The INSTITUTE for BIRD POPULATIONS

MAPS Chat

The annual newsletter of the Monitoring Avian Productivity and Survivorship Program

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Image: Melanie Underwood (adj)

Assigning age codes to MAPS captures: WRP revisited
by Danielle Kaschube

Last year we introduced the Wolfe-Ryder-Pyle (WRP) ageing scheme to the MAPS program. It was received with a little bit of excitement, some interest, and a good amount of trepidation and concern. For the most part, the introduction of the ageing scheme was successfully adopted; however, questions did arise.

A refresher on WRP:
Instead of assigning ages to birds based upon an abstract human calendar, in this ageing system a biological age is assigned to birds based upon their current plumage stage. This is especially important for species that can breed over the turning of the calendar from December to January, typically tropical species.

The age code consists of three letters:

First letter – indicates the molt cycle. For landbirds these are primarily **First, Second**, and **Definitive**, with **Third** being an option for woodpeckers. Each molt cycle begins with a prebasic molt.

Second letter – indicates if the bird is actively molting or not. **C** indicates that the bird is not actively molting; **P** indicates active molt (think "P" is for prealternate, preformative or prebasic).

Third letter – indicates the plumage the bird is in or is molting into; e.g., **J**uvenile, **F**ormative, **B**asic, **A**lternate, etc.

Some examples include: FCF - a bird in Formative Plumage (First Cycle Formative, or HY/SY); DCB - a bird in Definitive Basic Plumage (Definitive Cycle Basic, or AHY/ASY); SPB - a bird undergoing the Second Prebasic Molt (SY).

IN THIS ISSUE

Warning: There are also a few exceptions to the above letter sequencing; e.g. FAJ stands for "after first cycle juvenile plumage", which is a bird after its juvenile plumage, but a more specific plumage cannot be determined; or, SAB, stands for "after second basic plumage, a bird older than the second cycle (ATY) but a more specific plumage cannot be determined and among landbirds it is used only for woodpeckers.

These WRP determinations should be supported by codes in the remainder of the MAPS data record, e.g. if the bird is molting (BM>1 or FM =S) then the second code should be P, and if not molting (BM=0, and FM=N or A) then the second code will usually be C. And, if the bird is not molting but there are both juvenile and formative feathers in the Molt Limits and Plumage fields, the first position code should be F and the third position code should be F (e.g., FCF).

Please click HERE to view the 2019 MAPS Chat for a more in-depth discussion of using WRP codes.

Our mistakes and new discoveries:
While you were all learning about application of WRP codes, so were we. It might be hard to believe, but we make mistakes too! This is especially true when we try to roll out new ideas and coding systems. Several mistakes or system problems were caught by MAPS Chat readers and MAPS operators when they tried to apply the WRP system to the examples we gave and when they applied the system to birds in the field. Thank you to all who contacted us with questions. Below we address some of the most common questions and problems we encountered.

Problem: How to code adult birds of unknown specific age in alternate plumage?
Our original list of codes did not address what to do when you know a bird is in alternate plumage, but you aren't sure if it is first alternate (FCA) or definitive alternate plumage (DCA). In these cases, you should use WRP=UCA. We also ask that you code the body plumage category in the "Molt Limits and Plumage" section of the data as alternate, i.e. BPL=A.

This male Chestnut-sided Warbler is definitely an adult in alternate plumage. However, there is a truncate tail, but the primary coverts appear worn and the chestnut on the sides is intermediate. This would be a great time to use WRP=UCA. Photograph by fishawk on Flickr Commons.

Problem: What to do with species that may or may not have alternate feathers?
Some species, like Common Yellowthroat, may or may not go through a prealternate molt in certain age classes or due to environmental factors. If it is uncertain if an individual has alternate feathers, and a specific age class can be determined, you can use WRP=DCU or WRP=FCU.

This Carolina Wren is an adult but it is unknown what plumage it is in. WRP=FAJ. Photograph by NPS N. Lewis.

Problem: What WRP code to use for known adult (AHY) birds of an unknown plumage; e.g., either FCF or DCB?
Unfortunately, there isn't yet a great answer for this problem, and the WRP code we asked banders to use in 2019 was WRP=UCU. While WRP=UCU does not specify AHY, or indicate that the individual was not in juvenile (WRP=FCJ) plumage, other information in the MAPS data record (e.g. skull, breeding condition, juvenile body plumage, etc.) allows for those distinctions.

