The INSTITUTE for BIRD POPULATIONS

MAPS Chat

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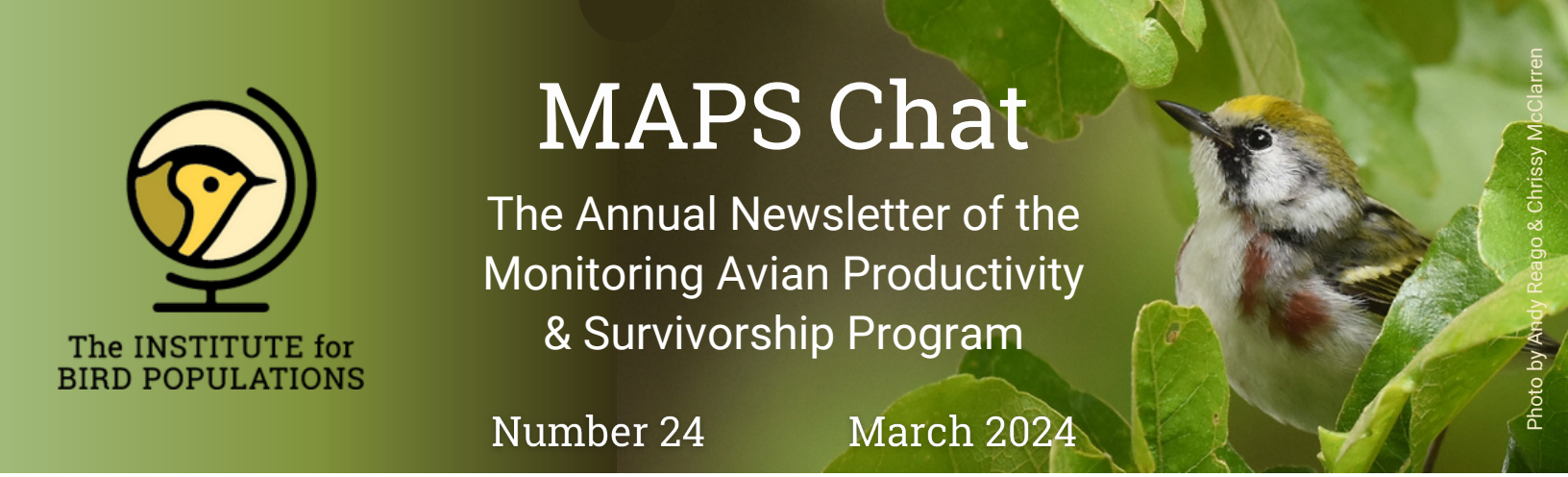

Bad Timing: As Spring Comes Earlier Due to Global Warming, Breeding Songbirds Aren't Adjusting Fast Enough

A new study using data from the MAPS program estimates that songbirds could produce 12% fewer young by the end of the century.

To be successful in many human endeavors- comedy, real estate, warfare- you have to have good timing. This holds true for most living things. Critical events in an organism's lifecycle must be timed so that they occur when weather conditions are suitable and food or other necessary resources are available. Plants leaf out in the spring once the likelihood of a hard frost has dropped. Insects emerge in time to take advantage of the plants' new leaves and flowing sap. In biology, the timing of seasonal or cyclical events in an organism's lifecycle is called "phenology."

But sometimes an organism's timing is off and a "phenological mismatch" occurs. Scientists have hypothesized that climate change, which is leading to earlier springs, may cause more phenological mismatches because different organisms may shift their life cycles to rapidly changing conditions at different rates. They also hypothesize that increased mismatch could have possibly dire consequences. For

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instance, if a flycatcher arrives on the breeding grounds before insects emerge, she may starve. If she arrives too late, she may miss out on the early spring glut of bugs, and, with less food and less time, may produce fewer offspring.

There is ample evidence of species shifting their phenology, and theoretical support for


Golden-crowned Sparrow eating a spring blossom. Photo by Nicole Beaulac.

the potential negative consequences of phenological mismatch, but there have been only a few documented examples of these consequences in the wild. Widespread evidence of detrimental effects of mismatch over broad groups of species on large geographic scales was lacking, likely because it's hard to test these hypotheses without long-term, multi-species, geographically broad datasets- and there are very few datasets that meet those criteria. But in a paper published last year in the Proceedings of the National Academy of Sciences, Dr. Casey Youngflesh of Clemson University, along with colleagues from IBP, UCLA, and three other universities, used data from the MAPS program to examine phenological mismatch between breeding songbirds and spring "green-up" (when deciduous plants leaf out.)

The researchers found that spring is indeed occurring earlier than it did in past decades and that birds are responding to this shift in timing, but not quickly enough. For every 1 day earlier that spring arrives, the timing of bird breeding changes by less than 1/3 of a day. For migratory species, arrival on the breeding grounds was slower to adjust to earlier springs than breeding itself. The species that best matched their breeding to changes in the arrival of spring tended to be resident species or shorter-distance migrants.

This phenological mismatch has consequences. The researchers showed that, when birds experienced larger phenological mismatches, they produced fewer young. This loss of productivity could have significant consequences for bird populations. "Based on projected climate change, the number of young that birds produce could decline by about 12% by the end of the century," says Youngflesh. "Which is problematic given that many of these North American species have already undergone substantial declines over the last 50 years."

