

NATIONAL GEOGRAPHIC

Hawaiians
Reclaiming Their
Culture 2

The Telescope
With X-ray
Vision 42

By Camel
Across
the Sahara 54

Can Kabul
Come Back? 90

The Magic of Snowy
OWLS

104

PT 109: Ted Kennedy Remembers 78



Muscle & Magic Snowy OWLS

They're power owls, the biggest on the tundra,
fast and fierce enough to knock a grown man to the ground.

Even a downy chick (overleaf) can flash an intimidating
yellow stare. Researchers who want to learn how snowy owls

live and breed have to face down some of the
toughest birds in the Arctic.

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NATIONAL GEOGRAPHIC WRITER

Photographs by DANIEL J. COX



With hungry chicks making wide-mouthed demands,
a nesting female, below, relies on her mate to deliver a steady supply of prey.

First choice: lemmings. To support their brood and themselves,
a pair of snowy owls must capture thousands of lemmings during the owls' breeding
season, mid-May to mid-September. The abundance—or scarcity—of this two-ounce
rodent directly affects how many owls reproduce,
and how many young they raise.



Scientists know just a few places where snowy owls breed regularly: Barrow, Alaska, is the only one in the United States. Perched between the Chukchi Sea—thick with ice even in July—and the hummock-and-pond vastness of the tundra, Barrow (above) has a population of roughly 4,600 people and serves as the municipal center for the state’s huge oil-rich North Slope Borough. A decade ago biologist Denver Holt, founder of Montana’s Owl Research Institute, came here, drawn by the “mythic lure” of big white birds. Though many individual snowy owls winter on the Great Plains of the U.S. and throughout Canada, to observe *Nyctea scandiaca* in significant numbers, Holt says, “You have to come to Barrow.”

Much of his summer fieldwork has focused on links between owl reproduction and lemming numbers. But as Barrow homes and businesses have expanded into snowy owl habitat—like the natural gas pumping station within sight of a nestful of chicks (right)—Holt has become increasingly concerned with owl-human relations. “There’s a long history of the native Inupiat people and owls living together here,” he says. “The question is, will those traditions continue to be respected? Will Barrow make choices that work for people *and* owls?”

Snowy Nomads

The first snowy owls tracked by satellite returned dramatic results. One (route in brown) sprinted across more than 800 miles of ocean in just 11 days. Another (route in blue) flew an average of 40 miles per day for 48 days on an 1,800-mile trip from Siberia to Canada.





Their range is so big, so inaccessible — we don't really know how many snowy owls there are.



Where do snowy owls go when they leave summer breeding grounds? Tested on Barrow owls, a new satellite tracking system—using transmitters that weigh about an ounce and record data for more than a year—reveals that individual birds range through as much as a third of the Arctic. But before Holt's Owl Research Institute team could start collecting data, owls had to be caught. Dodging a snapping beak and sharp talons (lower left), Holt and colleague Laura Phillips gently untangled a female from a lemming-baited trap, then fitted her with a transmitter backpack. After release (above) tagged birds preened, then flew undisturbed by the device's antenna (right), and rejoined their chicks. "We've worked on adults and young from 142 nests," Holt says. "Handling causes some stress, but we're extremely careful. Our research has never caused an owl to abandon a nest."



Most owl species depend on camouflage and stealth to survive, but “snowy owls seem to defy all the conventional owl wisdom,” says researcher Mat Seidensticker. “They don’t hide. During the breeding season they’re flashing white beacons” against the treeless greens and browns of the tundra, hunting in Arctic summer’s 24-hour daylight. Adult females weigh as much as five pounds and hurtle through the air on wings more than five feet across. Males are smaller and sleeker, with a top weight of about four pounds, but they’re equally powerful fliers. Lemmings aren’t their only prey: Snowy owls kill weasels and foxes, and even feed on other birds, including jaegers, eiders, and gulls. The female at right snatched a chick from a sandpiper nest. Diving out of the sky with long legs and talons outstretched, a snowy owl can drive away humans, dogs, even caribou that wander too close to its young.

Birds that remain in the polar north through winter manage to find food despite three months of total darkness. These stoic owls rarely seek shelter, even from roaring winds. Their plumage protects them so effectively that adults can endure temperatures as low as 40 degrees below zero. “Snowy owls,” Seidensticker says, “are as well insulated as arctic foxes.”





The pure white feathers of a male delivering a lemming to his mate (left) do more than keep him warm. They also show that he's fully mature. Males don't lose the gray-brown banding that marks females and juveniles until they're three to four years old, and rarely breed before that. In years of peak lemming abundance, Holt and his team have observed older, highly aggressive males establishing nests with two different females. They hunt for both, and protect two territories that may each extend a half mile from their central nest mounds.

Bloody from tearing a freshly caught lemming into tiny mouthfuls, the female below fed each of her offspring in turn. Females typically lay eggs two days apart; chicks hatch at roughly the same interval. In a clutch of six or seven eggs, the first chick hatched may be two weeks old before its youngest sibling emerges. "We've seen no signs of competition or favoritism in the nest," Holt says. "Snowy owls nurture all their chicks, even the smallest."

Harry Potter novelist J. K. Rowling cast a snowy owl as her orphaned hero's courier and companion. That seems perfectly fitting: Swift, strong, beautiful, and dauntless in caring for their young, these winged icons of the Arctic are magically fascinating—to boy wizards and scientists alike.

MORE ON OUR WEBSITE

Slog across Alaska's tundra at nationalgeographic.com/ngm/0212, and meet more of these captivating "power owls" face-to-face.

The most aggressive parents—master hunters and brave guardians—raise the most chicks.



Peering at the world between cotton grass blossoms,
this four-week-old has already left the nest. Parents keep close watch and
provide regular food deliveries until chicks are eight to nine weeks
old and can fly and hunt on their own. By the time such bright-eyed fluff-balls
become fully fledged, the brief Arctic summer is ending, and
most of Barrow's snowy owls disperse to face
winter's icy challenges—alone. □

