

Treaty Act to be included in NABC certification. Banders need to be encouraged to publish data. Comments were made about a possible need for a scientific design committee in IBBA. It was suggested that a letter be sent from IBBA to NABC stating that we are questioning the value of IBBA membership in NABC; the original purpose of NABC was to make banders better, but that does not seem to be the focus now. NABC manuals are rather old and need to be updated as does the training and certification process. A letter will be written.

Old Business

Web Page Update (Erika Dittmar).— IBBA's web page was complemented. Dittmar would like to have more information to add to the web page with meeting information, bander information and photos.

Bylaws Update (Tom Bartlett).— Proposed changes to Article VII (Officers) had been posted on IBBA's web page. Rather than electing individuals each year, the positions Second Vice President, First Vice President and President shall have two-year terms and individuals progress from Second Vice President to First Vice President to President to Past-President. In addition, the secretary and treasurer positions are to have five-year terms with the possibility of one additional re-election. These changes were approved by the board and membership needs to vote on it.

Mission Statement Update

Grant Committee Proposals (Linda Tossing).— During 2015, the grant committee received three grant proposals for \$500 from the Paul Stewart Fund and one request for a \$1,000 grant (combining \$500 from the IBBA Membership Research Fund and \$500 from the Paul Stewart Fund). The committee accepted and recommended awarding three grants totaling \$2000 this year, as no awards were granted in 2014. The grant application process will be revised primarily with regard to the timing for application and awards.

Other New Business

2016 Annual Meeting.— IBBA has received an invitation to meet in Indiana at the Mary

Gray Bird Sanctuary, 11-13 Nov 2016. Speakers have already been invited and the meeting will include the opportunity to observe a Saw-whet Owl banding project. Meeting proposals for 2017 will be welcomed.

Nominating Committee Report (Tom Bartlett).— The following election slate was presented: President: Vernon Kleen, IL (second term); First Vice President: Thomas Kashmer, OH (second term); Second Vice President: Linda Tossing, MO (fifth term); Secretary: Dana Ripper, MO (fifth term); Treasurer: Michael Eichman, IL (second term); Directors (2018): Erika Dittmar, MI (second term) and Lianne Koczur, TX (first term). The motion was made to close nominations and that the proposed slate be elected.

Adjourn.— Meeting was adjourned at 5:23pm.

Second Board Meeting

Called to order by the President at 5:30 pm. There was no business needing attention. The meeting adjourned at 5:32 pm.

Abstracts of papers presented at the 2015 IBBA Annual Meeting

Assessment of population trends in Golden-winged Warbler from long-term migration monitoring. *MARK SHIELDCASTLE* (markshieldcastle@bsbo.org), *Black Swamp Bird Observatory, Oak Harbor, OH.*

Population trajectory for many Neotropical migrant land bird species is difficult to assess due to the remoteness of a large portion of their breeding and/or wintering range. The Golden-winged Warbler is a Neotropical species that is under review for listing under the Endangered Species Act. Analysis on Breeding Bird Survey (BBS) data indicates a decline, but due to sample size, reliance on the dataset is low. I used data from an intensively studied stopover site in northern Ohio to evaluate this species' population trajectory. I looked at the potential of using migration banding data of the Golden-winged Warbler in northern Ohio to support or enhance the information needed to complete an informed decision-making process for

future management. Ninety-four Golden-winged Warblers were captured in 22 years of spring migration. Data indicates a strong decline in populations of this species migrating through the lower Great Lakes. My data confirm range-wide concerns for the future of the Golden-winged Warbler. Data from additional large and long-term migration monitoring stations should be organized under a Great Lakes migration monitoring network to better capture trends in this and other species of concern.

Age and sex dependent stopover biology of Ruby-throated Hummingbirds during autumn migration. T.J. ZENZAL (tjzenzal@gmail.com), Dept. Biol. Sci., Univ. Southern Mississippi, Hattiesburg, MS.