Why does phenological mismatch occur? It's possible that different organisms use different cues to time life cycle events. For instance, temperate zone plants and the insects that feed on them typically rely on soil and air temperature as cues for when to "green up"


Photo by Keith Williams

Hermit Thrush. Photo by Christa R./Flickr

and when to "eat up." Many birds, especially migratory species, use a variety of other cues, including day length, to time their migrations. Migratory species cannot assess temperature, food resources, or other conditions on the breeding grounds before they get there, so proxy cues such as lengthening days, or conditions on the non-breeding grounds, are what send them north. If these cues are no longer accurate, there is a potential for birds to arrive and/or start breeding later in relation to spring green-up and the accompanying glut of insects. Like late partygoers who arrive after all the best snacks are gone, these birds could miss out on important food resources that fuel their reproduction, especially because changes in the timing of the onset of spring conditions may be happening faster than birds can respond to them.

In the future, the researchers would like to examine the relationship between bird and insect phenology. Unfortunately, data on Iinsects are not yet available at the same scales as bird data. This study presents the broadest-scale evidence yet of the demographic impacts of phenological mismatch due to climate change and the MAPS program played a critical role, says Youngflesh:

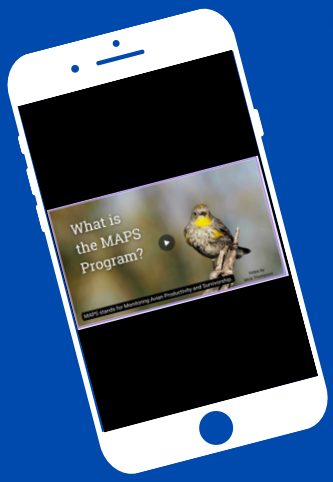
> *There are a number of great data resources available for birds. But MAPS is the only one where we can get demographic information at such broad spatial and taxonomic scales and over such a long period of time. Because ecological systems are so complicated it's very important to have large amounts of data that cover the variation that exists over space/time/across species.*

These insights into the impacts of climate change on breeding songbirds are only possible thanks to the thousands of dedicated MAPS program bird banders who had faith that their years of study, pre-dawn wake-ups, attention to detail, and meticulous record keeping would eventually build a dataset that would allow researchers to answer some of the most important questions in bird conservation.

MAPS banders hard at work before sunrise in Nebraska. Photo by Madison Sutton

A message to MAPS contributors from Dr. Casey Youngflesh. Click the green play button on the video or scan the QR code with your phone if you're reading a print copy.

MAPS in a Nutshell Video



IBP has produced a short video (less than 5 minutes) about the MAPS Program that you can share with visitors to your banding station or anyone else interested in your work. Use the QR code below to view the video on YouTube. You can also watch it on the MAPS program page on our website or by clicking this button:

Play MAPS Video

1st Annual MAPS Photo Contest

We want to see MAPS banders in action and share your important work with the world! Of course we love photos of birds- they are the stars of the show- but we also love photos of banders! Whether it's a posed group photo or a candid shot of your team hard at work at the banding table we want to see the people of the MAPS community too.

The 5 top-rated photographers will recieve their choice of an IBP hoodie OR a copy of the 2nd (new) edition of Peter Pyle's *Identification Guide to North American Birds, Part 1*. **Entries are due by Sept. 1st, 2024.**

You can submit photos individually or in batches of 10 using this **FORM**. To upload photos using the form you will need a Google (Gmail) account. If you don't have a Google account, and don't want to create one, PLEASE FILL OUT THE FORM & SUBMIT IT ANYWAY so that we have your information. Then email your photos separately to Meredith at mswalker@birdpop.org

By submitting your photos you are giving IBP permission to use them–with attribution to the photographer–on our social media accounts, and in newsletters, reports and other publications.

To be eligible for a prize in the contest, photos must meet IBP's guidelines for public-facing communications. To read the guidelines, click this link **MAPS Photo Contest Guidelines**.

If you have any questions, please email IBP's Communications Specialist, Meredith Walker, at mswalker@birdpop.org.

A Treasure Trove of Information in the Tip of a Feather

The MAPS database isn't the only important database MAPS banders contribute to- many of you also contribute feather samples to the Bird Genoscape Project (BGP) which is co-directed by frequent IBP collaborator Dr. Kristen Ruegg and IBP Board member Dr. Thomas Smith. The BGP uses DNA extracted from the tips of those feathers and advanced genetic techniques to create genoscapes- maps of genetic variation across a species' range. Creating a genoscape requires lots of feather samples from across the range and the MAPS network is uniquely suited for gathering these samples.

Genoscapes can be used to discover where different breeding populations of migratory birds spend the non-breeding season and to tease apart how different populations are affected by climate change. Two recent studies from the BGP, one on American Redstarts and one on Canada Warblers, used data from feathers collected by MAPS banders. These studies demonstrate how taking a moment to take a feather sample can yield important insights for bird conservation.

The American Redstart study, authored by Matthew DeSaix and a suite of co-authors including IBP research ecologist Jim Saracco, examined migratory connectivity, or where different breeding populations of this species spend the non-breeding season. DNA was extracted from 330 redstart feather samples

Photo by Wendy Miller

collected during the breeding season by MAPS banders and many others. Researchers at the BGP used genetic analysis to define five genetically distinct breeding populations of American Redstarts (see Fig. 1): Western Boreal, Basin Rockies, Southern Temperate, Northern Temperate, and Maritime Provinces. They then matched samples collected from redstarts on the non-breeding grounds- which extend from Central America to the eastern Caribbean and south to Colombia- to the different breeding populations to determine the origins of the non-breeding birds.

