Loons

Disconnected from their closest western kin by hundreds of miles and declining in numbers, Wyoming's loons are the rarest breeding bird in the state. Game and Fish wants to make sure they don't disappear for good.

Story by Christina Schmidt Shorma

Photos by Mark Gocke

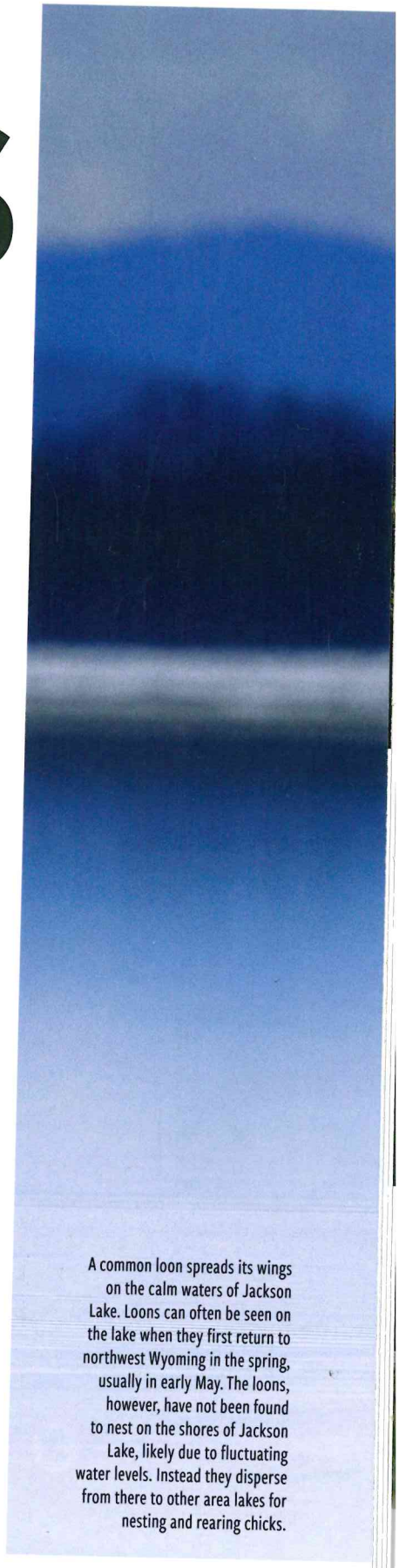
At some point around Sept. 11, 2014, loon No. 1048-00611 decided it was time. She spent the summer in northwest Wyoming, but with fall approaching, she lifted off Wolf Lake and began her migration south to the ocean for the winter. On April 14, 2015, she initiated her return journey and arrived back at her Wyoming residence on May 3. She carried on her leg a small, lightweight geolocator, a device that recorded and stored sunlight levels during her roundtrip journey, revealing her approximate latitude and longitude as she traveled.

Biologists recaptured her and removed the locator on July 2, 2015. Data downloaded from the device showed it had taken her approximately one month to arrive at her winter destination off the southern tip of the Baja Peninsula in Mexico. She spent 186 days on the ocean and made her return trip to Wyoming in just more than two weeks.

