The INSTITUTE for BIRD POPULATIONS

# MAPS Chat

The Annual Newsletter of the Monitoring Avian Productivity & Survivorship Program

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## New Tools to Make MAPS Data More Accessible

IBP is excited to announce the release of the MAPS Data Exploration Tool, a new web application created to make the MAPS database more accessible and the MAPS program more impactful. The MAPS database is a unique and valuable scientific resource consisting of over 2.5 million bird capture records spanning 33 years and counting. We wanted to make it easier for researchers to use the data and for everyone to understand how bird populations are faring. The web app houses two tools developed by IBP: a data download tool and a results exploration tool.

The MAPS Data Download tool (Fig. 1) gives researchers access to over 1,850,000 capture records for the years 1992-2018 (additional years will be added as the data is proofed.) The app interface allows users to select the timespan and type of data they are interested in. Data available includes capture records (band numbers, age estimates, mass, wing length, etc. for individual birds), banding station locations, effort and net-hours information, and local breeding status classifications. To date over 280 peer-reviewed research papers and reports using MAPS data have been published by IBP scientists and outside researchers. We hope that this data download toll will encourage even more researchers to investigate bird conservation and other ecology questions using MAPS data.

## In This Issue pages

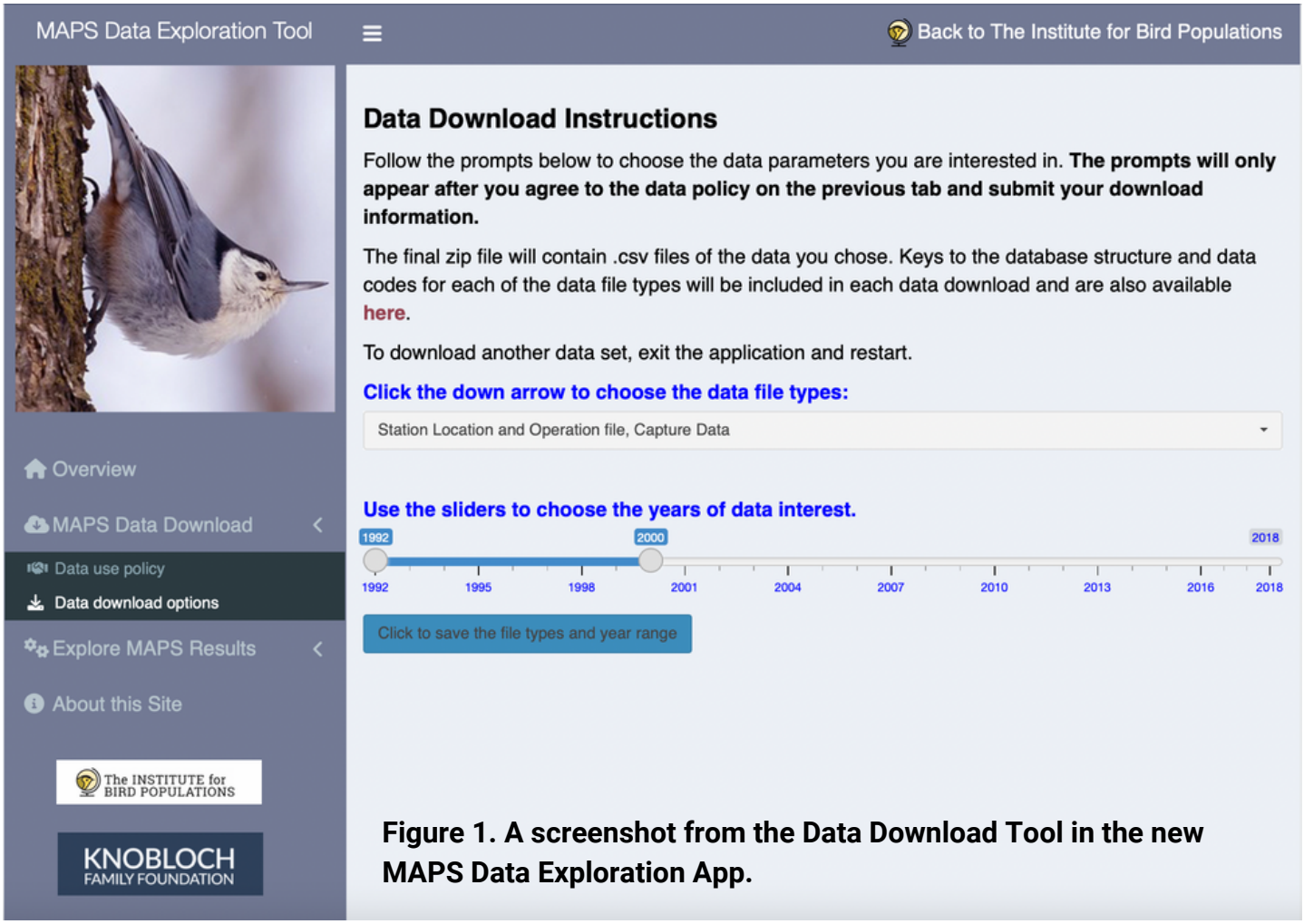



**Figure 1. A screenshot from the Data Download Tool in the new MAPS Data Exploration App.**

The Explore MAPS Results app (Fig. 2) serves as an update to the Vital Rates of North American Landbirds published in 2015. Thirteen additional years of data and newer, improved statistical modeling techniques have been used to create region- and year-specific estimates of demographic parameters. The tool includes estimates or indices for 5 demographic parameters: 1) adult abundance, 2) juvenile abundance, 3) productivity, 4) adult apparent survival, and 5) residency probability for dozens of the more commonly captured bird species. Results for more species, regions, and parameters may be added over time. Users can visualize the results on an interactive map, with pop-up graphs for some parameters, or if they prefer to create their own graphs, they can download the results to visualize as they choose.

Work on the new website began in 2020 during the pandemic after IBP received generous grants from the Knobloch Family Foundation and Tracy Aviary. MAPS program coordinator and bird banding guru Dani Kaschube and IBP biologist and man-of-many-talents Bob Wilkerson have spent endless hours developing and coding the website, and IBP Research Ecologist Jim Saracco applied his considerable experience with modeling MAPS data to create estimates and indices of demographic parameters.

This amazing team has yet another trick up their sleeves! Another application, just for MAPS station operators, is coming soon. This app will allow operators to use their own capture records to calculate summary statistics (with lovely graphs!) for their stations

with just a few clicks. Statistics include standardized captures per year and population and productivity trends, with survival and recapture probabilities to come in future versions. This tool will help operators share professionally analyzed results with stakeholders, land managers and funders. We expect this new app to go online by early summer.

