CANADIAN LAKES LOON SURVEY

Celebrating 40 years

of conservation, research, and monitoring

Photo: Karen Fahrlander

BIRDS CANADA
OISEAUX CANADA

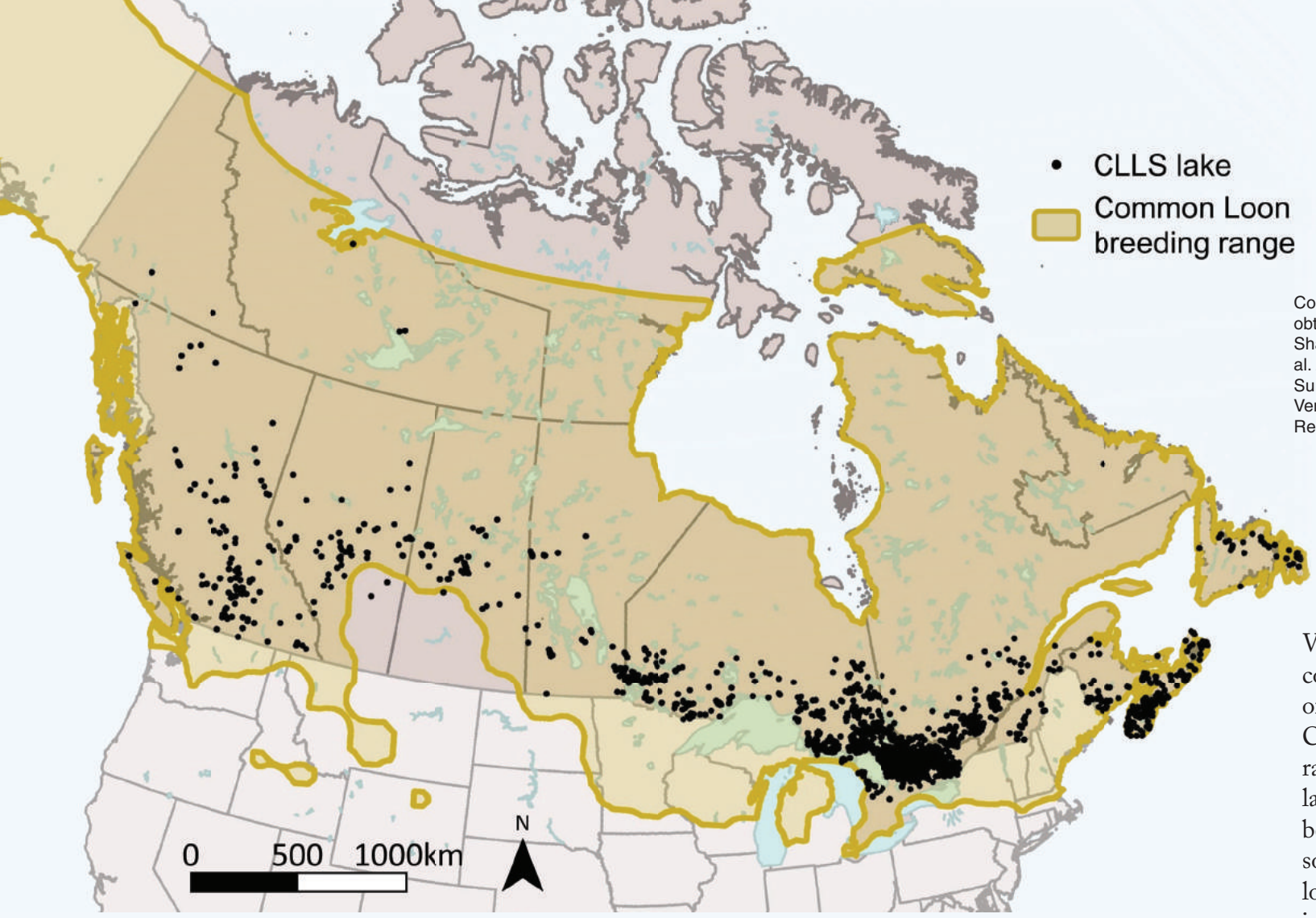
A 40-YEAR UPDATE

Photo: Mark Peck

The Canadian Lakes Loon Survey (CLLS) is one of the longest-running and most popular monitoring programs delivered by Birds Canada. Launched in Ontario in 1981, the CLLS expanded to include most of southern Canada in the early 1990s. In 40 years, over 4000 volunteers have monitored Common Loons on 4500 lakes. This impressive effort has generated massive amounts of information, which has been used to achieve the following important outcomes:

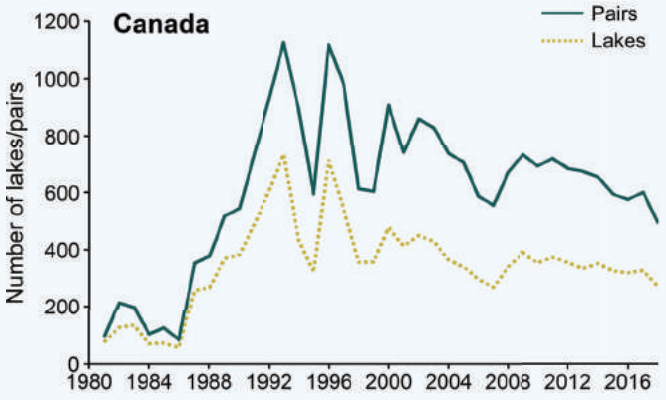
1. Assess trends and patterns in the number of young that Common Loons produce—or "productivity"—at scales ranging from individual lakes to all of southern Canada;
2. Identify factors that have an important influence on loon productivity;
3. Contribute to loon and lake conservation; and
4. Increase public awareness of the importance of loons and healthy lakes.

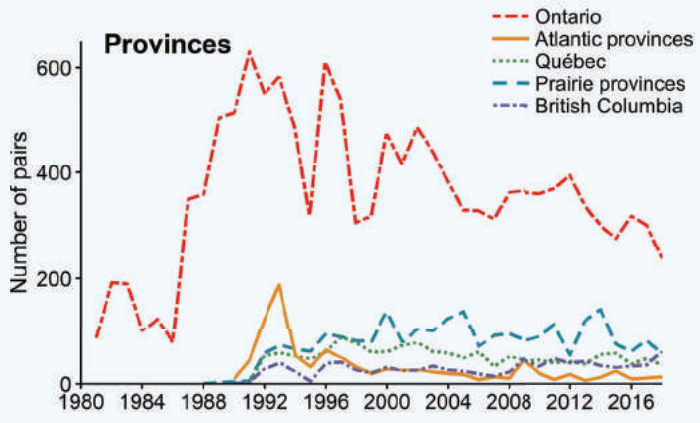
In this report, learn the value of monitoring Common Loons (p. 4-5); explore long-term trends in loon productivity (p. 6-7); find out what factors influence loon productivity (p. 8-19); learn how acid rain, mercury, and climate change could influence the future of loon conservation (p. 20-21); review what you can do to help protect Common Loons (p. 22-25); and read how the CLLS achieves conservation action (p. 26-29).



Common Loon breeding distribution was obtained from the USGS Relative Abundance Shapefiles for Geographic Analyses: Sauer et al. 2017. The North American Breeding Bird Survey, Results and Analysis 1966 – 2015. Version 2.07.2017. USGS Patuxent Wildlife Research Center, Laurel, MD.

Volunteers with the CLLS collect survey data across most of the southern portion of the Common Loon's breeding range. Over the years, up to 735 lakes and 1125 loon pairs have been monitored per year. In some provinces, the number of loon pairs surveyed was insufficient to calculate separate trends in productivity specific to those provinces; for these, we combined data into larger regions where possible (Prairie provinces, Atlantic provinces).





THE VALUE OF MONITORING

Why track productivity?

Loon productivity, or the number of young that loons produce, gives an indication of how well this species is doing and warns us about whether the health of our lakes is deteriorating. Because loons are top predators, any problems lower down in the food chain can be reflected in loons. The lake where a loon chick hatches is typically its only source of food. This means that any changes that decrease the number of fish, like increasing pollution, can cause food shortages for young loons, which hurts their ability to grow and survive, and ultimately reduces their numbers. In addition, as we shall see later in the report, some pollutants, like mercury, reach higher and higher concentrations as they move up each step in the food chain. These pollutants can reach high levels in loons' bodies and impact them in ways that reduce chick survival.

Small chicks are vulnerable to predators and rely on their parents for food and protection.

Adult Common Loon with chicks less than a week old. Photo: Missy Mandel

Six-week-old young have a high chance of survival and provide a good measure of Common Loon productivity.