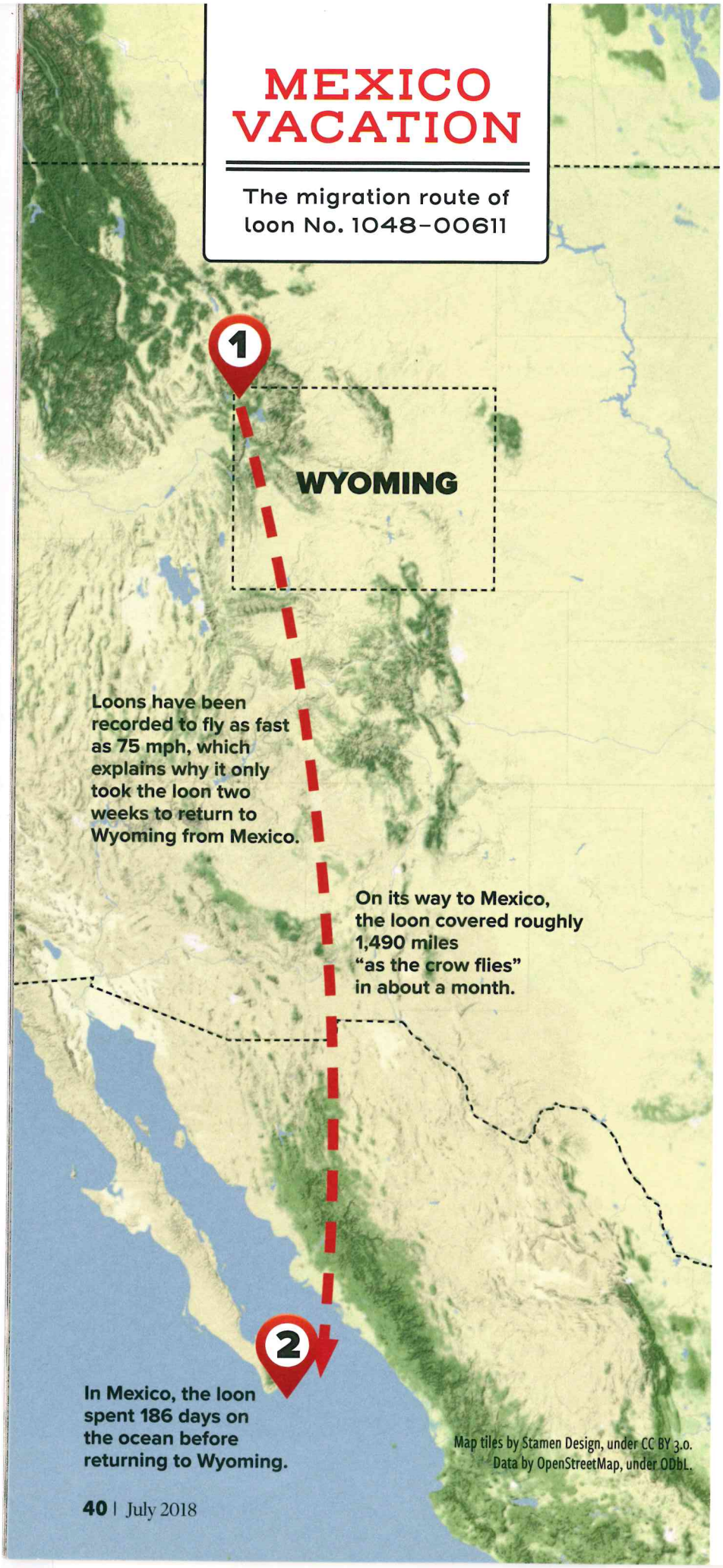
"For her to go that far south isn't necessarily unexpected, but it is very impressive," said Vincent Spagnuolo, loon program director for the Biodiversity Research Institute based in Maine. "That is quite the feat."

That year, loon No. 1048-00611 was one of just 16 territorial pairs and 10 unpaired loons counted in northwest Wyoming. These diving birds are also found in northwest Montana and northeast Washington, but Wyoming's nesting population is the smallest in the country. It's also the southernmost group of common loons (also known as an asylum) in the western U.S. They spread out on waters in Yellowstone and Grand Teton national parks and the Bridger-Teton and Caribou-Targhee national forests.

"The Greater Yellowstone Ecosystem population is one of the least studied populations of loons in North America," said Spagnuolo. "The GYE population is special in that it is one of the only populations of loons that is entirely disconnected from the rest of the species range. The nearest pair is 220 miles away in Montana and that



A common loon spreads its wings on the calm waters of Jackson Lake. Loons can often be seen on the lake when they first return to northwest Wyoming in the spring, usually in early May. The loons, however, have not been found to nest on the shores of Jackson Lake, likely due to fluctuating water levels. Instead they disperse from there to other area lakes for nesting and rearing chicks.



distance is much greater than the dispersal distance of loons. We are pretty sure this is an island population and there are no new loons coming in to rescue the declining population."

Common loons are listed in the Wyoming Game and Fish Department's State Wildlife Action Plan as a species of greatest conservation need and are considered the rarest breeding bird in the state. Wyoming loons have likely never reached large numbers in the recent past, but Susan Patla, a Game and Fish nongame biologist based in Jackson, believes the population is a remnant of a larger, more connected population that existed historically.

"We consider it the most at-risk of any bird species in Wyoming according to our ranking system," she said. "A random extreme weather or disease event can wipe out small populations. If for some reason these nesting loons disappear, I think it is highly unlikely that others would recolonize Wyoming."

