The INSTITUTE for BIRD POPULATIONS

MAPS Chat

The Annual Newsletter of the Monitoring Avian Productvity & Survivorship Program

Number 22 April 2022

Photo by Mick Thompson

Hey Science! What have you done with our MAPS data lately?

by Meredith Walker

What drives MAPS banders to roll out of bed at zero-dark-thirty and fuss with mist nets in the pre-dawn chill? The love of birds of course (!) and the excitement of having an intimate interaction with these magical creatures we can normally only observe from afar. But beyond the immediate thrill, it's the knowledge that the data we painstakingly collect will be used by scientists to help us understand, and conserve, the birds we dearly love. Here is a review of some of what scientists have learned from your MAPS data since the 2021 issue of MAPS Chat. It spans a wide range of topics from bird morphology, population dynamics, response to climate change and all the way to molt.

Morphology

A fascinating, soon-to-be published study by Casey Youngflesh and Morgan Tingley of UCLA along with IBP scientists used MAPS data from over a quarter of a million birds captured at 1124 banding stations over 30 years to look at how birds' morphology (shape and size) changes across space and over time. Comparing individuals within species they found that birds breeding at lower latitudes (closer to the equator and generally warmer climates) are smaller than individuals of the same species breeding farther north in generally cooler climates. This is further evidence for Bergmann's rule, the principle that body size in warm-blooded animals correlates with external temperature, with larger animals found in colder climates and smaller ones in warmer climates. This is because smaller bodies have more surface area per unit of volume and are able to shed heat better.

More surprising is the finding that as the climate warmed, birds have gotten smaller.

In This Issue

This study builds on a 2019 study that used a long-term dataset of migratory birds killed by window collisions in Chicago. This MAPS-based study found evidence of this "shrinking" trend across the continent and in twice as many species. In addition, while the first study found evidence suggesting that birds wings were lengthening over time, the MAPS-based study of live birds found that the absolute length of wings was not changing, rather wing length stayed the same as body mass declined.

However, Youngflesh and co-authors found that wing length did increase with elevation while body sized decreased. The researchers hypothesize that this is due to lower air density at higher elevations and when air is less dense, wings generate less lift. So longer or larger wings may help compensate for that. This is the first study to show, at a large scale and across many species, an increase in wing length with elevation that is not a side-effect of larger body sizes as previously believed.

Life History

A study by scientists at the University of Michigan used vital rates data derived from MAPS banding data to examine how the trade-off between reproductive output and survival is related to migration distance in birds that breed in the boreal forest of the northern US and Canada. A trade-off between investment in reproduction and investment in survival is a fundamental pattern in biology. Species tend to either reproduce quickly and die young, or reproduce slowly but live longer. Migration is generally thought to be risky for birds and so birds that migrate longer distances are assumed to have lower survival. But the researchers found that boreal breeding species that migrated longer distances to their wintering grounds actually tended to live longer as well. However, longer distance migrants tended to lay fewer eggs per year than short distance migrants. The researchers suggest that these results may be to time allocation- a longer trip to the breeding grounds gives you less time to breed (and fewer possible clutches.) Evolutionarily the reduction in annual reproductive output must be made up for with higher adult survival (more years to breed.) But longer migrations allow boreal breeding birds to winter in humid equatorial forests with lots of food resources which may increase their survival and make the trip worth it.

Canada Warbler.
Photo by Matt McGillivray/Flickr

Demographics

Two researchers at Stony Brook University in New York used the MAPS dataset to explore important concepts in population dynamics- the study of how and why populations change in size and structure over time. The MAPS dataset is particularly useful for these studies because banding and ageing birds allows us to estimate important parameters of a population such as productivity, survival and recruitment (the rate that breeding individuals are added to the population, either by surviving to breeding age or by emigrating from another population). There are few long-term datasets of non-human or non-domestic animals that provide enough information for these estimates. Bilgecan Şen and H. Reşit Akçakaya used MAPS data to test the "vital rates hypothesis" which seeks to explain the

relationship between local abundance of a species and its wider distribution. In a second study, they used MAPS data on Brown Creepers to test a statistical method they devised to estimate fecundity, survival and density dependence from mark-recapture data. Conservation biologists need robust estimates of these parameters to make predictions about changes in the size and distribution of populations and take appropriate conservation actions.

Yellow Warbler.
Photo by Gerard Cachon/Flickr

Climate

A study led by Dr. Rachael Bay from the University of California Davis with colleagues from several institutions including IBP, investigated whether individual Yellow Warblers winter in areas with a climate similar to their breeding grounds. They used genetic data (some of which came from MAPS and MoSI program banders) to link populations of Yellow Warblers breeding in different regions of North America with populations wintering in specific regions of Central and South America and compared the climate between the locations. The researchers also looked at differences in the warblers' physical characteristics and their relationship with different climatic variables.

They found that Yellow Warblers migrated between areas with similar amounts of monthly precipitation during the season that the birds occupied the area (i.e. spring and summer months in breeding areas and winter months in non-breeding areas.) Furthermore, the researchers found that Yellow Warblers breeding in wetter regions tended to have longer, deeper bills. Studies in other species suggest that larger bills may help birds shed heat in warmer or more humid environments. Alternatively, differences in bill size may reflect local differences in food resources (insect types in the warbler's case.) All of this adds up to a potential mechanism that may allow Yellow Warblers to maintain their local adaptations to different precipitation levels. Because birds that breed in wetter areas also winter in wetter areas, their adaptations to more precipitation are advantageous across their life cycle.

Another study by Kristin Ruegg of Colorado State University and colleagues used similar methods and data, again including MAPS and MoSI data, to look at climate across the annual cycle of Willow Flycatchers. The researchers found that the 4 genetically distinct populations of Willow Flycatchers (Eastern, Interior West, Pacific Northwest, and Southwest) had different sized “climate niches,” or range of temperature and precipitation variables, that they preferred and that the endangered Southwest Willow Flycatcher population had the narrowest niche on both the breeding grounds and the wintering grounds.

A Willow Flycatcher.
Photo by Jamie Chavez/Flickr

The Southwestern Willow Flycatchers also had the most overlap between its wintering and breeding climate niches, suggesting it was specialized to these climatic conditions. Whereas for the other populations, especially the Eastern Willow Flycatchers, the breeding and wintering climate niches did not overlap as much. This finding has conservation implications. Ruegg writes: "Remarkably, when paired with population-specific demographic trend data since the late 1960s, we find that populations with narrower climate niches across seasons are already endangered or steeply declining, while populations with broader climate niches across seasons have remained stable in recent decades."

Ecology

A study using MAPS data examined how bison reintroduction at a private nature preserve in Nebraska affected the Bobolink population. The study by Rachel Kaplan and Nico Arcilla of the International Bird Conservation Partnership used MAPS data to compare the abundance and productivity (number of young produced) of Bobolinks on the preserve before and after bison reintroduction in 2015. Prior to the reintroduction, periodic haying and controlled burning occurred on certain areas of the preserve. In addition, cattle were rotationally grazed on the preserve (rotated on and off certain areas to prevent overgrazing). These practices helped prevent encroachment of woody vegetation to maintain grasslands, and they continued after bison arrived. But in contrast to cattle, reintroduced bison were not rotationally grazed and were instead confined to a section of the preserve because they are more difficult to manage and move around.