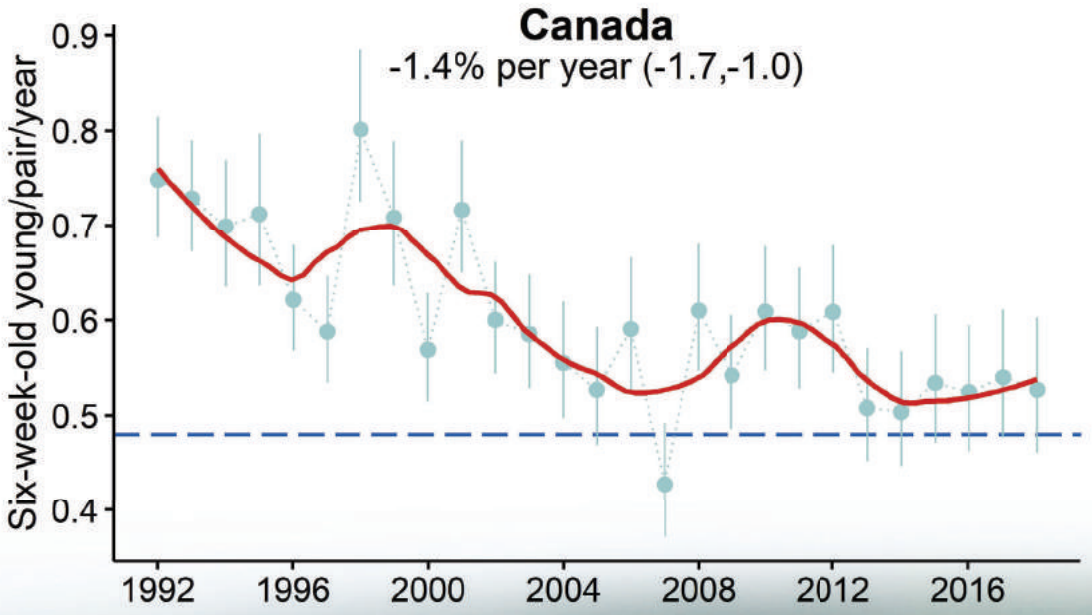
Productivity must stay above 0.48 six-week-old young per pair per year to prevent population declines.

Common Loons eat mostly fish, but they also eat invertebrates, like this crayfish, which is being fed to a chick at least 6 weeks old. Photo: Bruce Moffat

Measuring productivity

In loons, productivity is typically measured as the number of six-week-old young per pair per year. Six-week-old loons are about two-thirds the size of an adult loon, which means they have a much lower chance of being eaten by a predator, compared to younger chicks. Therefore, the number of six-week-old young per pair is a reliable indicator of the number of loon chicks that survive to adulthood. Measuring loon productivity predicts future changes in the number of adult loons. A minimum of 0.48 six-week-old young per pair per year on average is needed to maintain stable numbers of adult loons. If loon productivity drops below this rate, then loon populations could start to decline.

TRENDS IN PRODUCTIVITY



Trend across Canada

Common Loon productivity declined over the past three decades across Canada at a rate of -1.4% per pair per year. In the early 1990s, loons produced on average over 0.7 young per pair per year. This fell to about 0.55 in recent years. Although this may not seem like a big decrease, if this trend continues and productivity falls below 0.48 (shown by the blue horizontal dashed line), then loon populations will likely start to decline.

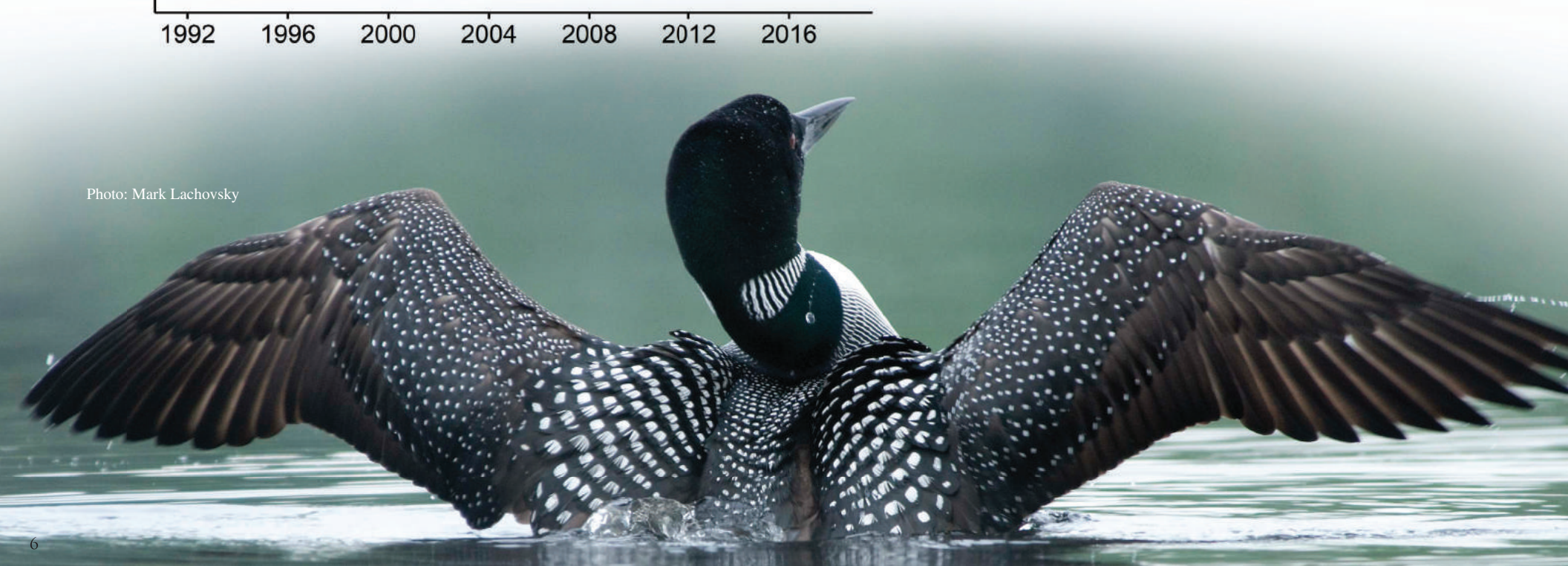
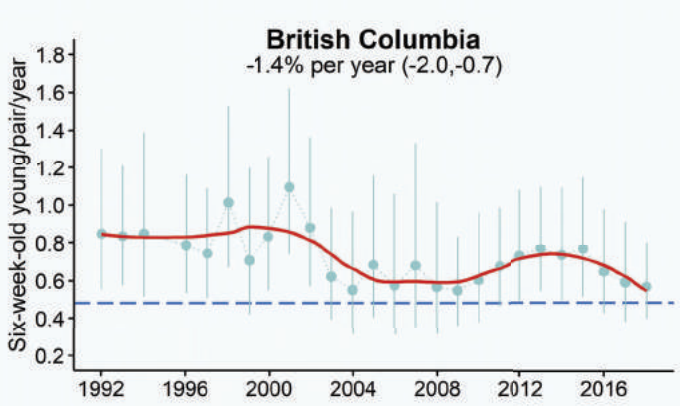
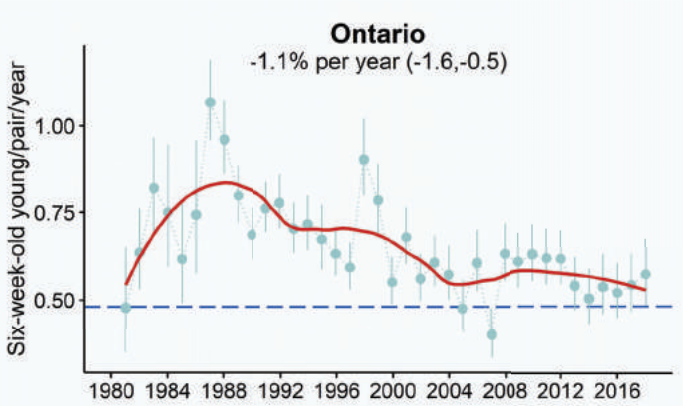