We are so excited for you to dive in and explore the MAPS database with these new tools. The database is an amazing resource for bird conservation and it would not be possible without the hard work and sacrificed sleep of thousands of MAPS banders over 33 years and counting. You didn't wake up at zero-dark-thirty just to fill in numbers on a spreadsheet! Dig in and put the data to good use!


Photo by Becky Matsubara

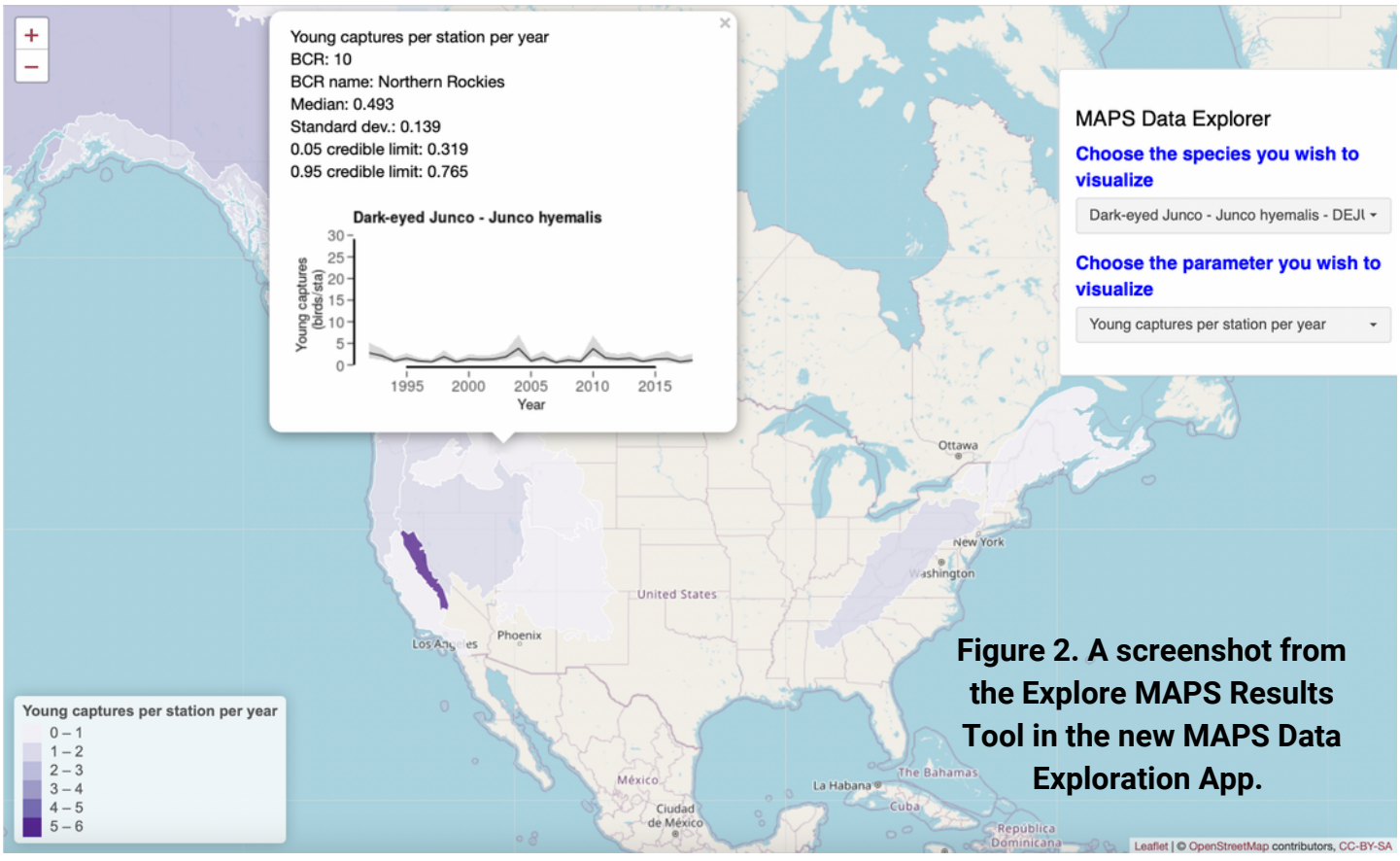



**Figure 2. A screenshot from the Explore MAPS Results Tool in the new MAPS Data Exploration App.**

# MAPS Data Reveal that Climate Change is Altering the Size and Shape of Birds

*A new study using over 250,000 capture records suggests birds may be shrinking.*

Northern Parula. Photo by Dan Pancamo.

The bodies of all living things are shaped by the physical environment, in response to temperature, precipitation, air pressure, and other factors, many of which are shifting due to climate change. Humans–the primary cause of climate change–are able to create artificial environments to evade much of this change, but most wild animals are not so lucky. Scientists are starting to see the effects of climate change on not only animal abundance, distribution, and behavior, but also on body size and form. For instance, climate change may be shrinking birds.

In a recent paper in Nature: Ecology and Evolution, Dr. Casey Youngflesh and colleagues from UCLA and IBP used data collected by the MAPS bird monitoring program between 1989 and 2018 to investigate how temperature and elevation affect the size and shape of birds. Using more than 250,000 banding records from 105 bird species, they found that within species, smaller body size was associated with warmer temperatures over space and time. Individuals breeding at lower latitudes are smaller, and as the climate warms, individuals at a given latitude are getting smaller over time. The researchers also found that within species, wing length increased in relation to body size as breeding elevation increased.

The 19th Century German biologist Carl Bergmann first posited that animals (particularly birds and mammals) are larger the closer to they live to the North and South Poles. His reasoning was that the environment is generally colder at higher latitudes and larger animals, with their lower surface area to volume ratio, better conserve heat. But does "Bergmann's Rule" hold up in the real world?

Youngflesh and his co-authors found that within bird species, body size increased strongly with higher latitude (closer to the poles). But contrary to Bergmann's rationale, they found the strongest effect of latitude on body size in species that experienced warmer temperatures at lower latitudes. This suggests that it is warmer temperatures and the ability to shed heat that drives the relationship between body size and latitude. Youngflesh has a hypothesis as to why warmer

Swainson's Thrush. Photo by Debrah Freeman.