After discussions among IBP staff, we have decided WRP=FAJ is a better option than WRP=UCU for known adults in unknown plumage. WRP=FAJ has traditionally been reserved as an option only for species that typically can have a complete preformative molt. For example, many Northern Cardinals, swallows, Wrentits, Bushtits, House Finches, Grasshopper Sparrows, meadowlarks, and a few others that are less common in MAPS. So, WRP=FAJ (after juvenile plumage) as it was strictly defined in the original system is not necessarily exclusive to adults, but for the MAPS program we will be assuming that FAJ excludes HY birds.

We hope there will be more discussion in the near future by the system creators (Wolfe-Ryder-Pyle) and other molt experts to solidify a solution to this problem. And we will also work with the Bird Banding Lab to incorporate these codes.

Problem: What code to use for individuals during the suspended portion of a suspended molt?
This question came up during fall migration, but it may also arise during the late portion of

the MAPS season. For example, AHY Red-eyed Vireos have a suspended prebasic molt in which the body, tertials, and some coverts molt on the summer grounds. Molt is suspended during migration and then molting of the primaries and secondaries resumes in a protracted molt on the winter grounds. If an individual is captured during this suspended phase it should be coded as being mid-molt, even though it doesn't have any actively molting feathers, i.e. WRP=SPB or WRP=DPB.

Note: this solution was not initially addressed by all Wolfe-Ryder-Pyle authors. One of the authors, Jared Wolfe has written a **paper** that suggested a new code "S" in the middle position to deal with this (e.g., SSB). However, for simplicity in the coding system we have forgone using the S code in favor of the alternate solution described in the paragraph above.

Problem: How to code birds in auxiliary formative (formerly known as "first supplemental") plumage?
Auxiliary formative (supplemental) plumage is still an enigma in studies of molt and plumage because documentation of this molt is tricky. This molt often overlaps with the end of the prejuvenile and with the beginning of preformative molt, so determining where each molt starts and stops is difficult.

Because of this lack of clarity, for MAPS we will not be using the auxiliary (supplemental) plumage codes, i.e. WRP=FCS and FPS. When you believe a bird is in auxiliary (supplemental) plumage, or molting into auxiliary (supplemental) plumage, code it as if it is in formative plumage, i.e. WRP=FCF or WRP=FPF.

This Ovenbird is an ASY individual (note strong olive edging on primary coverts) but it is unknown if it is in alternate plumage. WRP=DCU. Photograph by Marcel Gahbauer on Piranga.

Currently the Bird Banding Lab's band scheduling program Bandit also does not recognize the supplemental plumage codes. Avoiding supplemental plumage codes in MAPS data should make scheduling these individuals easier.

We expect more questions to arise through the next season as we will all learn more about molt, plumage, and coding. Refer to the 2020 MAPS Manual for the most current list of WRP codes (this will also be sent with beginning-of-season email). Also see a chart of commonly-used WRP codes on page 4 of this newsletter. And please continue to send us your questions!

MAPS Information Cards

We have produced some MAPS information cards (see photo) that can be handed out at your banding station or at events. If you are interested in having some of these cards mailed to you, please email Meredith at **mswalker@birdpop.org** with your address and the number of cards you would like.

The table below may help you translate your current terminology to WRP terminology. Updates from last year are in blue.

Most commonly-used WRP codes			
Plumage/Molt	**WRP Age**	**WRP Code**	**Typical Calendar Age**
Prejuvenile/first prebasic molt	**F**irst **prej**uvenile molt	FPJ	Age = 2
Juvenile plumage	**F**irst **c**ycle **j**uvenile	FCJ	Age = 2
Preformative molt	**F**irst **pref**ormative molt	FPF	Age = 2 (Age= 5 for species that molt late)
Formative plumage	**F**irst **c**ycle **f**ormative	FCF	Age = 2 in fall, Age = 5 after new year
First prealternate molt	**F**irst **prea**lternate molt	FPA	Age = 5
First alternate plumage	**F**irst **c**ycle **a**lternate	FCA	Age = 5
Second prebasic/first adult prebasic	**S**econd **preb**asic molt	SPB	Age = 5
Basic plumage	**D**efinitive **c**ycle **b**asic	DCB	Age = 1 in fall, Age = 6 after calendar flip
Definitive prealternate molt	**D**efinitive **prea**lternate molt	DPA	Age = 6
Definitive alternate plumage	**D**efinitive **c**ycle **a**lternate	DCA	Age = 6
Definitive prebasic	**D**efinitive cycle **preb**asic molt	DPB	Age = 6
Unknown cycle codes			
Prebasic – unknown cycle	**U**nknown cycle **preb**asic molt	UPB	Age = 1; used if the individual is molting into basic plumage but it is unknown what the previous plumage was.
Unknown cycle alternate plumage	**U**nknown **c**ycle **a**lternate plumage	UCA	Age = 1
First cycle plumage, but unknown if it is formative or alternate	**F**irst **c**ycle **u**nknown plumage	FCU	Age = 5; used for species that may have alternate plumage but the difference between formative and alternate it is subtle, e.g. OVEN or female COYE
Definitive cycle plumage, but unknown if it is basic or alternate	**D**efinitive **c**ycle **u**nknown plumage	DCU	Age = 6; used for species that may have alternate plumage but the difference between formative and alternate it is subtle, e.g. OVEN or COYE
Unknown plumage	**U**nknown **c**ycle **u**nknown plumage	UCU	Age = 0
Less common/species-specific codes			
Non-juvenile plumage	**A**fter **f**irst cycle **juvenile** (this code doesn't translate well)	FAJ	Age = 1; used for species that have a complete preformative molt and there are no juvenile feathers remaining on the bird, e.g. HOSP OR for known adults in unknown plumage