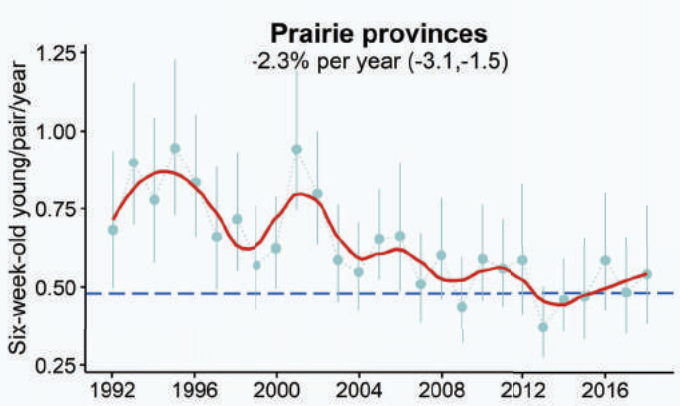
Photo: Mark Lachovsky

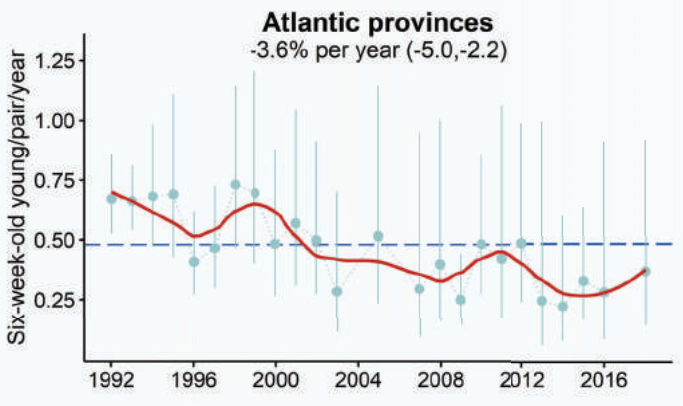
Trends by province or region

Looking at provinces or combinations of provinces separately, Common Loon productivity declined nearly everywhere. Declines over time were steepest in the Atlantic provinces (Newfoundland, Prince Edward Island, New Brunswick, and Nova Scotia), where productivity dropped below 0.48 young per pair per year in most years starting in the early 2000s. This is concerning, as it suggests that loon populations are especially in trouble in this region. Declines over time were shallower in British Columbia, Ontario, and the Prairie provinces, where so far, productivity remains above 0.48 young per pair per year in most years.



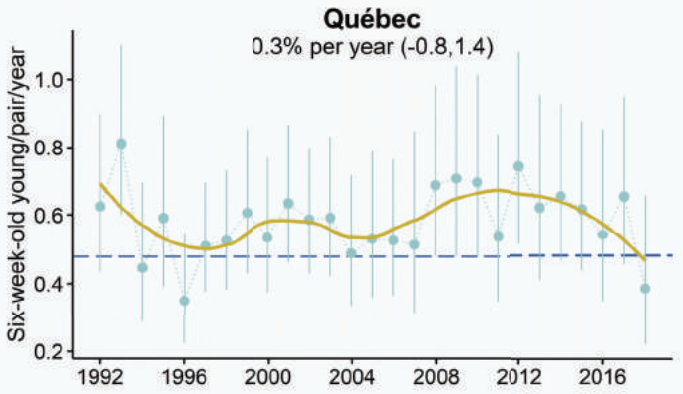






Understanding where and why productivity is declining is important for Common Loon conservation.

The only province or combination of provinces where productivity did not decline over time was Québec. Although productivity varied from year to year, there was no statistically significant change in the number of six-week-old young per pair per year over time.



Technical details – Trends are given as percent changes in the number of six-week-old young per pair per year (% per year), followed in parentheses by 95% confidence limits (lower, upper). Circles show model-predicted values ± 95% confidence intervals (vertical lines); lines of best fit are LOESS smoothers. Blue horizontal dashed lines indicate the minimum productivity required to support a stable population (0.48 young per pair per year). Note the difference in scale of the vertical axes among locations. Trends and annual productivity were modelled according to a Poisson distribution with lake as a random intercept. The following model-predicted values with especially large confidence intervals were omitted for clarity: 1995 in British Columbia and 2004, 2006, and 2017 in the Atlantic provinces.

WHAT DRIVES PRODUCTIVITY?

Adult Common Loon with young.
Photo: Mark Peck

Overview

Common Loons experience numerous factors that influence the number of young they produce. In the pages that follow, we use CLLS data to examine the influence of multiple factors known to drive Common Loon productivity (p. 10-21). Although we explore several different factors, there are others that either directly or indirectly impact Common Loon productivity that are not examined here. We begin with factors that have been found to influence or are thought to influence loon productivity, but are not linked to declines over time: human disturbance, early spring temperatures, and eagles and cormorants. We end with three additional factors that interact in complex ways and may be causing declines in loon productivity, in what we dub the "acid-mercury-climate hypothesis" (p. 16-21).

For more details on CLLS analyses and for further discussion, please see the following scientific articles:

McNicol, D. K., M. L. Mallory, and H. S. Vogel. 1995. Using volunteers to monitor the effects of acid precipitation on Common Loon (*Gavia immer*) reproduction in Canada: The Canadian lakes loon survey. Water, Air, and Soil Pollution 85:463-468 (https://doi.org/10.1007/BF00476872).

Weeber, R. C. 1999. Temporal patterns in breeding success of Common Loons in Ontario, 1981-1997. Unpublished report to Environment Canada, March 1999 (https://birdscanada.org/download/cllstrndrpt. pdf).

Badzinski, S. S., and S. T. A. Timmermans. 2006. Factors influencing productivity of Common Loons (*Gavia immer*) breeding on circumneutral lakes in Nova Scotia, Canada. Hydrobiologia 567:215-226 (https://doi.org/10.1007/s10750-006-0043-1).

Tozer, D. C., C. M. Falconer, and D. S. Badzinski. 2013. Common Loon reproductive success in Canada: the west is best but not for long. Avian Conservation and Ecology 8(1):1 (http://dx.doi.org/10.5751/ACE-00569-080101).

Bianchini, K., D. C. Tozer, R. Alvo, S. P. Bhavsar, and M. L. Mallory. 2020. Drivers of declines in common loon (*Gavia immer*) productivity in Ontario, Canada. Science of the Total Environment 738:139724 (https://doi.org/10.1016/j.scitotenv.2020.139724).

Bianchini, K., R. Alvo, D. C. Tozer, and M. L. Mallory. 2021. The legacy of regional industrial activity: is loon productivity still affected by acid rain? Biological Conservation. 255:108977 (https://doi.org/10.1016/j.biocon.2021.108977).

Bianchini, K., R. Alvo, D. C. Tozer, and M. L. Mallory. 2021. Late ice-off negatively influences breeding Common Loons (*Gavia immer*). Northeastern Naturalist 28:65-76 (https://doi.org/10.1656/045.028.0105).

