

Meeting activities include opportunities to visit Bear Divide and observe this amazing dawn migration spectacle, and the two ongoing studies in the area: a point count study led by Dr. Ryan Terrill (beardivide.org) and a banding study led by Tania Romero, Lauren Hill, and Jayde Blair. Additional activities include social events, talks, workshops, and presentations with a focus on bird migration and banding. We will also be planning birding field trips, such as to the high desert of the Antelope Valley at Piute Ponds, a visit to the bird collections at the Western Foundation of Vertebrate Zoology, and more.

The meeting itself will be held a few kilometers down the hill from Bear Divide at Placerita Canyon Nature Center in Santa Clarita, Los Angeles County, in a lush riparian center of bird abundance. A banding station at Placerita Canyon will likely also be in operation. It will be a pleasure to have you join us next spring and share with you Bear Divide.

**Please contact us for more information.
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Abstracts of the Western Bird Banding Association Virtual Annual Meeting, September 2021.

Compiled by Danielle Kaschube <dkaschube[at]birdpop.org>

We had an exciting, albeit virtual, meeting with several very interesting presentations. Take a look at them and enjoy them from the links to the meeting on WBBA's web page (westernbirdbanding.org).

Invited Keynoters

Using bird banding and wildlife monitoring data to mechanistically understand how climate change diminishes biodiversity.

Jared Wolfe (Michigan Technological University, [jdwolfe\[at\]mtu.edu](mailto:jdwolfe[at]mtu.edu)), David Luther, and John Vucetich (George Mason University).

Scientists are increasingly using bird banding data to understand the varied mechanisms through which climate change is impacting biodiversity and ecosystem function. Most prior work has emphasized the mechanistic role of (i)

species' physiological limits, (ii) mismatch between life history and phenology, and (iii) species' limited capacity to shift geographic ranges. What may be underappreciated are mechanisms involving trophic interactions and how those mechanisms are likely to result in many unforeseeable impacts of climate change on wildlife. Here, I will draw attention to several case studies, based on long term monitoring data, that have just now become available. Findings from these studies should raise concern for the conservation of birds and mammals in both pristine and human dominated systems.

Wingtips at our fingertips: understanding the complex lives of migratory animals.

Stu McKenzie (Migration Ecology, Birds Studies Canada, [smackenzie\[at\]birdscanada.org](mailto:smackenzie[at]birdscanada.org)).

The protection of migratory birds and their habitat requires a complete understanding of how they use landscapes and habitats throughout their full annual cycle. This information not only tells us where we should invest our limited time, resources and energies, but it also communicates the story of migration to engage and link people and communities in conservation action. Join Stu Mackenzie, to learn how scientists are advancing the understanding, appreciation and conservation of migratory animals through the Motus Wildlife Tracking System.

The Motus Wildlife Tracking System (Motus) is an international collaborative research network that uses coordinated automated radio telemetry to facilitate research and education on the ecology and conservation of migratory animals. Motus is a program of Birds Canada in partnership with collaborating researchers and organizations. Motus allows researchers to track the smallest animals possible (birds, bats, and insects), with high temporal and geographic precision, over great distances and reveal important aspects of their life movements, connectivity, ecology, and life histories. Motus combines the collective impact of local, regional, and even hemispheric projects into one massive collaborative effort that expands the scale and scope of everyone's work and maximizes the use of scarce resources.

It also makes data available and more useful for future projects, collaborative endeavors and large-scale meta analyses. Motus will play a vital role in increasing our understanding of migratory animals, and also help us to meet critical outreach and education objectives.

Contributed Papers

Creating a Bird Banding Network for the Caribbean

Holly Garrod (Birds Caribbean; hmgarrod26[at]gmail.com), Maya Wilson, Jeff Gerbracht, C. Justin Proctor, Ann Sutton, Adrienne Tossas, and Lisa Sorenson

The insular Caribbean is a global biodiversity hotspot that is home to over 700 bird species. Roughly half of these species are residents, including 171 that are endemic to the region. The other half are migratory — some spend the entire winter in the Caribbean, while others use one or more islands as stopover sites to rest and refuel during their long journeys. Bird populations, including many Caribbean species, are declining at alarming rates. Filling critical knowledge gaps through monitoring can help to identify important sites and habitats, assessing and mitigating the many threats that birds face in the region. Working with a network of partners, Birds Caribbean is initiating a landbird monitoring program using three complementary tools: (1) standardized bird surveys using the PRO-ALAS Manual; (2) bird banding; and (3) the Motus Wildlife Tracking System. The Caribbean Bird Banding Network will increase bird banding capacity and facilitate communication and collaboration among banders in the region. We will use a band distribution system to provide standardized bands to qualified banders, along with a website for reporting recaptures. We will also distribute a user-friendly bird banding database that will standardize the collection and entry of bird banding data across islands. Training provided through workshops and internships will increase the technical skill sets of Caribbean locals and encourage the creation of more long-term banding programs.