Moving to molt: What MAPS has taught us about molt migration

by Meredith Walker

Molt is an essential, but costly, part of the life cycle of a bird. Replacing feathers requires a lot of energy. Since feathers are made out of protein, birds must convert protein in their diet or from their muscles to build new feathers. Annual molt can require a quarter or more of a bird's total body protein mass, much of which comes from muscle tissue.

There are also indirect energetic costs associated with molting. Fewer feathers means reduced insulation and the loss of more body heat. Also, developing feathers, called pin feathers, are still living tissue and filled with blood vessels. Exposing those blood vessels near the surface of the body causes additional heat loss. Lost flight feathers mean less efficient flight, another indirect cost.

Molt is behaviorally demanding too. Less efficient flight means birds may be more vulnerable to predators. Plus, the high energy demands of molt make it incompatible with other energetically demanding activities like breeding or migration. For adults, molt is a time to lay low, eat, and relax after breeding.

Molt is so demanding that some species actually migrate to different habitat to undergo the process- this is called "molt migration." Traditionally, many songbirds were thought to molt on, or near, their breeding grounds, prior to migration. And for many years, the phenomenon of molt migration was thought to occur in just a handful of species. But in 2018, IBP scientists found **evidence** that molt migration is more common than previously thought. Using data from the MAPS program, they looked at the probability of catching a bird undergoing molt at the same banding station that it was captured in breeding condition.