Photo: Mark Peck

HUMAN DISTURBANCE

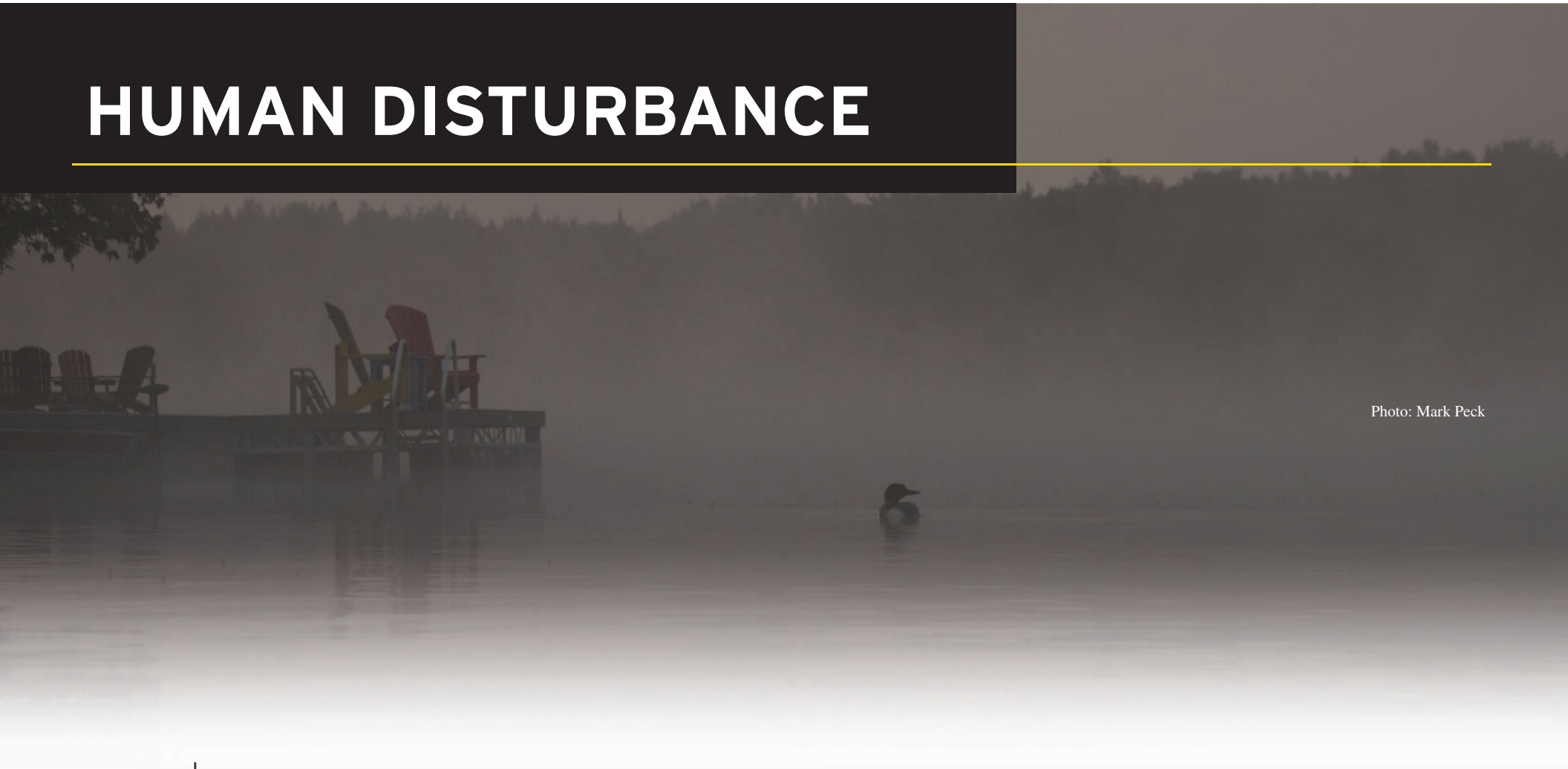
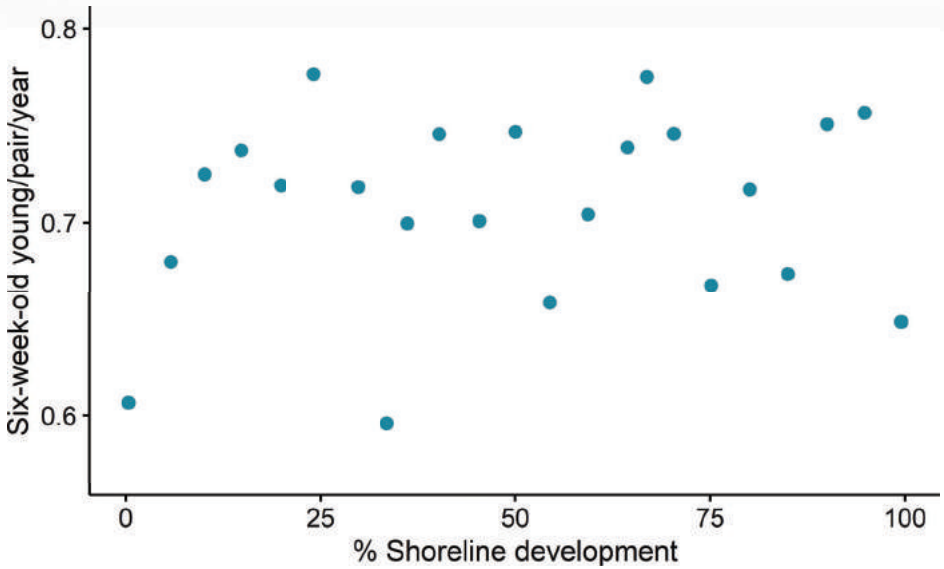
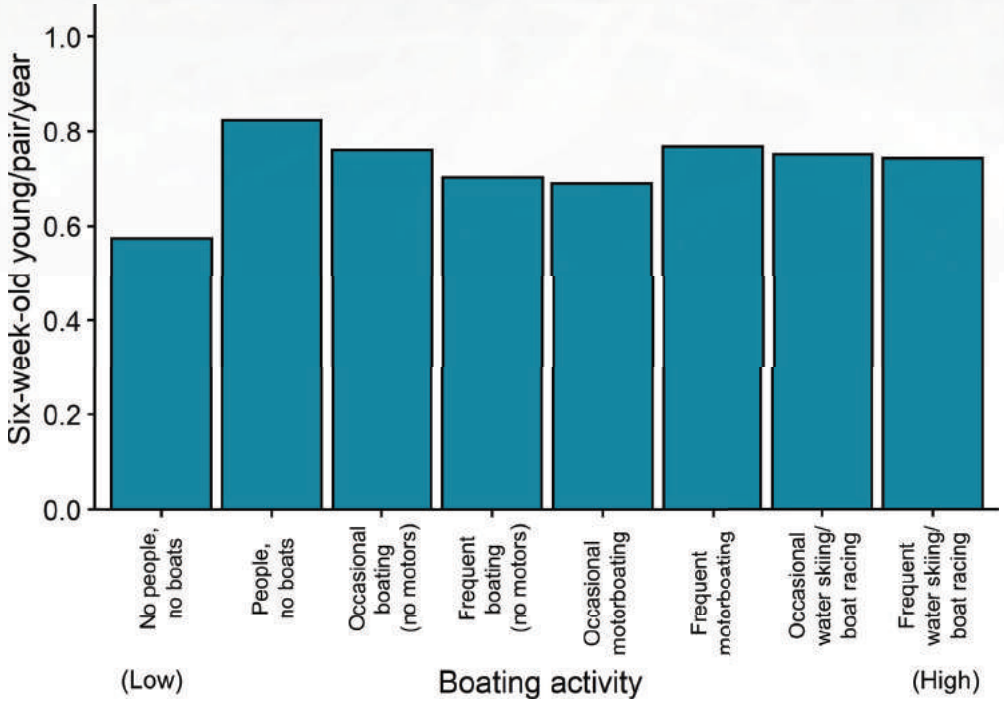


Photo: Mark Peck



Shoreline development and boats pose important challenges for Common Loons. Loons build their nests along shorelines, just above the water level, so they have easy swimming access. They are particularly fond of small, isolated islands for nesting, which helps them avoid mammalian predators. As a result, shoreline development often degrades or eliminates loon nest sites. Development can also increase the abundance of predators, such as raccoons that eat eggs, and gulls that eat mostly chicks. Boating can lower productivity by creating wakes that wash out nests, disrupt adults while they are incubating eggs, or distract adults as they feed and protect their chicks. Boat collisions are also a significant source of mortality for loon adults and chicks.

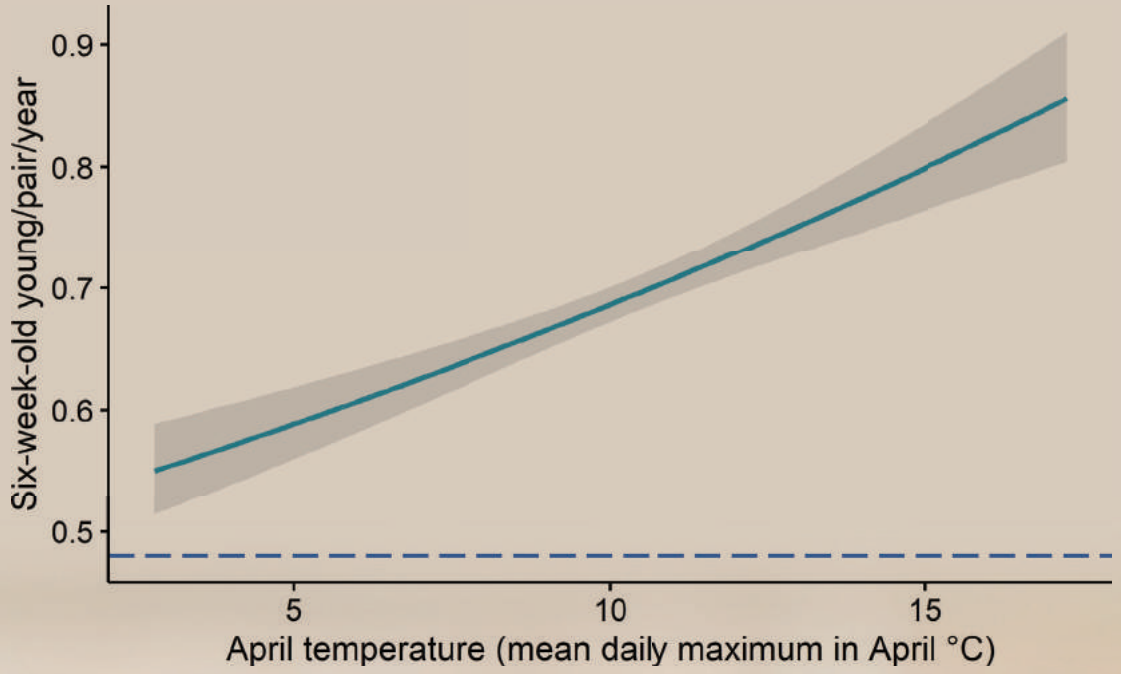
Common Loon egg in nest. Photo: Darwin Park



It is therefore surprising that CLLS data show no relationship between loon productivity and shoreline development or boating activity. This is probably because most territorial loon pairs chose to avoid heavily disturbed and developed areas, which typically offer poor, if any, nest sites. Therefore, although the CLLS data suggest that shoreline development and boating activity are not contributing to declines in loon productivity, it is important to realize that high levels of these two factors can significantly reduce the number of territorial pairs in many locations.

