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Western Bird Banding Association Annual Meeting 2009 Abstracts of Presentations

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2009-2010 year are President Michael Boyles (National Park Service, Boulder City, Nevada), First Vice-President C.J. Ralph (U.S. Forest Service, Redwood Sciences Laboratory, Arcata, CA), Second Vice-President Howard Browers (U.S. Fish and Wildlife Service, Pullman, WA), Treasurer Pat Leitner (Tucson, AZ), Secretary Renee Cormier (PRBO Conservation Science, Petaluma, CA), Editor Walter H. Sakai (Santa Monica College, Santa Monica, CA), Membership Chair Ken Burton (Arcata, CA), Immediate Past President John Alexander (Klamath Bird Observatory, Ashland, OR), and at-large Board members Kay Loughman (Berkeley, CA) and Andrea Wuenschel (Puget Sound Bird Observatory, Seattle, WA).

The meeting was a great success and, like all WBBA meetings, a lot of fun. If you missed it, please try to make it next year.

WESTERN BIRD BANDING ASSOCIATION ANNUAL MEETING 2009 ABSTRACTS OF ORAL PRESENTATIONS

Colwell, Rita R. FEMALE ANNA'S HUMMINGBIRDS DEMONSTRATE SEVERE BAND-CAUSE LEG INJURY IN CENTRAL CALIFORNIA.

Los Altos Hills, CA rcolwell@sbcglobal.net

At three banding sites in central California, a significant number of recaptured female Anna's Hummingbirds (*Calypte anna*) show leg injuries due to their bands. At the first site, established in 2005, several females were recaptured with varying degrees of banded leg swelling. They had been banded with the Bird Banding Laboratory's recommended 6.0 mm size. Since then, the problem has been observed at two other sites that were started later. At all three sites the band size used on females has been increased to try to alleviate the issue, but it has persisted. Normal breeding season leg swelling along with accumulation of foreign material under the band has proved to be the cause of the problem in the affected individuals.

Cormier, Renée, Thomas Gardali, and Julian Wood. ASSESSING MIGRATORY STOPOVER SITE-QUALITY FOR BIRDS DURING FALL MIGRATION ALONG TWO CALIFORNIA RIVERS.

PRBO Conservation Science, Bolinas, CA.

Consequences of habitat loss and environmental change not only impact birds on their breeding and wintering grounds, but can also affect migration stopover sites. Measuring site-quality for birds at migration stopover grounds and identifying critical stopover habitats is an important component to the conservation of migratory birds. We examined change in mass of recaptured individuals of migrant Willow Flycatchers (*Empidonax traillii*), Orange-crowned (*Vermivora celata*), Yellow (*Dendroica petechia*), and Wilson's (*Wilsonia pusilla*) warblers, and we examined relationships between body condition and time of day for the same species, since most migrants are not recaptured, at two sites each along the Mokelumne and San Joaquin rivers. We compared the rate of change in condition over the course of the day as an index of site quality, by inferring food availability, and compared those to similar studies in Canada and the US. Of recaptured individuals grouped by species and site, 64-88% showed an increase in mass. All study species showed increases in condition or condition was stable. Rate of change in condition varied among sites and species. Because most species showed increase in condition, but rate of change varied between sites, comparisons of additional sites and species would provide a better understanding of how we can assess migratory stopover site quality relative to the different needs and strategies of migrant species.

Dybala, Kristen E. A STUDY OF POST-FLEDGING SURVIVAL IN SONG SPARROWS USING RADIO TELEMTRY. Department of Wildlife, Fish & Conservation Biology, University of California, Davis, One Shields Avenue, Davis, CA 95616 kedybala@ucdavis.edu

Juvenile survival in passerine birds is likely to be a critical bottleneck in avian population dynamics; yet, very little is known about juvenile survival rates or the processes affecting juvenile survival. Radio telemetry studies may be essential to

this stage of the avian life cycle, but remain uncommon in juvenile passerines. Radio transmitters were attached to nestling Song Sparrows (*Melospiza melodia*) at the Palomarin Field Station in the Point Reyes National Seashore in 2008 and 2009, as part of an ongoing study of juvenile survival rates. Fledglings were tracked daily through independence, at approximately one month after fledging. Daily survival rates were calculated using known-fate models in program MARK. This study will be extended through 2010, with the goals of identifying temporal or spatial patterns of variation in post-fledging survival, as well as the relationship between post-fledging survival and nest success rates.

Garcia, William. CONSERVATION IN BELIZE: WORKING TOGETHER FOR A BETTER TOMORROW.

