
Recent Literature

Compiled by C. John Ralph (If you would like to help review articles of interest to banders, please contact cjr2 "at" humboldt.edu, and feel free to mention if you have a particular journal or geographic area of interest).

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EQUIPMENT, TECHNIQUES, AND STATION REPORTS

Lifelong effects of trapping experience lead to age-biased sampling: lessons from a wild bird population. C. Camacho, D. Canal, and J. Potti. 2017. *Animal Behaviour* 130:133-139. jpotti@ebd.csic.es

The authors studied a Pied Flycatcher (*Ficedula hypoleuca*) population in central Spain as an example to illustrate the sampling bias resulting from the repeated capture of free-ranging individuals. They evaluated interannually response of breeding adults to capture-related stress, measured as latency to enter nest boxes equipped with a swing-trap. Birds without any previous trapping experience entered nests more quickly than experienced ones, after controlling for other factors affecting latency, such as the sex, offspring quality, and the order of capture relative to the other pair member. Repeated exposure to capture stress over an animal's lifetime may induce long-lasting behavioural modifications that may influence trapability of the older segments of the population, which may ultimately lead to sampling bias towards younger ages, especially when effort is limited. Therefore, systematic age bias due to trapping experience can have important implications for the estimation of variation in a range of traits and should therefore be carefully checked in longitudinal studies. **JS**

Novel tracking and reporting methods for studying large birds in urban landscapes. A. Davis, R.E. Major, C.E. Taylor, and John M. Martin, in press. *Wildlife Biology*. Univ. of Sydney, Sydney, NSW, Australia. adrian.davis@sydney.edu.au

This study in Australia reports on monitoring individually marked birds' movements over the long term with the aid of third-party observers. This can be challenging for reasons including poor tag visibility, observer error and tag failure or removal. This study tested the efficacy of the little used method of tagging birds with livestock ear-tags fitted to the patagia of 100 Sulphur-crested Cockatoos (*Cacatua sulphurea*) occupying an urbanized landscape. The wing-tags were easily applied, persisted over four years, and were highly visible. Urban residents were encouraged to report sightings of tagged birds, and there was a strong public response, with a total of 14,705 valid records over the first four years. Wing-tagged birds were predominantly reported through a customized smartphone application (n = 10,146 records), e-mail (n = 3,243), Facebook (n = 415), and other formats (n = 901) by a large number of people (n = 1,252) across all formats. All 100 tagged birds were reported by third-party observers at least once and 68% of birds were reported more than 100 times. Because large birds tend to dominate urban bird communities, this research methodology should be effective for many other urban ecology projects. **JS**

The Motus Wildlife Tracking System: a collaborative research network to enhance the understanding of wildlife movement. Philip D. Taylor, Tara L. Crewe, Stuart A. Mackenzie, et al. *Avian Conservation and Ecology* 12(1):8. <https://doi.org/10.5751/ACE-00953-120108>. Bird Studies Canada, Port Rowan, ON, Canada. tcrewe@birdscanada.org.

With the continuing miniaturization of electronics and computers, researchers are now attaching "nanotags" to small animals such as birds, bats and even insects, allowing them to track these animals with high temporal and spatial precision. Until recently this was only possible at the local and perhaps regional scale, but with the establishment of an international network of automated radio-telemetry arrays, tracking is now possible at the hemispheric scale. These passive receiver

stations consist of a power source, a receiver, and one or more antennas tuned to a single frequency. Each nanotag emits very rapid radio transmissions with a coded sequence, repeated at fixed intervals, the combination of which uniquely identifies the tag. This paper describes the technology used in the tags and stations, how data is collected, current uses and identifies some challenges, opportunities and future directions for the network. From 2012 through 2016, Motus collaborators tracked over 9000 individuals of 87 species of birds, nine species of insectivorous bats, and two families of large insects. Detection data has been used to estimate stopover duration, activity level, regional and site fidelity during migratory stopover, precise departure and arrival times, departure and flight orientation, flight distance, time and speed, colony attendance patterns, and types of movements (e.g., migratory or relocation). Current limitations of the technology include inconsistent spatial coverage by the stations, limited battery life for some of the smallest tags, variable signal range and detectability, relatively low geographic resolution (compared to GPS technology), maintenance of the receiver network, and logistical challenges of large datasets. Despite these limitations, Motus is well positioned to play a pivotal role in the study of small animal movement. **CMS.**

