tell it was a bird with a head as big as its body. Its eyes were closed, and it did not move.

Feathers lay scattered on the ground. After leaving and returning with a cardboard box, the rescuer gently lifted the bird, placed it on a soft towel in the box, and carried it to a bird medical clinic called The Raptor Center. There veterinarians, wildlife rehabilitators, and volunteers take care of injured raptors (birds of prey, including eagles, hawks, falcons, ospreys, vultures, and owls). Every year, The Raptor Center on the St. Paul campus treats about 700 injured, sick, or orphaned birds from all over Minnesota and surrounding states.

In The Raptor Center treatment room, a veterinarian prepares to examine an injured northern saw-whet owl. Like any raptor that feels threatened, this owl might try to bite and claw in self-defense. When handling a wild bird, medical staff and volunteers wear leather gloves to prevent being hurt by sharp talons or beak.

By Kathleen Weflen

owl 10-583

Photography by Mike Dvorak

Check-In Clinic



AT THE CENTER, the bird rescuer told a veterinary student named Joey when and where this owl had been found. The bird's small size, its golden eyes, and the pattern of its brown and white feathers identified it as a northern saw-whet owl (*Aegolius acadicus*). The rescuer guessed the owl might have fallen to the ground after flying into a window.

Though an owl can see better than a human can, it cannot tell that a window is as solid as a wall. Lights and reflections might have made the window look like the sky. This northern saw-whet owl was

probably flying at night, migrating south from a forest in northern Minnesota to an area where hunting would be easier during the long winter months.

Joey thanked the rescuer and promised that The Raptor Center staff would take good care of the owl. To check on the owl's progress, the rescuer could call and ask about number 10-583—the 583rd bird admitted to the clinic in 2010.

First exam. Leaving the bird in the box, Joey brought 10-583 to the treatment room. With a stethoscope, he

Examination of owl 10-583 includes listening to the heartbeat with a stethoscope (above) and measuring the flight feathers (below). From wrist joint to feather tip is 14 centimeters (about 5.5 inches).



Snug in a soft wrap, owl 10-583 lies on a scale to be weighed. Medical staff weigh the owl each time they examine it. If the owl is eating the right amount of food, it should stay at a normal, healthy weight.

listened to the owl's heart and lungs. He also looked inside the bird's mouth to make sure no blood was present.

Joey decided the owl was strong enough to anesthetize for a complete physical exam. He placed a mask over its head, and the owl breathed in anesthetic gas (similar to a gas given to a person before surgery). The anesthesia would help 10-583 relax and not feel pain for a little while.

How big? To weigh the saw-whet owl, Joey wrapped 10-583 in a special cloth wrap and laid it on a scale. It weighed 95 grams (a little more than 3 ounces, about as much as this *MCV* magazine).

From head to toe, 10-583 measured 7 inches long. Though small, 10-583 was a full-grown northern saw-whet

owl, Minnesota's smallest owl species.

Male or female? In many raptor species, it can be difficult to determine whether a bird is a male or a female. For northern saw-whet owls, two measurements can help: the bird's weight and the length of a primary flight feather.

Saw-whet girls tend to weigh more than the boys do, a fact seen in most raptor species. An adult male saw-whet owl seldom weighs more than 90 grams. A female often weighs over 100 grams. At 95 grams, 10-583 might have been an extra-heavy male or an ultralight female.

Northern saw-whet owl girls have longer flight feathers than the boys do, and 10-583 had pretty long feathers. So the staff decided this saw-whet owl was a girl.

See the Doctor

RADIOGRAPH. With head tucked in a mask (top), owl 10-583 receives anesthesia. The doctor tapes the owl to a radiograph plate (middle). The radiograph pictures on a computer screen show the owl's skeleton. In the dark image (bottom, left), the injured shoulder looks lower than the other.

THE NEXT MORNING 10-583 had an appointment with clinic manager Lori Arant and Dr. Paula Castaño, a veterinary intern from the country of Colombia who is studying at the University of Minnesota.