Belize Foundation for Research and Environmental Education and Klamath Bird Observatory, P.O. Box 758, Ashland, OR 97520

(541)201-0866, Trioboy.garcia@gmail.com

Due to its close proximity to the US, its stable government, low population density, relatively intact ecosystems (particularly the terrestrial), and its commitment to preserving numerous protected areas, Belize is a key conservation partner regionally and globally. Yet, Belize faces many threats to its protected areas including impacts from ecotourism, development (particularly along the coast), overfishing, mineral extraction and energy development (e.g., hydro-electric). Numerous non-government organizations are working with the people and government of Belize to balance preserving the natural ecosystems, maintaining the livelihood for local people, and the sustainable use of natural resources. I will describe a community-based avian conservation and monitoring project in the Bladen Nature Reserve that is part of the Belize Foundation for Research and Environmental Education conservation initiatives that involve scientific research and environmental education. This project serves as model of local participation in the protection and monitoring of protected areas and provides opportunity for future collaborations.

Gilbert, William M.¹ and George C. West²

DETERMINATION OF SEX IN ADULT ORANGE-CROWNED WARBLERS BASED ON WING CHORD AND ORANGE CROWN PATCH.

¹Lafayette, CA winglbrt@aol.com, ²Green Valley, AZ.

The Orange-crowned Warbler (*Vermivora celata*) is a widespread paruline species that has been the subject of numerous field studies into basic breeding ecology and resource management. Future studies might benefit from being able to separate the sexes of this weakly dimorphic species reliably based on secondary morphological characters. Such separations would be especially useful during migration and winter residency when information on primary sexual characters, such as brood patch and cloacal protuberance, is not available. Current reference material on wing chord and orange crown patch lengths tends not to be sufficiently detailed to allow sexual separations in many cases. We provide more detailed information on these two morphological characters which should allow reliable field determination of sex in a high percentage of field-captured adult specimens. Certain preliminary determinations about a field-captured specimen are important to facilitate accurate sexual differentiation: 1) the specimen's age ("adult" or "immature," best determined by skull ossification), 2) the specimen's race (one of four), and 3) the possibility that the specimen is a "hybrid" between two races (most possible where breeding ranges of two races overlap). If this information can be ascertained, sexual separation of most adult specimens should be possible based on wing chord and/or length or (preferably) "grade" of orange crown patch. Sexual separation of a lesser percentage of immature specimens also might be possible based on wing chord and crown patch, but confirmation of a more exact methodology for such separations awaits better museum reference material based on unequivocal criteria for age (by skull ossification) and sex (by gonad dissection).

Hartman, C. Alex¹ and Lewis W. Oring² ANNUAL SURVIVAL AND MIGRATORY CONNECTIVITY OF LONG-BILLED CURLEWS.

¹San Francisco Bay Bird Observatory, 524 Valley Way, Milpitas, CA 95035, ahartman@sfbbo.org, and ²University of Nevada, Reno

The objectives of this study were to gather information on two aspects of Long-billed Curlew biology in which data are relatively sparse: adult annual survival and connectivity between breeding and wintering areas. Between 2003 and 2007, we banded curlews breeding on a series of cattle ranches in northeastern Nevada. Adults were caught on the nest using mist nets, dip nets or a bownet trap and given a unique combination of one federal band and three darvic color bands. We assigned sex according to bill length and shape. We resighted color-banded curlews beginning in the first week of April, when curlews first arrive to the study area, and continuing through May of 2004-2007. We used Cormack-Jolly-Seber models in Program MARK to model adult apparent survival rates and detection probabilities. We examined a set of *a priori* models in which survival and detection probability were allowed to vary by sex and/or year, as well as a model in which survival and detection probabilities were constant. Winter locations of curlews breeding in northeastern Nevada were determined using color-band sighting reports. Apparent annual survival rates were similar to those reported in other large-bodied sandpipers and were greater among males (0.92) than among females (0.83), most likely due to greater breeding site fidelity among males. A total of eight curlews from northeastern Nevada have been observed at least once on the wintering grounds. Locations range from San Francisco Bay to the Sea of Cortez and include both coastal and interior locations. Coupled with estimates of productivity, we conclude that the study area in northeastern Nevada supports a robust curlew breeding population. Moreover, the wide range of observed curlew winter locations demonstrates the importance of preserving a diverse network of overwintering sites throughout the Long-billed Curlew's range.