The researchers hypothesized that the reintroduction of bison, a native herbivore and keystone grassland species, would improve the habitat for Bobolinks and predicted that Bobolink abundance and productivity would improve post-reintroduction. Unfortunately, that's not what happened. Bobolink abundance and productivity declined steeply in areas occupied by the bison, while they remained stable in adjacent areas with no bison. This was likely due to over-grazing in areas with bison, which is not because bison graze differently than cattle but because they were managed differently (not grazed rotationally) due to the fact that they aren't domesticated and docile.

Bobolink. Photo by Steven Kersting/Flickr.

Molt

A new paper by IBP biologist Peter Pyle, along with Thomas Ryder, Jared Wolfe and colleagues from the National Audubon Society and Environment and Climate Change Canada, refines the Wolfe-Ryder-Pyle (WRP) age coding system after a decade of use and input from bird banders- many of them contributors to the MAPS program. Peter discusses that paper and walks through some examples of WRP use later in this issue.

A study of molt in three species of *Empidonax* flycatchers by IBP seasonal biologist Blaine Carnes and co-authored by Pyle takes an evolutionary approach to molt. Using data from

our Boreal MAPS program (done in partnership with Owl Moon Environmental Inc.), the study looked at the molts and plumages of Yellow-bellied, Least, and Alder Flycatchers, three species that do most of their molting on their wintering grounds in Central and South America. The researchers found that these species have fairly complex molt strategies (because *Empidonax* never make it easy!). They start their preformative and prebasic molts on the breeding grounds, suspend them during migration, and complete them on the wintering grounds, where they also undergo prealternate molts. To add to the complexity, the start of the prealternate molting sequence can overlap with the end of the prior molts. To put these molt strategies in an ecological context, the researchers relate the extent of each of these molts to the latitude and habitat used by each species. Latitude and habitat affect both the amount of solar radiation experienced and the food resources available to birds throughout the year- both of which affect feather quality and in turn shape molting strategies.


Yellow-bellied Flycatcher.
Photo by Rejean J. Deschenes/Flickr

The MAPS Legacy

Long-term datasets are rare because they can take a lifetime or more to accumulate. There are other long-term data sets in ornithology, but few as detailed and geographically broad as MAPS. The data that you collect as part of the MAPS program are a gift to the future of ornithology and bird conservation that will allow researchers to address questions not yet conceived of, and understand changes that are ongoing, as well as events that are yet to occur. As Nico Arcilla, the scientist who researched Bobolinks and bison grazing, expressed:

Song Sparrow.
Photo by Fyn Kynd/Flickr

> *"We could not have done this study without MAPS data. When the first MAPS data were collected in this area, I don't think the biologists doing so could have imagined that any of their sites would host bison reintroductions. MAPS data provided the baseline we needed to make a direct comparison between bird abundance and productivity before and after bison reintroduction."*

With each year of data added, the scientific and conservation value of the MAPS dataset grows. The MAPS dataset is a collaborative creation of many hands over many years and an expression of our love of birds and desire to conserve them. None of it would be possible without you- the skilled, talented and dedicated bird banders of the MAPS program. We are so grateful for you and you work, and the scientists and conservationists of the future will be grateful as well.

Integrating Calendar-year and WRP codes, and a Peek at Upcoming Code Formatting in the Next Edition of the *Identification Guide to North American Birds*

by Peter Pyle

It has been over 12 years since Wolfe et al. (2010) first proposed the "WRP" system for coding the age, molt status, and plumage of birds. Unlike traditional systems, such as that used by the BBL and MAPS for decades, the WRP system can be used at all latitudes and throughout the world. It is based not on the calendar year but on molt and plumage strategies that have evolved in all birds, and which thus form a solid basis for comparison between and among species. As our understanding of molt strategies and terminology develops, North American banders and others have gradually seen the value of the WRP system and have been adopting it, despite the fact that calendar-year systems function reasonably well at northern latitudes. Banders in our MoSI Program in Latin America and the Caribbean have already adopted WRP coding as calendar-based coding does not work for Neotropical species. It may seem daunting at first but if MAPS banders have successfully adapted to Windows 10 from Windows 7, they should have no problem adapting to WRP from calendar-based systems!

As with any large and complex classification system, WRP age-coding has undergone some growing pains and areas that needed refinement. Recently we have arrived at what we believe is a final or near-final version of the WRP system that optimizes functional age coding for birds globally. We emphasize ageing birds to "core" WRP codes, those which designate ages, molts, and/or plumages that can be used in future analyses to understand not just bird demography but also molt and plumage strategies. We also allow banders the flexibility to use non-core codes in their protocols, primarily those that designate unknown ages or plumages and will be excluded from data sets for many analyses.

Core WRP codes and how they relate in most cases to calendar-year codes have been covered well in several previous articles (Pyle et al. 2021; MAPS Chats from (2019, 2020, 2021). For passerines without prealternate molts, only six core codes will

Back-capped Chickadee.
Photo by Mick Thompson/Flickr


Northern Cardinal.
Photo by Andy Morffew/Flickr

cover the great majority of birds encountered by North American banders: FCJ (first cycle juvenile), FPF (first cycle preformative), FCF (first-cycle formative), SPB (second prebasic molt), DCB (definitive cycle basic), and DPB (definitive prebasic molt). For woodpeckers and small hawks the above plus two additional codes, SCB (second cycle basic) and TPB (third prebasic molt) will be needed, and for birds with prealternate molts, four additional codes can be added to this list, FPA (first prealternate molt), FCA (first cycle alternate), DPA (definitive prealternate molt), and DCA (definitive cycle alternate). Important non-core code for MAPS will also be M-FCF and M-FCA (see below). Hence, learning these 12 core codes and two non-core codes will allow effective age-coding of all captured birds in which age, molt status, and plumage are known. MAPS banders should do their best to assign one of these 12 core codes to all of their captured birds.

The plot thickens a bit when it comes to birds in which age, molt status, or plumage are not known, either because plumages are indistinguishable (for example, in species like Bushtit or Northern Cardinal that can have complete preformative molts) or because the bander is unsure of age, molt, or plumage status due to intermediate or conflicting characteristics. The assignment of "unknown codes," as we call them, created much of the confusion during the development of the WRP system but, as many will not be used in analyses, having these be standardized is not as important. To assist with unknown-code options, users can either assign the letter U to one of the three positions or use what we have introduced as an adjunct code, M, indicating that the designated WRP code is at a minimum of a particular molt cycle or age group. The use of a "minimum code," for example M-FCF or M-FCA, gives more information and better fits within the WRP framework than the use of U, for example UCU. But certain programs can use either or both options to designate slightly different things. For example in the MAPS program, M-FCF or M-FCA should be used for the equivalent of age AHY or 1, and UCU should be used for the equivalent of age U or 0 on those birds that escape before a designation of even HY or AHY could be assigned.

I am nearing completion to the revision of the *Identification Guide to North American Birds Pt. 1* Big changes will include:

- a revamping of first-cycle terminology - incorporating the terminology of Howell et al. (2003) including preformative molts and formative plumages. These terms replace "first prebasic molt" and "first basic plumage" of the previous version
- putting measurements in tables for easier access and including exposed culmen and tarsus for all species (as I did for Part 2), and including mass for species and, in many cases, sexes and/or subspecies
- overhauling and standardizing recognized subspecies
- adding six-letter alpha codes
- adding a section for each species on available WRP core and unknown codes.

There will now be four places within each account in which month ranges will be

White-crowned Sparrow.
Photo by Mick Thompson/Flickr

associated with codes: for molts, age categories, WRP categories, and in the bar graphs.