These findings have important conservation implications. For instance, the Maritime Provinces population of redstarts, which is the second fastest declining population, spends the non-breeding season in eastern Colombia. Deforestation and fragmentation of forests for timber and agriculture are accelerating in this region. Other warbler species that migrate to

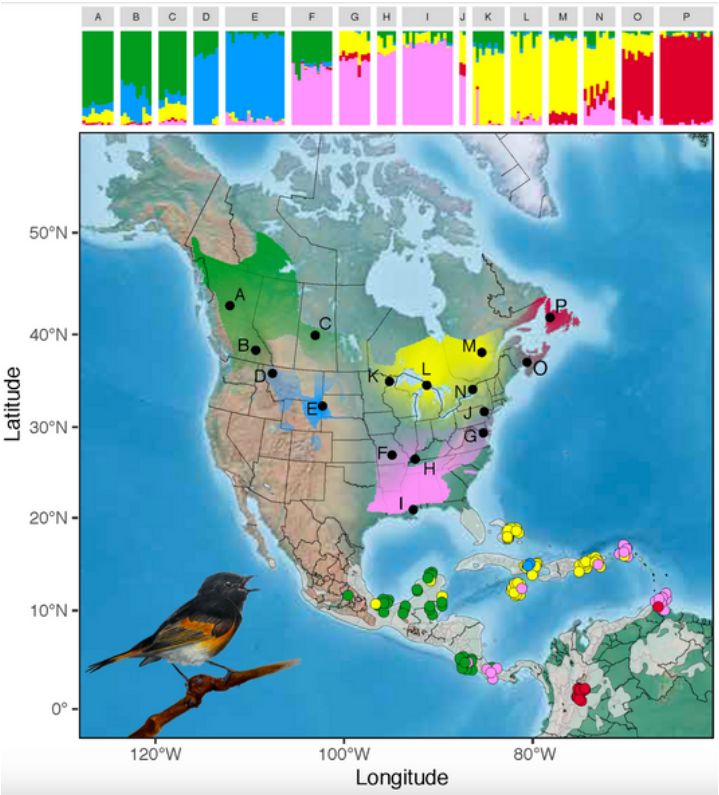


Figure 1. Map shows breeding populations of American Redstarts: green= Western Boreal, blue= Basin Rockies, pink= Southern Temperate, yellow= Northern Temperate, and red= Maritime Provinces.

eastern Colombia are also experiencing population declines, so conserving habitat in this region may be critical for conserving this population of American Redstarts.

Efforts to stop biodiversity loss focus not only on conservation of ecosystems and species, but also on preserving genetic diversity within species. Loss of genetic diversity can lead to problems due to inbreeding, but also limit a species' ability to adapt to climate change and other pressures. Researchers often designate "conservation units" within species that can be delineated by ecological or genetic traits. The Canada Warbler study, led by Caitlin Miller along with numerous collaborators (again including IBP's Jim Saracco) used feather samples collected from warblers on the breeding grounds to examine genetic variation in the species across the genome. They found evidence for 3 conservation units within the species: Northwestern, Eastern and Southern (Fig. 2.)

Genetic variance in each of these genetic groups was associated with different environmental parameters. Variance was associated with the seasonality of precipitation in the Northwestern unit, with amount of precipitation during the wettest month in the Eastern unit, and with warmer average temperatures in the Southern unit. These associations give scientists insight into how these different conservation units may respond to changes like warming temperatures or more intense precipitation predicted by climate change models. Many scientists predict that populations at the southern edge of a species range will be most affected by climate change due to rising temperatures. However, results of this study suggest the opposite may be true in Canada Warblers. "Birds breeding on the northern edge of the range may experience a combination of temperature and precipitation changes that makes them the most vulnerable," says Miller. "It seems like almost an inversion of what I would normally predict."

MAPS banders have played a large role in the BGP, Ruegg estimates that perhaps more than 70% of the feather samples used in the BGP have come from MAPS banders. BGP research can help make conservation more effective. "Migratory connectivity studies and

Photo by Ryan Mandelbaum

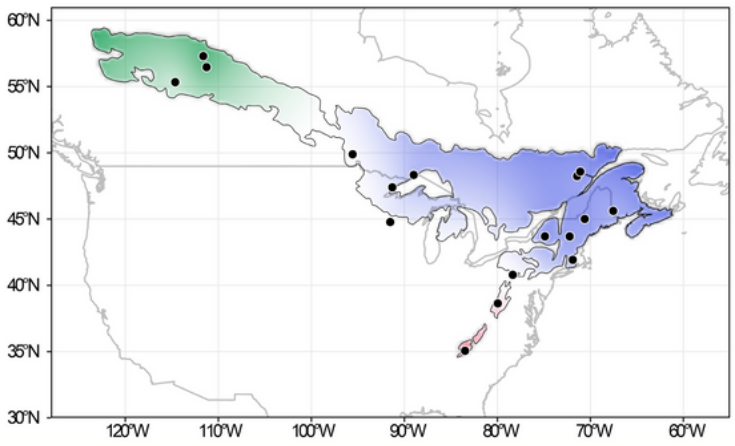


Figure 2. Map shows conservation units of Canada Warblers: Northwestern (green), Eastern (blue) and Southern (pink.)