Leitner, Wade. GRAPHICAL EXPLORATION OF BANDING DATA. BirdWorks, LLC, 1805 South Ceylon, Tucson, AZ 85748, wleitner@birdsci.com

Birds in the hand yield far more than data on recapture rates. Techniques for assembling data on capture history, cloacal protuberance, brood patch, fat, and molt have been developed and synthesized

into a single graphical representation by integrating database, analysis, and charting tools. The resulting chart allows direct inspection the timing of various features of the annual cycle including patterns related to the timing of reproduction, migration and molt. When assembled into species accounts, these patterns often reveal intriguing questions and provide insight into the natural history for several species both within and between banding stations. As an example, the species accounts produced for Lucy's Warbler (*Vermivora luciae*) provide a means to explore molt migration.

Meese, Robert J. BANDING TRICOLORED BLACKBIRDS IN CALIFORNIA'S CENTRAL VALLEY: METHODS, RESULTS, AND PRELIMINARY INTERPRETATIONS.

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I and several assistants have been trapping and banding Tricolored Blackbirds (*Agelaius tricolor*) since 2007 at their breeding colonies in the Central Valley of California. We have used modified "Australian crow traps" and modified dove traps baited with cracked corn to trap and band over 25,000 Tricolored Blackbirds from seven sites in Kern, Merced, Yolo, Yuba, and Colusa counties. Refinements in field methods have resulted in an increase in the number of birds captured and banded per unit of time. Over 350 birds, representing 249 unique individuals, have been recaptured. Documented movements confirm: 1) early-season breeding in the southern San Joaquin Valley with most individuals moving to the Sacramento Valley to breed again one or more times, 2) strong breeding site fidelity, and 3) colony cohesion. Resightings of color-banded birds have documented post-breeding movements from the Sacramento Valley to Pt. Reyes National Seashore and to northwestern Los Angeles County.

Neville, Laurie E.^{1,2}, Jared D. Wolfe^{1,2}, Lucy M. Rowe¹, and C.J. Ralph¹. METHODOLOGIES FOR FACILITATING AGING ACCURACY AND RAPID PROCESSING OF SOME WESTERN BIRDS.

¹USDA Forest Service, Pacific Southwest Research Station, Redwood Sciences Laboratory, 1700 Bayview Dr., Arcata, CA 95521 and ²Humboldt State University, Wildlife Department, 1 Harpst Street, Arcata, CA 95521

It is widely accepted that avian molt and plumage cycles can be used as accurate heuristic markers of seasonality and age. Despite the utilitarian nature of understanding avian molt strategies, recognizing age-related molt and plumage criteria in captured birds remains a topic of consternation for many field ornithologists. Variation in molt and plumage can be complex for various age and sex classes within each family/subfamily of commonly captured passerines. Establishing a straightforward and efficient protocol that utilizes phylogenetically conserved plumage and molt-based age criteria in association with accurate demographic data promotes safe and rapid processing. We believe that researchers learn more quickly and produce more accurate data by focusing on key ageing criteria for particular groups of species and describe methodologies that facilitate rapid, accurate and repeatable processing which ultimately reduces handling time and stress in captured birds.

Nott, M. Philip and Peter Pyle. VISUALIZATIONS OF MAPS DATA: DEMOGRAPHICS, MORPHOLOGY, PHENOLOGY, AND BREEDING CONDITION.

The Institute for Bird Populations, Point Reyes Station, CA.

The Institute for Bird Populations (IBP) recently developed a software tool, VizBand, for visualizing MAPS results from individual MAPS stations or groups of stations. VizBand allows the operator to define a list of stations and/or species and extract the relevant banding data from the master MAPS dataset. The output comprises tab- or comma-delimited text files allowing easy tabulation of MAPS results into statistical, word processing, spreadsheet, or web authoring software. Vizband generates detailed species- and year-specific reports of demographic estimates and indices (e.g. annual numbers of HY and AHY individuals, productivity, and survival). VizBand creates up to 24 visualization panels (JPG and PDF formats) for each species, including annual variation in population size (corrected for missed effort), wing chord lengths, body condition indices, breeding condition indices, timing of breeding, and natal recruitment. We will present a number of example visualizations from data collected at USFS- and BLM-funded MAPS locations in the Pacific Northwest and demonstrate how inferences can be

made regarding demographic and environmental causes of population change. IBP is actively seeking funding to implement a web-based portal through which these tools can be accessed for research and educational purposes.

Moran, Alison and Ann Nightingale. COMPARISON OF RESTRAINTS USED DURING HUMMINGBIRD BANDING. Rocky Point Bird Observatory, Victoria, BC.