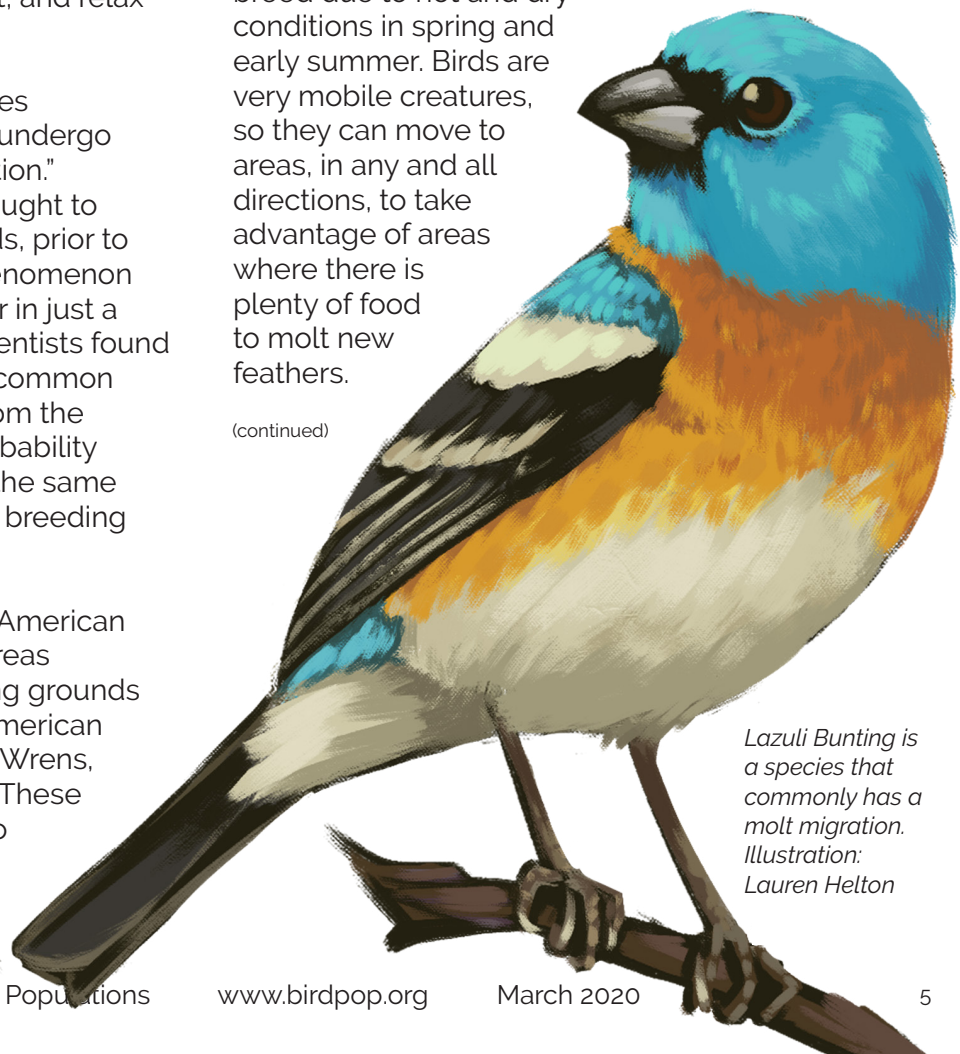
They found evidence that most North American landbirds can migrate or disperse to areas separate from the breeding or wintering grounds to molt. These included species like American Goldfinch, House, Carolina and Pacific Wrens, Gray Catbirds and Northern Cardinals. These are not merely "pit stops" on the way to the wintering grounds but include layovers of up to six weeks or more to undergo a complete molt of feathers, before moving on to winter grounds. Some species moved East or West, up to higher elevation or down to lower elevation. But most species head south, a break on their way to winter grounds.

Why move to molt? The most likely explanation is food resources (although this hypothesis has not yet been tested scientifically.) Birds breed in areas where food is abundant early in the summer, when they are courting, laying eggs and feeding chicks. Towards the end of the summer, food resources (like insects) may decrease in these habitats, but increase in others.

This decrease in insect abundance is most evident in western North America, where conditions become drier in most areas in late summer but wetter in the Mexican Monsoon Region of the Southwest.

As documented by IBP research in **2009** and **2011**, a host of molt-migrant species travel to this monsoonal region to take advantage of a late summer flush of vegetation and insects. This is especially interesting because it is an area where few species breed due to hot and dry conditions in spring and early summer. Birds are very mobile creatures, so they can move to areas, in any and all directions, to take advantage of areas where there is plenty of food to molt new feathers.

(continued)



Lazuli Bunting is a species that commonly has a molt migration. Illustration: Lauren Helton

The careful work of MAPS banders has greatly increased our understanding of the essential process of molt. Without the MAPS program, we would likely not know just how common molt migration is among North American landbirds, and this knowledge will benefit efforts to conserve them. In order to conserve bird populations, we must protect the habitat that they need at every phase of their lifecycle - including the costly, but critical phase, of molt.

Using social media to become a better bander

by Steve Albert

Determining the age and sex of birds is an essential part of the MAPS program. But ageing and sexing birds, and untangling the intricacies of molt can be hard – even frustrating. Don't you wish you could have an expert on hand at your banding station when questions arise? Well… maybe you can.

About a year and half ago, during a bird banding workshop in Ecuador, the participants agreed to exchange phone numbers and form group on the social media platform WhatsApp to exchange banding questions and insights. (While not as popular in North America as other parts of the world, WhatsApp is an instant messaging app which is used to communicate with individuals or to closed groups in real time. It also includes end-to-end encryption which protects your privacy.)

After the workshop, about 30 people signed up for the group, and have been exchanging questions, suggestions, and even pop quizzes for about a year. One of the ways in which the group interacts best is exchanging wing and tail photos (usually the keys to determining the proper age and sex) and questions about molt and age codes. The ability to send photos makes the process simple and accurate. And it's not unusual for someone to respond within a very short time — sometimes in under a minute! This group includes expert banders who are happy to answer questions.

The concept has gone so well that new groups have formed in both Mexico and Central America. So far, everyone seems to love it. Below are some of comments from people who have participating in the group:

"It's a practical tool for our colleagues in the field that have questions and want to share them with more experienced banders."