Biologists with Game and Fish, the U.S. Forest Service and the National Park Service have monitored loons with varying intensity since the 1980s, recording a high of 21 mated pairs for several years between 1989 and 2006. An unexplained decline happened in 2007, with just 12 pairs found, though numbers have rebounded to 20 pairs and 14 unpaired individuals in last year's count.

Beginning in 2013 with backing from all the agencies, the Biodiversity Institute led a five-year research project to monitor the population, study habitat, identify threats and search for previously undiscovered birds in the area. It built upon a pilot project in 2012 to investigate the decline and conservation status of loons in the Greater Yellowstone Ecosystem, funded by Yellowstone National Park and Game and Fish in collaboration with the institute.

The Ricketts Conservation Foundation, a nonprofit organization created by businessman and philanthropist Joe Ricketts, funds the current study. The foundation focuses on wildlife conservation projects in northwest Wyoming, with a goal of "re-establishing loons in their former breeding range and helping populations recover where they are declining."

With lifespans of more than 30 years, loons require both freshwater and marine environments. Born on freshwater lakes, their first fall migration takes them to the ocean, where they spend the next three years maturing and developing adult plumage. They then return to the lake where they hatched or to water near their birthplace. As happens with many species, restless juveniles are most likely to disperse to new areas — 8 miles on average — but in very rare instances they have dispersed up to 60 miles from the lakes where they hatched.

Loon biologist Chris Persico with Biodiversity Research Institute holds an adult female loon wrapped in a towel after a night capture to band the bird and follow its travels. The capture crew has found the night captures to be fairly successful by playing a recorded loon call, locating it with a powerful light and then easing up to it quietly and netting it with a large dip net.

Not until they are 6 years old do they seek a mate and stake out a territory that the pair will vigorously defend against other loons while nesting and raising chicks. A breeding pair produces one or two eggs per year and even if two chicks hatch, only one usually survives.

"The chicks are actually quite competitive," said Patla. "When they're very small, they ride on the adult's back (in the water). I once saw two newborn chicks, one was on the parent's back and the other was trying to get on, but the larger sibling kept the smaller one off. When I came back later in the month, there was only one chick left."

The birds are superb divers and efficient predators of fish, which provide the majority of their prey in most areas. However, Spagnuolo said some Wyoming loons exist on lakes with no fish. In fact, his team has discovered some of the pairs most successful at raising chicks are found on fishless lakes.

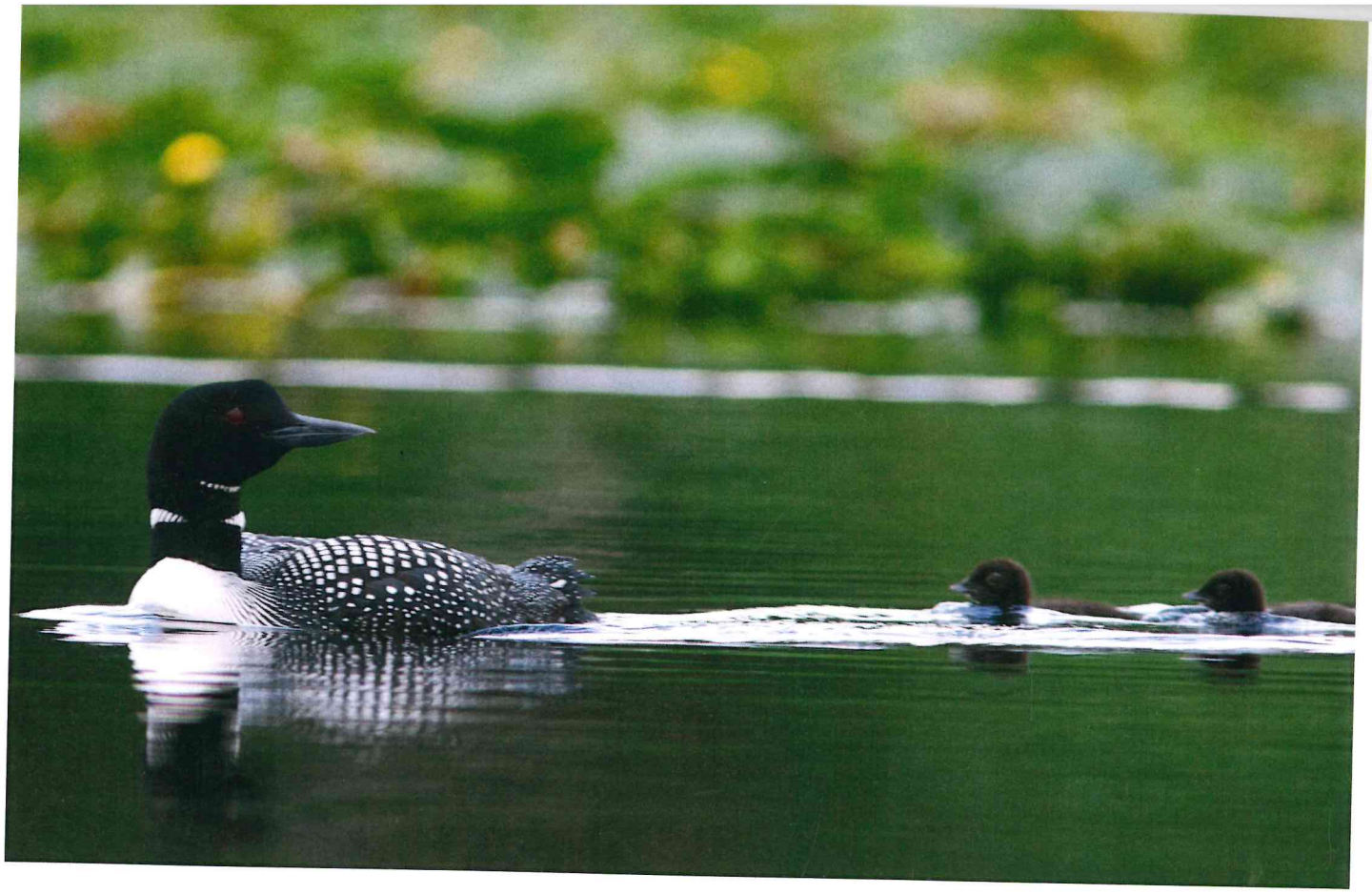
"From what we understand, they are relying entirely on aquatic invertebrates like dragonfly nymphs and leeches which is kind of bizarre for loons," he said. "I tell other researchers how productive these pairs can be and they can't believe it."