Here I will run through a few examples of common birds to give MAPS banders a glimpse of what is to come, and how the month ranges and codes (as compared to the calendar-year codes we are all used to) will interact with each other.

These changes may seem overwhelming at first, but I am confident that, with experience and continued incorporation ofWRP coding in MAPS data, it will become as easy to use as calendar-based systems. And it will be a much more effective methodology for comparing the ages of birds globally, for example, between the MAPS and MoSI programs.

Now, onto the examples. First off, note that the molt terminology at the beginning of the molt section (blue font below) has been revised from the first edition to include the preformative molt (PF) and the second and definitive prebasic molts, which I will be designating as "PBs". I will also be including WRP code options to the age couplets (green font) and will be adding a specific WRP section that indicates specific month ranges in which each WRP code can be expected (red font). The month designations in these couplets will also be revised, e.g., "Jun-May/Aug," now indicating June of one year until August of the next.

Finally, note that we have introduced another adjunct code, specific to WRP code FCF, to separate HYs that have finished the molt (H-FCF) from SYs that have not begun the second prebasic molt yet (A-FCF). This allows separation of these age cohorts for analysis, HY and SY, respectively. This primarily occurs in species in which the molting season is protracted. For most species these adjunct codes will not be needed, and for those that it is, only for 1-2 months at most in summer, as will be indicated in the WRP section.

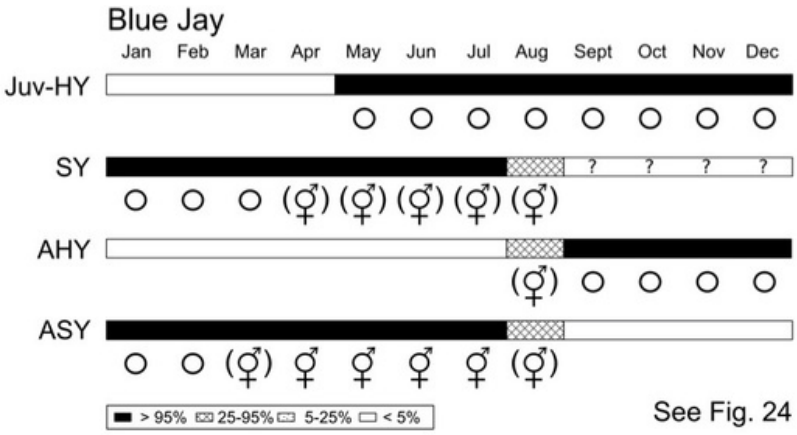
Blue Jay

This species lacks a prealternate molt and has a partial preformative molt, a strategy common to many species captured in MAPS, including corvids, chickadees, nuthatches, thrushes, and many wrens, finches, sparrows, and warblers. Until the prebasic molt, HY/SY (FCF) and AHY/ASY (DCB) Blue Jays are readily separated, as indicated by the black sections of the bars in the graph. As molt can begin as early as May, SPB and DPB can also be used for molting birds in May-Jul. It is only during Aug, when birds are completing the molt, that some birds need to be aged AHY and M-SPB. I include unknown codes in brackets when core codes are also available for the same month. Before giving in to one of these unknown codes, see if you can be more specific – it will make the data you take more valuable. Once molt completes in Sep, all birds are aged AHY (DCB), although M-SPB continues as an option this month for birds completing molt. The question marks within the SY bar at the end of the year are because some SYs possibly may be aged by roof-of-mouth color.

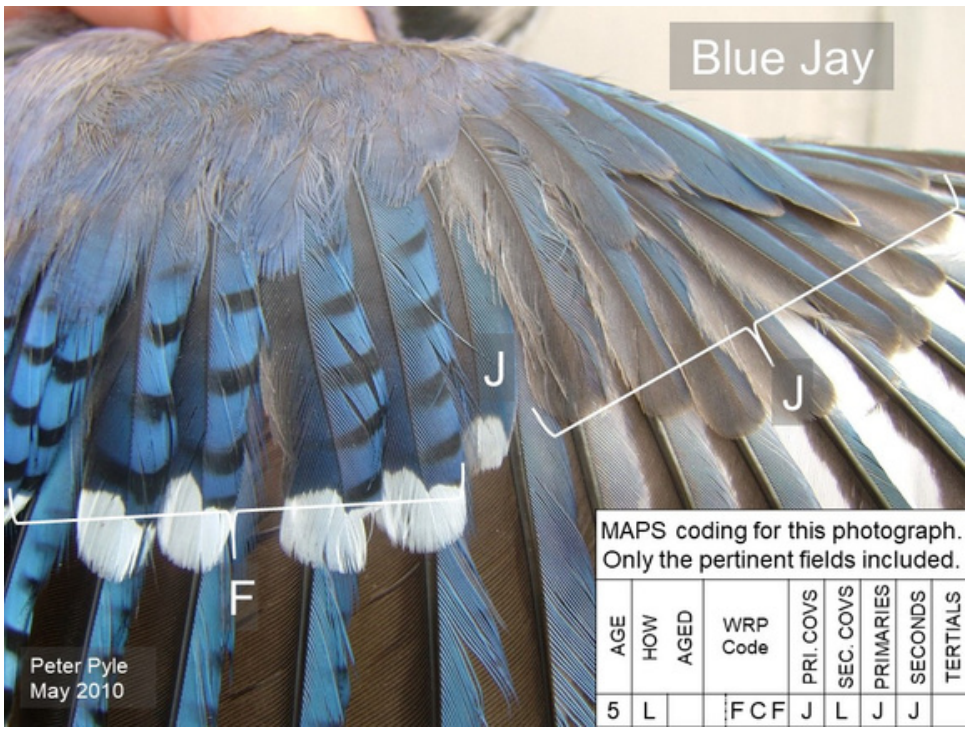
PF partial (Jun-Oct), PBs complete (May-Sep), PAs absent.

HY/SY (FCJ/FPF/FCF/SPB; May-Apr/Aug):
AHY/ASY (DCB/DPB; Jul-Jun/Aug)

WRP: FCJ (May-Aug); FPF (Jun-Oct); FCF (Jul-Jun/Jul); SPB (May-Aug); DCB (Jul-Jun); DPB (Jun-Aug); [M-SPB (Aug-Sep)]. Use H-FCF or A-FCF in Jul as needed.