Lesser Goldfinch. Photo by Mick Thompson

temperatures had a greater effect on body size:

> *In warm regions, birds might be close to what they find to be a tolerable temperature. That is, when temperature increases in these areas they need to do something about it. In colder regions, birds may be further away from these critical temperatures. So an increase in temperature in these areas might not be as much of a problem. As an analogy, if you're a human out in 100-degree weather, an increase in temperature of 20 degrees could be quite dangerous. However, if you're in 60-degree weather, that same increase isn't going to be much of a problem.*

The researchers also found that body size decreased over the course of the study in most species over the majority of North America. This is remarkable given that the study spanned just 30 years—an extremely brief time from an evolutionary perspective. This may mean that bigger birds are more likely to die at higher temperatures or that, during early developmental stages, individual birds can respond to the warmer environment by not growing as large. The results, while predicted, were still surprising to Youngflesh:

> *While we expect that birds should be responding to changes in the abiotic environment, it is always striking (if not surprising) to see that actually be the case. This is particularly true given that there are so many factors simultaneously acting on these animals. The consistent relationship between body size and temperature over both space AND time is not something that has been shown before, so this is quite exciting.*

These results have conservation implications as well. While species do seem to be adapting their body size to a warmer climate, body size responded more slowly over time than it did over space (latitude). This suggests that birds may not be changing their morphology quickly enough to keep up with the warming climate. "This point should be considered when we are thinking about the long-term persistence of species and how they are likely to cope with future climate change," said Youngflesh. Populations and species of birds that already live in hot, arid environments may be especially at risk as climate warms because

Black-capped Chickadee. Photo by Richard Hurd

Banders at work at a MAPS station in Glacier N.P.

they are closer to their maximum tolerable temperatures.

In addition to temperature, the study also uncovered an interesting relationship between elevation and morphology: wing length within species increases with elevation. This is the first study to show wing length increasing independent of body size. So, it's not simply that birds that breed at higher elevations tend to be larger and therefore have larger wings (in fact body sizes trend smaller as elevation increases.) Why would elevation affect wing length? Wings generate lift which allows birds to fly, but lift depends on air density which decreases at higher elevations. "We know that wings, whether attached to planes or animals, produce lower lift at higher elevations (due to lower air density there). But it was surprising that we see such a large effect," said Youngflesh.

Studies like this one require long-term datasets that span a broad geographical space and include multiple species. Few wildlife datasets rival that of the MAPS program in terms of duration, geographic scope, and breadth of species studied. Youngflesh explained:

*MAPS represents a critical resource for understanding not only how individual species vary over space but also how species are responding to the pressures of climate change. The program has incredible spatial coverage, spanning a large portion of the North American continent, and provides an incredible time series, dating back several decades. The scale of these data, collected at the individual level, allow us to understand and quantify variation within these species, which was a critical component of this work. MAPS is truly unparalleled in this regard. This research simply would not have been possible without the combined efforts of the many MAPS station operators that contribute to the project and the team at The Institute for Bird Populations.*

A Rose-breasted Grosbeak after banding at the Berkshire Bird Observatory's MAPS station. Photo by Ben Nickley

# MAPS operators help reveal where genetically distinct bird populations live year round

by Jacob Job, Associate Director, Bird Genoscape Project

Tucked away in the southwest corner of Michigan near Vicksburg is a 100ish acre plot of land surrounded by many, many more acres of farmland and urban development. Beneath the stands of oak and hickory trees is 'Pittsfield' migratory bird banding station. Run by Rich and Brenda Keith since 1989, many thousands of migratory birds have been caught and banded at Pittsfield as they make their way to and from their breeding and wintering grounds.

I first found my way to Pittsfield in 2010 shortly after I enrolled in a PhD program at Western Michigan University. I was just beginning to study human impacts on migratory birds and thought "what better to understand migratory birds than to volunteer at a local banding station". I ended up spending a half decade volunteering at Pittsfield, learning how to catch and band birds, and slowly began to understand the importance of banding stations like theirs.

Fast forward 13 years and I now find myself in northern Colorado as Associate Director of the Bird Genoscape Project (BGP) at Colorado State University. The BGP works to create maps of genetically distinct breeding populations of some of the most threatened migratory birds in the Western Hemisphere. These maps are called genoscapes (Figure 1). After building a genoscape, we can track individuals from each unique population across the Hemisphere throughout their full annual cycle (Figure 1). The individual unit that allows us to do our work? A plucked tail feather with trace amounts of DNA.

Photo courtesy of Jacob Job

As I familiarized myself with the BGP's feather collection, something stood out. Written on some of the envelopes containing tail feathers were the words 'Vicksburg', 'Pitt', 'B. Keith', and 'R. Keith'. My past was meeting my present. I knew that Rich and Brenda actively helped collect biological samples from caught birds for other research projects. In fact, I helped them pluck ticks from birds on occasion. But I wasn't aware they were also plucking tail feathers for the BGP. I dug a little into our database and found that, to date, the Keiths have contributed over 2,000 feather samples from over 100 bird species, and from as far back as 2002. It's possible that I was standing next to Rich and Brenda as they plucked feathers that I would work with years later!

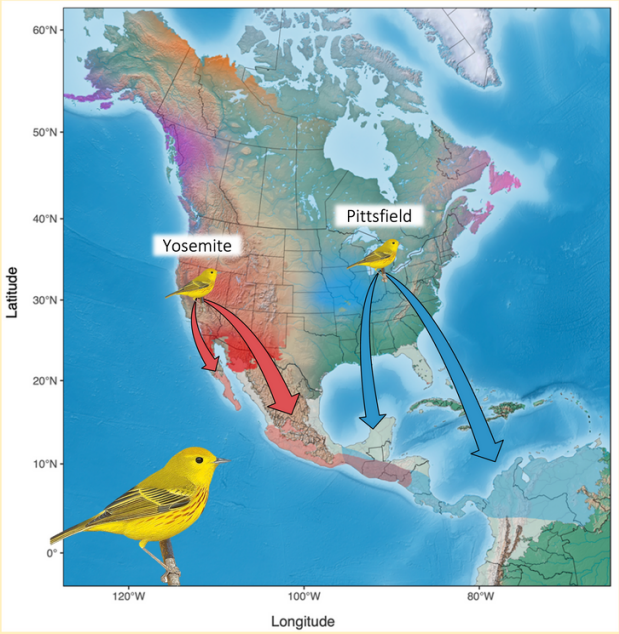



**Figure 1. Map shows where Yellow Warblers breeding in the Yosemite region and the Pittsfield region overwinter.**

Feathers the Keiths have collected at Pittsfield and their other MAPS banding stations nearby have directly been used to build genoscapes for several species: Willow Flycatcher, Common Yellowthroat, American Redstart, and Yellow Warbler. We've learned which populations of these species travel through Vicksburg during migration and where they spend the winter. And we now know that Yellow Warblers that breed in Southwest Michigan and are part of a genetically distinct 'Central' breeding population are known to winter anywhere from southern Mexico in Veracruz and Oaxaca south to coastal Venezuela near Caracas. Pretty cool!

