Josée Rousseau - At Large Board Member
John Alexander - At Large Board Member and NABC representative

The Saturday evening banquet events were held outdoors at the Ogden Nature Center. The locally catered banquet supper was ample and delicious. A competitive silent auction featuring books, T-shirts and wildlife prints netted $486 which helps fund WBBA's research and monitoring grant program. Our keynote speaker was Dr. Cagan Sekerciolgu, who provided an interesting and informative presentation on his work regarding birds and climate change.

Sunday events included two all-day field trips: Deseret Land and Livestock Ranch–spectacular high altitude scenery, gorgeous weather, and at least 50 bird species seen; and hotspots of the Great Salt Lake where thousands of waterbirds and shorebirds were sighted.

Plans are in the works for our 2012 annual meeting to be held jointly with the Oregon Field Ornithologists. The meeting will take place 22-24Jun 2012 at the Running Y Ranch near Klamath Falls, Oregon.

Howard Browers
1st Vice-president and Conference Chair

2011 Meeting Abstracts

(In alphabetical order by lead author)

ESTABLISHING THE BREEDING PROVENANCE OF A TEMPERATE-WINTERING NORTH AMERICAN PASSERINE, THE GOLDEN-CROWNED SPARROW, USING LIGHT-LEVEL GEOLOCATION

Renee L. Cormier, Nathaniel E. Seavy, Diana L. Humple, and Thomas Gardali, PRBO Conservation Science, Palomarin Field Station, Bolinas, California, USA

The migratory biology and connectivity of passerines remains poorly known, especially for those that move primarily within the temperate zone. We used light-level geolocators to describe the migratory geography of a North American temperate migrant passerine. From February to March of 2010, we attached geolocator tags to 33 Golden-crowned Sparrows *(Zonotrichia atricapilla)* wintering on the central coast of California, USA, and recovered four tags the following winter (October to December 2010). We used a Bayesian state-space model to estimate the most likely breeding locations. All four birds spent the breeding season on the coast of the Gulf of Alaska, but their breeding locations spanned 1300 km and did not overlap. Speed of migration was nearly twice as fast during the spring compared to the fall. The return rate of birds tagged the previous season (33%) was similar to that of control birds (39%), but the interpretation of return rates was complicated because 7 of 11 birds had lost their tags. Our results provide insight into the previously unknown breeding provenance of a central coastal California wintering population of Golden-crowned Sparrows and provide more evidence of the contributions light-level geolocation can make to our understanding of the migratory geography of small passerines.

THE INSTITUTE FOR BIRD POPULATIONS: HAPPENINGS AND RESULTS FROM IBP'S PROGRAMS

David F. DeSante, Phil Nott, Peter Pyle and Jim Saracco, The Institute for Bird Populations, P0 Box 1346, Point Reyes Station, 94956, California. Presenter: Danielle Kaschube, The Institute for Bird Populations

The Institute for Bird Populations (IBP) has several programs for which we will present an update of results or current direction. Analyses continue on 15 years of Monitoring Avian Productivity and Survivorship (MAPS) data that will culminate in the production of a scientific monograph and the development of a dedicated website to disseminate detailed results. The first goal was to document and

describe temporal (annual) and spatial variation in the population changes and vital rates that drive the population changes of over 100 species of North American landbirds. These include adult survival, recruitment into the adult population, proportion of resident individuals among newly captured adults, breeding performance, and post-breeding effects on recruitment. A second goal was to examine patterns in the relationships between temporal and spatial variation in the population changes of these species and corresponding variation in the vital rates that drive those changes. The final goal was to determine, for as many species as possible, the proximate demographic causes of the observed temporal and spatial variation in population changes, and to discuss the ramifications that those demographic causes have for the management and conservation of each species.

On a smaller scale, MAPS data from 120+ stations (1992-2008) located in the Pacific Northwest were modeled as functions of landscape type and pattern. Regional spatial datasets were analyzed to derive "landscape context" and the resulting models of adult captures, young captures, and other population performance parameters were mapped across the region and made available through the Data Basin online GIS interface. This allows planners and land managers to assess levels of species performance and habitat utilization for areas of interest (e.g., USDA Forest Service ranger district).

The Monitoreo de Sobrevivencia Invernal (MoST) program continues monitoring overwintering populations. In addition, it is critical we look at molt migrants and the habitats they need for successful migration and molt. Results indicate that grassland and riparian habitats are most important for 12 species. However, conserving a mosaic of habitats is important due to variable responses of molt migrants to annual variation in monsoon conditions.

BURROWING OWL CONSERVATION AT THE UMATILLA CHEMICAL DEPOT, OREGON 2008-2011

Michael A. Gregg, US Fish and Wildlife Service, Mid-Columbia River National Wildlife Refuge Complex, Burbank, Washington; David H. Johnson, Global Owl Project, Alexandria, Virginia; James L. Rebholz, US Fish and Wildlife Service, Mid-Columbia National Wildlife Refuge Complex, Burbank, Washington; Donald C. Gillis, Department of Defense, Umatilla Chemical Depot, Umatilla, Oregon.