A number of restraint methods are employed during hummingbird banding, including cloth or mesh bags, reusable or disposable casting jackets, paper tubes, and screens or bands with clips. Since restraints are intended to minimize harm to birds during the banding process, we considered the following factors: stress and level of exposure to the elements; ability to observe signs of stress; ability to feed the bird during processing; ability to adjust the restraint to birds of different sizes; potential for damage to structures, such as wings, bill, tongue, legs, and feet; risk of crushing; risk of entanglement or escape; ease of banding; and ease of obtaining measurements. Positive and negative attributes were identified for all methods tested, including the use of no restraints. We conclude that the most effective strategy for risk reduction may be a combination of methods, and that the most appropriate methods may differ with respect to climatic conditions and species.

Pollinger, John P., Emily E. Curd, and Thomas B. Smith. UPDATE ON THE UCLA-NIH AVIAN FLU AND BIRD CONNECTIVITY PROJECT.

Center for Tropical Research, Institute of the Environment, University of California, Los Angeles, 300 La Kretz Hall, 619 Charles Young Drive South, Los Angeles, CA 90095
jpollinger@ucla.edu

We present an update of the progress of UCLA's NIH-funded project to investigate the distribution and transmission of avian influenza (AI) in migratory passerines in the Americas. We have now collected over 35,000 cloacal swabs and feathers from passerines in 39 US states, Mexico, and five Central American countries through our partners at the Monitoring of Avian Productivity (MAPs) network and Landbird Monitoring Network of the Americas (LaMNA), the Institute

for Bird Populations (IBP)-led Monitoring of Overwintering Survival (MoSI) network, and four South American countries with Alex Jahn (U. Florida). We are now ramping up testing for influenza presence in cloacal samples and have observed ~3% positive rate in North American passerines to-date. Our preliminary predictive modeling results for influenza presence and distribution in passerines using ecological variables indicates vegetation density and primary productivity are strongly correlated with occurrence of AI in passerines. As we expand testing of samples, we will be able to investigate temporal effects (seasonality, migration) on occurrence of AI. We will also present an update on our bird bander human AI blood serology survey (187 samples collected at AOU in 2008 [Portland] and 104 at AOU in 2009 [Philadelphia]). The serology testing has turned out to be unexpectedly complex, requiring a new panel of human AI regional strains to be prepared as standards. The CDC and Iowa University are now collaborating with UCLA to refine and optimize this testing technology as it will be a critical resource for future human AI surveillance in the US. We will also discuss the unique passerine feather collection at UCLA (now >85,000 feathers), most collected by the LaMNA and MAPs network of banders. This collection has become a valuable resource to the worldwide avian research community, facilitating a number of genetic and isotopic migratory connectivity, population, and systematics studies and conservation applications.

Ralph, C. John¹, Josée Rousseau^{1,2}, John D. Alexander² and Leo Salas³. JOINING THE EFFORT: PRESERVE, SHARE AND ANALYZE DATA.

¹USDA Forest Service, Pacific Southwest Research Station, Redwood Sciences Laboratory, 1700 Bayview Dr., Arcata, CA 95521, ²Humboldt State University, Wildlife Department, 1 Harpst Street, Arcata, CA 95521, and ³PRBO Conservation Science, 3820 Cypress Drive #11, Petaluma, CA 94954

LaMNA (Landbird Monitoring Network of the Americas), with the help of several other partners, has developed tools to help preserve and describe banding data and facilitate data analysis and sharing. We have developed a process to fully document, archive, and then extract all data from

any bird-monitoring dataset into a common, easily shared format (i.e., the Avian Knowledge Network Bird Monitoring Data Exchange). LaMNA is also developing tools for data exploration and analysis. LaMNA is a cyber network whose mission is to prevent data loss, make bird banding data available to a wide audience, provide tools to researchers and managers for data exploration and analysis, facilitate cooperative research projects spanning regional boundaries, and increase communication between researchers through newsletters and meetings. It does this through providing tools, such as: band tracking program, field data entry program, accessible data preserving locations, creation of metadata documentation, data processed to shared format, data exploration tools, and data analysis tools

Robinson, Caitlin¹, Carley Schacter¹, Jill Demers¹ and Cheryl Strong². WATERBIRD BANDING IN THE SOUTH SAN FRANCISCO BAY.

¹San Francisco Bay Bird Observatory, 524 Valley Way, Milpitas, CA 95035 and ²U. S. Fish and Wildlife Service, Don Edwards San Francisco Bay National Wildlife Refuge, Fremont, CA.