Technical details – Circles and bars show model-predicted values; confidence intervals are not shown for clarity. Graphs are based on data collected between 1982 and 2004 on 1284 lakes for shoreline development and 1184 lakes for boating activity in Ontario. Productivity was modelled according to a Poisson distribution with lake as a random intercept.

EARLY SPRING TEMPERATURES



CLLS data show that there are fewer young per pair in years with cooler April temperatures and more young per pair in years with warmer April temperatures. This likely reflects black fly abundance and ice-off timing as described below. Early spring temperatures do not appear to be linked to declines in productivity because April temperatures are increasing in many locations over time and warmer April temperatures yield higher numbers of young per pair. However, it is important to realize, as we describe in more detail later (p. 20-21), that warming temperatures throughout the whole year may be reducing productivity in other ways.

Technical details – Line shows model-predicted values with 95% confidence intervals shaded in grey. Blue horizontal dashed line indicates the minimum productivity required to support a stable population (0.48 young per pair per year). Graph is based on data collected between 1981 and 2015 on 1549 lakes in Ontario. Productivity was modelled according to a Poisson distribution with lake as a random intercept.

Common Loons compete for breeding territories in complex ways, such as during this "circle dance" between a nesting pair and a visiting stranger. Photo: Mark Peck

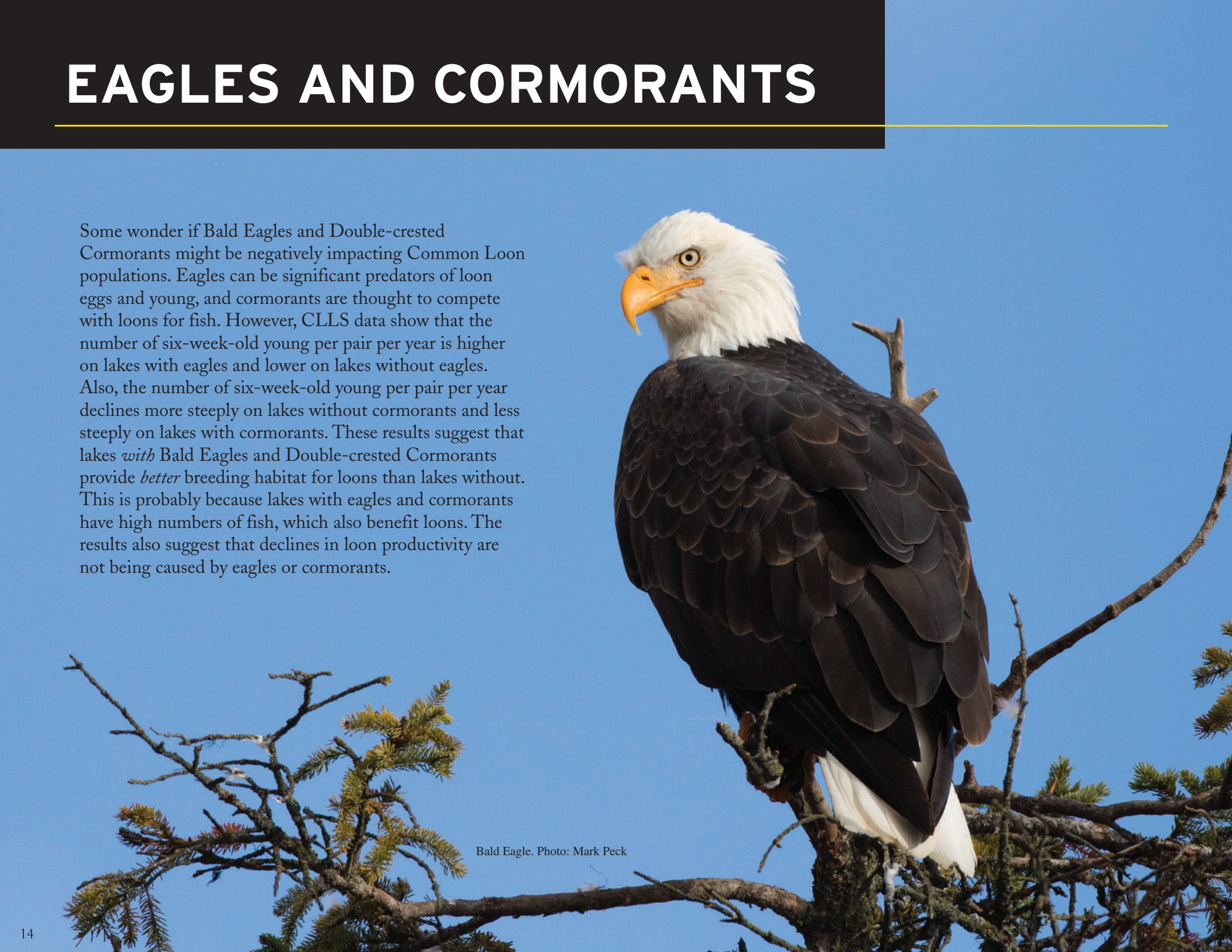
Common Loons tolerate clouds of blood-thirsty loon black flies while incubating their nests. Photo: Linda Grenzer

Black flies – The black fly, *Simulium annulus*, has such a strong preference for Common Loon blood that it has been dubbed the "Loon Black Fly." This black fly feeds almost exclusively on loons while they are incubating their first sets of eggs. In years with high black fly numbers, loons are harassed so much they abandon their nests at higher rates, but some re-nest successfully later in the same season once the flies have died off. When Aprils are cooler, small streams take longer to dry up, meaning there are more hatching sites for stream-loving black fly larvae. Cooler April temperatures also increase the lifespan of biting adult black flies. Thus, cooler Aprils mean more biting flies harass loons and more loons abandon their first nests, and even though some successfully re-nest, many don't, and productivity is lower because of it.

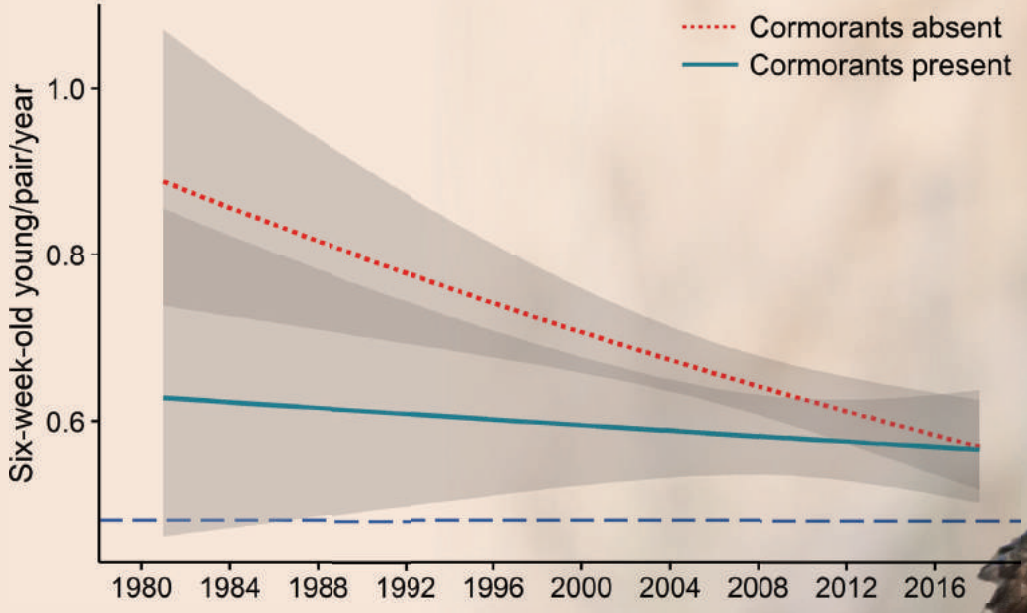
Ice-off timing – Loons typically arrive on their breeding territories in the spring just before ice-off, when ice melts completely from the surface of the lakes. Ice-off occurs later in years with cooler spring temperatures, which delays the arrival of breeding loons and shortens their breeding season. Late ice-off may also lead in various ways to lower fish abundance, such as when prolonged ice cover reduces dissolved oxygen in the water, causing fish to suffocate. Thus, cooler Aprils and the late ice-off that results may lead to lower loon productivity in ways that are currently unclear, and which are unrelated to the loon black flies.