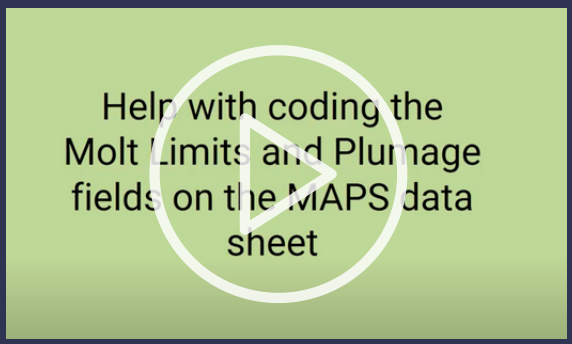
genomics-informed climate vulnerability studies allow us to target limited conservation dollars to the parts of the annual cycle where they are most needed," says Ruegg. Genetic analysis by the BGP has also led more immediate conservation outcomes. When the listing status of the Southwest Willow Flycatcher was challenged by a lawsuit, evidence from research by the BGP helped support the Southwestern Willow Flycatcher as a genetically distinct subspecies. If you are not already contributing feather samples to BGP, but would like to do so, please visit the "Contribute Samples" page on the BGP website to learn more about their sampling protocol.

A bander holds a Wood Thrush and an envelope for collecting a feather sample for the Bird Genoscape Project.

A message to MAPS contributors from Dr. Kristen Ruegg. Click the play button on the video or scan the QR code with your phone if you're reading a print copy.

MAPS Program Coordinator Dani Kaschube has some tips on filling in the Molt Limits & Plumage fields on the MAPS data sheet.

These fields can be tricky. To watch Dani's video click the play button on the video below or scan the QR code with your phone.



MAPS Operator Profile: Wolf Ridge Environmental Learning Center

by Lori Walewski, Wolf Ridge educator

More than mere data collection, bird banding serves as a way to engage curiosity, connects us to place, and provides an entry for people of all ages into the scientific process and community. This is possible for everyone who participates and/or visits. Thousands of people have enjoyed learning about birds, this place, and themselves at the Wolf Ridge MAPS banding station.

When Peter Harris, Wolf Ridge's science project coordinator, filled out the application to become a MAPS banding station in 1993, he had no idea where it would lead. "The project looked intriguing and fit with other monitoring projects we were conducting." Air quality (especially acid rain at the time), watersheds, weather, and forest health monitoring served as the foundation. Bird population data fit perfectly.

Wolf Ridge Environmental Learning Center is a K12-accredited outdoor school in northeastern Minnesota next to the North Shore of Lake Superior. School children (typically 5th-8th graders) enjoy overnight field trips for 3-5 days. Bird banding demonstrations were already part of the Birds class - we catch feeder birds and color-marked Black-capped Chickadees. After establishing the MAPS banding station, opportunities for learning and teaching exploded.

We've welcomed over 4,400 visitors to the banding station. Eleven and twelve-year-olds may visit for an hour. Adult volunteers have returned for multiple weeks and even multiple years to help with the process while they also learn. Wolf Ridge continues to co-facilitate total immersion workshops with The Institute for Bird Populations. Beginner and Advanced sessions began in 2013 and continue each summer and fall.

Curiosity drives our little community to continue the work. We've learned so much about this landscape and developed a much deeper sense of place as a result. This is home to hundreds of American Redstarts and Chestnut-sided Warblers. Far more than we could have imagined.

An American Redstart on her nest. Photo by Dennis Church.

One of Wolf Ridge's famous sunrises.
Photo courtesy of Lori Walewski

As visitors to their home, we've watched the forest change. We all know forests change. Watching it closely week by week and collecting habitat data for over 30 years, we've formed a deep sense of place based on data and lived experiences. During a storm in 1994, as we raced around to close nets we also watched aspens snapping and crashing to the ground. We know the story of those humus lumps on the forest floor.

And the sunrises. The birds here have such a beautiful place in which to live. We have been so fortunate to share this place with the birds; especially the sunrises.

Peter Harris, Margie Menzies, and Lori Walewski are the founding members. Peter recently retired from Wolf Ridge. He knows that the MAPS banding has become the cornerstone of the research at Wolf Ridge. Margie volunteered for many years and now manages two other MAPS stations. Lori continues as the lead bander and especially values the friendships made with fellow bird lovers, banders, and volunteers - a community that now spans the continent.

Best of all, this project has provided an entry into the scientific process and community for hundreds of people of all ages. Many years

Margie Menzies, Lori Walewski, Peter Harris in 1993 (top) and 2024 (bottom)

Lori Walewski banding a Northern Flicker with students.
Photo courtesty of Wolf Ridge Environmental Learning Center.

ago a young boy visited the banding station with his grandparents. That boy recently returned as an older teen. He spent a week here in the Wolf Ridge Ornithology Camp. We wouldn't be surprised to see him return as a graduate student in the Wolf Ridge Naturalist Training Program. A short visit to a MAPS banding station has the potential to transform a life.

We have come a long way. Our first banding station was on a knoll in the woods with a picnic table. We now have luxury headquarters with bathroom facilities, parking for visitors, phones, and a solid roof over our heads. We've contributed additional data for avian flu monitoring, West Nile virus testing, genoscape research and more. Recently two research papers used data from our MAPS site.

Wolf Ridge's mission is to develop a citizenry that has the knowledge, skills, motivation, and commitment to work together for a quality environment. We achieve this by fostering awareness, curiosity, and sensitivity to the natural world and, especially, providing lifelong learning experiences in nature.

It's been an amazing journey these past 30 years. We look forward to the next 30 years as we share it with the people and the birds who visit.

WOLF RIDGE℠
ENVIRONMENTAL LEARNING CENTER

Photo by Photo Kent/Flickr

IBP is sorry to announce the passing of two MAPS contributors in the last year, **Cathy Nowak** and **David Junkin**. Our condolences to their friends and families. They will be missed in our MAPS community.