But the BGP gets a lot of feathers from places other than Pittsfield. Our feather collection now stands at over 200,000 and growing, with contributions from hundreds of individuals running migratory, MAPS, and MoSI (Monitoreo de Sobrevivencia Invernal/Winter survival monitoring) banding stations across the country and Hemisphere. Much of this work is done in conjunction with The Institute for Bird Populations (IBP) and their vast network. For instance, numerous bird banders operating MAPS stations on the other side of the country in or near Yosemite National Park have contributed nearly 6,000 feather samples from 88 species to the BGP since the 1990s. These samples have been used to construct genoscapes for three species: Anna's Hummingbird, Wilson's Warbler, and Yellow Warbler. And like we did with Yellow Warblers from southwest Michigan, we discovered that breeding Yellow Warblers around Yosemite are part of a genetically distinct 'Southwest' breeding population, and winter anywhere from Sonora, Mexico down to the Costa Rica/Panama border, overlapping slightly with birds caught at the Pittsfield banding station.

Our collection of feathers has taught us a lot more than just where migratory birds live. Data from banding stations like Pittsfield and those in Yosemite have given us a better understanding of how bird populations adapt to local climactic conditions. Combining Yellow Warbler genetic data with climate data and demographic data from the Breeding Bird Survey, we found that Yellow Warbler populations have climate-related associations throughout their full annual cycle3. In other words, birds that winter in the driest regions of the tropics breed in the driest regions in North America. We also found that year-to-year variation in annual precipitation is linked to changes in relative abundance across the breeding range. Of course, these findings have direct implications for predicting climate change-related population impacts.

To help communicate the results of these

A Yellow Warbler banded at the MAPS station on the Chaparral Wildlife Management Area in South Texas. Photo by Nicole Alonso-Leach.

collaborative efforts, in 2022 we partnered with eight organizations and the National Audubon Society to launch the 'Bird Migration Explorer'. The Explorer combines migratory data for 458 species found in the United States and Canada. Data were collected over decades using a multitude of tools and then combined into a single interactive platform. This platform allows users to explore the routes of migratory birds in their backyards and the threats they face along their way.

The impact of the BGP has grown as our network of contributing bird banders has grown. For every feather that is sent our way, we can better help land managers and agencies develop more pointed and cost-effective conservation plans moving forward. To date we've completed genoscapes for 14 species and are in progress of completing another 37. All of this as we work towards our goal of completing genoscapes for 100 of the most threatened migratory bird species in the Western Hemisphere.

We'd like to extend a heartfelt thank you to those who have contributed samples to the Bird Genoscape Project. If you want to become a contributor and/or learn more about our work, visit www.birdgenoscape.org. Here you can learn how we construct genoscapes, browse completed genoscapes, discover applications for our work, and maybe most importantly, find out how you can get involved and help us meet our goals.


Photo by Frank D. Lospalluto

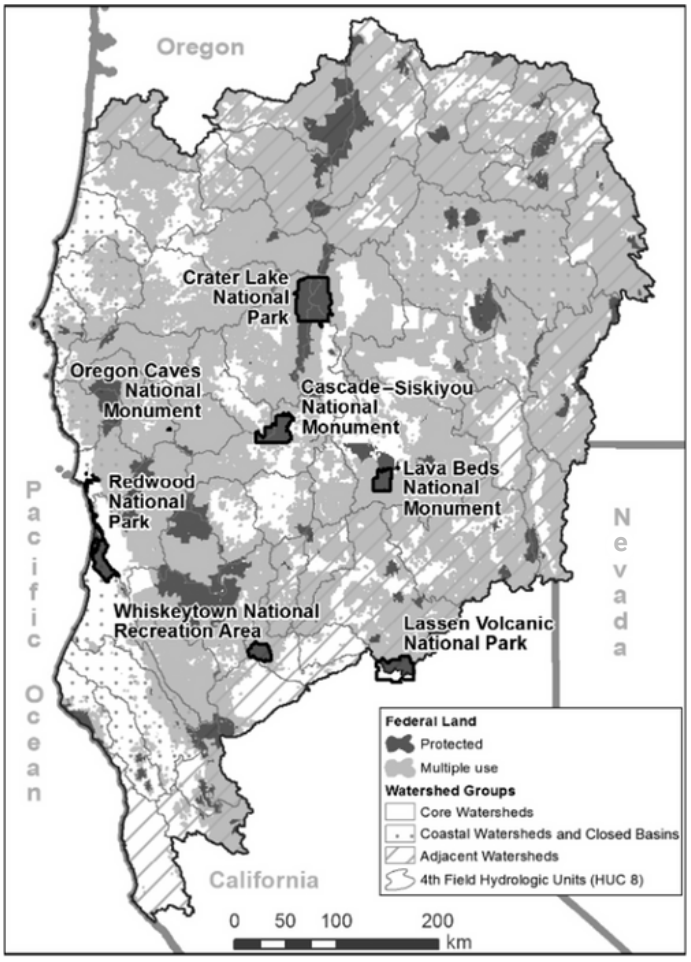
KBO's 2022 banding team. Photo courtesy of KBO

# MAPS Operator Profile: Klamath Bird Observatory

**by Claire Stuyck, Bird Banding Research Biologist, Klamath Bird Observatory**

In early 1992, KBO co-founders John Alexander and CJ Ralph started a long-lasting collaboration to develop the Klamath Bird Monitoring Network, covering the Klamath Siskiyou Bioregion of northern California and southern Oregon (Fig. 1). The high diversity of birds in this are reflects the bioregion's status as a global biodiversity hotspot. The network grew to include many collaborators and >100 constant-effort banding stations, many contributing to IBP's MAPS program. KBO emerged from this effort, incorporating in 2000 to advance bird and habitat conservation through science, education, and partnerships.

KBO's banding program is operated in collaboration with the Forest Service (USFS), Fish and Wildlife Service (FWS), Park Service, and Bureau of Land Management (BLM). Several stations have been in operation for




Fourth field watersheds used to delineate the greater Klamath Siskiyou Bioregion study area, distribution of federal lands that are protected or that are managed for multiple use, and seven protected areas considered in analysis of bird distribution (From Alexander et al. 2017).

more than 25 years. Each year we band thousands of birds including over >100 species, tracking abundance, reproductive success, survival, and other information about the health of birds that only banding can provide. Data contribute to the Partners in Flight full lifecycle approach to landbird conservation, informing conservation management at multiple scales.