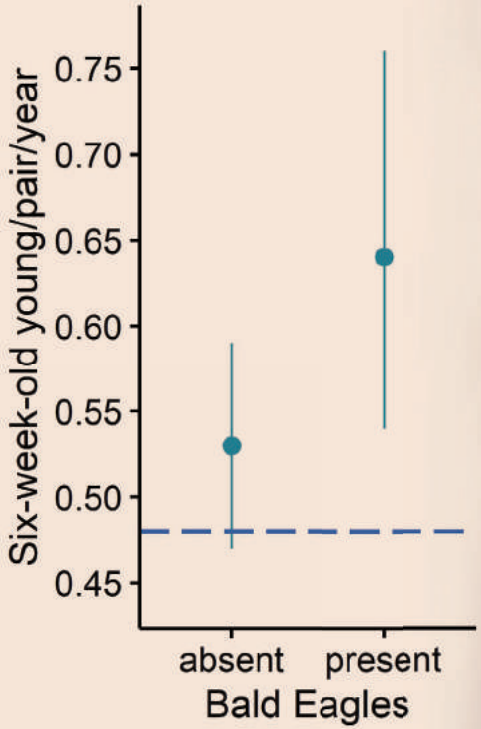
EAGLES AND CORMORANTS

Some wonder if Bald Eagles and Double-crested Cormorants might be negatively impacting Common Loon populations. Eagles can be significant predators of loon eggs and young, and cormorants are thought to compete with loons for fish. However, CLLS data show that the number of six-week-old young per pair per year is higher on lakes with eagles and lower on lakes without eagles. Also, the number of six-week-old young per pair per year declines more steeply on lakes without cormorants and less steeply on lakes with cormorants. These results suggest that lakes *with* Bald Eagles and Double-crested Cormorants provide *better* breeding habitat for loons than lakes without. This is probably because lakes with eagles and cormorants have high numbers of fish, which also benefit loons. The results also suggest that declines in loon productivity are not being caused by eagles or cormorants.



Bald Eagle. Photo: Mark Peck

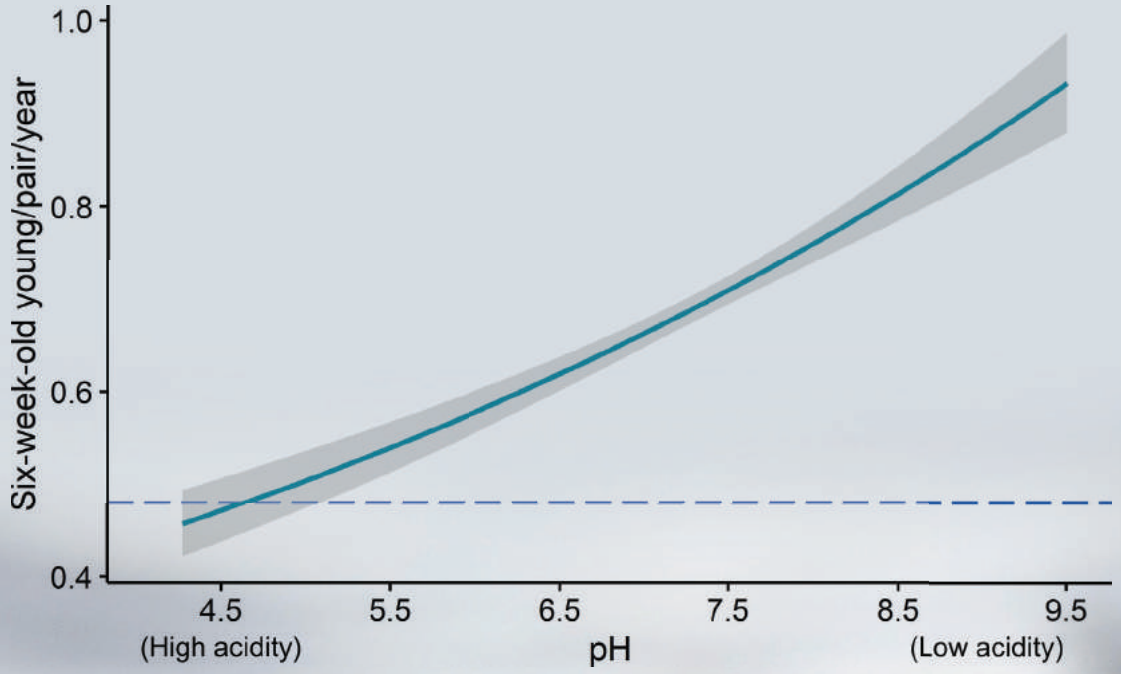




Technical details – For eagles, circles show model-predicted values, and lines indicate 95% confidence intervals. For cormorants, lines show model-predicted values with 95% confidence intervals shaded in grey. Blue horizontal dashed lines indicate the minimum productivity required to support a stable population (0.48 young per pair per year). Graphs are based on data collected between 1981 and 2018 on 335 lakes for eagles and 393 lakes for cormorants in Ontario. Productivity was modelled according to a Poisson distribution with lake as a random intercept.

Double-crested Cormorant. Photo: Mark Peck

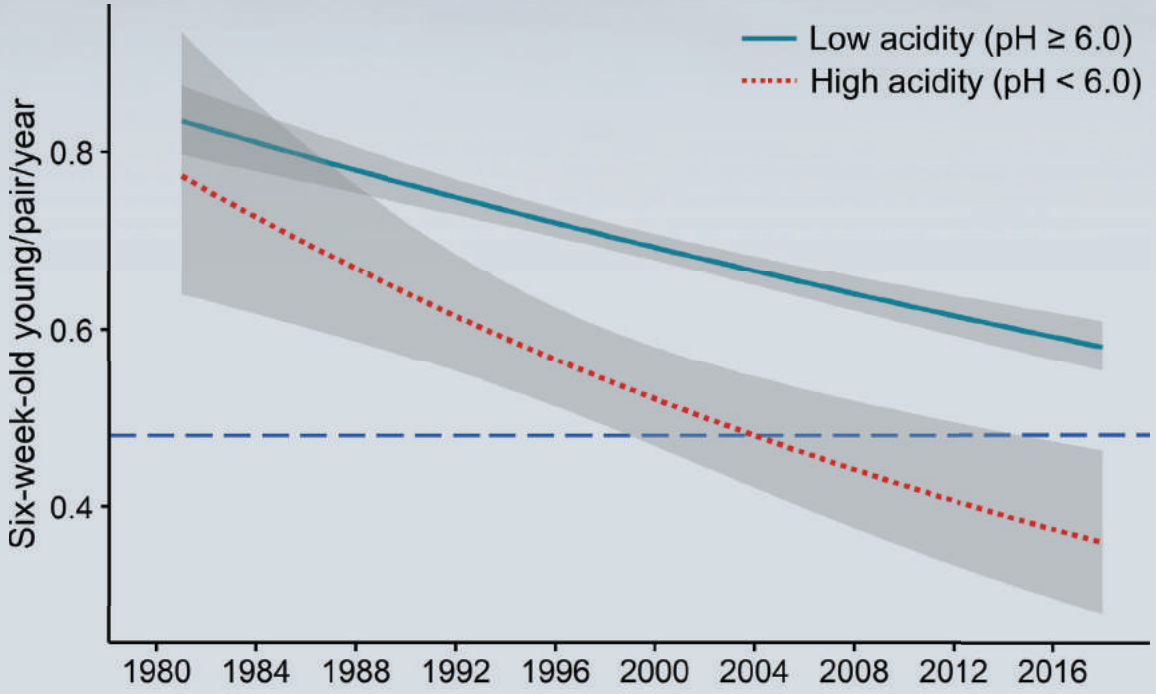
ACID RAIN



In the 20th century, acid precipitation (commonly referred to as "acid rain") caused widespread damage to lakes and forests, particularly in areas like Sudbury, Ontario, where local industries produced a lot of acid rain. Acid rain is caused mostly by air pollution from burning fossil fuels. Pollutants released into the air mix with water and other chemicals, creating acidic precipitation that leaches toxic metals into water. These pollutants and the acids themselves then interfere in many different ways with fish growth, reproduction, and survivorship, meaning there are fewer fish to support young loons in more acidic lakes (i.e., lakes with lower pH). High acidity also increases the amount of mercury in the food chain, putting loons at greater risk of mercury toxicity in more acidic lakes (see p. 18-19 for more details). CLLS data show that loon productivity is lower and declines in productivity are steeper over time on more acidic lakes. Indeed, over the past four decades loon productivity declined in the acid-rain-ravaged area around Sudbury, Ontario, by -6.3% per year, whereas productivity declined across the rest of Canada by -1.4% per year.