The South Bay Salt Pond Restoration Project aims to restore over 15,000 ac of salt ponds to tidal action and other wetland habitats. This restoration project will likely impact two of the breeding birds in the South San Francisco Bay: California Gull (*Larus californicus*) and the threatened Western Snowy Plover (*Charadrius alexandrinus nivosus*). The California Gull breeding population in the South Bay salt ponds has increased from approximately 12 nests in 1982 to over 43,000 nesting birds in 2009. In 2010, the salt pond that hosts the largest gull breeding colony will be restored to tidal action, likely causing gulls to move to new nesting sites. In turn, gulls may displace current breeding populations of Caspian Terns, Forster's Terns, American Avocets, Black-necked Stilts, and Snowy Plovers. Therefore, we color-banded California Gulls to examine their current movements among colonies and landfills and to observe how and where gulls from displaced colonies disperse after the colony levees are breached. Snowy Plover breeding habitat will also be reduced by the restoration project, and it is unknown if the displaced California Gulls will

further impact plover habitat. California Gulls are known predators of many of the ground nesting birds, and in 2009 we captured video footage of gulls depredating a Snowy Plover nest and chicks. Additionally, to determine Snowy Plover fledging success and monitor movements with the pond systems, we color banded Snowy Plover chicks with individual four-color combinations in 2008 and 2009. By marking these two species of waterbirds, we will be able to track movements of the birds as the restoration project changes the habitats in the South San Francisco Bay.

Rousseau, Josée^{1,2}, John Alexander², Tom Gardali³, Michael Fitzgibbon³, Susan M. Wethington⁴, Diana L. Craig⁵, and Cheryl Carrothers⁵. HUMMINGBIRD NETWORK TO PROMOTE COLLECTION AND CONTRIBUTION OF DATA TO THE NEW HUMMINGBIRD PORTAL BEING DEVELOPED AS PART OF CADC/LAMNA.

¹USDA Forest Service, Pacific Southwest Research Station, Redwood Sciences Laboratory, 1700 Bayview Dr., Arcata, CA 95521, ²Humboldt State University, Wildlife Department, 1 Harpst Street, Arcata, CA 95521, ³PRBO Conservation Science, 3820 Cypress Drive #11, Petaluma, CA 94954, ⁴Hummingbird Monitoring Network, and ⁵U.S. Forest Service.

Hummingbirds are the feathered jewels of the migratory bird world but receive relatively little attention from a conservation standpoint; yet, there are indications that populations of at least some of the species are declining. The Western Hummingbird Project (WHP) with its mission of working together to maintain thriving hummingbird populations and their habitats throughout western North America was created to address conservation issues. Two of its projects will be presented. One is identifying, describing, and archiving existing hummingbird datasets through the Landbird Monitoring Network of the Americas (LaMNA). The other is the creation of a centralized web portal by Point Reyes Bird Observatory (PRBO) for information collection, storage, and dissemination. Your hummingbird data (banded and unbanded birds) are needed to help advance our knowledge of their life history, habitat needs, distribution, diversity and abundance.

Salas, Leo, Michael Fitzgibbon, Mark Herzog, Nadav Nur, Doug Moody, and Grant Ballard.

VISUALIZATION AND ANALYSIS TOOLS FOR BANDING DATA AT CADC, THE CALIFORNIA AVIAN DATA CENTER.

PRBO Conservation Science, 3820 Cypress Drive #11, Petaluma, CA 94954

Most bird banding organizations invest considerable time and resources managing banding data to generate basic summaries for annual reports and other purposes. Investment in these preliminary activities is universally needed; if not automated, it can detract from organizations' abilities to conduct deeper or integrative analyses that can substantively increase our understanding of bird populations or advance our ability to improve their conservation. To address this need, PRBO has developed data entry, management, and visualization tools that facilitate data aggregation, summarization, reporting, and exploration using the best available data curation and analytical technologies, and made them publicly accessible at the California Avian Data Center. Here we present the first set of visualizations for banding datasets hosted by CADC. Standard visualizations (summary tables and trends in abundance) are web-accessible while more advanced analyses (e.g., trend analyses) are possible using the Ravian R package for avian data analyses developed by the Informatics team at PRBO.

Saracco, James F., David F. DeSante, and Peter Pyle. PROXIMATE CAUSES OF POPULATION TRENDS IN MIGRATORY LANDBIRDS.

The Institute for Bird Populations, Point Reyes Station, CA.