IBP Biologist Lynn Schofield teaches her St. Olaf College students about bird banding

Using the MAPS Database as an Educational Tool:

IBP Biologist Lynn Schofield uses MAPS data to teach her students important concepts in biological statistics

A bird in the hand is an excellent educational opportunity. Only a lucky few of us get to see wild birds up close and it can be a transformative experience. Many MAPS banders use their banding activities to educate the public about birds and their conservation. Some MAPS stations are even run by schools and universities to provide their students with opportunities to learn about birds and their ecology.

IBP Biologist Lynn Schofield, who also teaches introductory biology at St. Olaf College alongside her husband Sean Peterson, has found a new way to incorporate the MAPS program into education and it doesn't necessarily require a banding permit. Schofield uses datasets from the MAPS database in a lab activity to teach the students about the relationship between reproduction and survival and how statistics allow us to quantify that relationship. The tradeoff all organisms face between living a long life or producing many offspring is a fundamental concept in evolutionary biology, and it's an important dynamic to understand. A population that isn't balancing reproduction and survival may be in decline, MAPS data and some basic statistics can help to illustrate this concept.

She says that the MAPS data from the data exploration tool is ideal for this because "there's lots of it, it's proofed and it's from the real world." Using real data is critical for

House Wrens are one of the species Schofield uses in her lesson. Photo by Andy Reago & Chrissy McClarren

fostering an understanding of how statistics work and how statistical concepts can be used for understanding wider systems of all kinds. While rolling dice or flipping a coin can help illustrate how statistics works, it's harder to be enthusiastic about that kind of data and it doesn't provide insight as to how those statistics can be used in the real world. It is one way to avoid the question that all math teachers fear 'when will we actually use this?'" While many of the students spend a morning banding birds with Schofield and her husband before they do the data analysis portion of the lab, Schofield notes that even students who weren't able to participate in banding still got a lot out of this lab.

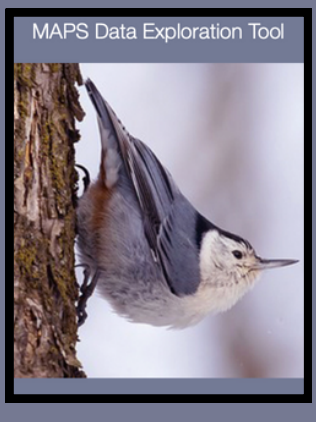
Schofield has students download data from the MAPS Data Exploration Tool for about 20 species in each of three habitat types in the region of St. Olaf's College. The students then use publicly available, web-based applets to explore and manipulate the data and examine correlations and patterns found in the data. Next, they get an introduction to "R"- an open source statistical software and programming language that is widely used by scientists for data analysis and visualization- and use it to quantify the relationship between reproduction and survival in their study species. Students can then reflect upon why this relationship exists and how it drives evolution. The students discuss what might be responsible for any outliers in their data and potential sources of error in the data- both important concepts in statistics.

> *"Biological data is always messy, because there are so many variables that cannot be accounted for out in the field," says Schofield. "Students interested in going into biology need to be equipped to understand how to think about complex data."*

Schofield and Peterson are using this curriculum again this semester (Spring 2024) and will make it available to other instructors on IBP's website sometime towards the end of May. Schofield says this lesson plan would be appropriate for advanced high school students as well as undergraduates. She notes that they've tailored it to the birds and habitats found in the St. Olaf College area, but that instructors in other locations could easily choose datasets to suit their needs.

Want to Take a Deep Dive into the MAPS database?

Check out the MAPS Data Exploration Tool on the IBP website. It gives you access to over 1,850,000 capture records for the years 1992-2018 (additional years are on the way.) You can download customized subsets of data, The Explore MAPS Results app serves as an update to 2015's Vital Rates of North American Landbirds with additional years of data and newer, improved statistical modeling techniques have been used to create region- and year-specific estimates of demographic parameters.



An Evolutionary Perspective on Molt

The Journal of Avian Biology's March/April cover features an artful and informative illustration (see page 14) from the perspective piece "Molt terminology: envisioning an evolutionary approach" by Peter Pyle, Steve N. G. Howell, Danny I. Rogers. and Chris Corben. Twenty years ago these same authors originally proposed the term 'preformative molt' and defined four strategies to help elucidate the evolution of molts in birds (Howell et al. 2003). The illustration, by artist and biologist Lauren Helton, depicts an avian evolutionary tree with molt strategies mapped onto it. In the perspective piece, the authors propose, illustrate, and discuss how molt strategies may have evolved across avian lineages. Staunch advocates of the Humphrey-Parkes (H-P) system of molt and plumage terminology, they aim to familiarize readers with this system and increase their understanding of its evolutionary framework. By illustrating how molt strategies may have evolved along lineages of an evolutionary tree, they hope to increase comfort with the H-P system, particularly among readers using 'life-cycle' molt and plumage terminology, which is functional for passerines in the Northern Hemisphere but generally not globally or among larger species of birds.

Our understanding of the evolution of molt strategies is still developing and Pyle and coauthors emphasize that the conceptualization they present here is a working hypothesis. The four main molt strategies defined by Howell et al. (2003) are mapped onto the tree: "simple basic strategy" (SBS; no preformative or prealternate molts), "complex basic strategy" (CBS; a preformative molt but no prealternate molts), "simple alternate strategy" (SAS; a single molt in the first cycle and prealternate molts in later cycles), and "complex alternate strategy" (CAS; a preformative molt in the first cycle and prealternate molts in all cycles).