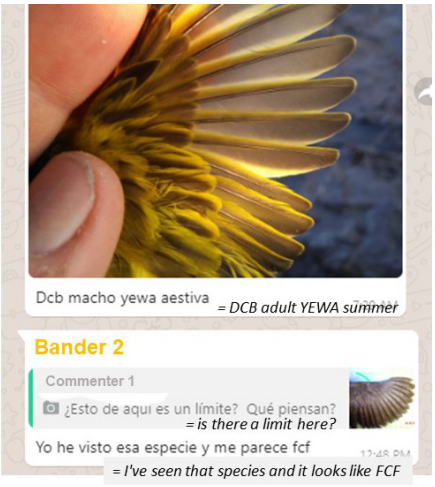
"I'm happy to have the opportunity to meet experts and learn from their observations — in real time."

"It provides instant information and, in most cases, allows the assessment of more than one expert. It helps maintain constant contact with other banders, and generates relationships that allow the banding community to grow. It reminds you that you're not the only bander out there."

Are you interested in forming a MAPS WhatsApp group?

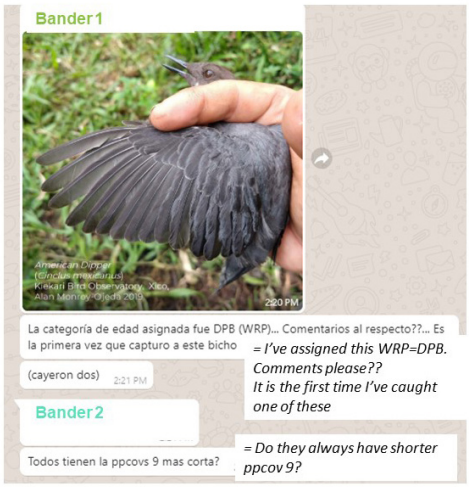
WhatsApp has been the medium of choice for the banding groups in Latin America. We realize it's not as widely used in North America as other social media apps, but it has several advantages including the ability to restrict access to a limited group, immediate notification of messages, and advanced privacy. If you're interested in trying this out, please email Steven Albert (salbert@birdpop.org) with your cell phone number.

As the screen-grabs at the top of page 7 show, topics typically concern questions about the molt or age, and the proper molt and age codes (the participants use Wolfe-Ryder-Pyle codes).



Above: Two banders quiz the Central American WhatsApp group about molt and age in a wintering Yellow Warbler.

Above: Bander and others share ideas about reconciling the WRP and skull ossification codes for a Painted Bunting.



Above: Banders chat about the WRP codes for an American Dipper, a new species for many in the group.

New MAPS operators join the flock - welcome!

The following operators joined MAPS in 2019-20. 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!

Matt Baumann Albuquerque, NM
Stephanie Beilke Chicago, IL
Simon Burton College Station, TX
Fred Collins Tomball, TX
Simon Duval Ste-Anne-de-Bellevue, QC
Stacey Haggard Cedarpines Park, CA
Libby Keyes Tinley Park, IL
Sara Pearce Meijerink Edmonton, AB
Daniela Mendes Lyndhurst, NJ
Margie Menzies Duluth, MN
Wallis Moore Reid Victoria, BC
Anita Morales Ste-Anne-de-Bellevue, QC
Cailin O'Connor Fitzpatrick Lyndhurst, NJ
Robyn Perkins Slave Lake, AB
Cathy Reader Victoria, BC
Sarah Sargent Erie, PA
Gar Secrist Lake Junaluska, NC
David Tattoni Woodside, CA
Sharna Tolfree Columbia, SC
Bethany Thornton Fort Calhoun, NE
Jen Vieth Hastings, MN

Bird photos

We all love the birds we work with and often want to share our experiences with others. However, we would like to encourage MAPS banders to think carefully when taking, or publicly sharing, photos. We recently revised IBP's photo policy to prohibit what are known as "wildlife selfies," or photos of people where the bird is a prop or trophy.

Even though snapping the photos may have taken only a second, the viewer may not know that, and think the birds are experiencing additional stress for the sake of fun photos. This article in *The Conversation* giving a fuller rationale for avoiding "wildlife selfies" is worth a read.

We do encourage taking photos of birds alone or as part of a photo documenting the scientific process of banding and data collection only if the bird is not held for additional time or stressed additionally by the photographic process. We do think it is important to document what we do for both scientific and educational purposes.

Please avoid posting pictures of birds in nets. These pictures can disturb individuals unacquainted with banding who may not know that mist-netting is a safe capture method and that we try to minimize the amount of time birds spend in the net.