We assessed demographic contributions to BCR-scale spatial variation in MAPS population trends for 28 species of migratory landbirds. We estimated trends (time-constant lambda), adult apparent survival rates, and recruitment rates from capture-recapture models; and indexed productivity from constant-effort mist-netting data. Productivity appeared to be important in driving recruitment and trend for just nine species, while recruitment appeared to be the major driver of trends for 25 species, implicating the major importance of first-year survival. Adult survival appeared to be important for driving trends for nine species.

Species for which first-year survival was important in explaining spatial variation in trends tended to have declining populations, species for which adult survival was important tended to have stable trends, and species for which productivity was important tended to have stable or positive trends. Results indicate that (1) enhancing survival (especially first-year) will be important for slowing declines and stabilizing populations, (2) enhancing productivity may be necessary to recover populations whose declines have been arrested, and (3) identifying relationships between vital rates and winter habitat and weather will be critical for migratory bird conservation.

Simmons, Steve. ADVENTURES IN BANDING 35,000 CAVITY-NESTING BIRDS OVER 36 YEARS IN MERCED COUNTY: MY PROTOCOL FOR HANDLING AND BANDING CAVITY-NESTING BIRDS. Merced, CA
simwoodduk@aol.com

A review of the procedures I have used over the last 36 years to prevent nest desertions when handling and banding adult cavity-nesting birds and band recovery rates on cavity nesting birds. The following species will be covered: kestrels, Barn Owls, screech owls, Wood Ducks, and various passerines. A discussion of the problems of recapturing some adult birds year after year and the use of special in-box traps and dummy traps to capture some species. Also, some information on dispersal data on HY birds from the natal site will be covered on several species of cavity nesting birds as well as the importance of Barn Owls to agriculture.

Spotswood, Erica N.¹, Kari Roesch Goodman¹, Jay Carlisle². MIST NETTING AS A LOW-RISK TOOL: AN ANALYSIS OF INJURIES AND MORTALITIES ASSOCIATED WITH MIST NETTING AT BANDING ORGANIZATIONS IN THE US AND CANADA.

¹University of California, Berkeley, ²Idaho Bird Observatory, *Department of Environmental Science, Policy and Management, 137 Mulford Hall, Berkeley, CA 94720, espots@nature.berkeley.edu

Although millions of birds are caught using mist netting across the US and Canada each year, we were unable to find any systematic analyses of the associated risks to birds. We aimed to fill this gap

by compiling data from banding organizations to address the following questions: 1) how much do mortality and injury rates vary across banding organizations, 2) what kinds of accidents are most common, and 3) are some kinds of injuries or mortalities particularly common in some groups of birds, and if so, which ones? We contacted 67 bird banding organizations across the US, Canada, the UK, and France and asked them to give us information about records of mortality and injury at their banding stations. Thirty-two organizations responded, of which 16 provided us with rates of mortality and injury from their projects. Three organizations contributed individual records totaling 776 incidents from 64 species. Injury and mortality rates were similar across banding organizations and averaged 0.6% and 0.1% of all captures respectively. Sixty-seven percent of all incidents were injuries of which cuts and strains were the most common. Predation and trauma were the most common causes of mortality. Variability in reporting was high and at least 11 of the 32 responding organizations stated that they do not systematically keep track of accidents. We are aware that the bias associated with our sampling method probably results in artificially low rates that are not representative of all organizations. Nevertheless, we think they are useful because they will provide a baseline against which banding organizations can assess their performance. These results will also help identify what problems are most common among which groups of birds and may reduce some of the associated accidents. Our ability to make inferences about the susceptibility of birds to specific kinds of incidents was problematic due to the high variability in reporting. Therefore, further research could benefit from the establishment of more systematic protocols for accident reporting at banding stations.

Wolfe, Jared D.^{1,2} USING MOLT CYCLES TO CATEGORIZE AGE IN TROPICAL BIRDS: AN INTEGRATIVE SYSTEM ¹USDA Forest Service, Pacific Southwest Research Station, Redwood Sciences Laboratory, 1700 Bayview Dr., Arcata, CA 95521 and ²Humboldt State University, Wildlife Department, 1 Harpst Street, Arcata, CA 95521

Methods to differentiate age classes accurately are essential for the long-term monitoring of resident

New World tropical bird species. Molt and plumage criteria have long been used to age temperate birds accurately and recent studies have shown that similar criteria can be used to categorize tropical individuals into age classes. Application of temperate age-classification models to the Neotropics has been hindered because annual life-cycle events of tropical taxa are not always in concordance with temperate age-classification nomenclature. Here we propose a categorical age-classification system for tropical birds using molt cycles, provide a case study, and discuss implications of the system. Our proposed cycle-based age-classification system can be used for all birds, including temperate species, and provides a framework for investigating molt and population dynamics which could ultimately influence management decisions.