A remote marking device and newly developed permanent dyes for wildlife research. Patricia Baird, Dan Robinette, Scot A. Hink. 2017. *Wildlife Society Bulletin*. doi:10.1002/wsb.832. California State University Long Beach, Long Beach, CA, USA. pab7@sfu.ca

Noninvasive, safe, quick marking of individual animals using distinctive colors that are highly visible and persistent is a valuable methodology, but practical techniques and permanent safe dyes are lacking. The authors describe a novel, remotely controlled dye machine to rapidly mark stationary animals in predictable locations, such as birds sitting on nests on the ground. They spot-dyed 77 California Least Terns (*Sternula antillarum browni*) at a colony in California, in four days without handling them. Concomitantly, they developed a suite of permanent (until molt or shedding), non-toxic, and mainly phthalocyanine dyes that are

incorporated chemically into feathers and cannot be preened or rubbed off, which have never been used before to dye animals. They found no toxicity of the dyes during in vivo testing over 1 month.

Evaluation of leg banding and attachment of radio-transmitters on ring-necked pheasant chicks. J.M. Carroll, R.L. Hamm, J.M. Hagen, et al. 2017. *Wildlife Biology* <http://dx.doi.org/10.2981/wlb.00263>. Oklahoma State Univ., Stillwater, OK 74078.

Although banding of and the attachment of radio transmitters to adult Ring-necked Pheasants (*Phasianus colchicus*) are widely used, it is uncommon in chicks. This paper evaluated four banding techniques and two transmitter attachment methods. Using only size 6 butt-end bands was not effective as 50% of the bands slipped off. Plastic spiral bands were placed below the metal band to prevent slippage. An immediate issue was a “jingling” sound produced when the birds walked. Later, the plastic bands began to constrict the leg as it grew. Just using plastic bands resulted in similar constriction problems. Finally, cotton was glued to the inside of the band. The cotton degraded as the leg grew, resulting in no band loss. Radio transmitters were attached to the bird by using an assortment of glues or sutures. The glues proved ineffective, as transmitters were lost within a week. Ninety percent of the sutured transmitters remained on the chick for the 84-day life expectancy of the battery. **WHS**

Dietary studies in birds: testing a non-invasive method using digital photography in seabirds. Davide Gaglio, Timothée R. Cook, M. Connan, et al. 2017. *Methods in Ecology and Evolution* 8:214–222. University of Cape Town, Rondebosch, South Africa. swift.terns@gmail.com

This is not about banding, but a new (and very smart) method that obtains useful information without handling the birds. Traditional diet sampling methods may be invasive or subject to biases, so developing non-invasive and unbiased methods applicable to a diversity of species is essential. The authors used digital photography to investigate the diet fed to chicks of a prey-carrying seabird in South Africa and compared their approach (photo-

sampling) to a traditional method (regurgitations) for the Greater Crested Tern (*Thalasseus bergii*). Over three breeding seasons, they identified >24,000 prey items of at least 48 different species, more than doubling the known diversity of prey taken by this population of terns. They presented a method to estimate the length of the main prey species (anchovy *Engraulis encrasicolus*) from photographs, with an accuracy <1 mm and precision ~0.5 mm. Compared to regurgitations at two colonies, photo-sampling produced similar estimates of prey composition and size, at a faster species accumulation rate. The prey compositions collected by two researchers photo-sampling concurrently were also similar. Photo-sampling provides a novel tool to aid conservation and management decision-making in the light of the growing need to assess environmental and anthropogenic change in natural ecosystems. **JS**

Reduction in adverse effects of tracking devices on waterfowl requires better measuring and reporting. T.K. Lameris and E. Kleyheeg. 2017. *Animal Biotelemetry* 5:24. thomaslameris@gmail.com