Migratory bird community structure in oil palm (Elaeis guineensis) plantations and native forest fragments in southern Mexico.

Samuel Oliveira (Michigan Technological University, soliveir[at]mtu.edu), David Flaspohler,

Christopher Webster, Jessie Knowlton, and Jared Wolfe.

Landscapes dominated by a single product have reduced the habitat available for migratory birds that inhabit forests and has generated questions about the value of agroecosystems for wildlife. Oil palm plantations are among the fastest growing agroecosystems in the neotropics, yet little is known about how overwintering migratory birds use oil palm habitats. To better understand the potential value of oil palm as an overwintering habitat for migratory birds, we surveyed birds in oil palm and native forest remnants in Tabasco, Mexico. Specifically, we coupled bird captures, measures of vegetative structure, multivariate analysis, and generalized linear models to assess how oil palm development drives changes in migrant bird diversity, community assemblage, and abundance. Our study provided three important findings: (1) native forest remnants hosted more migratory bird species when compared to oil palm plantations; (2) migratory bird community assemblage differed between native forest and oil palm plantations; (3) changes in migratory bird abundance – and subsequent changes in community assemblage – was driven by dissimilarities in vegetative structure between native forest and oil palm plantations. Our results suggest that integrating more native trees and increasing understory structural heterogeneity throughout oil palm plantations represents a viable management action to improve the habitat quality of working landscapes for migratory birds.

Banding techniques for hummingbird (Trochilidae) monitoring programs in Venezuela: a preliminary study.

Miguel Matta (Scientific Committee for the Marking and Monitoring of Birds of Venezuela (MASAVES), memattapereira[at]gmail.com), Miguel Lentino, Jhorman Piñero, Sarahy Contreras, Martín López, Jesús Aranguren, German Quijano, Andreína López Marcos, and Carlos Jaime.

Hummingbird species richness in the Neotropics implies many possibilities and combinations in terms of band sizes and types of tarsi. This information is still unknown in a wide range of species. Venezuela is the fourth country with the greatest number of hummingbirds (Trochilidae) in the Americas. However, there is not a national program or any other standardized effort or recommendations to band this group of

birds for population studies. The main goal of this work is to provide modern hummingbird banding techniques used at Portachuelo Pass. We report the band sizes in relation to the diameter of the tarsi in 23 northern Venezuelan hummingbirds. These first results show how band size varies depending on species, sex, and geography. They also confirm that this is the best tracking technique for short and long-term monitoring programs. We hope to continue taking new measurements of hummingbird tarsi to develop a catalog of band sizes for Venezuelan hummingbirds.

A Tri-National Partnership: Migratory Connectivity and Western Forest Bird Conservation

John D Alexander (Klamath Bird Observatory, jda[at]KlamathBird.org), Sarahy Contreras, Luis E Morales, Christine A Bishop, Caitlyn E Gillespie, Kristen Mancuso, Josee E Rousseau, Sarah M Rockwell, Matthew Betts, Susan Bonfield, Wendy E Easton, and Greg S Butcher

Amazingly, through their migration many western landbirds connect a diversity of temperate forest habitats where they breed in Canada and the United States with the imperiled pine-oak, tropical cloud, and tropical deciduous forests of western Mexico and northern Central America, where they overwinter. Many of these species are of conservation concern; their populations are suffering declines that signal severe human impacts on the natural systems that they depend on. However, there is hope – these migratory birds are also connecting an international group of partners from government agencies, non-government organizations, and academic institutions who are working together to track these birds throughout their migratory cycles and implement integrated conservation strategies to reverse their population declines. These strategies target specific threats that impact the forest habitats on which these migratory birds depend throughout their annual cycles (e.g., unsustainable timber harvest, livestock grazing, fire management, and water management). We will summarize how, through international collaboration and capacity building, our science and conservation efforts are meeting objectives outlined in Partners in Flight migratory bird conservation plans. We will present example projects focused on Rufous Hummingbirds and Yellow-breasted Chats that span the breeding,

migration, and wintering ranges of these two migratory species. We will share research and monitoring results and show how this science is informing habitat protection and restoration efforts in Canada, the United States, and Mexico.