ABSTRACTS FOR POSTER PRESENTATIONS

Carver, Amber¹ and Jared D. Wolfe^{1,2} TO BAND OR SEARCH? ANALYZING DETECTABILITY BETWEEN TWO COMMON CENSUS TECHNIQUES.

¹USDA Forest Service, Pacific Southwest Research Station, Redwood Sciences Laboratory, 1700 Bayview Dr., Arcata, CA 95521 and ²Humboldt State University, Wildlife Department, 1 Harpst Street, Arcata, CA 95521

Area searches and bird banding remain popular methodologies for gathering avian demographic data. Each technique has inherent economical, statistical, and logistical advantages. In this study, we used banding and area search data to generate Poisson frequencies, standardized by unit effort, to compare intraspecific detectability between techniques. We found that area searches dramatically lose the ability to detect forest-dwelling species during migratory periods. Ultimately, banding provides statistical estimates, such as survivorship, growth rates (λ), and other important demographic parameters not available through area search data. In conclusion, understanding logistic, economic, and temporal limitations of implementing various census techniques is vital to the success of avian monitoring programs and informing subsequent management decisions.

Nightingale, Ann and Alison Moran. MODIFICATIONS TO HUMMINGBIRD CASTING JACKET DESIGN.

Rocky Point Bird Observatory, Victoria, BC

Hummingbird casting jackets can be used as both long- and short-term restraints. Initially developed as a means for transporting birds safely over long distances, this low stress restraint method has been adopted for use in banding. It is particularly useful in low temperature conditions, reducing substantial loss of body heat. The tighter restraint is also preferable during times when food resources are limited, since struggling within a more open system may cause unnecessary burning of calories as well as damage to body structures such as the plumage or bill. Here, we show various recent modifications to the design and closure of the jackets. These modifications enable banders to examine and band the birds safely, while minimizing stress and risk of physical damage.

Rowe, Lucinda M.¹, Jared D. Wolfe^{1,2}, Laurie E. Neville¹. ALTERNATIVE AGEING CRITERIA FOR SOME WESTERN BIRDS IN NORTHERN CALIFORNIA.

¹USDA Forest Service, Pacific Southwest Research Station, Redwood Sciences Laboratory, 1700 Bayview Dr., Arcata, CA 95521 and ²Humboldt State University, Wildlife Department, 1 Harpst Street, Arcata, CA 95521

Plumage and molt patterns are useful tools for ageing most passerines. Many Western banding operations emphasize retained primary coverts, derived from the preformative molt, as the principal focus for ageing passerines. However, Powdermill and other research centers have recognized molt limits within the Alula Covert (A1), Lesser Alula (A2), and the Carpal Covert (CC) as important and easily recognizable ageing criteria. Through photographic documentation, Redwood Sciences Laboratory has not only recorded examples of alula molt limits in Western passerines but has also recorded novel replacement patterns such as retained flight feathers in Wrentits and mixed generations within Western Wood-Pewee primary coverts. It is important to document and archive molt limits in Western species because some replacement patterns remain to be described.

Scarpignato, Amy^{1,3,4}, Emily Cohen^{1,5}, and Dr. T. Luke George². POPULATION AND SURVIVAL ESTIMATES OF ADULT LAWRENCE'S (*CARDUELIS LAWRENCEI*)* AND LESSER (*CARDUELIS PSALTRIA*) GOLDFINCH IN THE KERN RIVER VALLEY, CALIFORNIA.