Wilson's Warbler
Image: Tim Zurowski

Crunching big numbers to answer bird conservation questions

by Meredith Walker

MAPS banding data is incredibly valuable for understanding bird populations, but sometimes using it to answer conservation questions requires some impressive mathematical feats and computing power. In a **paper** just published in the journal Ecology and Evolution, IBP research ecologist Jim Saracco, along with Madeleine Rubenstein of the USGS National Climate Change & Wildlife Science Center, used gigabytes and statistical savvy to examine how climate change is affecting Wilson's Warblers- a species whose populations are declining.

The researchers combined data from 17 years of the Breeding Bird Survey (BBS) and MAPS. Combining these two datasets in a single analysis is no easy feat. Statistically speaking the BBS data and the MAPS data are apples and oranges, or perhaps even apples and pineapples.

The BBS is a roadside bird survey done once a year in the spring, with observers across the continent reporting counts of Wilson's Warblers and other birds seen or heard at regular counting locations along fixed routes. The MAPS data, on the other hand, include what is called "capture-mark-recapture" data, and the data for each individual bird consist of a series of ones and zeros denoting whether the bird was encountered at any given capture session or year.

As you know, MAPS banders also collect a variety of other data on birds to determine ages, which is critical information for accurately assessing demographic rates like productivity (ratios of young to adult birds) or adult survival rates. MAPS banding occurs multiple times across a summer, rather than once a year as in the BBS, and such within-season information, can help determine whether individuals captured are resident birds at a station or just passing through.

Combining MAPS and BBS data, with their different forms and schedules, each collected at a unique set of sites, along with data on climate variables can prove to be quite a challenge! In the end, you've got quite the tangle of numbers to make sense of in order to find an answer to your research question.

That's where advanced statistics and computing power come in. Saracco and Rubenstein used what is called an "integrated population model" to analyze the data, something that wouldn't have been practical just a couple of decades ago, or even just a few years ago. Modern, fast computers with lots of processing power allow ecologists to perform complex mathematical operations on huge sets of data, analyses that were intractable until fairly recently. And even with modern computers, the volume of data and the complexity of the math mean a computer may need a full week to do the analysis.

So what did statistics, computers, along with the hard work of MAPS banders, BBS bird surveyors, and climate scientists tell us about Wilson's Warblers? "Our model shows that spring temperature may be important for determining breeding success for populations in the Pacific Northwest and Sierra Nevada where springs are cooler but variable year-to-year," says Saracco. This is presumably because warmer springs mean earlier snow-melt and more insects to eat and feed young. But the researchers note that there is probably a limit to this effect; theoretically springs could become too warm for insects and birds.

Saracco and Rubenstein also found that drought on the warbler's wintering grounds in northwest Mexico reduced adult survival in Sierra Nevada and coastal California populations of the species, but not in Pacific Northwest populations. Late summer is very dry in the Sierra Nevada and along the coast of California, though usually not in the Pacific Northwest. Drought at the end of the breeding season leading to fewer insects, combined with drought on the wintering grounds may be a double whammy that many individuals in these populations don't survive.

Unfortunately, droughts are expected to become more frequent as the climate changes. But targeted conservation efforts might help mitigate this. "Focusing habitat preservation efforts in Baja and northwest Mexico on areas that are both drought resilient and full of wintering Wilson's Warblers would be a good idea," says Saracco.

Statistics and computers may not be the tools we usually associate with ornithologists and conservation biologists, but they are critical tools. With them, researchers can learn information that can help us protect the bird species we love, like when a drought in Mexico will stress warblers that breed in Yosemite. A day at the desk may be less fun than a day at the banding station, but it's just as important.

Why do I band birds?

by Robert G. Thobaben Jr.

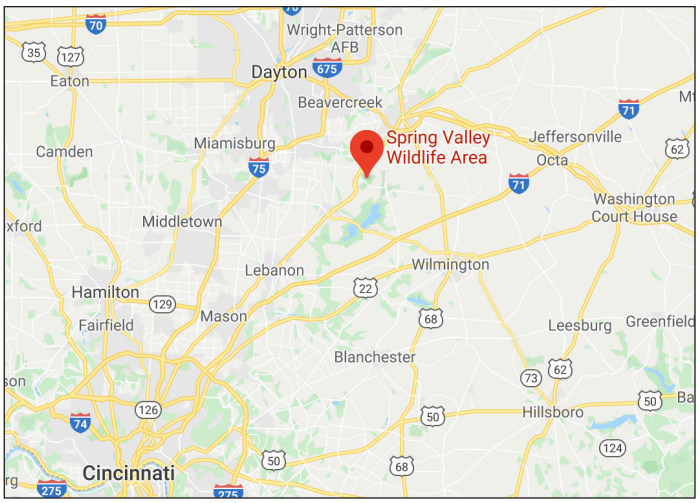
Bob holds a Pileated Woodpecker he captured at his station.