Peter Pyle

Seeing molts presented in an evolutionary framework, one is struck by the prevalence of the CBS strategy and intrigued by the departures from it. The authors propose that the CBS is basal to all avian lineages and provide discussion and speculation on how the other three strategies may have evolved. For example, the SBS was formerly thought to be basal, but instead a preformative molt appears to have been lost in lineages exhibiting the SBS from those exhibiting the CBS, for families and species that grow strong juvenile feathering. Taxa exhibiting the CAS appear to have evolved prealternate molts to replace worn feathers (particularly in migratory species), but some species have taken adaptive advantages of these extra molts to develop more cryptic plumages for flight-feather molt or more colorful plumages for courtship. Some species that exhibit the SAS may have evolved this strategy through the merging of ancestral preformative and first prealternate molts along lineages exhibiting the CAS.

An evolutionary perspective makes the endeavor of understanding avian molt less daunting. "Once one envisions the evolutionary bases of H-P, which can be difficult to do for those of us who grew up on the life-cycle system, the categorization and study of molts becomes much less confusing, much more satisfying, and actually rather enjoyable," says Pyle.

On pages 15-16 Peter Pyle gives examples of and more detail on each of the four molt strategies.

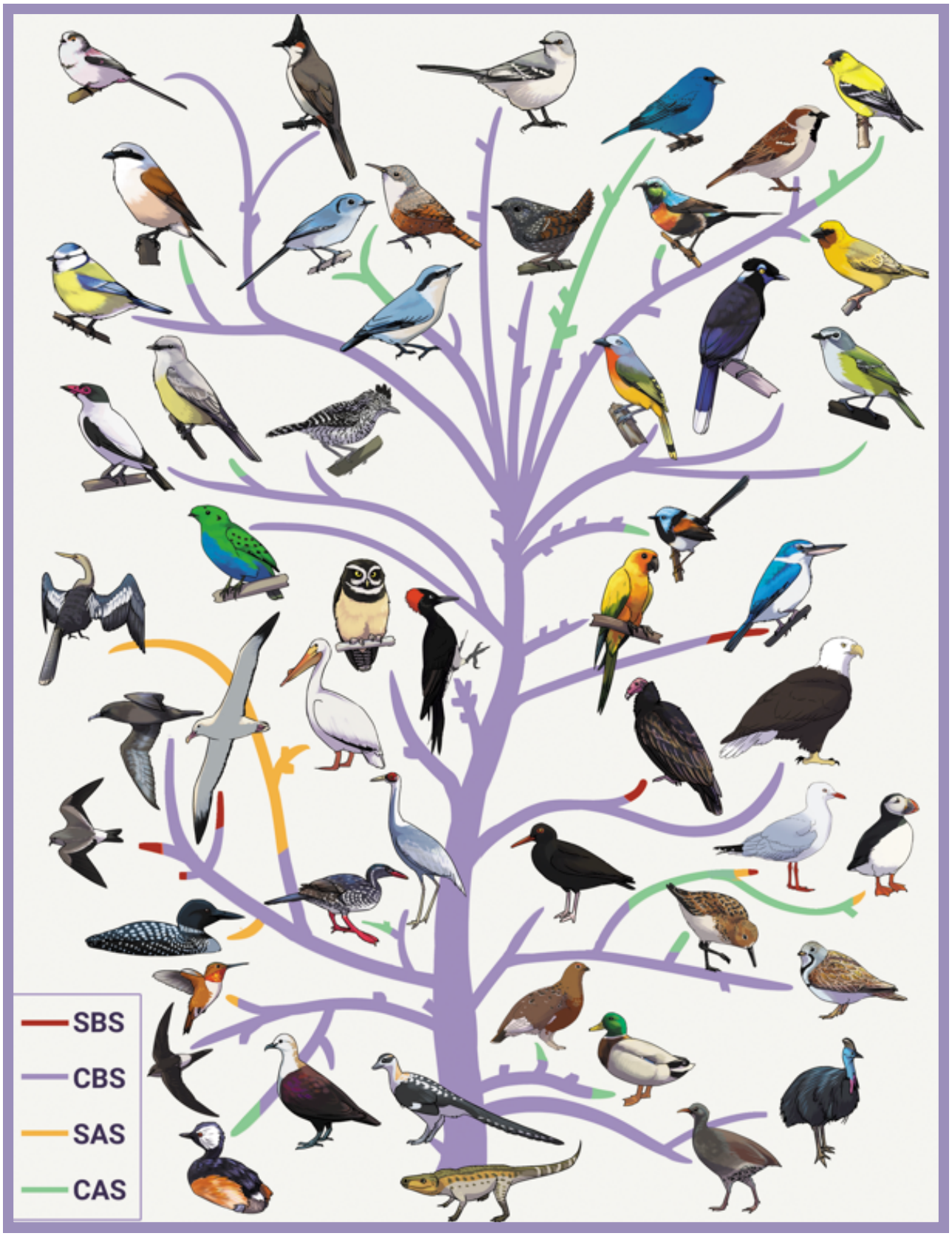


Figure from "Molt terminology: envisioning an evolutionary approach" by Peter Pyle, Steve N. G. Howell, Danny I. Rogers. and Chris Corben. Illustrated by Lauren Helton.

SBS = Simple Basic Strategy, CBS = Complex Basic Strategy, SAS = Simple Alternate Strategy, CAS = Complex Alternate Strategy

Complex Basic Molting Strategy (CBS)

Tinamous (Order Tinamiformes) are a family of ratites, the most primitive group of flightless birds that also includes ostriches, rheas, and emus. The fact that tinamous and other basal bird taxa include preformative molts suggests that this molt could have evolved from reptiles, which may undergo an extra shedding of skin in the first year as body size grows rapidly (but more study is needed on this). As such, and since these basal taxa lack prealternate molts, the authors propose that the Complex Basic molting strategy (CBS) is ancestral to all bird lineages. This Little Tinamou (*Crypturellus soui*) was photographed in Cali El Faro, Colombia on January 23, 2023 by Doug Greenberg.