Yearling proportion correlates with habitat structure in a boreal forest landbird community.

Danielle Kaschube (The Institute for Bird Populations, dkaschube[at]birdpop.org), Peter Pyle, Kenneth R. Foster, Christine M. Godwin, and James F. Saracco

It is a popular assumption that when ideal habitat is limited, yearling birds (i.e., hatched the previous year) are pushed into less desirable habitats. We related yearling proportion to habitat-structure covariates, including reclamation age, in a boreal forest landbird community. Data were collected at 35 constant-effort mist-netting stations over a 6-year period, and consisted of 12,714 captures of adults, of 29 landbird species, including 4,943 captures of yearlings. “Habitat greenness”, through Enhanced Vegetation Index (EVI) based on Landsat satellite imagery, was positively correlated with age since reclamation up to 20 years. At this time it became comparable to that of natural stations. The probability of capturing a yearling for species associated with mature forest was lower at stations with higher EVI and the opposite was the case for species favoring successional habitats. These results suggest that yearling birds are being excluded from preferred breeding habitats by older birds through despotism and/or that yearlings are simply selecting poorer habitats due to lack of breeding experience or other factors.

What’s new at the BBL? Preparing for the next decade of bird banding science

Antonio Celis-Murillo (USGS Bird Banding Laboratory, acelis-murillo[at]usgs.gov).

The USGS Bird Banding Lab (BBL) has been a leader of the North American Bird Banding Program since its establishment in 1920. BBL operations have slowly adapted over the past century to address changes in bird banding practices and the availability of new data management processes. Today, the BBL team is ensuring that the lab remains the premier resource for long-term bird banding and marking data in North America and that the lab becomes a robust, integrated scientific resource that rapidly

adapts to new science needs, study methods, and technologies to facilitate successful and effective bird management and conservation science. This presentation will highlight the most recent updates to the BBL program and soon-to-be-available features of the Bander Portal, a web-based platform that will allow banders to directly connect with the BBL database. These projects offer the lab the ability to streamline operations to reduce staff workload, modernize data management practices, align to users' needs, adapt to science needs and, ultimately, facilitate the advancement of bird banding science.

Mantiqueira Bird Observatory: Science, conservation and communication in the Brazilian Atlantic Forest

Pedro Martins and Luiza Figueira (Mantiqueira Bird Observatory, pedrovrima[at]gmail.com).

Even though bird observatories are an established organizational format for bird research and conservation throughout the United States and Europe, very few organizations like these are present in Brazil. Also, very few long-term, constant-effort bird banding operations are active in the country. In this talk, we will present how the Mantiqueira Bird Observatory is applying the Bird Observatory "formula" in Brazil, as well as show some of the highlights on the still-young organization's bird banding monitoring program. Our 3-year-old program has already registered almost 2,000 captures from 106 species, ranging from resident species with 100% recapture rate to explosive species that do not follow the same breeding-molt schedule regularly seen in the species we capture.

Patterns of year-round colony attendance by VHF radio-tagged Crested Auklets (Aethia cristatella) at their prototypical Aleutian breeding site

Christy N. Wails (Virginia Tech, Blacksburg VA and University of New Brunswick, Saint John NB Canada, wailsn[at]gmail.com), Heather L. Major, and Ian L. Jones

Seabird colony attendance during their breeding seasons is driven by reproductive obligations of incubation and chick rearing, resulting in relatively predictable attendance patterns near breeding sites. Less is understood about patterns and function of activity ashore at colony sites outside the breeding season. We

attempted to quantify year-round activity of crevice-nesting Crested Auklets at Gareloi Island, Alaska, site of some of their largest colonies. In June and July 2013 and 2014, 94 Crested Auklets (92 adults and 2 subadults) were fitted with uniquely coded 1.0 g VHF radio-tags (0.6% of body mass) at two inland study plots in the southeast colony. Radio receiver-loggers remotely detected and recorded individuals present on the nearby colony site surface 24 h/day from date of tagging through autumn, winter, spring and summer 2013 – 2015. Notably, we found Crested Auklets present in all months of the year, with half of our radio-tagged auklets (n = 47, 29 females, 10 males, 8 unknown sex) detected inland at the colony site during non-breeding months (September – March). Visit duration for these individuals comprised about 0.4% of their total annual colony site activity, this is the first evidence of year-round Crested Auklet colony attendance that may be unique to Gareloi Island. Other findings included extreme individual variability and intersexual differences in colony attendance frequency, differences in attendance between breeding and non-breeding birds, a lapse in surface activity prior to laying in May, and frequent nocturnal activity on the colony surface. Enhanced circannual patterns of Crested Auklet colony attendance at this island may relate to the defense of nesting site and other social advantages, permitted by a nearby highly productive sea area with year-round foraging opportunities.