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The Lawrence's Goldfinch (*Carduelis lawrencei*) has a restricted breeding range, but the inter-annual irregularity of breeding locations has made it difficult to assess population sizes in any one area or to assess regional trends. The closely related Lesser Goldfinch (*Carduelis psaltria*) is relatively common throughout its larger range and is not nomadic in its breeding habits. North American breeding bird survey routes in California from 1980 through 2007 indicate a strong negative trend in Lawrence's Goldfinch numbers and a weaker trend for Lesser Goldfinch (-7.0 versus -0.3, although neither trend is significant $p=0.18$ and $p=0.64$, respectively). We conducted a comparative study to examine annual population and survival rates of these two species in California's Kern River Valley, one of the few areas where there has been a consistent breeding population of Lawrence's Goldfinch. We used four competing models for population size and survival estimates of adult Goldfinch within the Kern River Preserve using data from a two-year banding effort designed specifically for analysis with Pollock's robust design in Program MARK. We used model averaging to determine the relative impact of the top supported models and provide unconditional parameter estimates. The population size for Lawrence's Goldfinch was greater in 2004 than in 2005 and there were more males than females both years. Conversely, the Lesser Goldfinch population was smaller in 2004 than in 2005 but there were also more males than females both years. Lesser Goldfinch had higher capture and recapture probabilities than Lawrence's Goldfinch. Total population size for Lawrence's Goldfinch was estimated to be larger than the Lesser Goldfinch

population although Lesser Goldfinch survival rates were greater than the Lawrence's Goldfinch survival rates.

*The genus of goldfinch has now been changed back to *Spinus*.

Sakai, Walter H. THE ROADKILL CAFÉ: THE USE OF A ROADKILL FOR DEMONSTRATION AND TEACHING PURPOSES Santa Monica College, 1900 Pico Blvd., Santa Monica, CA 90405 sakai_walter@smc.edu

A Great Horned Owl (*Bubo virginianus*) was collected as a roadkill along a California highway. Both wings, both feet, the skull, and sclerotic rings were salvaged for demonstration and teaching purposes. The wing had four generations of flight feathers, indicating that it was at least an after-fourth-year bird. The wings were also used to demonstrate "tegmen" feather barbs and "fluting" or "fimbriae" found in owl flight feathers. The low wing load of owls was also evident and compared with a *Buteo*. One foot was displayed in an ansidactyl pattern, while the other foot was displayed in a zygodactyl pattern. The skull showed the stereoscopic vision of predators, and the bony or sclerotic plates supporting the eyes were on display.

DEMONSTRATIONS

Simmons, Steve. CAVITY NESTING BIRDS CAPTURE AND BANDING TECHNIQUES. Merced, CA simwoodduk@aol.com

A display of nest boxes specifically designed to attract Barn Owls, screech owls, Burrowing Owls, kestrels, Wood Ducks, and passerines was presented. How to capture each species of adult birds for banding and collect recapture data were explained. A demonstration of various devices used to trap or confine birds in their nest boxes along with other helpful tools for use with cavity-nesting birds. An artificial burrow for Burrowing Owls, which allows observation of activity in the burrow from ground level, was also presented. Also on display is a bait trap for small birds, such as doves and a smaller transport cage that mates up or attaches to the bait trap for removing the birds and taking them to the banding area without ever handling a bird until the actual banding occurs. How

to prepare a nest box cavity for each species of bird you are trying to attract was demonstrated.

Sakai, Walter H. POWERPOINT DEMONSTRATION OF PREPARING A BIRD STUDY SKIN.

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A PowerPoint presentation was given to demonstrate the basics of the preparation of a museum bird study skin using a Western Gull (*Larus occidentalis*). The basic tools used to prepare a study skin were

discussed. The technique for removing the body and replacing it with a cotton body was explained. The carcass was opened to show the gonads. Male and female gonads were compared, and how to document the condition of the ovary was discussed. Proper salvage and the deposition of specimens collected were explained. Further resources on preparing bird study skins were cited (Winker, K. 2000. Obtaining, preserving, and preparing birds. *Journal of Field Ornithology*, 71:250-297, and a recent beta-version video by Winker).



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2008 WBBA Annual Summary of Birds Banded

The 2008 banding year has shown a rebound from the last several years when the number of banders reporting their banding efforts had been declining. The number of Master Banders reporting banded birds rose from 143 in 2007 to 157 in 2008 and the total number of birds rose from 143,759 in 2007 to 157,176 in 2008. There were 66 reports of no banding in 2008. We had the highest number of recognized taxa banded with 465 taxa (includes BBL-recognized subspecies, races, and such). A good portion of this spike from 400 taxa in 2007 to 465 taxa in 2008 was due to a large report from Mexico.

About half of these new birds do not have "American" AOU#s and were placed at the end of the list. This may precipitate a change in the presentation of the numbers next year. In order to keep taxa together and to keep up with changing taxonomy, I may present the birds in the sequence presented by the AOU Checklist Seventh Edition and its supplements. The AOU#s and alpha codes will still be presented on the submission Excel file for ease of data entry.

I hope that these upward trends from 2007 to 2008 continue next year.

Walter H. Sakai

2008 WBBA Annual Summary Compiler