Waterfowl may be particularly prone to tag effects, since many species are migratory and tracking devices can disrupt their waterproof plumage. The authors reviewed literature on this subject through the reporting rate of effects of tracking devices in 202 original studies. They found that although the number of waterfowl tracking studies in the literature has steeply increased over the past decades, reporting rates of potential effects have decreased from 65.0 to 26.5%. Meanwhile, the mean weight of the tracking devices relative to the bird's body mass remained stable around 2.0%. Major negative effects were reported in 17% of all studies and were found for all attachment methods. Overall, large differences exist in the occurrence and type of negative effects between species and studies, even if the same tracking methods were used. Inconsistent reporting of effects, lack of control groups to measure effects and incomplete descriptions of the methodology hamper the identification of factors contributing to these effects. They propose a framework for standardized reporting of methods in primary tracking studies and standardized protocols to measure effects. **JS**

Effects of geolocation tracking devices on behavior, reproductive success, and return rate of Aethia auklets: an evaluation of tag mass guidelines. Carley R. Schacter and Ian L. Jones. 2017. *The Wilson Journal of Ornithology* 129(3):459–468. Memorial University of Newfoundland, St. John's, NL, crs634@mun.ca

The authors note that a widely accepted guideline for tracking devices on seabirds of 3% of the body weight of the bird was developed for albatrosses and petrels. They reviewed studies that showed some species of Alcidae are more likely to be affected by these devices than other seabird groups, despite some of these being far less than 3% of their body weight. Reproductive success of Parakeet Auklets (*Aethia psittacula*) was negatively affected by tags 1.1% of their body mass but return rate and chick growth was not affected. Whiskered Auklets (*A. pygmaea*), with tags 1.8% of their body mass, showed minor decreases in chick growth and a 74% decrease in adult returns compared with a control study the previous year. They recommend that inclusion of experiments of the effects of tracking devices be considered essential in the design and approval of tracking studies. **ATC**

IDENTIFICATION, MOLTS, PLUMAGE, WEIGHTS, AND MEASUREMENTS

Taxonomy and distribution of the imperilled Newfoundland Gray-cheeked Thrush, *Catharus minimus minimus*. A.M. FitzGerald, D.M. Whitaker, J. Ralston, et al. 2017. *Avian Conservation and Ecology* 12(1):10. <https://doi.org/10.5751/ACE-00976-120110>. State University of New York, Albany, NY, darroch.whitaker@pc.g.ca

The authors assessed the validity of the subspecies of Gray-cheeked Thrush found in Newfoundland by collecting blood samples and morphological measurements from 51 individuals captured at 15 sites in Newfoundland and Labrador, Canada. This is a species that banders will encounter during migration. These birds were compared to samples from Nova Scotia, Quebec, Alaska and Siberia. Their genetic and morphological results (shorter wing chords, tails and culmens in Newfoundland thrushes), coupled with observations of

a substantial geographical gap with *C. m. aliciae*, support the separation of the Newfoundland subspecies. The authors' research also supports the hypothesis that nest-predating red squirrels (*Tamiasciurus hudsonicus*), introduced to the island in the 1960s, may have contributed to the catastrophic decline of Gray-checked Thrushes. **CMS**

NORTH AMERICAN BANDING RESULTS

Northern Pintail (*Anas acuta*) survival, recovery, and harvest rates derived from 55 years of banding in Prairie, Canada, 1960–2014. Blake A. Bartzen and K.W. Dufour. 2017. *Avian Conservation and Ecology* 12(2):7. <https://doi.org/10.5751/ACE-01048-120207>. Canadian Wildlife Service, Saskatoon, SK, blake.bartzen@canada.ca

This study is an analysis of 14,634 hunter recoveries from 205,747 pintails banded following capture using bait traps, drive traps and rocket nets at 274 unique locations in southern Alberta and Saskatchewan. This extensive dataset was used to estimate annual survival, recovery and harvest rates. Their annual survival rates of 0.64 ± 0.13 (S.E.) for females and 0.74 ± 0.10 for males increased slightly over the 55 years, and is relatively high compared with many other dabbling duck species. Hunting accounted for from 6–36% of the mortality, with adult females being lowest and hatch-year males being highest. With an approximately 7% return rate, compared to <1% for most passerines, this is a dataset that researchers will be able to mine for years to come. **CMS**

Evaluation of sex differences in the stopover behavior and postdeparture movements of wood-warblers. Yolanda E. Morbey, Christopher G. Guglielmo, Philip D. Taylor, et al. 2017. *Behavioral Ecology*, arx123, <https://doi.org/10.1093/beheco/arx12>. Western University, London, On. ymorbey@uwo.ca