Juvenile Common Loon, old enough to find its own food with occasional help from its parents. Photo: Mark Peck

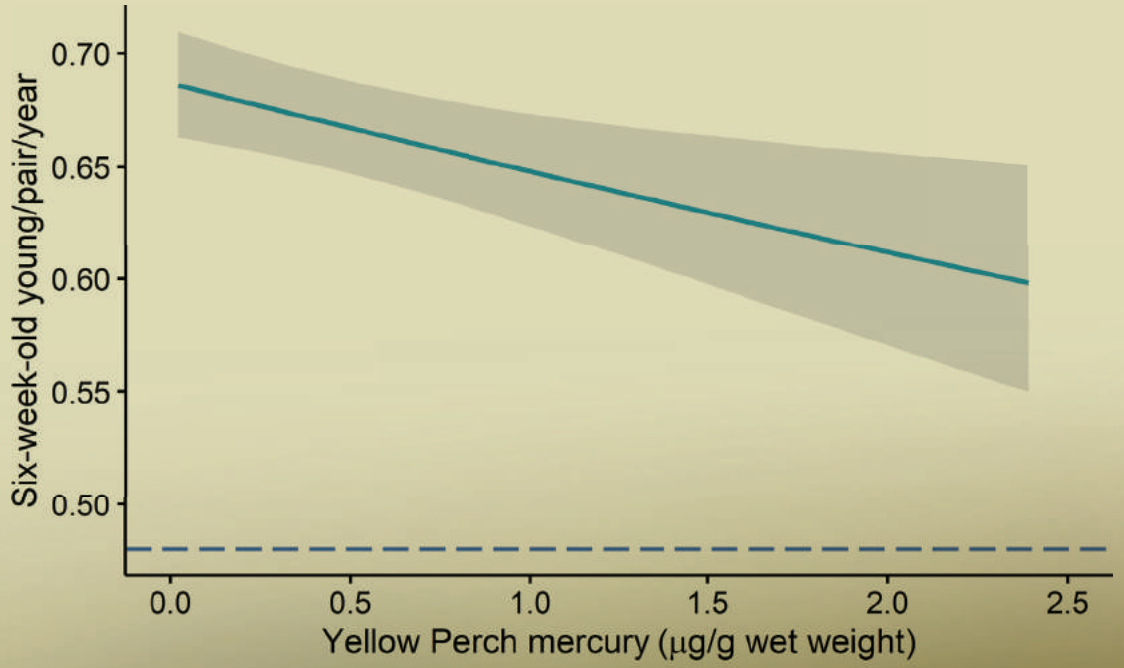
Two Common Loon chicks take shelter under their parent's wing for warmth and protection, while the other parent offers food. Photo: Mark Peck



This is concerning because, over the years throughout the U.S. and Canada, there have been large reductions of up to 90% in the pollution that causes acid rain, and acidity has declined in many but not all lakes. Yet despite these improvements, loons continue to raise fewer and fewer young over time on more acidic lakes for reasons that remain unclear, but may be related to mercury and climate change (see p. 18-19 and p. 20-21 for more details).

Technical details – Lines indicate model-predicted values with 95% confidence intervals shaded in grey. Blue horizontal dashed lines indicate the minimum productivity required to support a stable population (0.48 young per pair per year). Graphs based on data collected between 1981 and 2018 on 1207 lakes in Ontario. pH was averaged across years for each lake. Productivity was modelled according to a Poisson distribution with lake as a random intercept.

MERCURY



Mercury is a toxic metal that alters animal behaviour. It is released to the atmosphere mainly during the combustion of fossil fuels and makes its way into lakes in rain and runoff. Adult loons with higher levels of mercury in their bodies are more lethargic and spend less time defending territories, incubating eggs, and feeding chicks. Chicks with higher levels of mercury take fewer energy-saving rides on the backs of adults, have weaker immune systems, and are worse at evading predators. As a result, loon productivity is lower in loons with higher levels of mercury in their bodies. Furthermore, mercury is influenced by acid in important ways. For mercury to enter the food chain and make its way up to loons, its chemical structure must be changed through a process called "methylation" to form methylmercury. Methylation is more common in acidic waters because acid-loving, "methylating" bacteria are more abundant and more active, meaning that loons are at greater risk of mercury toxicity in more acidic lakes.

Common Loon chicks compete for a food item, while their parent keeps a watchful eye. Photo: Missy Mandel

Common Loon chicks. Photo: Mark Lachovsky

CLLS data show that loons produce fewer chicks in areas where their favourite food, Yellow Perch, contains higher levels of mercury. Mercury levels in fish are increasing over time in many regions due to climate change, and increasing mercury toxicity in loons may be contributing to declines in loon productivity, particularly the steeper declines occurring on more acidic lakes (see p. 16-17 and p. 20-21 for more details).

Technical details – Lines indicate model-predicted values with 95% confidence intervals shaded in grey. Blue horizontal dashed lines indicate the minimum productivity required to support a stable population (0.48 young per pair per year). Graph based on data collected between 1981 and 2018 on 596 lakes in Ontario. Mercury concentrations were averaged by watershed for each decade. Productivity was modelled according to a Poisson distribution with lake as a random intercept.

CLIMATE CHANGE IMPACTS

Photo: Jim Richards

Climate change could worsen the problems that acid rain and mercury pose for loons by intensifying changes in water levels and by raising water temperatures. Lower water during droughts exposes lake sediments to oxygen, which, through various chemical reactions, results in greater acidity when water levels rise again. Greater acidity, in turn, increases the activity of acid-loving, methylating bacteria, such that mercury also increases in fish and loons (see p. 18-19 for more details). Furthermore, higher water temperatures caused by climate change also increase the activity of methylating bacteria, leading to even more mercury in fish and loons. Therefore, as water level changes become more frequent and dramatic, and as water temperatures continue to rise with ongoing climate change, loons are expected to experience repeated exposure to high levels of mercury, particularly on acidic lakes, leading to further reductions in their productivity. We refer to this as the "acid-mercury-climate hypothesis," which we predict will play an important role in future research and conservation efforts to mitigate threats to Common Loon productivity.

“For me, the CLLS means protecting, preserving, and sustaining the health of our lakes for our grandkids and future generations.”

—Serge Bélanger; Lake Torment, NS; CLLS surveyor since 2009

Photo: Mark Peck

ARE LOONS IN TROUBLE?

Photo: Jim McCabe

The short answer is yes: Common Loons appear to be in trouble in Canada due to the declining trends in productivity shown by CLLS data. Luckily, however, there is still a large Canadian breeding population of at least an estimated 240,000 pairs. As well, CLLS data from across Canada show that loons currently produce about 0.55 young per pair per year on average, still above the 0.48 minimum required for a stable population. Nevertheless, if productivity declines below this threshold, which is currently where it appears to be headed, then the Canadian population will start to fall apart.

The good news is that there is still time to prevent loon population declines. As we have shown throughout this report, Common Loon monitoring by thousands of dedicated CLLS volunteers is helping to identify and understand why productivity is decreasing. With this information, we can make changes now to help conserve Common Loons and to prevent further declines of this cherished symbol of pristine northern lakes and wilderness.

Common Loon chicks sometimes rest on the backs of their parents until they are 3 weeks old. Photo: Mark Peck

“We always cherish the presence of loons on the lake, and get enthralled by their iconic vocalizations. Participating in the CLLS for many years has intensified our love for, and protection of, these mysterious birds.”

—Anneliese Kaufmann; Lake of the Woods, MB/ON; CLLS surveyor since 1997

“As a keen birdwatcher, it was an easy decision to do what I love by participating in the CLLS, and help Birds Canada gain much needed data to help find out why reproductive rates of loons are in decline. Our pontoon boat is a perfect vessel for loon surveying. I also kayak to areas I cannot access with the “toon.” I reach out to our local cottage association for extra "eyes" and to report any loon sightings to me. This has been extremely helpful. I’ve found out there are more loons on the lake than I knew. People are very keen to report and find out what is going on.”

—Catherine Graydon; Gloucester Pool, ON; CLLS surveyor since 2019

HOW YOU CAN HELP

There are many meaningful ways that you can help support Common Loon conservation, research, and monitoring:

- Support Birds Canada (birdscanada.org). Birds Canada is the country's leading science-based bird conservation organization. By supporting Birds Canada, you help provide CLLS volunteers and staff with the tools they need.
- Take part in the CLLS (birdscanada.org/loons). By monitoring Common Loons, you are collecting critical information to help conserve loon breeding pairs and their chicks. Many thanks to all of the volunteers who already participate in the CLLS!
- Slow down and minimize boat wakes to avoid washing out loon nests and separating small chicks from their protective parents.
- Use non-toxic, non-lead fishing tackle to prevent lethal ingestion of lead by loons, which can be a leading cause of mortality and occurs when loons catch hooked fish or when they mistake lost weights for pebbles or grit to aid in digestion.
- Let native wetland plants grow in wide strips along shorelines to provide shelter for small chicks and fish habitat to feed loons.
- Dispose of fishing lines properly and keep lakes garbage-free to help loons avoid getting entangled or injured and to avoid attracting garbage-feeding loon predators.
- Lobby for loon and lake conservation and support loon and lake research.
- Perhaps most importantly, decrease your ecological footprint, especially by using less electricity, fossil fuels, and other resources, which will help mitigate the negative effects on loon productivity described by the acid-mercury-climate hypothesis (see p. 20-21 for more details)!