While Lori held the bird's head and feet, Dr. Paula placed a mask over the owl's head, and 10-583 breathed in anesthesia. She relaxed and closed her eyes. Then Dr. Paula carefully taped her open wings to a special piece of glass and carried her into another room for a radiograph, an X-ray to show bones beneath skin and feathers.

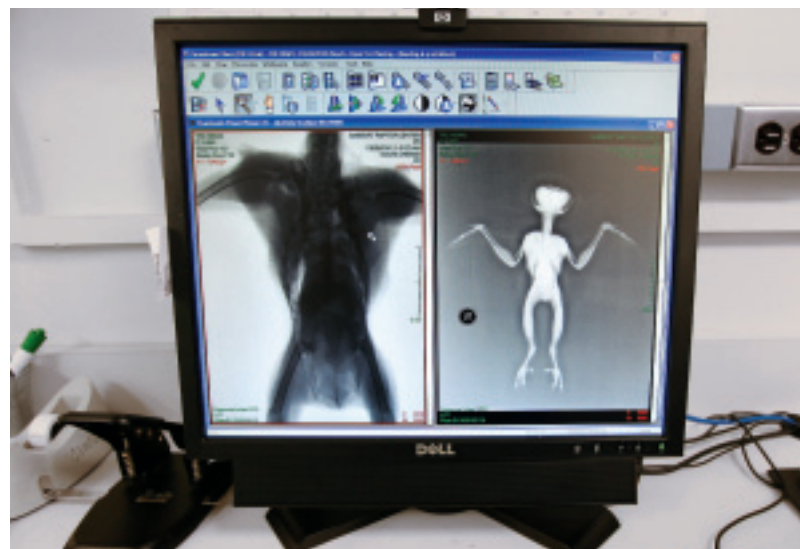
Diagnosis. The radiograph showed 10-583 had a *coracoid fracture*—a break on the left side of a bone similar to your collarbone. You can see your collarbone sticking out just below your neck. It connects to your chest bone and shoulder blades. An owl's coracoid connects to its chest and wing bones.

Because of the break, 10-583 drooped her wing and could not fly. Before returning to her wild home, she would need to heal and regain her ability to fly. The medical team hoped for a full recovery, but they were not certain.

Treatment. Though 10-583 did not need surgery or a cast, she did need a body wrap. If you broke a finger, the doctor might tape your fractured finger to a healthy one. Like a cast, the wrap holds the damaged bone in place while it heals. Dr. Paula wrapped this special bandage tape around the chest and wing. The body wrap would hold the wing against the body, so 10-583 could not move the fractured bone as it healed.

A person with a broken collarbone might need to wear a bandage for 12 weeks. Because birds heal faster, 10-583 would probably only need the body wrap for two to three weeks.

Does it hurt? If 10-583 showed pain in the wild, she would look like easy prey for a bigger raptor such as a Cooper's hawk, which might try to eat her. Clinic manager Lori said it is hard to tell how much pain a bird feels. "Sometimes they'll just sit there with eyes half closed and won't eat," she said. At the center, 10-583 got medicine to relieve any pain she might feel from hurt nerves and muscles.



Room and Food

SHELTER. Owl 10-583 is returned to her crate after flight exercise. Wildlife rehabilitators know how to handle injured birds. If you find a hurt or orphaned wild animal, do not touch or feed it. Call a wildlife center for help.



LIKE A HOSPITAL, The Raptor Center has rooms for patients. Up to 100 birds at a time can stay for treatment. There are four rooms with patient cages—plastic crates where the birds hang out while they recover. During the healing phase, every raptor has its own crate. Once healed, some big birds, such as red-tailed hawks, share a room where they can stretch and fly. But little raptors, such as 10-583, usually get their own flight space. Can you imagine why?

Private room. The first couple of days, 10-583 stayed in a heated box called an

incubator. When she started to eat and move on her own, 10-583 was transferred to a crate. She seemed comfortable alone in this cavelike shelter. Maybe it reminded her of a hole in a tree, where she once nested. Except during nesting season, a saw-whet owl lives alone.