Sex differences in the behaviors underlying avian protandry, where males arrive at breeding areas earlier than females, are still poorly understood for most species, but are an important ecological factor in life history ecology. Using captures at a coastal site on Lake Erie, Ontario, the authors at-

tempted to test for sex differences in stopover behavior, refueling rates, and post-departure movements during spring using a unique system of automated radio telemetry with two warbler species, and analysis of plasma metabolites as indicators of refueling in three other warblers. They found no differences between sexes in stopover duration or refueling index, although they did find subtle sex differences in the onset and end of diet activity. More obvious were annual differences in stopover duration and the timing of diel activity, with shorter stopovers and an earlier onset of diel activity in the year with a warmer spring. They also did not find any evidence that sexes differed in their post-departure ground speeds or migration routes. In wood-warblers, males and females can differ in some aspects of their stopover ecology, but these differences are likely context dependent and likely do not drive protandry in a consistent way. As is often the case, more research is needed. **CJR**

Distribution of natal dispersal distances and the genetic structure of Spruce Grouse (*Falcipennis canadensis*) populations. G.F. Barrowlough and M.A. Schroeder. 2016. *Canadian Journal of Zoology* 94(6):421–425. American Museum of Natural History, New York, NY 10024.

A long-term banding study was used to look at the natal dispersal distance of chicks in the eastern foothills of the Rocky Mountains in southwestern Alberta, Canada. The results come from banding and studying these birds for 20 years. Through resighting birds as adults, mean dispersal distance of males was 1.13 km vs 2.33 km for females. Resighting data provided estimates on population density of 17.8 individuals per square km, annual adult survivorship of 0.73, and effective population size of 541 individuals. These numbers were then compared to two other long-term studies. **WHS**

Cold spell en route delays spring arrival and decreases apparent survival in a long distance migratory songbird. M. Briedis, S. Hahn, and P. Adamik. 2017. *BMC Ecology* 17:11 martins.briedis@upol.cz

Based on capture data from the breeding

locales, the long-distance migrating Semi-collared Flycatcher (*Ficedula semitorquata*) delayed the last phase of their spring migration, and the population suffered low return rates to breeding sites, while enduring a severe cold spell en route. The authors found that the onset of spring migration in Africa and the timing of Sahara crossing were consistent between early and late springs while the arrival at the breeding site depended on spring phenology at stopover areas in each particular year. This interesting study helps us understand how environmental stimuli and endogenous circannual rhythms interactions can improve predictions of the consequences of climate changes on migrants. **JS**

Altitudinal bird migration in North America. W. Alice Boyle. 2017. *The Auk* 134:443–465. Kansas State University, Manhattan, Kansas. aboyle@ksu.edu

This paper provides an important view of a little-known subject. Altitudinal bird migration involves annual seasonal movements up and down elevational gradients and banding can provide important information on this phenomenon. Despite the fact that species from montane avifaunas worldwide engage in altitudinal migration, the patterns, causes, and prevalence of these movements are poorly understood. This is particularly true in North America where the overwhelming majority of avian migration research has focused on obligate, long-distance, temperate–tropical movements. Elsewhere in the world, most altitudinal migrants are partial migrants, making downhill movements to nonbreeding areas. However, spatial and temporal patterns, the prevalence and predictability of migration at individual and population levels, and the ultimate ecological factors selecting for movement behavior vary considerably among taxa and regions. The author conducted a systematic survey of the evidence for altitudinal migration to fill gaps in our understanding of this behavior among the landbirds of North America and Hawaii. Altitudinal migration was as prevalent as in other avifaunas, occurring in 20% of continental North American and nearly 30% of Hawaiian species. Of the species wintering within the USA and Canada, ~30% engage in altitudinal migrations. Altitudinal migrants are far more common in the

West, are taxonomically and ecologically diverse, and North American species exhibit patterns similar to altitudinal migrants elsewhere in the world. Because altitudinal migration systems are relatively tractable, they present excellent opportunities for testing hypotheses regarding migration generally. Altitudinal migration has likely been overlooked in North America due to contingency in the history of ornithological research. Our need to understand the patterns and causes of altitudinal migrations has never been greater due to emerging environmental threats to montane systems. **JS**