Birds represent the greatest diversity and unique adaptations of any vertebrate group of animals on earth. They represent over 10,000 species, they escaped gravity, they possess spectacular plumage, exceptional senses, and complex migrations, and they inspire the human spirit. When I present an interpretive program on birds I usually say, "As go the birds, so goes the human race".

Avian demographics expose how we are harming or helping the natural world on which we all depend. By marking an individual that we capture and band, we uniquely identify the individual and hope to recapture the bird at some time in the future. This gives us information on the individual and combined with other recaptures, the condition of the environment.

I obtained my Federal Banding Permit in 1976 after attending the University of Michigan Biological Station. I have been banding breeding birds at Spring Valley Wildlife Area in SW Ohio since 1988, when the MAPS program was introduced. The detail and standardization of data collection made complete sense to me for comparing my data with others around Ohio and elsewhere. I have learned an enormous amount from the MAPS program by submitting the data electronically with MAPSPROG and understanding the different types of bird molt. From this data we can make informed decisions when it comes to stewardship of our environment. Hail MAPS!

The area I study, Spring Valley Wildlife Area (SVWA), is a complex wetland with over 240 bird species recorded since the 1960s. I have a north and south banding station which exhibit a marshy deciduous scrub habitat and a drier wet prairie habitat, respectively.



There are numerous reptile and amphibian populations coexisting with the avian community. We have Massassauga Rattlesnakes and Spotted Turtles along with Ambystoma Salamanders and 8 frog species. SVWA is intensively managed for upland game hunting and fishing.

The insect populations of deer flies, mosquitoes and gnats are a constant nuisance while banding. Reptile traps and other outdoors-people make banding birds at SVWA challenging. I have "donated" volumes of blood and inhaled the invertebrates while I am extracting Northern Cardinal, Carolina Chickadee, and woodpeckers. Every species wants a piece of you!

The management of the area by mowing, aerial spraying of Roundup, and individuals exercising their dogs means I must remain vigilant from May 21st through August 8th. There is never a dull moment. The information gleaned from banding has demonstrated how influential changing the water level a few centimeters in the marsh, altering the timing of aerial spraying, or mowing the trails can be to the breeding bird populations. The Ohio Department of Natural Resources and area managers have helped with the MAPS project immensely.

A Carolina Chickadee, frequently seen in the Spring Valley Wilderness Area of Ohio. Image: Mark Moschell

I look forward to my 32nd year of banding breeding birds at SVWA and my 27th year of MAPS. I also want to acknowledge four subpermittees who have assisted me in the project; Stephen Lee, Sylvia Hadley, Jeff Hays, and Elvina Gibbons. Science requires collaboration and dedication to help understand complex avian behavior. MAPS is a great collaboration to preserve and monitor our "silent partners" with which we share the planet. As humans alter land use practices and introduce new chemicals into the environment, MAPS will become more important and useful in the stewardship of birds.

IBP has moved!

After 30 years in Point Reyes Station, IBP moved to Petaluma, California! Please update our mailing address in your records to:

The Institute for Bird Populations
PO Box 518
Petaluma, CA 94953

The new main office phone number is: 707-789-3224. We will continue to receive mail sent to our old PO box in Point Reyes Station at least through September. All offsite staff phone numbers remain the same.

Our new office is in the Foundry Warf complex in Petaluma (in the far left building of the photo).

IBP bird banding classes!

Images this page: Graham Montgomery

IBP is pleased to offer several bander training classes in 2020 in conjunction with some great local host organizations. Both beginning and advanced classes are available. Classes often fill quickly, so if you are interested, we recommend signing up soon.