KBO collaborates with partners to produce peer-reviewed articles that answer questions about the trends, demographics, and other aspects of avian life cycles. Rockwell et al. (2017) compared local population trends with trends from the broader northwest region, showing acute forest bird declines in or area that is in urgent need of forest restoration. Weigardt et al (2017a, 2017b) examined post-breeding and molt related elevational movements and Figueira et al. (2020) site fidelity on breeding and molting grounds, leading to better understanding of where birds undergo essential aspects of the annual cycle. Wolfe et al. (2019) demonstrated how diversity estimates informed with banding data offer an improved approach for identifying valuable wildlife habitat, as compared to traditionally used naïve measures of diversity. Most recently, through KBO's growing tribal collaborations, we collaborated with the USFS and Karuk Tribe using banding data to identify times when culturally significant birds are most vulnerable to fire (i.e., breeding and molting periods), informing the timing of USFS prescribed fire practices (Long et al. In Press). The results align with environmental cues relating to biological phenology, weather, and astronomy traditionally used to guide the timing of Indigenous ecocultural burning practices. These examples, along with our contributions to the MAPS program, provide insights into the causes of populations declines and the importance of sites during the annual cycle, informing ecosystem conservation efforts.

An Olive-sided Flycatcher is measured for a band. Photo courtesy of KBO.

KBO's operates our multifacility Upper Klamath Field Station where two of our longest running stations are maintained in partnerships with the USFWS Klamath Basin Wildlife Refuge Complex and the Fremont-Winema National Forest. One, located on the Upper Klamath Lake Refuge, straddles mature forest and marsh vegetation. Before drought conditions that are now the norm, chest waders were necessary at this station and Black Terns flew abundantly overhead; today water levels are much lower and terns occur in noticeably fewer numbers. A second encompasses mature coniferous forest, alpine meadow, and a small riparian corridor of aspens and willows along Sevenmile Creek. In 1996, these stations, along with two BLM stations along the Klamath and Rogue

rivers, were among dozens of stations operated annually. With funding limitations, we have scaled back efforts, as other programs also have. These sites are now more important than ever, as our need to track vital signs and trends becomes more urgent as we face the three billion birds crisis.

Active stations on public land offer opportunities to engage the public in bird conservation. We host visitors from far and near to observe bird banding process and engage in conservation science. Partnering with Crater Lake National Park we provide meaningful visitor opportunities that educate participants about science-driven conservation. In 2022, participants came from over four countries and twenty-five states, representing a diversity of ages and backgrounds.

KBO's program includes an academically-based training program, supported by USFS International Programs, Environment and Climate Change Canada, and Oregon State University's International Program. KBO has hosted more than 300 participants from more than 18 counties. The program has launched the careers of many who now serve as conservation leaders and make up a network of banding trainers throughout the Americas and Caribbean. KBO also offers international banding workshops where our former students serve as lead trainers. This March, our KBO – BirdsCaribbean intern Zoya Buckmire from Grenada went on to co-teach a BirdsCaribbean workshop in the Dominican Republic. Continued mentorship and collaboration with interns has lead to the establishment of sister bird observatories, including Observatorio de Aves da Mantiqueira (OAMa) in Brazil and San Pancho Bird Observatory in western Mexico. In 2023

The banding team hard at work. Photo courtesy of KBO.

we are starting a new intern exchange program with OAMa–Birds and Banders without Borders Exchange Program.

KBO is developing a programmatic certification program through which the North American Banding Council (NABC ) will "accredit" training programs that meet NABC standards. Accredited programs will take individualized approaches to training, testing, and certifying that accommodates diverse teaching and learning styles. This will help make NABC's certification accessible for more diverse banders as an important step in furthering NABC's promotion of sound and ethical banding techniques. Programmatic certification represents one of the many way KBO continues to support more diverse, equitable, inclusive, and just advances in science and conservation.

As KBO enters our 30th year of our bird banding, we continue to collect data that are critical to understanding causes of population declines, while training the conservation science leaders of tomorrow. Long-term monitoring is one of the most important aspects of bird conservation, while also one of the most difficult to fund. KBO's program remains viable as a result of partner investments and generous donations from our long-term supporters.

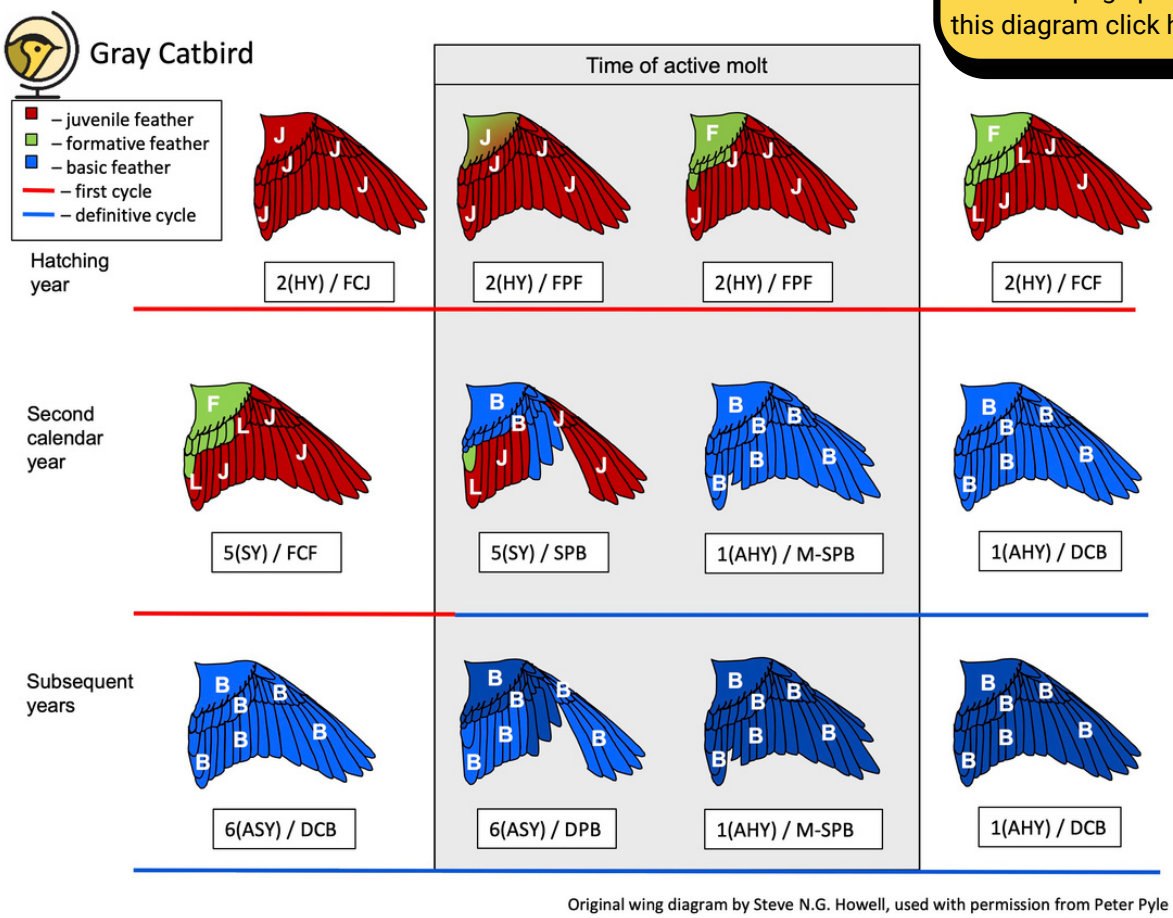
# SPB, DCB, or M-SPB:
## When to Use Which WRP Code?