This study focuses on age and sex-related differences exhibited during stopover by Ruby-throated Hummingbirds on autumn migration along the northern coast of the Gulf of Mexico. Sex-dependent migration is expected because of sexually dimorphic characteristics in wing morphology and body size. Age-dependent migration is expected since young birds engaging in their first migration lack the experience of older individuals. Information on arrival condition, phenology, fuel deposition rates (FDR), stopover duration, and estimated flight ranges are obtained through banding data, passive integrated transponder tags, radio telemetry, and color marking. All variables except FDR had significant differences between age as well as sex; however, we detected no interactions between age and sex. Males arrived in better condition than females, while older birds arrived in better condition than younger birds. Females arrived earlier in the season compared to males, while older birds arrived earlier than younger birds. Males had longer stopover durations compared to females, while younger birds stayed at our study site longer than older birds. Males were estimated to fly farther than females, while older birds were able to fly farther than younger birds. We also tested for correlations between arrival condition and FDR as well as stopover duration finding that only young males had significant correlations of FDR and stopover duration with

arrival condition. The lack of differences between FDR as well as relationships between FDR and stopover duration with arrival condition in the other age/sex classes are minimized when migrants face an ecological barrier. Ultimately, this study provides information on the poorly understood migration of Ruby-throated Hummingbirds by outlining differences in their stopover biology by age and sex.

Post-breeding movements of Black-capped Vireos on the breeding grounds. DAVID CIMPRICH (david.a.cimprich2.civ@mail.mil), Natural Resources Management Branch, Ft Hood, TX.

As part of a monitoring program at Fort Hood Military Installation, I captured and banded Black-capped Vireos both on study areas, in which I collected data on reproductive success, and in other areas. Banding effort started when vireos first arrived in late March and continued to late September when the birds departed on southward migration. I examined 2009 - 2015 data to reveal patterns of movement by adult males during the post-breeding season. I also collected behavioral observations from 28 Aug to 8 Sep 2015. I defined the "post-breeding season" as beginning on ordinal date 160 (9 Jun for non-leap years) when the final nests for half of territorial males had either fledged or failed. Prior to day 160, captures within study areas were predominately of males that were territorial on those sites (residents). Afterward, males that had not been territorial on the study sites (non-residents) became the most frequent captures. The capture rate of non-resident males was greatest from day 160 to day 195. One quarter of the non-residents captured after day 160 became territorial residents on the same site in the following breeding season. Further evidence of movement came from 93 recaptures of residents during the post-breeding season. Whereas, most of these were recaptured relatively near (<100 m) the center of their territory, 32% were 150 - 250 m away and 10% were even farther away (up to 1700 m). Non-residents showed even greater movement. Upon recapture, 36% of these birds were more than 400 m from their initial capture point. Daily movement rates of non-

residents between capture and recapture were high, sufficient in 69% for total movements >2 km during the entire post-breeding period (100 days). Thirty-five percent of captures of resident males were of second-years compared to 63% for non-residents. Late post-breeding season observations revealed evidence of territoriality (singing, counter-singing, chasing) as well as evidence of behaviors related to courtship. These behaviors were shown by both residents and non-residents alike. Taken together, these observations provide evidence that male Black-capped Vireos commonly leave the territory they defended during the breeding season after their final nesting attempt and that, during the ensuing wanderings, they may select and defend new territories for the next breeding season. Evidence also suggests that some may even attract potential mates for the next breeding season at this time.

Changes and updates for the North American Bird Banding Program and Bird Banding Laboratory. BRUCE PETERJOHN, Bird Banding Laboratory, USGS Patuxent Wildlife Research Center, 12100 Beech Forest Rd., Laurel, MD.

No abstract.

Malaria parasitemia and prevalence in the Tufted Titmouse. KAYLA FAST (kmfl60@msstate.edu) and DIANA C. OUTLAW, Dept. Biol. Sci., Mississippi State Univ., Mississippi State, MS.

Haemosporidians, including the avian malaria parasites, are a diverse group of blood parasites that infect terrestrial vertebrates worldwide. There is variability in parasite prevalence (presence) and parasitemia (infection intensity); infections range from virtually inconsequential to lethal. Prevalence and parasitemia of avian malaria in the Tufted Titmouse were determined (n = 81). The genera *Plasmodium* and *Parahaemoproteus* were detected and quantified from bird blood using microscopy, polymerase chain reaction (PCR), and quantitative PCR (qPCR). Thirteen lineages of malaria parasites were found. Sequence data from the parasite's mitochondrial cytochrome b gene indicate that prevalence is 69.1% (*Plasmodium* -

89.3%; *Parahaemoproteus* - 7.1%; double infection - 3.6%). Parasitemia was low in all infected birds. Seasonally, parasite prevalence varied significantly. Avian malaria prevalence and parasitemia were not associated with host sex, age, or health. Observations of infection in this naturally infected bird provide details on host susceptibility that are applicable to the understanding of malaria parasites in other avian hosts.