Avian malaria, body condition, and blood parameters in four species of songbirds. Carolina Granthon and Dean A. Williams. 2017. *The Wilson Journal of Ornithology* 129(3): 492–508. Texas Christian University, Fort Worth, TX 76129 USA. carolinagranthon@gmail.com

This study used birds captured for banding at the Powdermill Avian Research Center in southwestern Pennsylvania during the breeding season to determine the prevalence of blood parasites in four target species, as well as to explore any relationships between infection and bird health, measured by body condition and blood parameters, and whether there was a relationship with age and sex of the bird. Blood samples were collected from the brachial veins of American Redstarts (*Setophaga ruticilla*), Gray Catbirds (*Dumetella carolinensis*), Cedar Waxwings (*Bombycilla cedrorum*), and Red-eyed Vireos (*Vireo olivaceus*). High parasite prevalence was detected in all species, using genetic methods, but lower actual infection based on microscopic evaluation of blood samples with the exception of Red-eyed Vireo which also showed higher infection rates. There was no relationship with age and sex and parasite prevalence or infection, again with the exception of Red-eyed Vireo. **ATC**

Body condition explains migratory performance of a long-distance migrant. Sjoerd Duijns, Lawrence J. Niles, Amanda Dey, et al. 2017. *Proceedings of the Royal Society of London B: Biological Sciences* 284:20171374. Carleton University, Ottawa, Ontario. duijns.sjoerd@gmail.com

Body condition (i.e. relative mass after correcting for structural size) affects the behaviour of migrating birds, but how body condition affects migratory performance, timing and fitness is still largely unknown. In their study of 302 individuals at Delaware Bay, USA, the authors studied the effects of relative body condition on individual departure decisions, wind selectivity, flight speed, and timing of migration for a long-distance migratory shorebird, the Red Knot (*Calidris canutus rufa*). By using automated VHF telemetry on a continental scale, they studied knots' migratory movements with unprecedented temporal resolution over a 3-year period. Knots with a higher relative body condition left the staging site later than birds in lower condition, yet still arrived earlier to their Arctic breeding grounds compared to knots in lower relative body condition. They accomplished this by selecting more favorable winds at departure, thereby flying faster and making shorter stops en route. Individuals with a higher relative body condition in spring migrated south up to a month later than individuals in lower condition, suggesting that individuals in better condition were more likely to have bred successfully. Moreover, individuals with a lower relative body condition in spring had a lower probability of being detected in autumn, suggestive of increased mortality. The pressure to arrive early to the breeding grounds is considered to be an important constraint of migratory behavior and this study highlights the important influence of body condition on migratory decisions, performance and potentially fitness of migrant birds. **JS**

The pull of the Central Flyway? Veeries breeding in western Canada migrate using an ancestral eastern route. K.J. Kardynal and K. A. Hobson. 2017. *Journal of Field Ornithology* 88:262–273. khobson6@uwo.ca

Understanding non-breeding season movements and identifying wintering areas of different populations of migratory birds is important for establishing patterns of migratory connectivity over the annual cycle. The authors had some amazing results as they captured birds and used five solar geolocation and a global positioning data sets to investigate migration routes, stopover sites,

and wintering areas of a western-most breeding population of the Veery (*Catharus fuscescens*) in the Pemberton Valley, British Columbia, Canada with those from a population ~250 km east across a mountain chain in the Okanagan Valley, BC, and with an eastern population in Delaware. The Pemberton birds used an eastern trajectory through the Rockies to the Great Plains to join a central flyway route during fall and spring migration, similar to the Okanagan birds. However, wintering destinations of Pemberton birds were more varied, with inter-individual wintering distances ~1000 km greater than birds from the Okanagan population and ~500 km from the previously known winter range of Veeries. The observed eastern migration path likely follows an ancestral route that evolved following the most recent glacial retreat. Consistent with patterns observed from the Okanagan and Delaware populations, the Pemberton birds undertook an intra-tropical migration on the wintering grounds, but this winter movement differed from the others. Such winter movements may thus be idiosyncratic or show coarse population associations. Intra-wintering-ground movements likely occur either in response to seasonal changes in habitat suitability or as a means of optimizing pre-migratory fueling prior to long-distance spring movements to North America. **JS**