Biologists Chris Persico, left, and Carl Brown with Biodiversity Research Institute take measurements of an adult female common loon before fitting it with a geolocator leg band which determines the birds general location by the amount of daylight it receives over a few months.

There are several potential threats to loons in the Greater Yellowstone Ecosystem but many of them can be alleviated with management and simple choices made by people.

Loons are sensitive to fluctuating water levels while nesting. With legs positioned far back on the body, they have remarkable swimming and diving skills. However, this anatomical design makes walking difficult, requiring the birds to clumsily belly-crawl while on land.

To stay close to the safety of water and the promise of easier mobility, loons nest within a few feet of the water's edge. If water levels decrease too much, the birds often abandon a landlocked nest. Conversely, rising water levels may inundate and



An adult female loon keeps a careful watch over its two chicks, likely just days old. Loons will typically hatch two chicks, but often only one survives to fledgling (flying) age.

destroy a nest.

Changing water levels may explain why Jackson Lake has no loon pairs. Its large size and shoreline appear to provide good loon habitat, but its water is tapped for irrigation of agricultural lands in Idaho.

"We've had extreme fluctuations over the past decades," said Patla. "Some years there is hardly any water in the lake and other times it can be quite high."

But options exist for managing this situation in some cases. On one lake in the Caribou-Targhee National Forest, an Idaho irrigation company using the water worked with forest managers to leave water in the lake long enough into the season for the resident loon pair to successfully nest and fledge chicks.

Additionally, floating nesting platforms planted with vegetation are deployed in some lakes with great success. They rise and fall with water levels, remaining safely above water and providing protection against shoreline predators.

Anglers can play a big part in protecting loons and other birds by picking up discarded fishing line which can entangle and drown them. Loons are also susceptible to lead poisoning from fishing tackle, which can be prevented by using lead-free sinkers, jigheads and lures.