Photo: Bert de Tilly

“I became interested in loons with help and encouragement from Birds Canada. Recruiting lake residents to participate in the CLLS was a way to not only encourage residents to keep track of the loons they were observing, but also a way to get to know folks on the lake, and learn ways to save loon habitat.”

—Leigh (Dixie) Olmstead; Big Basswood Lake, ON; CLLS surveyor since 2016

Common Loons are often injured during violent confrontations with other loons over ownership of breeding territories. Photo: Bert de Tilly

“The CLLS means the world to me and I look forward every summer to monitoring “our” loons. Mostly I do it because I love the loons and want to help protect them in any small way that I can. Besides, it’s fun. Our summers at the cottage would never be the same without the loons on the lake at night with their haunting calls.”

—Deborah Stevenson; Norway Lake, ON; CLLS surveyor since 2001

CLLS IN ACTION

The CLLS conserves loons in many different ways. Below is a selection, all of which have widespread, ongoing benefits for loons, lakes, people, and other wildlife.

- The CLLS is one of the most effective measures of the threat of acid rain for wildlife. CLLS information helped establish the Canada-U.S. Air Quality Agreement in the early 1990s, which substantially reduced acid emissions by up to 90%.

- Each year, CLLS volunteers install education and conservation signs at public venues, and with our advice, in specific places and situations where loons need protection. CLLS participants also invest countless hours engaging the public in loon and lake conservation.

- The CLLS provides advice on loon nesting rafts, which are artificial, floating islands that protect nests from rising and falling water levels. Loon nesting rafts should only be installed in specific situations that are best identified using multiple years of CLLS data in consultation with a qualified biologist.

- CLLS data bring about better stewardship and healthier lakes across Canada each year. Poor loon productivity, as illustrated by CLLS data, is often used by community groups to foster action to address the problems underlying it through cooperation among lake users.

- The CLLS is a unique and critical early-warning system for identifying threats to lake health across Canada. As we have seen in this report, CLLS information helps us learn what is wrong with our lakes and identify what we should do about it.

Adult Common Loon with a 2-3 week old chick. Photo: Karen Fahrlander

"The CLLS for me means an outing on nearby Bell's Lake. When I do see loons it gives my heart a lift, since I only occasionally see them there. I am reminded of summer holidays at the lake as a child when the haunting loon calls were common."

—Nikki May; Bell's Lake, ON; CLLS surveyor since 2016

Common Loons give at least four different calls, each of which conveys specific information to its audience: wail, tremolo, yodel, and hoot. Photo: Mark Peck

"My late father Donald Hurst, educator and environmentalist, introduced me to canoeing and loons at a very early age. He had a wonderful loon call that he would use to communicate with the loons. He participated in the CLLS on the French River, ON, for decades. Fond memories of his survey visits have encouraged me to continue with the loon survey at our cottage."

—Deborah Doherty; North Channel French River and Lake McGregor, ON; CLLS surveyor since 2012

“The CLLS has helped make me and my family more aware of loons and other winged neighbours.”

—Ferg Devins; Lake of the Woods, MB/ON; CLLS surveyor since 2014

“A long time ago, before there were personal watercrafts, seadoos, GPSs, or cell phones, and you had nothing but a topo map to guide you, we were young and strong and bushwhacked with our canoe from one hidden lake to another. One day we heard a loon distress call, over and over again from afar, and when we reached the small lake we saw an adult loon with a large injured young that could not dive. One of the most moving moments in our many years of observing loons, and there were many. Feeling so helpless in these moments contributed to our commitment to protect loons from avoidable interference by humans. And that is why we have surveyed 10 lakes over 39 years and shall continue until we no longer can. The CLLS is one of the most valuable tools to monitor the health of our lakes, ultimately gathering information about our own well-being. Our loons are our canaries in the mine.”

—Dieter and Marlies Schoenefeld, Lake Onaping, McFarlane Lake, and many others, ON; CLLS surveyor since 1982.

“I love the CLLS and anxiously await its arrival each spring. The loons nest conveniently on a small island offshore from my cottage and I can see the nest easily with binoculars. My daughter and two granddaughters spent most of their summer at the lake, and the two little girls were enchanted, watching the two chicks grow up in our bay. It just makes my day. I spend all my early mornings sitting on the dock, waiting for the loons.”

—Caryn Phoenix-Renz; Kasshabog Lake, ON; CLLS surveyor since 2009

“What could be better than doing science for an iconic species of wild Canada? The presence of loons, and their calls, became part of my summers at the age of 12, with my first summer at an Algonquin Park canoe trip camp.”

—S.R. “Sandy” Gage; Bella Lake, Oudaze Lake, Canisbay Lake, ON, and others; CLLS surveyor since 1981

“Through my years of involvement with the CLLS I have learned so much about loon life...it has been a deeply personal education journey. It has also been a real awakening of my curiosity through my annual surveys by kayak. Further it has given me the chance to involve, educate, and celebrate loon life with the Crimson Lake Cottage Owners Association and its members. We have all become loon lovers, advocates, and habitat protectors. I believe our lake and loon awareness is at an all time high. I was first introduced to the Loon Survey when a long-time friend of the family asked me if I could assist her in her later years. My interest was sparked and we have never quit since. I am now grooming both my daughter and all 5 grandkids to gradually take over my job...succession is important!”

—Darwin Park; Crimson Lake, AB; CLLS surveyor since 2008

“The lake I survey is not easy to access, involving dragging the canoe up a small creek, but the rewards are substantial. Along with the loons, sightings of Least Bittern, Black Tern, Trumpeter Swan, Common Tern, and sometimes shorebirds make it worthwhile. Without the impetus of the CLLS and the knowledge that my data will help the loons, I probably wouldn’t have done it as often as I did. Thank you for creating that opportunity for me.”

—Stew Hamill; Cranberry Lake, ON; CLLS surveyor since 1997

“I got involved decades ago when loons were being disturbed by boaters on our lake. That year, a chick died as a result. The lake level here also fluctuates quite a bit, so that by late summer it is too low even for kayaking in the area where one of the loon pairs nests. Over the years, I have written about loon conservation in our lake association newsletter, sent to over 250 members twice yearly, and we have installed a loon nesting platform. Until 5 years ago, we had only 2 loon pairs. Now we have 3. And now loons are respected. Cottagers take action to ensure the safety of our loons. Thank-you, CLLS.”

—Carol Hewitt; Horseshoe Lake, ON; CLLS surveyor since 1998

“I love to take part in the CLLS and help monitor the health of the loon population on my lake. It also gives me the opportunity to be a visible steward to educate people about better boating and fishing practices.”

—Missy Mandel; Kahshe Lake and Healey Lake, ON; CLLS surveyor since 2013

The Canadian Lakes Loon Survey (CLLS) is a program of Birds Canada, the country's leading science-based bird conservation organization. Our mission is to conserve the wild birds of Canada through sound science, on-the-ground actions, innovative partnerships, public engagement, and science-based advocacy. The CLLS is funded, almost entirely, by Birds Canada members and supporters.

For information on participating in the CLLS or on loon and lake stewardship, visit birdscanada.org/loons. For more information, please contact:

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Acknowledgements
A special thank-you goes to the thousands of CLLS participants who volunteered their time to collect four decades of data. Kathy Jones, Tracy Barber, Ted Maddeford, and a network of stewardship and conservation groups and associations provided key support. Kathy Jones and Ellen Jakubowski made valuable comments that improved the report. Thanks to all of the CLLS participants and supporters who donated beautiful photographs for this report. We are grateful to all of the researchers who generously shared their data: Ken Minns provided additional pH data and Dan McKenney and Pia Papadopol provided local weather data. A big thank-you goes to Sullivan Scott and Nicolas Love for helping collect field data on lakes near Sudbury, Ontario. The Long Point Waterfowl and Wetlands Research Program of Birds Canada, CLLS participants, Birds Canada supporters, and the organizations shown at the bottom of the page are gratefully acknowledged for their support.

Suggested citation
Bianchini, K., D. C. Tozer, R. Alvo, S. P. Bhavsar, and M. L. Mallory. 2021. Canadian Lakes Loon Survey: Celebrating 40 years of conservation, research, and monitoring. Birds Canada, Port Rowan, Ontario, Canada. 30 pp.