Simple Basic Molting Strategy (SBS)

Some avian taxa, such as albatrosses, American vultures, storm-petrels, and the Ivory Gull (*Pagophila eburnea*), lack both preformative and prealternate molts, and thus undergo the Simple Basic Strategy (SBS). The authors had originally proposed that this strategy was ancestral; however, as taxa undergoing the SBS have evolved along avian lineages that exhibited the Complex Basic Strategy (CBS), it seems more likely that the preformative molt was 'lost' evolutionarily, and that preformative molts and CBS are thus basal to all avian lineages. Birds exhibiting the SBS typically grow stronger juvenile feathers during prolonged nestling periods precluding the need for their replacement during the first year. This Ivory Gull was photographed in Sweden on Dec. 11, 2004 by Thomas Landgren.

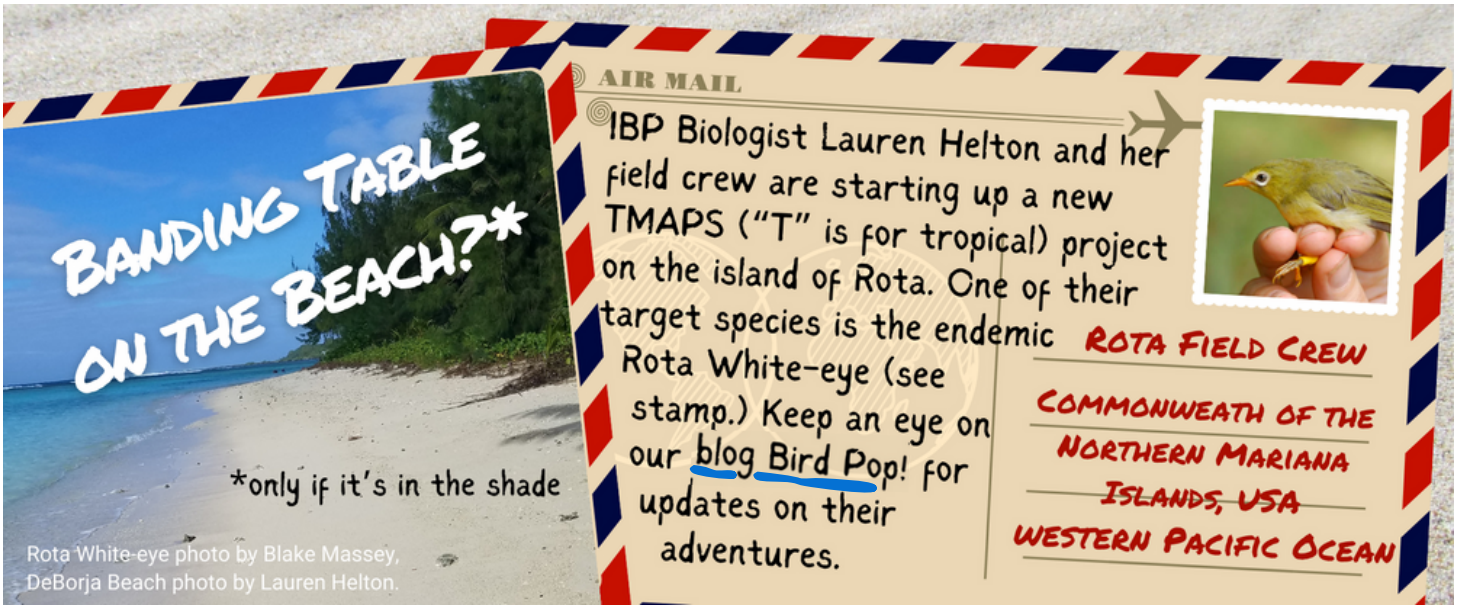
Complex Alternate Strategy (CAS)

Prealternate molts are extra inserted molts that have evolved within molt cycles of various avian lineages; species with these molts in both the first and later cycles undergo the Complex Alternate Strategy (CAS). The molts themselves likely evolved due to the need to replace worn feathers more than once per year, especially in migratory species exposed to more solar radiation on an annual basis. In some taxa such as Tyrannid flycatchers, most vireos, and wrens, prealternate molts result in little change in plumage coloration or pattern. Other species have taken advantage of prealternate molts for adaptive purposes, for example, in ducks, ptarmigan, and possibly

jaegers, prealternate molts result in duller or more cryptic plumage for camouflage during molt of flight feathers. In many other CAS taxa, such as grebes, loons, wagtails, American warblers, and Red-backed Shrikes (*Lanius collurio*), males or both sexes take advantage of prealternate molts to develop colorful plumage for display and sexual selection during the prebreeding season. This Red-backed Shrike was photographed in Slovakia on June 2nd, 2016 by Radovan Václav.