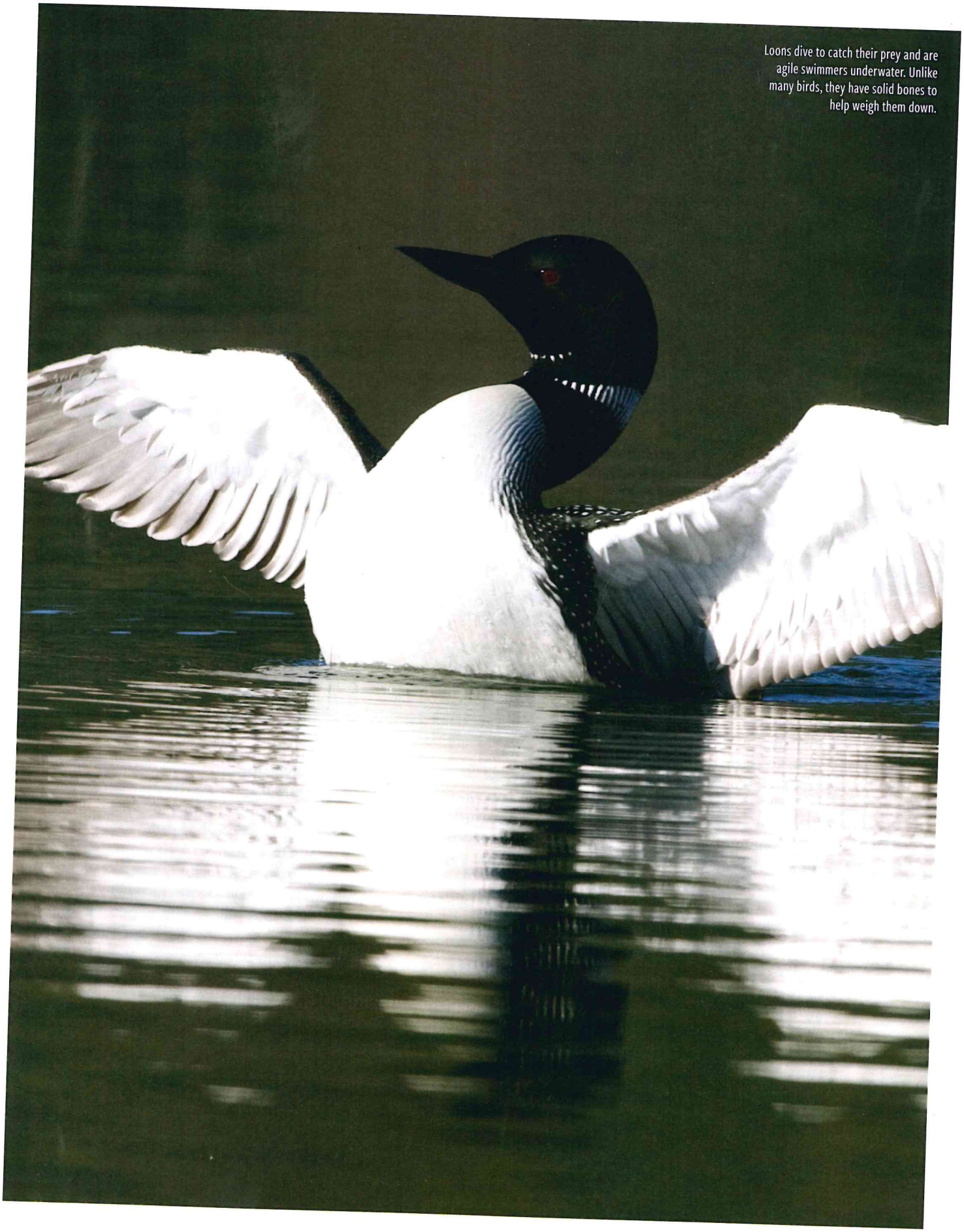
Also, anglers and other recreationists can assist researchers in identifying new loons by reporting sightings to Game and Fish. It is not uncommon to see loons from northern populations migrating through Wyoming in early spring and fall, but birds seen on Wyoming lakes from mid-June through early August are likely residents.

However, Spagnuolo and Patla caution against approaching loons too closely. This could distract the loons from caring for their young or result in them abandoning their nest.