by Danielle Kaschube


The banding community, especially MAPS operators, has been incorporating the use of WRP in their band operations. Well done everyone! However, there are still some areas of confusion and one I see often is when to use SPB, DCB, or M-SPB. I hope the explanation below will help clarify when to use each of these codes. If you aren't familiar with WRP codes at all, I recommend reading the WRP section in the MAPS Manual and/or the WRP sections in previous MAPS Chats to get the basics.

The diagram below represents a loose calendar, with each line equaling one calendar year. Because I am trying to explain molt, the first part of the year is substantially shortened and the molt timing is happening in the July to September time frame.
For the purpose of this example, we are going to mostly ignore what happens in the first year, except to remind you that while feathers are molting, you ignore the new ones and only score the retained feathers. That is why in the third diagram on the top, while the greater coverts are growing in, we would still score that tract "J". Once the molt of that tract is complete and there are no actively molting feathers, then it would become an "L".

For a full-page pdf of this diagram click here




Original wing diagram by Steve N.G. Howell, used with permission from Peter Pyle

Moving to the second calendar year of life, these individuals would try to breed and after the breeding season, successful or not, they will begin their second prebasic molt (the first having happened in the nest). At this point in time, they will be replacing the retained juvenile and formative feathers with basic feathers. While they retain distinguishable juvenile and formative feathers they can still be called second year and be known to be starting their second cycle.

After the second calendar year of life, this individual would try to breed each season and after each breeding season, they will begin another prebasic molt. At this point in time, they will be replacing retained basic feathers with a new generation of basic feathers (in this case a slightly different blue in the diagram so you can see the difference). While they retain two distinguishable generations of basic feathers these individuals can still be called after-second year and be known to be going from one definitive basic cycle into another.

However, in both the second year and in subsequent years, at some point, the bird will still be molting in new feathers but will have no retained feathers remaining from previous generations to use for reference against the new feathers. In this example, the two years are slightly different blue colors, but in reality, you would be unable to tell birds the third diagram in the second calendar year from the third diagram in any subsequent year. At this point, we know the bird is at minimum in its second prebasic molt but are unsure of which prebasic molt it is, so we use the WRP code M-SPB.

IBP Biologist Emma Cox shows a student molt limits on a Spotted Towhee. Photo by Rachel Perpignani

I hope this clarifies when to implement each of the codes SPB, DBP, and M-SPB.

NOTE: In the past, the WRP coding system required that primaries be molting to use the P code in the second position of the three-letter code. This is no longer required. The bird just has to have some active molt anywhere on its body.

Molt and coding examples that have been included in past MAPS Chats have been updated to use current WRP coding. These are now available on our website at:
https://www.birdpop.org/docs/misc/2023_updated_wing_diagrams.pdf

**The new (2nd), edition of "The Identification Guide to North American Birds, Part 1 "by IBP Biologist Peter Pyle is now available!** This new edition presents revised and consistent molt and plumage terminology, including designations of preformative molts and formative plumages, along with inclusion of "WRP" age and plumage codes (in addition to BBL age codes) that reflect this terminology. Other changes include the addition of 21 new species accounts, presentation of measurements in tables for greater ease of comparison, and inclusion of exposed culmen, tarsus, and mass values for each species and sex, and for many subspecies. Fifteen new figures have been added, many of which emphasize "molt clines" for ageing. Information has been substantially revised through evaluation of digital images, comments received from hundreds of users since 1997, and the incorporation of over 1,295 additional scientific papers and on-line resources. Finally, recognition of subspecies has been overhauled in an attempt to provide a consistent and practical taxonomy. We have learned a lot since 1997 and this revised edition reflects the progress we have all made!

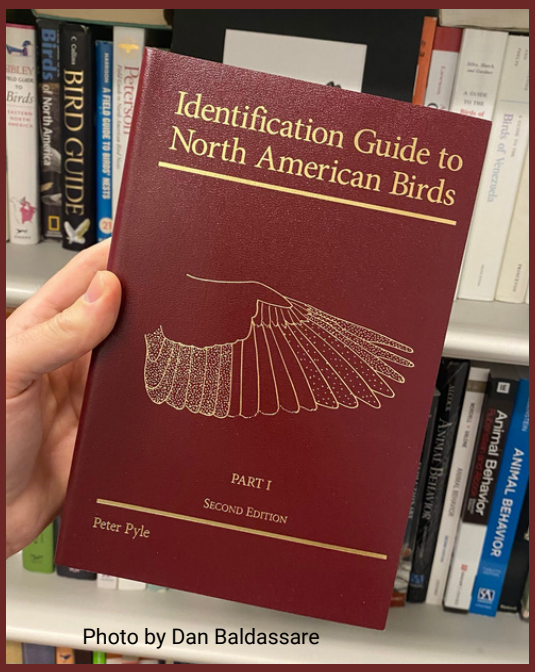


Photo by Dan Baldassare

You can purchase this new edition through Slate Creek Press at slatecreekpress.com. It is also available from Avinet or Buteo Books. Happy Banding!

# Got Old Mist Nets?

If you have nets that need minor repairs (i.e., can be repaired with 2 hours or less of work) that you will no longer be using, please send them to IBP. We will send them to our cooperators in the Neotropics who have trouble funding new nets. Donations can be sent to: Steve Albert, IBP, PO Box 633, 17 McNiel St, Ramah, NM 87321.

Once a net is no longer usable, it needs to be disposed of in a way that it can't cause harm by reopening and catching wildlife. We recommend partnering worn out nets with old containers of latex paint (not oil.) Submerge the net into the paint in the can and let the paint dry. When hardened, the paint will not be toxic to wildlife and the net won't be able to catch anything, and the can of hardened paint will be safe to put in your household trash. Please check your local regulations on paint disposal/recycling before attempting this net disposal method.


Banders at a new MoSI station in Paraguay set up their nets.

# Helpful Hints for the New ID Guide

by Danielle Kaschube

I hope you are looking forward to tackling the new MAPS season with your new Second Edition, Identification Guide to North American Birds, Part I by Peter Pyle. If you haven't yet ordered yours, you can do so easily at Slate Creek Press.