Mealtime. In the wild, 10-583 would start hunting for food after sunset. Perched on a low branch, she would watch and listen for a deer mouse, meadow vole, or shrew to skitter through grass or under snow. Then she would swoop down and grab the prey with her feet. Using her sharp beak, she would tear her meal into pieces.

Around sunset at the center, a volunteer brought 10-583 her daily meal of a mouse, about 20 grams, cut into chunks. You use your teeth to chew your food before you swallow it. Owls don't have teeth, so 10-583 swallowed whole chunks of food. The owl did not need water because her mouse dinner had enough moisture.

Pellet casting. Eight to 10 hours after eating a mouse, 10-583 coughed up a pellet—a small ball of undigested bones

and fur. Like detectives, scientists take apart owl pellets to find out what a bird has eaten. The Raptor Center sells owl pellets for studying owls' eating habits.

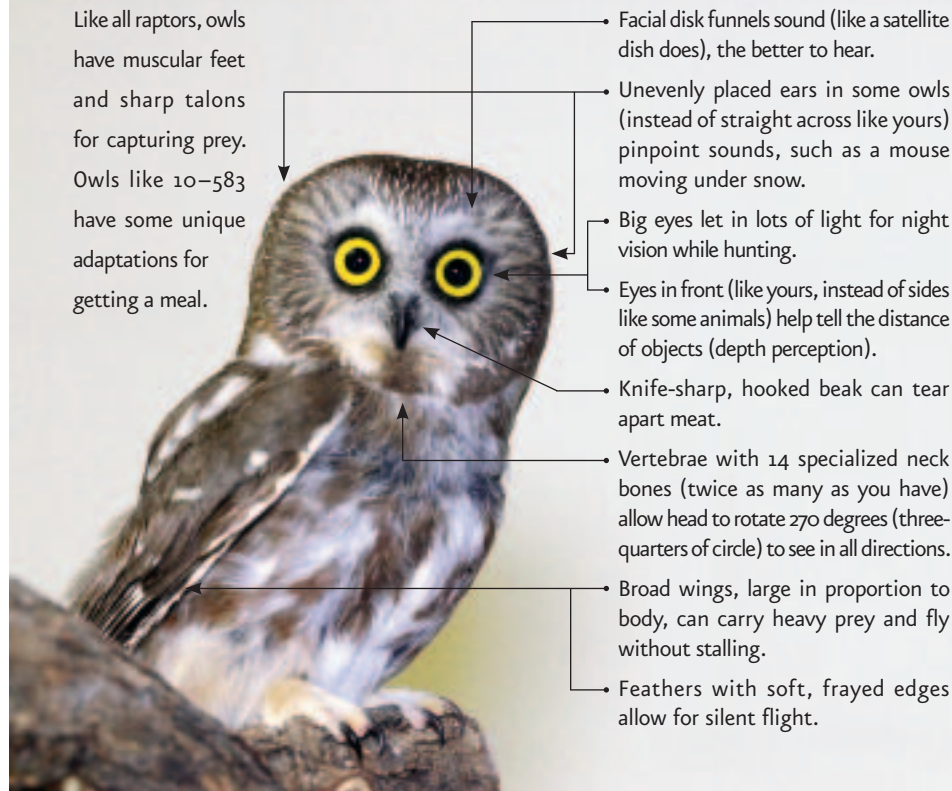
Place to perch. At first, when she was still weak, 10-583 stood on a flat-topped perch (block perch) in her crate to eat. Later, Lori exchanged the block for a perching branch, which 10-583 grasped with both feet (two toes forward and two back on each foot). There she roosted, napping during the day. Every few days, 10-583 got a different perch so she could change foot positions and not get foot sores.

Night owl. In the forest, 10-583 would stay up at night to hunt for prey and to guard against predators. At the center, lights in the windowless owl room automatically turned on and off as the sun rose and set. This helped 10-583 keep her nocturnal, or nighttime, habits.