• A beginner banding class will be held May 11-17, 2020 at the **Opossum Creek Retreat** in south central West Virginia, near the New River Gorge National River. Additional information is available on the **class information sheet.** Please contact the class host, **Keith Richardson** at 888-488-4836 to register. CANCELLED

• Four banding classes will be held at the **Wolf Ridge Environmental Learning Center** in northeastern Minnesota this summer. The **adult beginner class** dates are June 21-28, 2020 and the adult advanced class dates are June 30 - July 4, 2020. There will also be two youth ornithology camps for students (entering grades 10-12). The **Introduction to Ornithology** field camp is designed for student with little or no ornithology experience and will be held July 12-18, 2020. The Advanced Ornithology field camp is designed for student with a strong interest in birds and bird research along with prior experience with birds. This class will be held July 5-11, 2020. Please contact the class host, **Peter Harris**, or check out the banding class page for the adult beginner and advanced classes or for the Youth Ornithology Camps on Wolf Ridge's website for more information about the classes and how to register.

• A beginner banding class will be held on **Hurricane Island Center for Science and Leadership** off the coast of central Maine. The class will be held July 12-18, 2020. Please contact the class host, **Teddy Simpson**, (phone: 207-867-6050), or see the **banding class registration page** on Hurricane Island's website for more information about the class, including how to register.

• An advanced banding class will be held at the **Beaver Creek Reserve** near Fall Creek, Wisconsin. The class will be held August 24-27, 2020. Please contact Beaver Creek's Citizen Science Center at csc@beavercreekreserve.org for more information about the class, including costs and how to register.

• A fall advanced banding class will be held at the **Wolf Ridge Environmental Learning Center** in northeastern Minnesota which will tie in with their Fabulous Fall Adult Weekend. The tentative class dates are September 23-26, 2020. Please contact the class host, **Peter Harris**, for more information about the class and how to register.

Classes are often added throughout the year so please visit **IBP's banding class page** for more information. If you would like host a class at your facility, information for doing so is available **here.**

Contributing samples to feather pull project & Yellow Warbler genetics project

MAPS has partnered with the Bird Genoscape project for many years and that partnership will continue in 2020. A link to the 2020 protocols will be included with the MAPS beginning-of-season email. Please continue to collect feathers for this project! Also, if you catch Yellow Warblers at your station, consider contributing to the study described below.

Yellow Warbler project:
In brief, the project is examining the climate change vulnerability of different populations of Yellow Warbler. To get at this question, Ph.D. candidate Marina Rodriguez will be looking at portions of the DNA known as telomeres, which can yield information on a bird's age and the stress it has experienced.

Marina is looking for collaborators who capture Yellow Warblers at their station through the breeding season, and either have a permit to draw a small amount of blood or are willing to obtain one and learn how. Marina is willing to travel to your station to provide instruction. In addition, there may be a limited amount of funding available to offset the cost and hassle factor of the additional work this would involve.

If you're interested in participating, please email any or all of us. Be sure to let us know where your station is, approximately how many Yellow Warblers you band per year, and if you plan to band through the full breeding season. Thanks so much for everything you do for bird conservation!

Marina Rodriguez
mdrodriguez10@gmail.com

Danielle Kaschube
dkaschube@birdpop.org

Steven Albert
salbert@birpop.org

31 years!

The 2020 field season marks the 31st year of the MAPS Program and several individual stations are celebrating their 25th birthday. Many thanks to the station operators for all the time and effort they have put into the MAPS Program.

Happy birthday to the Morse station in Pierce County, WA!

The Morse station at the Morse Wildlife Preserve near Graham, Washington was started by Don Norman (above, left) and is a partnership between the Puget Sound Bird Observatory, Tahoma Audubon, and the land owner, Forterra. Many volunteer banders have made the effort possible, especially the primary assistant, Clarice Clark (above, center), who has volunteered from the beginning and nearly every session, and current lead bander, Nathanael Swecker (above, right).

Happy birthday to the Beaver Meadow station operated by David Junkin in Wyoming County, NY

The Beaver Meadow station on the Beaver Meadow Buffalo Audubon preserve in Java, New York was started by David Junkin (pictured right) 25 years ago and this intrepid bander is still operating it today!

David Junkin

The following stations have also reached 25 years of operation this year:

Muddy Hollow - operated by Point Blue Conservation Science in Marin County, CA.

Oak Openings - operated by Mark Shieldcastle and the Black Swamp Bird Observatory in Lucas County, OH.

The Muddy Hollow and Oak Creek Openings operators were pictured in previous MAPS Chats. They have multiple stations that have reached the 25 year mark!

The INSTITUTE for BIRD POPULATIONS

We are so grateful to all of our MAPS program partners. Your early morning wake-ups, hard work and dedication leave a legacy. They have resulted in a data resource that scientists can use to answer critical questions in bird conservation. And in our present moment, with bird populations showing alarming declines, your work is all the more important.