I was able to use mine in the field for the first time in March. If you are familiar with the first edition, this guide is very similar but has a few differences that can catch you off guard if you aren't ready. I highly recommend reading through pages 1-40, 41-42, 220-227 **before the season**. This is NOT something that can be done in one sitting, so take your time and read a few pages at a time to give you time digest the material.

Below are a few things that are different from the first edition and I think it's helpful to point them out in advance to help you make the transition to this edition.

1) Subspecies four-letter codes: The subspecies codes are no longer listed at the top of the accounts for species like DEJU, WCSP, and YRWA. They are now located at the top of each subspecies paragraph in the geographic variation sections. The USGS Bird Banding Laboratory and the Canadian Bird Banding Office still require that you use the four-letter subspecies codes when you record your data. We recommend you look through the subspecies sections in advance of the season and determine which subspecies are possible/likely in your area. Then, underline the four-letter code to make it easier to find when you need it.

2) Date designations: The new edition uses a new system to indicate periods of time longer than a year, for example, July-Jun/Aug. Using actual months and years, a bird might be in formative plumage from July 2019 - August 2020 and this would appear as Jul-Jun/Aug in the guide. July to Jun is one year plus the additional two months of the second July and August equals 14 months. July-August would indicate only two months. For a fuller explanation, read page 31 of the new guide.

A bander in a training class refers to the 2nd edition of the ID Guide while banding a Bewick's Wren. Photo by Rachel Perpignani.

3) Alternate plumages: these are no longer broken out for species where the basic and alternate plumages are significantly different. For example, in Chestnut-sided Warbler there use to be separated alternate plumage and basic plumage descriptions. Now the differences are described within the same paragraphs but using dates. Check out this species in the guide to see what I mean. This method makes the overall account shorter but adds extra text to read through, some of which is not useful during the MAPS season. One

possible way to make it easier to hone in on sections that are useful and ignore sections that are not, is to underline basic plumage traits in one color (e.g. blue) and alternate in another (e.g. yellow). Be careful what you use to write in your book with so it doesn't bleed through the pages.

4) Alternate body plumage descriptions: In general, alternate body plumage is not described very often in the guide, though the molt section does indicate when an alternate plumage is present in the species. This isn't really different from the first edition, but for WRP coding you do need to know when birds are in alternate vs basic plumage. Keep a regular field guide handy to help with this so you can know when to put an A in the body plumage field.

5) Alula molt: The alula is described more often as a feather tract to use for ageing in this edition. It is important to know how the wing feathers are molted in, in order to know how the guide uses language regarding the alula. Page 221 outlines the sequence of molt in passerine overwing coverts. Molt in these coverts begins with the lesser coverts and the alula covert (A1) preceding through the median coverts and lesser alula (A2) and finishing with the great coverts and finally the greater alula (A3). When you know this sequence and you read in the molt section of something like the Blackburnian Warbler, "The PF usually includes all med and gr covs and sometimes the gr alula....." you should assume that alula covert (A1) and lesser alula (A2) do molt and there is potentially a molt limit between the lesser (A2) and greater alula (A3).

6) New errata: Yep, there is an erratum for this guide too. You should visit it on a regular basis, at least before the MAPS season, to see what might need to be updated. It can be found at: https://www.slatecreekpress.com/ErrataPart1.pdf .

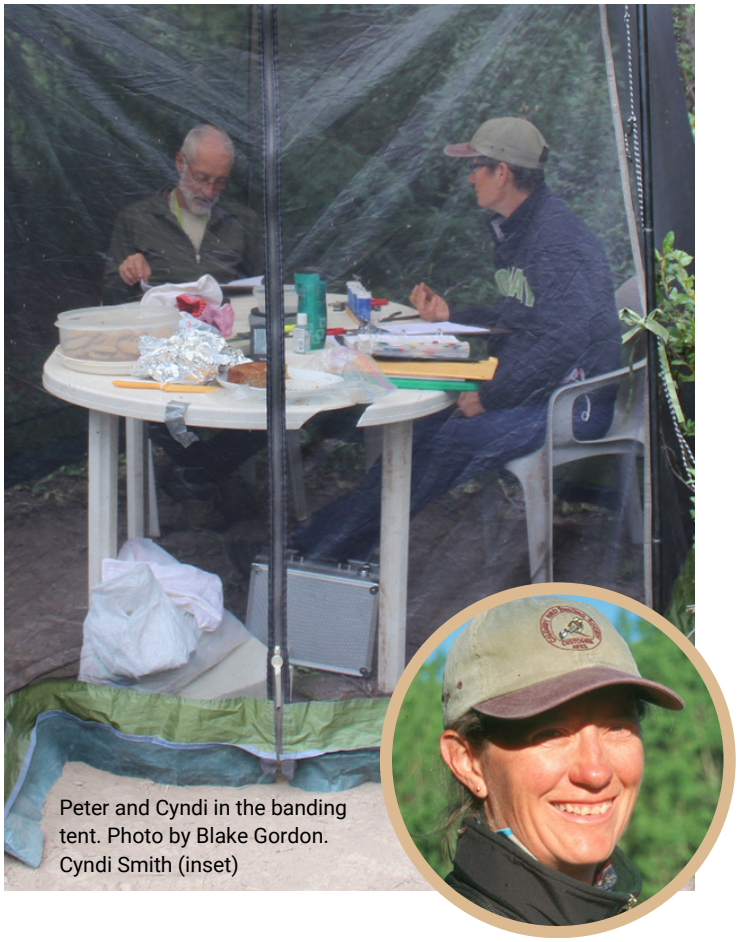
I hope these paragraphs will help you interpret the second edition, or at least point you to appropriate pages in the guide for more study.

**Check out the growth bars on this Spotted Towhee tail! Photo by Rachel Perpignani.**

# 25 Year Operators


Photo by Byron Chin

**The MAPS Program will reach its 34th year of operation during the 2023 season! This year, four stations will mark their 25th season! Thank you to all MAPS Operators – whether 2022 is your first, 10th or 25th season.**


Peter and Cyndi in the banding tent. Photo by Blake Gordon. Cyndi Smith (inset)

Happy 25th birthday to the **Ranger Creek** MAPS station operated by Cyndi Smith in Banff National Park, Alberta. It is the longest running MAPS station in a national park in Canada. Besides capturing and observing an amazing diversity of montane birds, banders also contend with an interesting mix of other wildlife: mosquitos, elk, grizzly and black bears, and wolves! Ranger Creek station is entirely run by volunteers and supported by Parks Canada and the Bow Valley Naturalists.