Molting while breeding? Lessons from New World Tyrannus Flycatchers. A. E. Jahn, V. Bejarano, M. Benavides Guzman, et al. 2017. *Journal of Ornithology* 158:1061–1072. JahnA@si.edu

Songbirds must annually undergo two energetically demanding but important activities: breeding and feather molt both are most easily quantified at banding stations. Because of this demand, these two events are generally not simultaneous. However, substantial variation in the level of annual reproductive investment among populations may result in variation in molt-breeding overlap. This paper looked at how different members of a genus overlap molt and breeding, and the relationship between clutch size, molt, and energetic condition. Of 219 species sampled, only one molted flight feathers while breeding, suggesting that molting flight feathers and breeding simultaneously is too energetically expensive at any clutch size.

However, some flycatchers molted body feathers during the breeding season. When they tested for an effect of clutch size, sex, and energetic condition on body molt intensity during the breeding season, only clutch size and sex had significant effects, with a negative effect of clutch size on body molt intensity in males but not in females. Based on these results, they developed a set of hypotheses to guide future studies on the potential tradeoffs between investment in reproduction and molt. This is an ideal field of exploration for a network of banding stations to see how they might differ on a spatial scale. **JS**

NON-NORTH AMERICAN BANDING RESULTS

Effects of migration distance on life history strategies of Western and Semipalmated sandpipers in Peru. Eveling A. Tavera, D. B. Lank, and P. M. González. 2016. *Journal of Field Ornithology* 87:293–308. etaveraf@sfu.ca

Migration distances of shorebird species correlate with life history strategies. To assess age specific migratory preparation and adult wing-molt strategies, the authors used a comprehensive set of captured Western Sandpipers (*Calidris mauri*) and Semipalmated Sandpipers (*C. pusilla*) at the Paracas National Reserve in Peru, one of the most southern wintering areas of the species. They found an interesting mix of strategies within and between the species. Western Sandpipers breed near the Bering Sea, ~11,000 km from Paracas. Semipalmated Sandpiper populations at Paracas are a mixture of short-billed birds from western Arctic breeding sites, plus long-billed birds from eastern sites, ~8,000 km distant. Adults of both species arrive in October with primary feathers already partially renewed so wing molt starts at sites further north. Semipalmated Sandpipers with longer bills completed wing molt later than shorter billed birds. Adults of both species prepared for migration in February and March. No juvenile Western Sandpipers prepared for migration, confirming the “slow” over-summering life history strategy of more southerly non-breeding populations. Juvenile Semipalmated Sandpipers showed bimodality in strategies. Most showed no migratory preparation, but, during three non-breeding periods, from 27% Oct - Dec 2017

to 31% fattened, molted, and partially replaced outer primaries during the pre-migratory period. Juveniles with longer culmens were heavier and tended to have more alternate plumage. Juveniles that were partially molting primaries had longer culmens and more alternate plumage. Juvenile Semipalmated Sandpipers from eastern-breeding populations thus have a higher propensity for a fast life history strategy, and western birds a slow one. Semipalmated Sandpipers breeding to the west thus resemble Western Sandpipers, suggesting a common, possibly distance-related, effect on life history strategy. **JS**

Longevity records for the Waved Albatross *Phoebastria irrorata*. G. Jiménez-Uzcátegui, M.P. Harris, C.R. Sevilla, and K.P. Huyvaert. 2016. *Marine Ornithology* 44:133-134. Charles Darwin Foundation, Puerto Ayora, Galápagos, Ecuador.

The Waved Albatross is an Ecuadorian endemic, breeding on Española Island, Galápagos. During part of a mark-recapture study, on 19 Jun 2015, a 40.8-year-old bird was recaptured. It was banded on 27 Oct 1974. The bird was previously recaptured in 1994, 2001, 2007, 2009, 2010, and 2013. **WHS**

Partial migration and decreasing migration distance in the Hungarian population of the Common Blackbird (*Turdus merula Linnaeus*, 1758): Analysis of 85 years of ring recovery data. Z. Németh, Z. 2017. *Ornis Hungarica* 25:101–108. znemeth05@gmail.com