Bendire's Thrashers Pathway Project Preliminary Results

Chrissy Kondrat (Arizona Game and Fish Department, ckondrat[at]azgfd.gov), and Corrie Borgman (USFWS Region 2 Office, corrie_borgman[at]fws.gov).

The Bendire's Thrasher (*Toxostoma bendirei*) is a Species of Conservation Concern with the USFWS and most state agencies across its range. We will give a brief overview of the multi-agency coordinated regional occupancy monitoring effort, and preliminary results of a banding and GPS tag project to collect much-needed data on the Bendire's Thrashers migratory movements and winter localities. Results from both monitoring, banding, and GPS tag projects will contribute important suggestions to the Best Management Practices for the species.

Details on aging and sexing Rosy-Finches

Jason Kitting (Rio Grande Bird Research Inc., jason1991.bnow[at]gmail.com), and Steve and Nancy Cox

Rio Grande Bird Research Inc. (RGBR) has been banding Rosy-Finches at the Sandia Crest House since 2004 which all started because of a feeder they have maintained since 2003. The Sandia Crest House is located at the top of the Sandia Mountains overlooking the city of Albuquerque, New Mexico. This unique location happens to be the southern extreme of all three Rosy-Finch species' winter ranges. Each winter, flocks made up of all three species (Black, Brown-capped, Gray-crowned) visit this feeder each day from late November through early April. RGBR member Jason Kitting will go over the different plumage characteristics used in order to age and sex these relatively understudied birds, as well as compare these characteristics between the different species.

Learning to Read Wings: My experience as a volunteer bird bander

Fiona Gillogly (Gold Country Avian Studies, fionasongbird[at]gmail.com)

Fiona Gillogly is eighteen years old and has been a volunteer bird bander at Gold Country Avian Studies in northern California since 2018. She is also an avid birder and nature journaler. She recently attended an Advanced Bird Banding Course at Wolf Ridge Environmental Learning Center. This course, led by Danielle Kaschube of IBP, gave her the opportunity to study molt patterns, understand aging, band numerous birds she had never seen before, learn from other participants, and draw the birds that others were banding. She will be discussing her experience as a volunteer bird bander, why she likes to band, and what she learned through the banding course at Wolf Ridge. She will also share some of her journal pages from the trip.

Value added in bird monitoring: a tool to explore the data from capture and banding provides new insights on the spatial differences of physical, physiological, and demographic metrics

C. John Ralph (Klamath and Humboldt Bay Bird Observatories, cjralph[at]humboldt1.com), and Pedro Martins

Bird monitoring has long been thought of as specifically counting birds and looking at their habitats. Important as these are, the importance of monitoring through banding is proving to be perhaps equally important. Through the wonderful programs of IBP including MAPS, we have learned much about the broad-scale changes in productivity and survivorship of breeding birds between years and between regions. In our program of over a hundred intensive capture stations in northern California and southern Oregon, we worked to understand the life history traits on a very fine geographical scale. We have crafted a tool to explore a species' strategies of breeding, molting, physical changes, and movements at a banding station, then expand to other near and distant stations. We found that a species' strategies were usually similar to nearby stations, within a river corridor or habitat type. However, when one moves a short way to other stations, the strategies differ in a fashion almost as different as if they were different species. We will explore the methods we used to explore capture data and how the display of these data result in generation of interesting hypotheses for testing.

Bear Divide Banding Station: A New Banding Location for Capturing Dawn Migrants of the West

Lauren Hill, Jayde Blaire and Tania Romero (Bear Divide Banding Station, t4lromero[at]gmail.com).

Along the Pacific Flyway, massive dawn migration flights of passerines are mostly unknown, rarely observed, and poorly researched, as compared to those along the Atlantic Coast and Great Lakes. Little is currently known about types of locales where one can witness morning flight movements of western migrants. The Bear Divide area has recently been recognized as a potential important vantage point to monitor western migration in Los Angeles County. The Bear Divide Banding Station was established in April 2021 to research this phenomenon through mist-netting. A total of 909 net hours were conducted and 1,962 birds were captured and processed. We will detail about the establishment of the station and the first season and look forward to having the WBBA meeting in late April 2022.