One morning when Dr. Paula went to get 10-583 from her crate, she found the owl on her perch with her bandage partly unwrapped. "You have had a busy night," Dr. Paula said. Apparently, 10-583 had been using her sharp, hooked beak to try to remove the body wrap. Was she getting ready to fly?

Owl Survival Adaptations

Like all raptors, owls have muscular feet and sharp talons for capturing prey. Owls like 10-583 have some unique adaptations for getting a meal.



Getting Ready to **Fly**

AFTER A WEEK in a body wrap, 10-583 had another exam. Dr. Paula put her on a towel on an exam table. While Lori held the bird's feet and head, 10-583 made a clicking noise by snapping her beak. If she felt threatened in the wild, 10-583 might click her beak to scare away a predator. Were these people predators looking for prey?

Dr. Paula unwrapped the bandage and felt the broken bone. She found a small bump, a callus, had formed on the fracture. Like a bridge, the callus was joining the broken parts, healing the fracture.

Physical therapy. 10-583 was ready for physical therapy. When you exercise, you move your body on your own. In physical therapy, a doctor or physical therapist helps move the hurt part of the body.

For her first therapy, 10-583 received anesthesia to control pain. "I go very slow," Dr. Paula said as she opened the wing, stretching it out like the bird would do when taking flight. "We stretch each area about 10 times, starting first with the shoulder, and we rotate it a little bit."

Like your arm, the owl wing has

joints at the shoulder, elbow, and wrist. By spreading the wing, Dr. Paula was helping to keep the joints limber.

In a couple of minutes, the therapy was done, and 10-583 would rest three days before her next session.

Test flight. Tuesday, Nov. 9, one month after arriving at The Raptor Center, 10-583 had her first chance to fly. She had gained weight and could spread her wings.

Lori and Dr. Paula brought her to the flight hall. Lori stood by a tall sawhorse perch at one end of the 50-foot hallway. At the other end, Dr. Paula put 10-583 on a perch. 10-583 swiveled her head to look around the strange room.

The moment Dr. Paula raised her hand, 10-583 opened her broad wings and swooped down from her perch and flew to the far end. There she sat until Lori waved her hand. Again she flew, rapidly beating her wings, back down the hallway toward Dr. Paula.

"She looks like a moth," Lori said. 10-583 flew as quietly as a moth. Her fringed feathers allowed air to pass silently.

owl 10-583

Photos top to bottom: In the flight hall, 10-583 comes in for a landing on her perch. Here is how she did on her flight schedule:

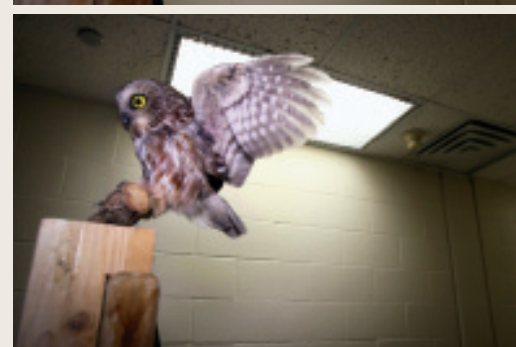
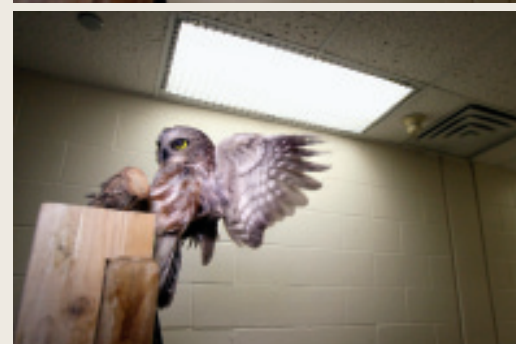
Day	Number of laps
Nov. 11	20
Nov. 15	30
Nov. 17	40
Nov. 19	40
Nov. 22	45
Nov. 24	50
Nov. 26	50
Nov. 29	55

On the next lap, she flew more slowly. "The wing is starting to droop," said Lori. "Let's turn out the lights and catch her."