Simple Alternate Strategy (SAS)

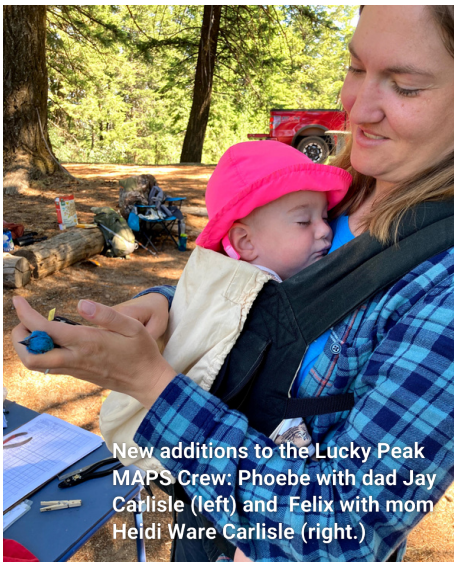
Finally, some species have an inserted prealternate molt in second and later molt cycles but show only one molt (preformative and/or first prealternate) in the first cycle, and thus undergo the Simple Alternate Strategy (SAS). The SAS may have evolved along avian lineages in one of several ways. In some taxa, such as loons, pelicans, and ibises, prealternate molts may have been gained along lineages exhibiting the Complex Basic Strategy (CBS) in species that do not breed until two years old or later. The molts likely evolved due to the extra wear to feathers that result from harsh breeding environments and later resulted in colorful plumage for mate selection. For others, such as some alcids, larger gulls and shorebirds, lineages that exhibited the Complex Alternate Strategy (CAS) may have lost the preformative or prealternate molt in the first cycle or, as seems more likely, had these two molts merge into one. In only some cases, such as for the Horned Puffin (*Fratercula corniculata*), does it seem clear that one molt (in this case preformative) may have been lost while the first prealternate molt was retained. No landbirds, including passerines, exhibit the SAS, perhaps relating to most of these species initiating breeding at a year of age. These Horned Puffins were photographed on St. Paul Island, AK on May 30, 2015 by Isaac Sanchez.



25 Year Operators

The MAPS Program will reach its 36th year of operation during the 2024 season! This year, two stations will mark their 25th season! Thank you to all MAPS Operators – whether 2024 is your first, 10th or 25th season.

Lucky Peak MAPS Crew in 2010: Gary Robinson, Dave and Carol Wike, Heidi Ware Carlisle, Rob Miller, Stephanie Coates, Jack Stenger, Melody Monbleau, Jay Carlisle



New additions to the Lucky Peak MAPS Crew: Phoebe with dad Jay Carlisle (left) and Felix with mom Heidi Ware Carlisle (right.)

Happy 25th Birthday to the Lucky Peak MAPS station operated by crews of the Intermountain Bird Observatory (IBO), lead by Jay Carlisle, Heidi Ware Carlisle, and Greg Kaltenecker of Boise State. The gorgeous station at the top of Lucky Peak is located in the Boise River Wildlife Management Area overlooking Boise, ID. In addition to the MAPS station, the Lucky Peak station also has a nearby hawk banding station, with both banding sites also operating during migration and active hummingbird banding as well. The banding station has hundreds of visitors each year, allowing the public an up close view to the birds.

Also Turning 25:

Residence Station near Slave Lake, Alberta operated by the Lesser Slave Lake Bird Observatory, which was featured in the 2018 MAPS Chat when two of their other stations turned 25.

New MAPS operators have joined the flock!

Welcome!

Photo by Teddy Llovet

The following operators joined MAPS for the 2023 or 2024 season. Most have begun operations at new stations but others have joined established operators or inherited the station from previous operators. We welcome them all to the MAPS family.

Shane Abernethy Vaughan, ON
Angie Arredondo Sinton, TX
Arlene Blumton La Grande, OR
Shannon Bowling Quantico, VA
Blaine Carnes Coppell, TX
Andrea Chreston Vaughan, ON
Chris Cloutier Notre-Dame-de-L'ile-Perrot, QC
Hallie Daly Alamo, CA
Brandee Diner Brownsburg-Chatham, QC
Ivy Doak Denton, TX
Kathleen Farley, PhD Teaneck, NJ
Holly Garrod Missoula, MT
Megan Granger San Saba, TX
Gene Groshon Prince Frederick, MD
Mariamar Gutierrez Brecksville, OH
Lindsay Herlihy Webster, NH
Claus Holzapfel, PhD Newark, NJ
Nidia Gisell Jaime-Escalante Weldon, CA
Cody Lane Fort Collins, CO
Josh Lefever Bondurant, WY
Jim Ma Quantico, VA
Laura Mahrt La Grande, OR
Catherine Manschot Burlington, ON
Orion Methany Bruceton Mills, WV
Annie Meyer Weldon, CA
Mark Mitchell Mason, TX
David Morgan Austin, TX
Megan Ring Jamestown, ND
Tricia Rodriguez Missoula, MT
Jennifer Schlick Jamestown, NY
Rose Swift Jamestown, ND
Jean-François Therrien Les Bergeronnes, QC
Emily Thomas DuBois, PA
Daniel Toth Akron, OH
Mattie VandenBoom Berlin, MA
Michelle Wilcox Columbia, SC
Sandra Young Stillwater, OK

Photo by Kenneth Cole Schneider

IBP Banding Classes


Participants in a bird banding workshop at Wolf Ridge Environmental Learning Center in 2021.

IBP is again partnering with Wolf Ridge Environmental Learning Center in NE Minnesota this summer to offer banding classes again in 2024. The beginner class will be held June 20 – 27, 2024 and there will be two advanced classes June 29 – July 3 and Sept. 13-17, 2024. We will also be offering a youth ornithology camp for students (entering grades 10-12). The Ornithology Field Camp will be held July 7-12, 2024. A fall advanced class is also being planned for early to mid-September. Visit Wolf Ridge's events page for information on all of these classes.

If you have your own group or would like to host a class, we welcome you to contact us to schedule your own class. If you would like to be notified when registration opens for new classes, please email Danielle Kaschube (dkaschube@birdpop.org) to be put on the training class email list. You will only get emails regarding scheduled classes if you are on this list.