## Also Turning 25:

**Gin Flat East Meadow station** in Yosemite National Park, operated by IBP.

**Topsy station** in Siskiyou County, OR. Operated by Klamath Bird Observatory (see page 10.)

The **Saranchuk** MAPS station operated by Christie Borkowsky and Robert E. Jones in the Manitoba Tall Grass Prairie Preserve is also a quarter century old! The station is located in the northern extent of the tall grass prairie ecosystem and also features aspen parkland. Over the past 25 years, banders have seen a shift in the species captured at the MAPS site as the habitat has changed, with aspen filling in and the sedge meadows becoming wetter and willow shrub cover expanding. Fewer grassland species and more shrub and forest preferring species are being captured including a first golden-winged warbler (a threatened species in Canada) not too long ago. Christie reports that banding continues to be one of the best parts of the field season and something summer students enjoy learning about even though it requires a much earlier start to their normal work day.

The mobile banding set-up at Saranchuk MAPS station. Photo courtesy of Christie Borkowskyf.


Tall grass prairie at Saranchuk MAPS station. Photo courtesy of Christie Borkowsky.

# New MAPS Operators have joined the flock! Welcome!

The following operators joined MAPS in 2022 or 2023. Most are beginning operations at new stations but others have inherited a previously operated station or are starting a new station after being away for a while. We look forward to including them as part of the MAPS family for many years to come.

**Daniel Baldassarre** Oswego, NY
**Kelsey Biles** Houston, TX
**David Brinker** Catonsville, MD
**Alan Christian** Lothian, MD
**John DeLuca** Sisters, OR
**Roarke Donnelly** Atlanta, GA
**Emily Gaydos** Camp Lejeune, NC
**Steven Gabrey** Van Buren, AR
**Adam Hannuksela** Pima, AZ
**Ryan Jacob** Oak Harbor, OH
**Lianne Koczur** Jefferson, AL
**Chrissy Kondrat** Phoenix, AZ
**Edye Kornegay** Camp Lejeune, NC
**Suellen Lynn** San Diego, CA
**John Martin** San Diego, CA
**Diego Navarro** Cotulla, TX
**Tami Pearl** Berlin, MD
**Maia Persche** Madison, WI
**Aya Pickett** Pima, AZ
**Beckie Prange** Ely, MN
**Jenna Stanek** Los Alamos, NM
**Adam Stein** Mesa, AZ
**Brent Thompson** Los Alamos, NM
**Kimberley Wetten** Fort McMurray, AB

Photo by Kenneth Cole Schneider

# IBP Banding Classes

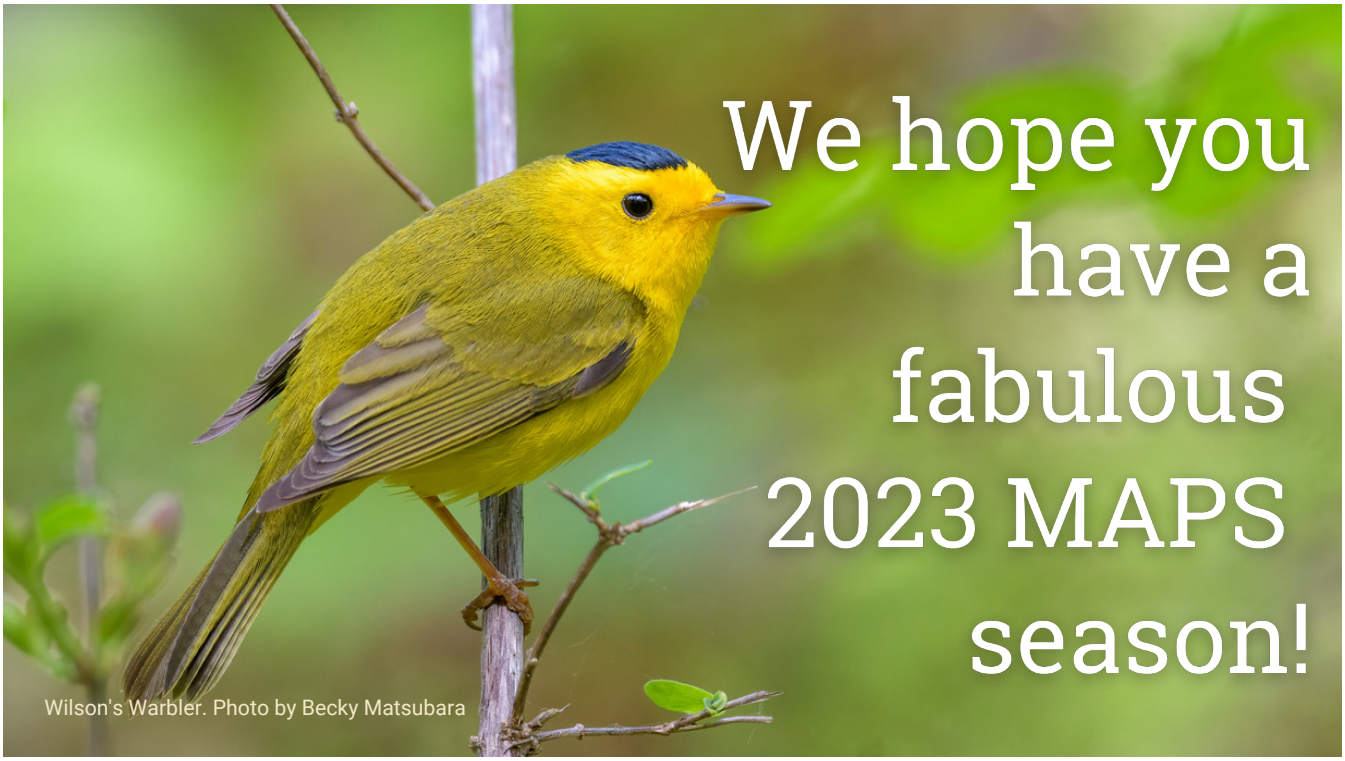
We are happy to be offering banding classes again in 2023 and partnering with Wolf Ridge Environmental Learning in NE Minnesota this summer. The tentative schedule: beginner class June 23 – 30, 2023 and advanced class July 1 - 5, 2023. There will also be a youth ornithology camp for students (entering grades 10-12). The Ornithology Field Camp will be held July 9-14, 2024. 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.

MAPS Program coordinator Danielle Kaschube shows a bird's skull to students at an IBP banding class. Photo by Rachel Perpignani.

## We'd like to share your stories!

To help spread awareness about the importance of the MAPS program, we'd love to share your photos & stories on our social media (with proper credit of course.) If you have some you'd like to share please email them to Meredith (our communications gal) mswalker@birdpop.org.




Wilson's Warbler. Photo by Becky Matsubara