Changes in gut microbiota of migratory passerines at stopover along the northern Gulf Coast. WILL LEWIS (william.b.lewis@eagles.usm.edu), FRANK MOORE and SHIAO WANG, Dept. Biol. Sci., Univ. Southern Mississippi, Hattiesburg, MS.

Although the gut microbiota provides many beneficial functions to animal hosts, including digestion, fat metabolism, and immune function, little is known about the temporal stability of avian gut microbiota in response to environmental changes throughout the annual cycle. Migration offers an ideal scenario for investigating this issue, as migratory birds are frequently exposed to novel stopover habitats characterized by varied food types and qualities. During spring 2014, migratory Gray Catbirds, Wood Thrushes, and Swainson's Thrushes were captured at a site in southwest Louisiana shortly after crossing the Gulf of Mexico and at least one day later during stopover. Fecal samples were collected and microbial communities were analyzed using next-generation sequencing. The microbiota of the majority of birds became more similar during stopover compared to arrival, with the degree of change in microbiota being related to the duration of time spent at the site. Additionally, changes in microbiota appeared to be tied to a bird's ability to increase mass during stopover. The influence of common food resources and habitat at the shared stopover site likely drove many of the observed changes in microbiota, though the influence of a common resting period after a prolonged flight may have also played a role. The results of this study suggest that the gut microbiota of migratory passerines has the potential to show pronounced changes over short periods of time at stopover.

Distribution and prevalence of haemosporidian parasites in the Northern Cardinal. *V. WOODY WALSTROM* (verylwoody@gmail.com) and *DIANA C. OUTLAW*, Dept. Biol. Sci., Mississippi State Univ., Mississippi State, MS.

Avian malaria parasites provide a model system for understanding ecological and evolutionary host-parasite interactions. The diversity and distribution of these parasites is largely unknown, and we provide the first range-wide assessment of avian malaria in a continentally distributed host, the Northern Cardinal. We specifically address the following three questions: 1) what is the prevalence of avian malaria parasites in the Northern Cardinal and does it vary between host subspecies populations? 2) What is the lineage diversity and biogeographic distribution of these parasites? 3) Is there evidence of parasite lineage structuring with respect to host subspecies?

Based on molecular techniques, we show geographical differences in prevalence and lineage diversity between host subspecies and identify several novel lineages. We use phylogenetic reconstruction to show where these lineages fit into the expanding evolutionary tree of known avian malaria lineages. All except one subspecies of Northern Cardinal are highly parasitized by a wide diversity of *Plasmodium* and *Parahaemoproteus*. Compared to published studies that used microscopy to determine prevalence in this host, we find a much higher number of infected individuals (66.3% versus 45% or less). Consistent with previous studies, *Parahaemoproteus* from the Northern Cardinal was found to be highly host specific and geographically structured, whereas *Plasmodium* was less host specific and spread across a large geographic range.

Active capture of rails during the breeding season and fall migration. *AURIEL M. V. FOURNIER* (aurielfournier@gmail.com), *KIEL DRAKE* and *DAVID G. KREMENTZ*, Arkansas Coop. Fish & Wildl. Res. Unit, Univ. Arkansas, Fayetteville, AR.

Rails are elusive and live in dense vegetation making many traditional capture methods ineffective or inefficient. We have tried

several methods to capture Virginia Rails, Yellow Rails and Sora during the breeding season and fall migration including the use of broadcast calls, active capture and flushing with various methods. We have found nocturnal capture most effective, with no noticeable drop-off in effectiveness until dawn. During the breeding season, the use of broadcast calls and active capture with dip nets is effective with all three species. The active capture of Virginia Rails remains difficult, as they are often the most challenging to capture, only giving one opportunity. Sora and Yellow Rails will approach a broadcast call several times. During fall migration, flushing rails either on foot or on ATVs and capturing with dip nets is effective. During fall migration, captures are most effective on calm nights near the new moon. In breeding and fall migration season having two or three people working as a team increases capture success.

Variation in Green Heron nesting success in coastal Louisiana marshes. *MOLLY M. FOLKERTS* (mmf0009@tigermail.auburn.edu), Louisiana State Univ. Shreveport, Shreveport, LA, *K. E. PERCY*, *ERIK I. JOHNSON*, *KAREN A. WESTPHAL*, *TIMOTHY J. VINCENT*, Audubon Louisiana, 6160 Perkins Rd., Suite 135, Baton Rouge, LA, and *JAMES L. INGOLD*, Louisiana State Univ. Shreveport.