This is an interesting analysis of the Common Blackbird, a partial migrant throughout much of its range in Europe. That is, part of its breeding population migrates while the rest stays at the breeding ground for winter. Given the rapidly changing global climate, it is important to understand how migratory birds, including partial migrants, respond to shifting climatic conditions. The author analyzed recoveries of the Hungarian population banded during the breeding season and recovered during migration or winter, with two objectives in mind: (1) to assess whether the population is also partially migratory, and (2) to test the prediction that they have exhibited decreasing migration distances over the past decades as expected based on warming winter temperatures. They had

both migratory and resident strategies, and had been recovered increasingly closer (-5.9 km/year) to their breeding grounds in the past decades. Age and sex had no effects on recovery distance. Possibly in the future the Hungarian population may become entirely sedentary. Surprisingly, 88% of migrant recoveries were the result of shooting or hunting activities in Mediterranean countries, primarily in Italy, highlighting both the need to understand the effects of hunting pressure on migratory behavior at the population level in songbirds and the urgency to ban the killing of migratory birds in European countries. **JS**

Breeding biology of Fire-tailed Myzornis (*Myzornis pyrrhoura*) in an alpine environment in southwestern China. Dan Liang, Ge Gao, Lian-Xian Han, and Xu Luo. 2017. *The Wilson Journal of Ornithology* 129(3): 568-575. Southwest Forestry University, Kunming, China. xu_lo@aliyun.com

Color banding of a small number of adults (n=12) was used in a broader study of life history traits and breeding biology of Fire-tailed Myzornis to determine if there were any differences in the Gaoligong Mountains of southwestern China, where it is rare, from birds in the core range in the Himalayas. Males and females of this high-elevation species are subtly different in plumage, and color banding allowed observers to determine that both sexes contributed equally to breeding activities, as has been observed in India and Nepal. Pairs were also observed to be socially monogamous, with only one male and one female observed attending nests and young. **ATC**

Satellite telemetry reveals the first record of the Ascension Frigatebird (*Fregata aquila*) for the Americas. Sean M. Williams, Sam B. Weber, Steffen Opper, et al. 2017. *The Wilson Journal of Ornithology* 129(3): 600-604. Ascension Island Government Conservation and Fisheries Department, Georgetown, Ascension Island, sam.weber@ascension.gov.ac

The at-sea range of Ascension Frigatebird is poorly understood. As part of a broader long-term study, 60 individuals were fitted with a satellite transmitting device on Ascension Island in the South Atlantic Ocean. One individual, tagged on 6 Mar 2014, was tracked on a flight westward toward

Brazil beginning on 16 Jun 2014, passing into Brazilian territorial waters on three occasions between 23 Jun and 17 Jul 2014, closely approaching the Brazilian Archipelagos of Fernando de Noronha and Sao Pedro e Sao Paulo. This was a first record for the country of Brazil, the continent of South America, and the Americas in general, showing that satellite telemetry studies can sometimes return unexpected and interesting results. **ATC**