Dr. Paula tried to catch her on the perch, but 10-583 flew to the floor. She caught her there, and 10-583 clicked her beak. When the lights came on, Lori and Dr. Paula were smiling.

"That was a good start," Lori said.

Two or three times a week, they would take 10-583 to the hall to exercise her flight muscles. The goal was to fly 50 laps without stopping for long. Then she would be ready to return to the forest.



Now Fly **Away?**

EYELIDS. Besides upper and lower lids, owls have a third inner eyelid. Called a nictitating membrane, this inner lid keeps owl eyes moist. Unlike you, 10-583 cannot cry tears because owls do not have tear ducts.

AFTER ALMOST TWO months at The Raptor Center, 10-583 was flying strong. She held her left wing in a natural position as she flew 50-plus times back and forth in the hallway, swooping from perch to perch without stopping long to rest.

Dr. Paula and Lori said 10-583 seemed restless, moving around her crate and wiggling and snapping when held. Lori decided it was time for an exam to see if 10-583 was healthy enough to return to her natural habitat.

Final exam. Once again, 10-583 got anesthesia and a radiograph of the broken bone. Then, working quickly, Lori turned on a bright overhead light, poked a needle into an armlike vein of 10-583, and drew two tiny tubes of blood. A veterinary technician checked the blood cells for the ability to carry oxygen and other signs of health.

Lori fastened a small metal ring around 10-583's left leg. The leg band has a U.S. Fish and Wildlife Service number, so anyone who finds 10-583 can report



the number to a national banding lab. The lab will notify The Raptor Center. Banding helps researchers track wild birds and learn how they survive.

10-583 now weighed 100 grams, a healthy weight for flying and hunting. The plan was set: In two days the medical team would put her crate in a car, drive 10-583 to a nature center, and release her.

Flight delay. On the scheduled release day, Dec. 2, a snowstorm was blowing into Minnesota. A storm can stop people and wild animals from traveling. And for 10-583, a heavy snowfall could make survival difficult. She might be a young adult that lacks experience hunting in snow.

STOP WINDOW CRASHES

Every year about 100 million birds in the United States die from window collisions. Learn how to help prevent crashes at www.mndnr.gov/young_naturalists/saw_whet_owl.


A NOTE TO TEACHERS

Find links to teachers guides: www.mndnr.gov/young_naturalists.

Deep snow could prevent her from capturing prey to eat. While a larger, heavier owl could plunge into snow to grab a mouse, 10-583 would have trouble reaching deep. If 10-583 didn't capture a mouse soon after release, she would quickly lose weight and have more trouble surviving.

As snow piled up in December, Lori decided to keep 10-583 at The Raptor Center until spring.

An outside mew. Out its back door, The Raptor Center has tall, large raptor cages called *mews*. 10-583 moved into a mew of her own. One wall has an open wooden box, similar to a tree hole, where she can roost.

Now northern saw-whet owl 10-583 lives in the fresh, cold air as she waits for the snow to melt so she can return to the wild. 

 www.mndnr.gov/magazine Watch 10-583's rehab in a multimedia video.

DR. PAULA CASTANO AND CLINIC MANAGER LORI ARENT



The Raptor **Center**

Founded in 1974, The Raptor Center cares for injured, orphaned, and sick wild birds of prey, so that they can return to their natural habitat. This important work is called *wildlife rehabilitation*. To rehabilitate owl 10-583, the center's medical team had to help her regain the ability to fly.

Sometimes an injured bird does not get strong enough to survive on its own. Then it might become an education bird, which makes appearances at schools, special events, and the center. The center's 33 education birds help children and adults learn how raptors and people can safely share the environment. In 2010, as of Dec. 15, The Raptor Center had cared for 682 injured birds, including 388 hawks, 202 owls, 114 eagles, 66 falcons, 17 ospreys, and nine vultures.

To learn more about The Raptor Center and how you can help raptors, visit www.theraptorcenter.org.