Green Heron nests were surveyed in coastal marshes at Audubon's Paul J. Rainey Wildlife Sanctuary, Vermilion Parish, LA, during the breeding seasons of 2013 through 2015 to determine factors affecting nest success and to discover possible explanations for population declines. We banded 142, 139, and 220 chicks in each year, the largest number of Green Herons that have ever been banded. We used program MARK to examine the relationship between nest success and the extent of nest aggregation, pond proximity, water level fluctuation, navigation canal versus natural bayou habitat, nest tree characteristics, and temporal variation. We built competing nest survival models and used model averaging to estimate daily nest survival rate, which was 0.968 (SE = 0.002). Prior to 2015 data collection, the most parsimonious model was the simplest one,

which involved no covariates and no time dependence. However, single covariate models involving nearest temporal neighbor distance (range 5 – 6346 m), canal type (man-made canals versus natural bayous), and year had model likelihoods >0.50 and were within 2 AICc units of the top model, suggesting strong support for these competing models. We found a weak negative relationship between nearest temporal neighbor distance and nest survival. In 2015, we increased surveys of natural bayous and partial analysis with the new data has revealed the most parsimonious model to be one involving survival as a function of year and canal type. Results provide evidence for higher survival in natural bayous than in man-made canals. With 206, 244, and 167 active nests located each year since 2013, the Paul J. Rainey Wildlife Sanctuary supports some of the largest nesting concentrations of this species in the U.S., suggesting that Louisiana's Chenier Plain deserves conservation attention for reversing population declines.

Method of capture for Clapper Rails to estimate survivorship using radio-transmitters and automated telemetry. *JARED FEURA* (jfeura@gmail.com), *EAMON HARRITY*, Dept. Wildl., Fish. & Aquaculture, Mississippi State Univ., Mississippi State, MS, and *EVAN ADAMS*, Biodiversity Research Inst., 276 Canco Rd., Portland, ME.

Playback of Clapper Rail vocalizations and modified mist nets were used to capture resident Clapper Rails during the breeding season of 2015 (Apr – Aug). Single trammel 8-m long mist nets were fabricated using multifilament gill netting of 1.5 inch mesh that was dyed black. Two speakers accompanied each net setup and were placed on opposite sides of the net attached to a call playback system. Weights were affixed to the trammel line that ran along the ground. Using standard mist nets and two speaker playback six birds were captured in 32 attempts, but with modified mist nets and two speaker playback, 24 birds were captured in 38 attempts. The new nets were less conspicuous, allowed less disturbance of marsh vegetation, and birds were unable to break through the netting.

Clapper Rails are a relatively common, yet secretive resident of saltwater and brackish emergent marshes but, despite their generic distribution within salt marshes, few studies have investigated their survivorship. In the breeding season of 2015, 20 individuals were captured and radio-tagged in two (n = 10 birds/site) northern Gulf of Mexico tidal marshes. These 20 birds will be monitored by automated telemetry towers, affording survival and movement information over a two-year period.

Stopover site fidelity of Nearctic-Neotropical migrants to a high-elevation bald evidenced through bird banding. *CRAIG MARSHALL* (cmarshall.wildlife@outlook.com), Dept. Wildl., Fish. & Aquaculture, Mississippi State Univ., Mississippi State, MS, *DAVID F. VOGT*, Chattanooga, TN, *ERIC C. SOEHREN*, Alabama Dept. Cons. & Nat. Resources, Wehle Land Cons. Center, 4819 Pleasant Hill, AL, *SCOTT SOMERSHOE*, U.S. Fish & Wildl. Serv., Div. Migratory Birds, Region 6, P.O. Box 25486, Denver, CO 80225, and *SCOTT A. RUSH*, Dept. Wildl., Fish. & Aquaculture, Mississippi State Univ.

We examined stopover site fidelity exhibited by Tennessee Warblers and Cape May Warblers to a high-elevation bald in the southern Appalachian Mountains. From 1999 - 2014, 6,175 Tennessee Warblers and 198 Cape May Warblers were captured and banded at Whigg Meadow banding station (Monroe County, TN), with 16 Tennessee Warblers and one Cape May Warbler recaptured in subsequent years. The inter-annual recapture of 16 Tennessee Warblers documents the highest known incidence of fidelity to a single stopover site by a Nearctic-Neotropical migrant passerine species. These results indicate that fidelity to stopover sites by long-distance migrant passerine species occurs, but may be limited to a specific suite of species. We encourage continued reporting of inter-annual site faithful passerines and research regarding stopover site fidelity as an understudied subset of stopover ecology.