Blue Jay. Photo by Dennis Church/Flickr



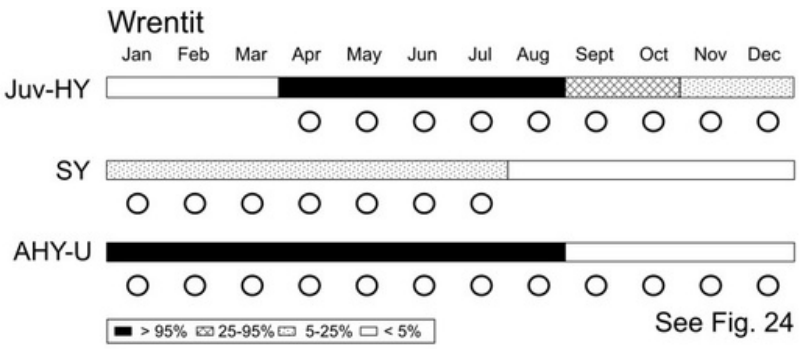
Wrentit

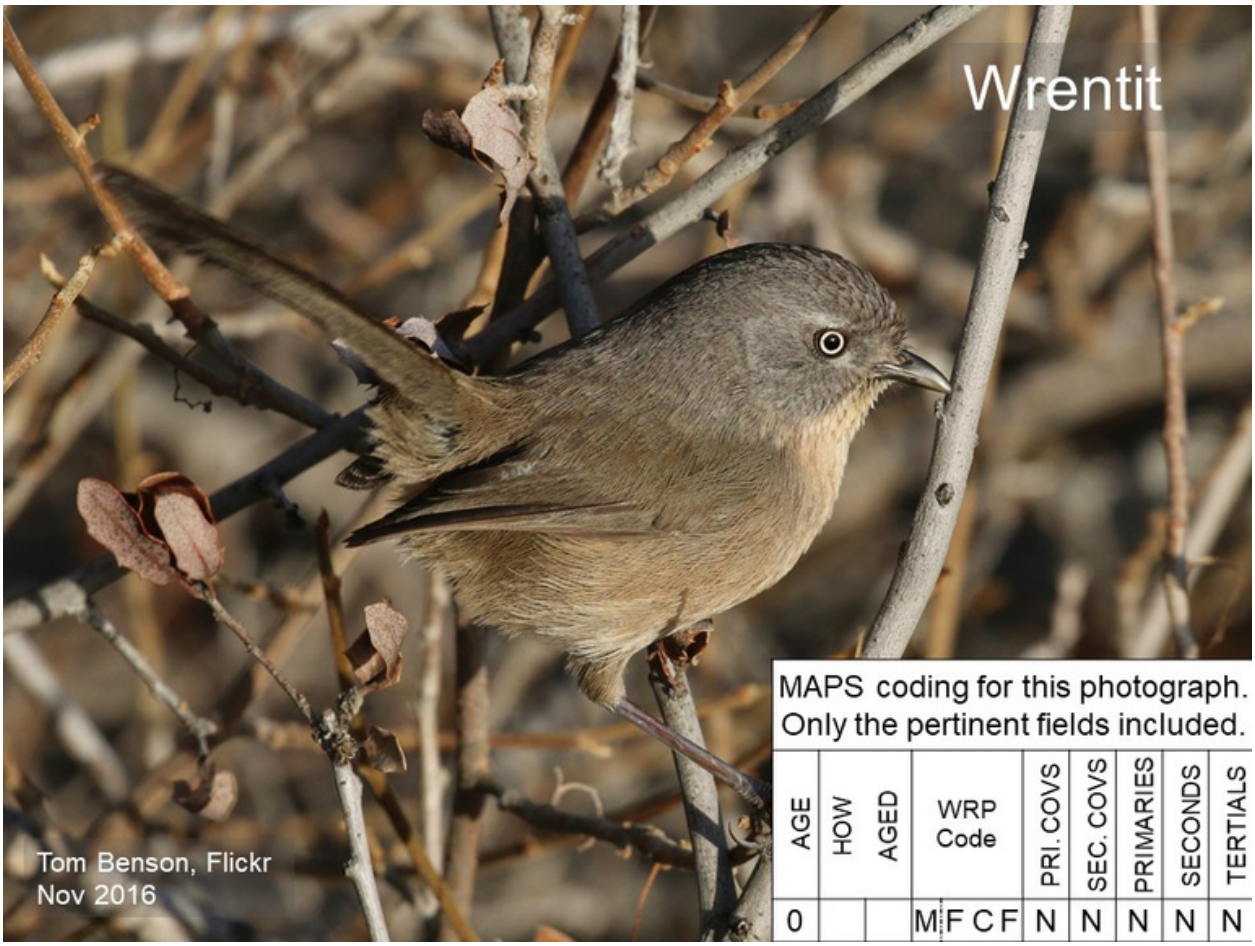
Wrentit differs from Blue Jay in that the preformative molt can either be incomplete ("eccentric") or complete. For those birds with incomplete molts, HY/SYs (FCF/SPBs) can be aged, whereas following complete molts birds can only be aged U/AHY - for these M-FCF and M-SPB become the only WRP options and are thus not included in square brackets. As with Blue Jay, the month ranges given for the molt, age, and WRP sections and the bar graph all line up, except that molt can extend for a month or two beyond what is indicated in the age section and bar graph; molting birds in Sep of unknown age can thus be given WRP code M-FPF indicating they are either undergoing a complete preformative molt or a complete prebasic molt. SYs (SPBs) can only be aged through Jul, as by Aug the retained juvenile feathers following an incomplete molt (inner primaries and outer secondaries) have typically been replaced.

PF incomplete-complete (Jun-Sep), PBs complete (Jun-Sep), PAs absent.

HY/SY (FCJ/FPF/SPB; Apr-Mar/Jul): U/AHY (M-FCF/M-SPB; Sep-Aug):

WRP: FCJ (Apr-Aug); FCF (Aug-Jul); FPF (Jun-Oct); SPB (Jun-Jul); M-FCF (Aug-Jul); M-SPB (Jun-Aug). [M-FPF Sep-Oct]