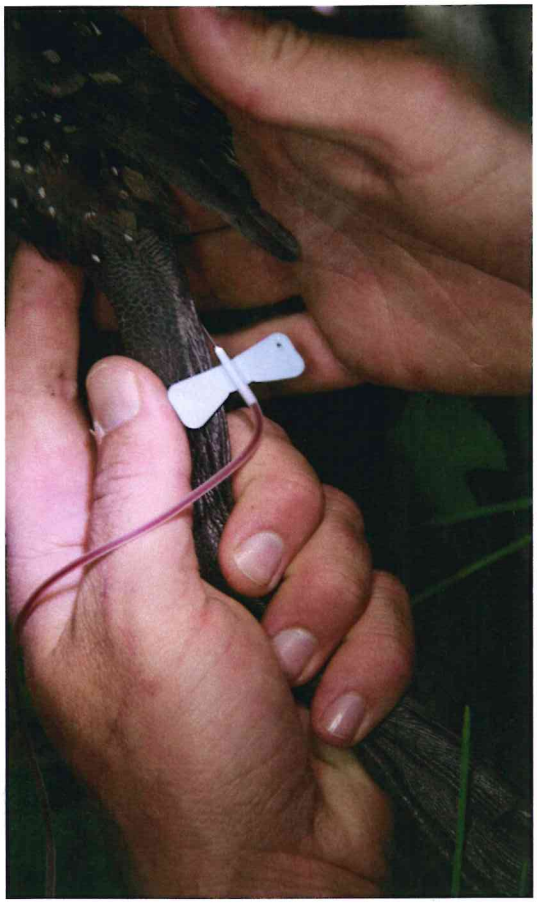
"If a loon looks alert or starts vocalizing, you are disturbing it, so that is something to be aware of," said Patla. "They might have a nest nearby that you can't see. It is pretty obvious if they are agitated and you need to leave the area."

Targeted, temporary closures of some areas in national forests and parks during the nesting season and other efforts to protect loons are in place, but these safeguards are lost when the birds leave northwest Wyoming.

"Loons can be adaptable to human disturbance but it is a long and complex process to achieve that," said Spagnuolo. "We have seen that best displayed in New Hampshire where over 40 years the Loon Preservation Committee has created a cultural change by educating people how to live with loons. We now see a point where lake residents and recreationists give them the space they need and the loons are becoming more comfortable. Reproductive success is increasing or perhaps normalizing as a result. But it takes a lot of time and effort and with the GYE population, we don't have that time. We don't really have the luxury to slow play this and hope for the best. We could do everything we can to protect breeding loons in the GYE and we might still lose this battle."



Loons dive to catch their prey and are agile swimmers underwater. Unlike many birds, they have solid bones to help weigh them down.



Above: A blood sample is drawn from the leg of an adult female loon to test for any abnormalities, such as the presence of lead or mercury, which can be lethal to loons across their range. At right: Vincent Spagnuolo, loon program director for the Maine-based private wildlife research firm called the Biodiversity Research Institute, holds a common loon chick while its mother receives a geolocator leg band and biological samples are collected north of Jackson.

But hope for the northwest Wyoming loon population received a boost in the summer of 2015 when four loons were spotted on lakes in the Wind River Range, an area with only scant reports of loons in the past. Two birds were observed the next year and three in 2017.

The Winds hold more than 1,000 lakes, but how many might provide good loon habitat is yet unknown. The high altitude and remoteness make these mountains difficult to access and survey, especially early in the spring. But researchers have documented loons living there in the summer with some occasional pairing taking place — two birds on one lake in one year, just one bird the next year and then a pair coming together on another lake in another part of the range the following year. A successful breeding by a pair in the Wind River Range has not been documented, but it has likely taken place.

"This pairing seems to be quite ephemeral, with pairs only lasting a year or two," said Spagnuolo. "And it matches what we have seen in terms of behavior and dynamics in other parts of the range where there are low densities of loons. They just need a few more numbers to hit a critical mass that has some stability and consistency to fuel enough productivity to increase numbers."

Spagnuolo said research suggests the Greater Yellowstone Ecosystem could potentially support more than twice the current population, but how many can be sustained in the Wind River Range has yet to be learned from future research.

"We are still trying to figure out what the potential is in the Winds," he said. "It could be a lot more than we expect. It is a fascinating story that we are trying to backfill in and we are excited to see where it goes. I do feel confident we are doing appropriate research to make well-informed management decisions in the future."

— Christina Schmidt Shorma came to Wyoming in 1999. She has a degree in wildlife management and a minor in journalism. She lives with her husband Dustin in Dayton, and is the new public information officer for Game and Fish in the Sheridan region.

JULY 2018

$2.00

WYOMING WILDLIFE

TENKARA
An old art offers a simple way to ease into fly-fishing

WINDY FISHING
All is not lost when the Wyoming wind blows, learn how to adapt your angling

GRASS ROOTS
Partnerships keep Thunder Basin working for wildlife, land, people

LOONS
Game and Fish studies how to protect a disappearing population