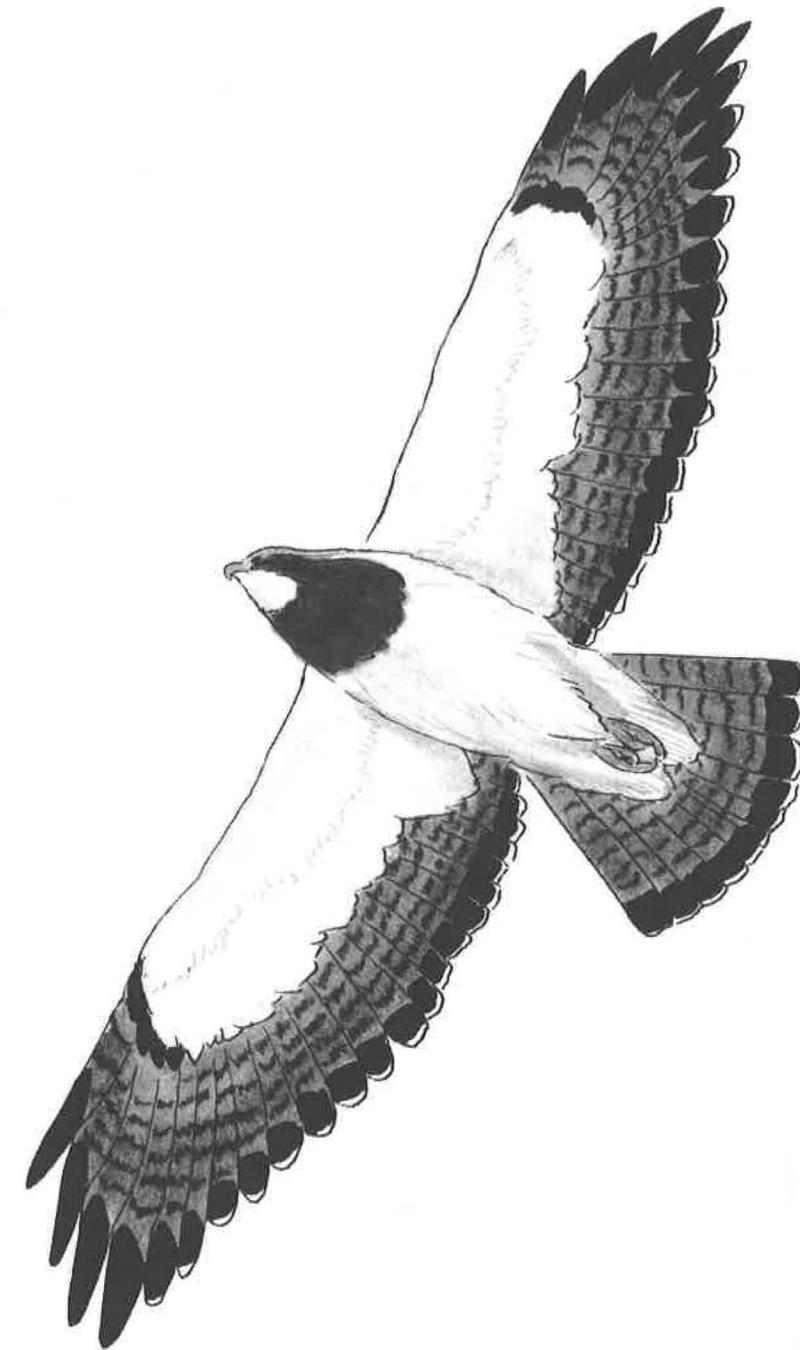
Geocator data reveal the migration route and wintering location of a Caribbean Martin (*Progne dominicensis*). Noah G. Perlut, Thomas C. Klak, and Eldar Rakhimberdiev. 2017. *The Wilson Journal of Ornithology* 129(3): 605-610. University of New England, Biddeford, ME. nperlut@une.edu

Geolocators are increasingly being used to uncover interesting and unknown life history information about little known or cryptic species. The migration routes and winter range (September-January) of Caribbean Martin are largely unknown. Seven geolocators were placed on Caribbean Martins in the Commonwealth of Dominica in 2012. One geocator was retrieved from a female in 2014 which documented her movements over a two-year period. The winter range in both years was in the state of Bahia, Brazil, ~3550 km southeast of the breeding grounds. Fall migration routes differed between years, with a more coastal route along northeastern South America in fall 2012, and a more inland route in fall 2013, including portions of the state of Amazonas, Brazil. The spring 2013 migration route was coastal, similar to the fall 2012 route. Few geocator studies have assessed the repeatability of migration routes. This data will help identify conservation priorities for stopover sites as well as wintering range and habitat for this species. **ATC**

Home range size and nocturnal roost locations of Western Chat-Tanagers (*Calyptophilus tertius*). Christopher C. Rimmer, Patrick L. Johnson, and John D. Lloyd. 2017. *The Wilson Journal of Ornithology* 129(3): 611-614. Vermont Center for Ecostudies, Norwich, VT. crimmer@vtcostudies.org

Western Chat-Tanager is a rare and poorly studied species endemic to the West Indian island of Hispaniola. Radio-telemetry studies during March and April 2010 of a small number (n=12) of adults allowed researchers to determine the home range size of males and females, and also led them to

nocturnal roosting sites. This information is important for the conservation of this species not only in defining habitat use, but also to form the basis for estimating overall population size and density, as well as the species' sensitivity to habitat fragmentation. **ATC**



Swainson's Hawk
by George West