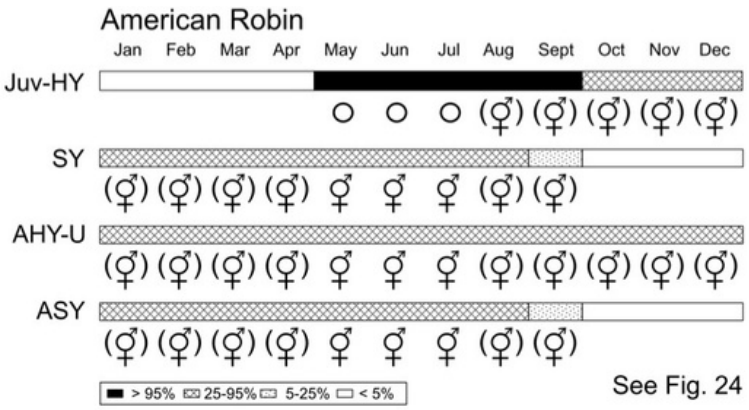
American Robin

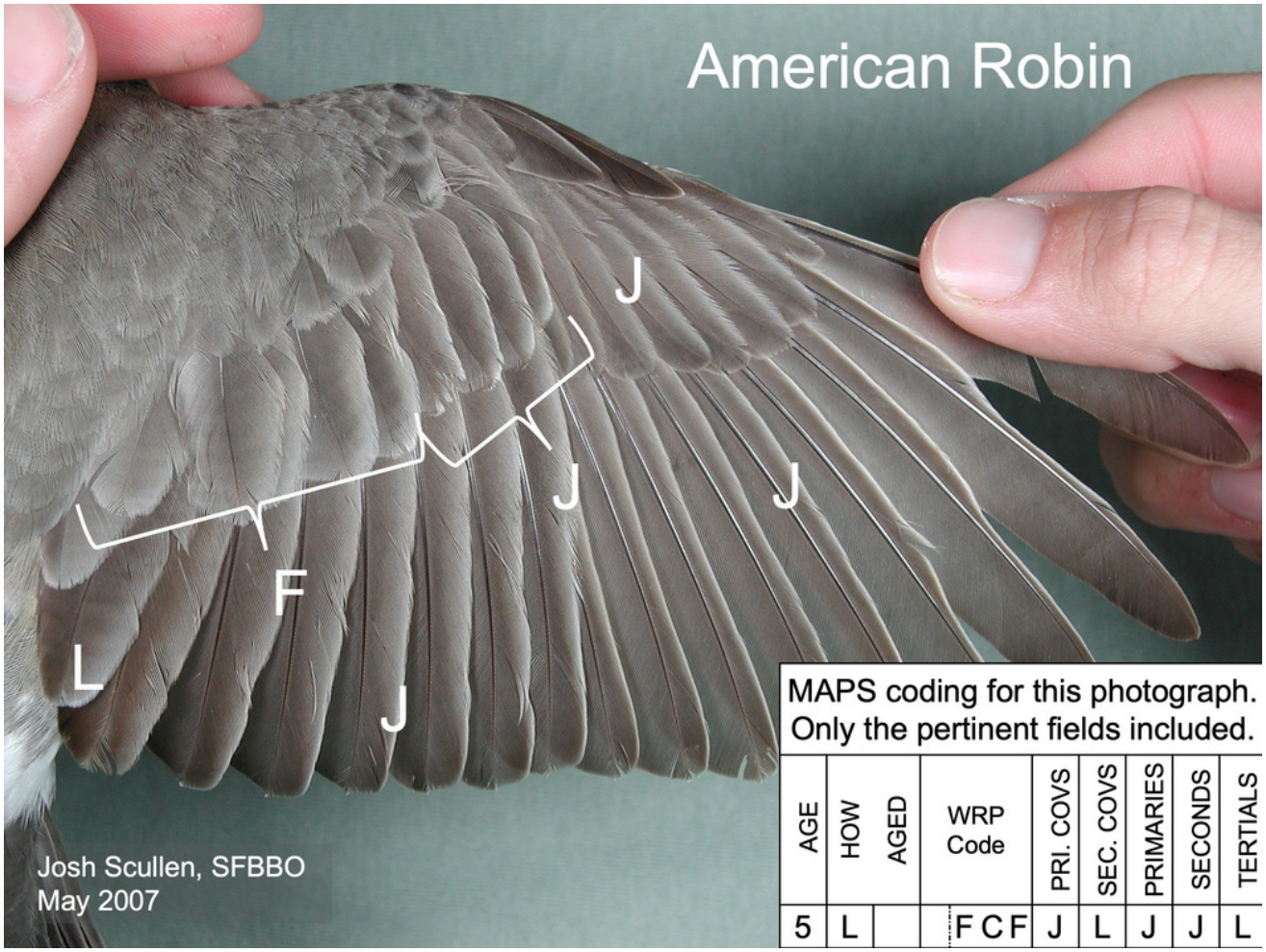
American Robin is similar to Blue Jay in having partial preformative molts and lacking prealternate molts, but in this case more intermediates occur that are difficult to age, as indicated by the hatched bars for HY/SY and AHY/ASY from Oct to Aug. Thus, the added code M-FCF for Oct-Jul (as well as M-SPB for May-Oct) are indicated as a regular "unknown code" option in brackets for these birds. Ideally these will not be needed and most birds banded in the MAPS program can be given one of the core codes FCJ, FPF, FCF, SPB, DCB, or DPB.

PF partial (Jul-Oct), PBs complete (Jun-Oct), PAs absent.

HY/SY (FCJ/FPF/FCF/SPB; May-Apr/Sep):
AHY/ASY (DCB/DPB; Aug-Jul/Sep):

WWRP: FCJ (May-Sep); FPF (Jul-Oct); FCF (Aug-Jul); SPB (May-Sep); DCB (Aug-Jul); DPB (Jun-Sep); [M-FCF (Oct-Jul); M-SPB (May-Oct)].





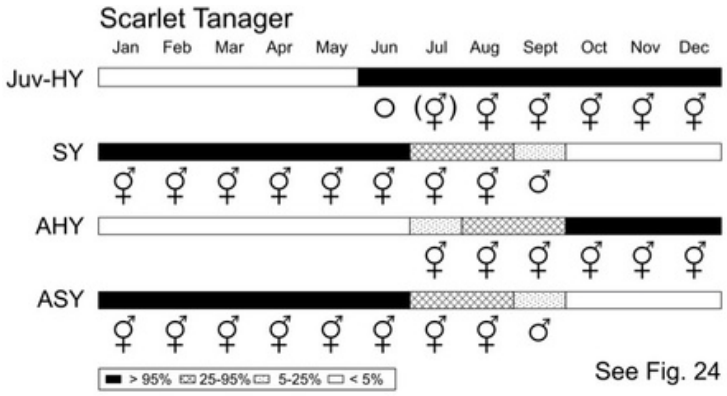
Scarlet Tanager

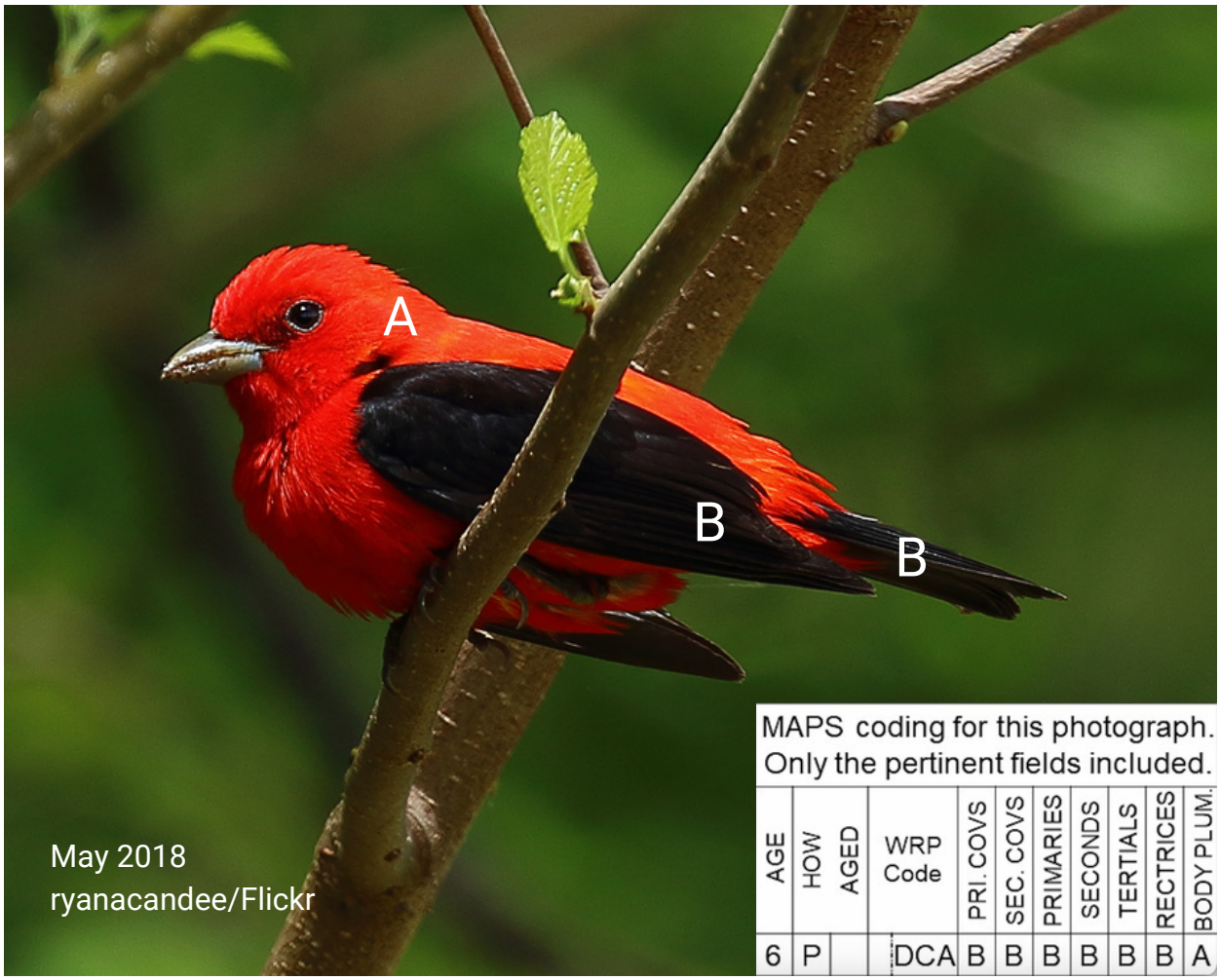
Scarlet Tanager is well known for its prealternate molt, males being green in fall and winter and brilliant red in summer. Following the preformative molt, birds are easily aged, as indicated by the black bars in the graph for Aug-Jun. In both the age couplets and the WRP section, codes FPA, FCA, DPA, and DCA are indicated along with the month ranges in which they should be assigned. As with Blue Jay, the only unknown code that will be frequently used is M-SPB for molting birds in Jul-Sep, at which time age criteria may be obscured.

PF partial (Jul-Dec), PBs complete (Jul-Sep); PAs: partial (Jan-Mar).

HY/SY (FCJ/FPF/FCF/FPA/FCA/SPB; Jun-May/Sep):
AHY/ASY (DCB/DPA/DCA/DPB; Aug-Jul/Aug):

WRP: FCJ (Jun-Aug); FPF (Jul-Dec); FCF (Aug-Mar); FPA (Jan-Mar); FCA (Mar-Aug); SPB (Jul-Sep); DCB (Aug-Feb); DPA (Jan-Mar); DCA (Feb-Jul); DPB (Jul-Sep); [M-SPB (Jul-Sep)].





MAPS coding for this photograph. Only the pertinent fields included.

AGE	HOW AGED		WRP Code	PRI. COVS	SEC. COVS	PRIMARIES	SECONDS	TERTIALS	RECTRICES	BODY PLUM.
6	P		DCA	B	B	B	B	B	B	A

Northern Parula

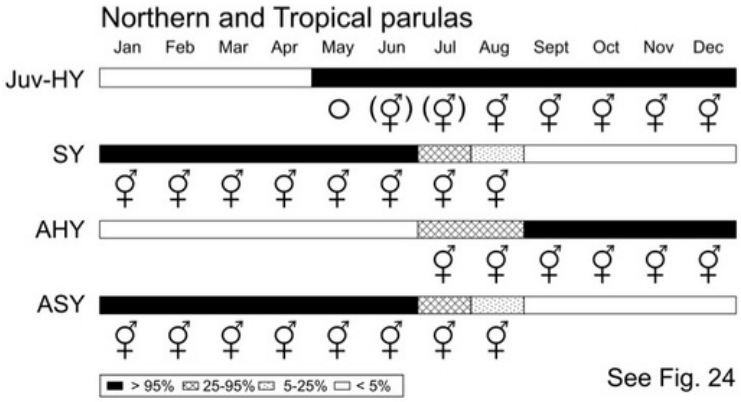
This species also has a prealternate molt in some but not all individuals. WRP coding is similar to that of Scarlet Tanager except that more options are available for birds captured in Apr-Jul. If there are no signs of prealternate molt, the codes FCF or DCB can continue to be used during this period, whereas birds that show signs of this molt (e.g., as indicated by the scattered newer-looking feathers in the head of the bird below) can be coded FCA or DCA. Signs of prealternate molt may be difficult to infer, in which case WRP codes FCU and DCU can be used, indicating the age but that plumage status is unknown. This is one area in which we hope WRP coding will encourage MAPS banders to look more closely for presence or absence of alternate feathers in breeding SYs and ASYs, so that we can learn more about the frequency of this molt in certain species.

Northern Parula.
Photo by John Sutton/Flickr.

PF partial (May-Jul), PBs complete (Jun-Aug), PAs absent-limited (Mar-Apr).

HY/SY (FCJ/FPF/FCF/FPA/FCA/SPB; May-Apr/Aug):
AHY/ASY (DCB/DPA/DCA/DPB; Aug-Jul/Aug):

WRP: FCJ (May-Jul); FPF (May-Jul); FCF (Jul-Mar/Jul); FPA (Mar-Apr); FCA (Apr-Jul); SPB (Jul-Aug); DCB (Aug-Mar/Jul); DPA (Mar-Apr); DCA (Apr-Jul); DPB (Jul-Aug); [M-SPB (Jul-Aug); FCU (Apr-Jul); DCU (Apr-Jul)].



Other commonly captured birds in which prealternate molts occur in some, but not all birds, include White-eyed Vireo, White-breasted Nuthatch, Field Sparrow, Dark-eyed Junco, Yellow-breasted Chat, Brewer's Blackbird, Orange-crowned Warbler, Common Yellowthroat, Wilson's Warbler, and Rose-breasted Grosbeak.

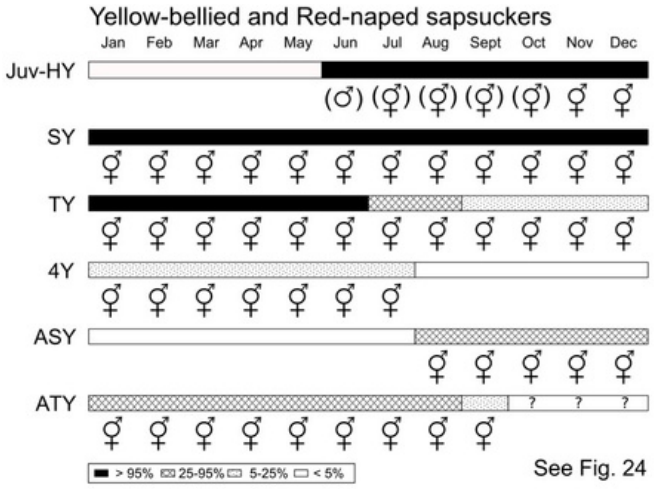
Yellow-bellied Sapsucker

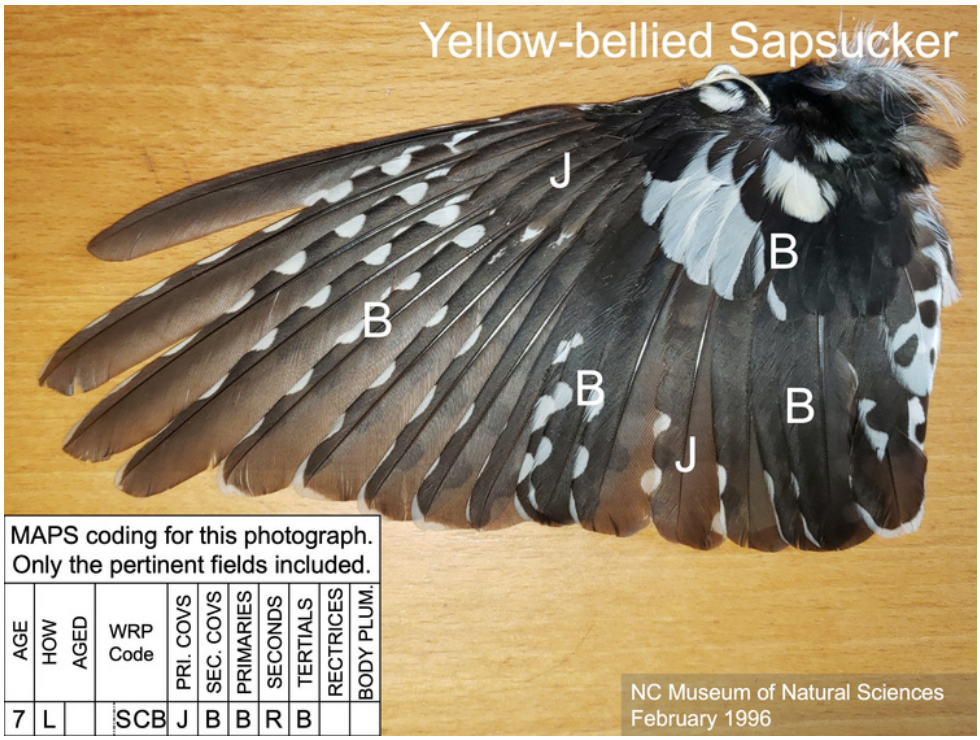
Woodpeckers differ among MAPS-captured species in that SY/TYs and ASY/ATYs are readily aged and, as confirmed by IBP's work on Black-backed Woodpeckers, a small proportion of TY/4Ys can also be aged. For these, the WRP codes SCB, TPB, TCB, and 4PB can be used for the month ranges in which they apply. For woodpeckers, the codes DCB and DPB are applied to ASY/ATYs, as this can be considered definitive plumage, which also includes most TY/4Ys. This is a better option than designating these as M-TCB and M-4PB and, in fact, this results in no unknown codes being suggested for woodpeckers in this section. But, alas, we all know how troublesome ageing of woodpeckers can be, especially for beginners, and it will be perfectly fine to use such codes as M-SCB and M-TPB for AHY/ASYs or just to default to UCU and UPU! With experience, however, we have learned that virtually all woodpeckers can be aged to the core codes FCJ, FPF, FCF, SPB, SCB, TPB, DCB, and DPB, with a few being assigned TCB and 4PB.

Molt—PF incomplete (Jun-Apr), 2nd PB incomplete (Jul-Oct),
Def. PB incomplete-complete (Jul- Oct); PA absent.

HY/SY (FCJ/FPF/FCF/SPB; Jun-May/Oct):
SY/TY (SCB/TPB; Sep-Aug/Oct):
ASY/ATY (DCB/DPB; Sep-Aug/Oct):
TY/4Y (TCB/4PB; Sep-Jul):

WRP: FCJ (Jun-Jul); FPF (Jun-Apr); FCF (Nov-Jul); SPB (Jul-Oct); SCB (Sep-Aug); TPB (Jul-Oct); DCB (Sep-Aug); DPB (Jul-Oct); TCB (Sep-Jul); 4PB (Jul).





MAPS coding for this photograph. Only the pertinent fields included.

AGE	HOW AGED	WRP Code	PRI. COVS	SEC. COVS	PRIMARIES	SECONDS	TERTIALS	RECTRICES	BODY PLUM.
7	L	SCB	J	B	B	R	B		

Could you use some further clarification?

We've got a video for that!

"**Translating MAPS codes to WRP**" is available on our video presentations page & our YouTube Channel.

High School Students, Land Trusts & the MAPS Program Enhance Conservation in Northwest Connecticut

by Laurie Doss, Marvelwood School

Photo by
Andy Reago &
Chrissy McClarren/Flickr

The Marvelwood School is an intentionally small school in the northwest corner of Connecticut. The school, as part of its science curriculum and community service programs, has a strong history of conservation work in the local community. I have always tried to engage and inspire the next generation of conservationists via project-based learning experiences at Marvelwood.

In 1995 the school moved from the town of Cornwall to Kent, CT. Shortly after the school arrived on Skiff Mountain in Kent, our neighbors and local conservation organizations solicited our assistance to document species to help save approximately 450 acres of land surrounding our new campus. The land was slated for subdivision and development. Since two of the school's four core values are Service and Responsibility we naturally jumped in and offered to contribute our time to help protect the land!

Realizing that we would need to scientifically document the fauna discovered, particularly the birds, we obtained permission from the organization selling the land, and a local landowner, to create three MAPS stations to the North, South, and East of the campus for "educational" purposes. We started our first station in 2001 to the south of the campus and then added our station to the east and our north station. Local and international students would stay on campus to help with these banding efforts. The mission to save the land was not going well until a very special bird, already listed as endangered in the state, landed in our mist nets.

The capture and documentation of a male Golden-Winged Warbler during a MAPS banding session, with physiological

Science Department Chair Laurie Doss after a successful net run. Photo Courtesy of Laurie Doss.

evidence of breeding, finally helped sway the various town commissions involved in granting development permits, to pause further project approvals until a full one-year environmental impact assessment could be conducted. Once the environmental importance of the land was discovered, the developers agreed to sell the land to the Trust for Public Lands, Sharon Land Trust and Kent Land Trust. A 1.26 million dollar Open Space and Watershed Land Acquisition Grant from the Connecticut Department of Environmental Protection secured the deal to purchase the habitat creating a conservation easement permanently adding another layer of protection. Sharon Land Trust gained ownership of Skiff Mountain North Preserve and Kent Land Trust became responsible for Skiff Mountain South Preserve. The neighbors who also had fought so hard to help save Skiff Mountain placed their land in the U.S. Forest Service Forest Legacy Program resulting in the protection of over 700 acres around our campus.

Energized by efforts to help save the land, Marvelwood continued to engage in MAPS banding in partnership with one of the land trusts instrumental in helping to save Skiff Mountain, the Kent Land Trust. We wanted to ensure that now that the land was safe from development, habitat in Skiff Mountain South Preserve would be managed for the avian species breeding on the property. Marvelwood School and Kent Land Trust volunteers helped to restore an old overgrown meadow surrounded by forest. This led to the creation of our SKIF banding station at the opposite end of the preserve from our BEAV banding station. Local children and KLT volunteers would soon increase their participation and join Marvelwood students in our MAPS banding efforts. Banding around this newly restored forest gap led to the discovery of a pocket of breeding Cerulean Warblers along with Worm-eating Warblers and Wood Thrush. In fact, one female Cerulean Warbler was captured and banded on June 10, 2012, and then recaptured in the exact same net on June 13, 2017!

Cerulean Warbler. Photo courtesy of Laurie Doss.

Another highlight at our MAPS banding station was in 2012 when a banded Cooper's Hawk landed in our mist nets at BEAV banding station in June and then again at RACK banding station in July. The bird had originally been banded on October 8, 2010, in Cape May County in New Jersey as a hatch year male. The original banders were delighted to receive information about this bird as well as pictures, which they reported they rarely receive.

Student-driven data obtained from our banding station was also key in the designation of a landscape level Important Bird Area, the Macedonia Forest Block. Thanks to our MAPS banding stations the IBA met numerous criteria including long-term research and/or monitoring projects that contribute substantially to ornithology, bird conservation, and/or education and are important to species of global concern particularly Cerulean Warbler and Wood Thrush.

Over the years, students and Kent Land Trust volunteers have created interactive bird trails, secured grants to soften edges by planting

native species and provided educational programs about birds and habitat management for local children and adults. Recently we contributed key physiological evidence via our MAPS banding data to confirm breeding species for the CT Bird Atlas Project.

Marvelwood students examine a bird during the banding process. Photo courtesy of Laurie Doss.

Banding highlights throughout the years, in addition to those already mentioned, include Winter Wren, Black-Billed Cuckoo, Yellow-throated Vireo, Hermit Thrush, Hooded Warbler, Least Flycatcher, Black-throated Blue Warbler, Ruffed Grouse, Black and White Warbler, American Woodcock, Broad-winged Hawk, Scarlet Tanager, Eastern Towhee and Lawrence's Warbler (hybrid). Interesting non-avian experiences include being sprayed by a skunk; dealing with a long-tailed weasel with attitude intimidating one of our volunteer banders; and multiple black bear encounters, including one who charged one of my students while he was trying to extract a Red-eyed Vireo.

The most important contribution of our long-term MAPS stations on Skiff Mountain, where we have banded and/or extracted over 65 bird species, has been in raising awareness within the Kent Land Trust, the local community, and young people about birds and their conservation needs. As a teacher, I first secured a sub-permit under Laurie Fortin and eventually obtained my own master permit, to use birds as a vehicle to protect land from development, establish a landscape level IBA, better manage habitat for birds, and impress upon my students the importance of volunteering their time to assist in conservation efforts. I constantly remind my students that we all have a responsibility to use our skills, time, and knowledge to help others in our community understand and protect the incredible avian biodiversity we are blessed with on Skiff Mountain. We came so close to losing land critical to many breeding birds of conservation concern and data generated from our participation in the MAPS program was key in helping to save the land. We continue to stay involved in the MAPS program so that our data can also contribute to a better understanding of bird populations and efforts to conserve bird species at both a local and continental level. Our students, through their volunteer efforts, are contributing to science and educating people in the Kent area about the importance of providing quality habitats for birds.

Lawrence's Warbler.
Photo courtesy of Laurie Doss.

I am grateful to all the biologists and researchers at The Institute for Bird Populations for their knowledge and assistance to allow us to participate in the MAPS program. I would also like to thank Kent Land Trust for their commitment to better understanding birds and their life cycle needs on their properties, financial support, and providing banding interns. I am also thankful to Kent School Alumni (our current campus was originally the campus for girls at Kent School) and Marvelwood School for their financial support to continue to operate our MAPS stations. Finally, I would like to thank my mentor Laurie Fortin, long-time banding partner Janet Allison and all the students and KLT banding volunteers these past 21 years. Community partnerships really do work and collaborative efforts like we have on Skiff Mountain are key to understanding and conserving habitat for birds. Perhaps David Attenborough best summed up what we have been doing on Skiff Mountain for the past 21 years by stating "No one will protect what they don't care about, and no one will care about what they have never experienced."

We appreciate the Institute for Bird Populations and their MAPS program for giving us the tools to help make our community care about birds and the resources in our little corner in Connecticut and the habitats they need to thrive.

Laurie Doss and students in the custom IBP masks they had printed for the 2021 MAPS season. Photo courtesyof Laurie Doss.

Simplifying the MAPS Habitat Structure Assessment

We know for many operators the habitat structure assessment is one of the hardest aspects of the MAPS season. We thank you for all the hard work you have put into your assessments in the past!

Because technology has changed to allow us to acquire much more remote sensing data we are simplifying what operators are asked to collect. We still need a map of your station with major habitats delineated and some descriptions of your station but we are eliminating much of the precise detail. The requested data will still include a generalized description of the station and each habitat; a National Vegetation Classification code; naming of the dominant species; a general structure description; and a history of disturbance (fire, flood, management, etc) at the station.

The habitat assessment protocol will now become part of the MAPS Manual (not a manual of it's own). The full updated habitat section will be included as an attachment to the beginning-of-season letter, so make sure to check that out.

25 Year Operators

The MAPS Program will reach its 33rd year of operations during the 2022 field season. This year, three stations will mark their 25th season! Thank you to all MAPS Operators – whether 2022 is your first, 10th or 25th season.

Happy 25th birthday to the **Drakesbad** station in Lassen Volcanic National Park in Tehama County, CA! Michael Magnuson began banding early in the station's history and officially took over operations in 2000.

Mike with his favorite bird (Lazuli Bunting) with Loren Morgan-Outhisack from Point Blue taking a photo (left). Mike, a MacGillivray's Warbler and volunteer Lyra Martin (right.)

The following stations have also reached 25 years of operation this year:
(their operators were pictured in previous issues in association with other stations)

Seven Mile Creek – operated by Klamath Bird Observatory in Klamath, CA
Cabin – operated by Klamath Bird Observatory in Klamath, CA

MAPSPROG Update

There will be an update to MAPSPROG for the 2022 season. This will be a fairly major update to the program to allow for the changes in WRP coding and simplification of the habitat structure assessment. Please look for the announcement of MAPSPROG v6.0 in the coming weeks.

New MAPS operators have joined the flock!

Welcome!


Photo by Putneypics/Flickr

The following operators joined MAPS in 2021 or 2022. 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.

Jeffrey Anderson Springfield, OR
Nick Bartok Picton, ON
Kara Belinsky New Paltz, NY
Peter Bloom Corona, CA
Ross Brittain Hopewell, WV
Lesley Bulluck Richmond, VA
Simon Burton College Station, TX
Lyell Buttermore Corona, CA
Happy Chambers Murray, KY
Jannaca Chick Victoria, BC
Randy Dettmers Hadley, MA
Ivy Doak Denton, TX
Lauren Ferreri Stevens, PA
Andrew Forbes Bloomington, MN
Megan Garfinkel Morris, IL
Michael Hague Torrey, UT
Stacey Hayden Benton, KY
Heather Kraus Yemassee, SC
Norm Legault Devon, AB
Melanie Madden Pioneer Point, CA
Thomas McKenrick Lincolnton, NC
Matt McKinney Hopewell, WV
Phillip Mercier St. Jean sur Richelieu, QC
Peter J. Motyka Flagstaff, AZ
Dan Mummert Stevens, PA

Allison Nelson Grass Valley, NV
Barry Nerhus Corona, CA
Benjamin Nickley Great Barrington, MA
Cailin O'Connor Pompton Lakes, NJ
Audrey Sanchez Los Alamos, NM
Phylicia Sanchez Corona, CA
CJ Solberg Denton, TX
Claire Stuyck Ashland, OR
Scott Swanson Ely, MN
Rob Vinson Alamo, NV
Cathy Viverette Richmond, VA
Tami Vogel Afton, MN
Paul Wagner Alvadore, OR
Richard Zembal Corona, CA


American Goldfinch
Photo by Mick Thompson/Flickr

IBP Bird Banding Classes

A new banding season is approaching and people want to learn new banding skills! We are planning both beginning and advanced classes and expect they will fill quickly. If you would like to be notified when registration opens for new classes, please email Danielle Kaschube to be put on the training class email list. You will only get emails regarding scheduled classes if you are on this list.

Three banding classes are planned for the Wolf Ridge Environmental Learning Center in northeastern Minnesota this summer. The tentative schedule: beginner class June 24 – July 1, 2022 (this class is full but you can be added to the waitlist) and advanced class July 3 - 7, 2021. There will also be a youth ornithology camp for students (entering grades 10-12). The Ornithology Field Camp will be held July 10-16, 2022. Visit Wolf Ridge's banding class page for the adult beginner and advanced classes or the camp registration page for the Ornithology Field Camp.

Note: Classes will only be held if COVID safety guidelines are agreed upon by IBP, the host and participants. Classes may be cancelled if COVID numbers are deemed unsafe for travel or gathering, so do not make travel arrangements too far in advance without cancellation insurance.