Burrowing Owls *(Athene cunicularia)* were once a common breeder in grasslands throughout North America. Population declines have led to Burrowing Owls being listed as endangered in Canada and a Species of National Conservation Concern in the U.S. Population declines have been most evident in the northern extent of their range and attributed to habitat loss on breeding grounds and other unknown factors. One potential factor is impacts to owls during their migration and wintering areas. Little is known about the owls' specific migratory pathways and overwintering sites. However, it is now possible to obtain this information with state-of-the-art technology by attaching geolocators to breeding owls. Acquiring this information is critical in order to identify key stakeholders and to develop and implement effective management efforts to help reverse population declines. The objective of our work was 1) stabilize breeding owl populations with artificial burrows at the Umatilla Chemical Depot in Oregon, and 2) identify migration routes and wintering areas of owls breeding on the Depot. During 2008-2010, we installed 117 artificial burrows. Owl occupancy rates exceeded 80% and breeding success was greater than 70%. Breeding owls on the 7,287 hectare Depot increased from four pairs in 2008 to 61 pairs in 2011. In 2010, we captured and attached geolocators to 20 adult (10 male and 10 female) Burrowing Owls to identify migration routes and wintering areas. As of July 2011, seven owls with geolocators have returned to the Depot. We captured and attached geolocators to

an additional 73 adult Burrowing Owls in spring 2011. In addition to 33 owls captured at the Umatilla Chemical Depot, we captured owls at three additional study sites: Hanford Reach National Monument, Washington (10), Pasco Washington (20), and Baker City Oregon (10)

Results of this research will have range-wide implications for Burrowing Owl populations in North America.

COMPARATIVE STUDY OF TRAPPING METHODS FOR GROUND-NESTING SHOREBIRDS

Lucas K. Hall and John F. Cavitt, Avian Ecology Laboratory, Department of Zoology, Weber State University, Ogden, Utah

Investigators initiating research or monitoring projects are often challenged with effectively and efficiently capturing birds. Several methods exist to capture ground-nesting birds, yet questions remain concerning their effectiveness, cost, and safety. Consequently, we conducted an experimental test of trapping methods commonly used to capture ground-nesting shorebirds to inform investigators on the efficacy of these techniques. Data were collected on a population of Snowy Plover *(Charadrius alexandrinus)* nesting at Great Salt Lake, UT, during the 2010 breeding season. Several different trap designs have been used to capture Snowy Plovers at nests and these methods vary in design, cost, set-up time, and trapping success. We experimentally compared the three most commonly used traps (the spring trap, circular or walk-in funnel trap, and leg-hold noose mats) in terms of their construction costs, trap efficiency (e.g., time spent at the nest, time for a bird to return to the nest after trapping) and success. Our findings demonstrated that the funnel trap was the least expensive to build, required the least amount of time at the nest ($P < 0.001$), and had the highest capture rate. These results provide the first quantitative test of nest traps for Snowy Plover and provide information applicable to other ground-nesting birds.

URBAN GOOSE BANDING AND RELOCATION IN UTAH

Rich Hansen, Utah Division of Wildlife Resources, Ogden, Utah

In 2006, the Utah Division of Wildlife Resources (UDWR) was asked to do something about the urban goose problem in Salt Lake Valley. Canada Geese were prospering on golf courses, apartment and condo complexes, public parks and everywhere else that had water. UDWR conducted the goose captures with the assistance of Wildlife Services and hundreds of volunteers in the first week of June from 2006-2010. The captures were conducted while the geese were molting their flight feathers.

In 2006, we put the USGS aluminum leg band on all geese and a red tarsal band on 493 adults and a yellow tarsal band on 453 juveniles. Adult geese were taken south of Delta, Utah, to Clear Lake Waterfowl Management Area and released. Juvenile geese were taken to Waterfowl Management Areas (WMA's) in Northern Utah and released with wild geese.

From 2007-2010, we put yellow neck collars with unique alpha-numeric codes on the adults. This allowed us to observe individuals returning to Salt Lake Valley. During this period, we put on 1,315 neck collars and there were also 1,315 geese that were control birds that just got a USGS aluminum leg band. All adults were also moved to Clear Lake Waterfowl Management Area during this period. We banded 3,145 juvenile geese with the Yellow tarsal bands and they were moved to WMA's in Northern Utah.

From 2007-2010, there were weekly observations done throughout Salt Lake Valley to read neck collars and figure out which geese were returning and when.

We have banded 6,722 geese in Salt Lake valley in the last five years. We have hundreds of band returns from hunters and have thousands on observations of the neck collars.

HOW TO CATCH BIG AND LITTLE DIPPERS

David Hodkinson, Klamath Bird Observatory Ashland, Oregon and Wild Research, Vancouver, British Columbia

Dippers *(Cinclus* sp.) are found on fast flowing rocky streams and rivers across five continents and are unique among passerines in being capable of swimming underwater. This position on the interface of the terrestrial and aquatic ecosystems along with their propensity for urban dwelling makes them a unique and enigmatic study species.

These aspects of their natural history present a novel set of challenges for those wishing to study them. Here I explore some of these challenges within the framework of maintaining a color-banded population. I present some solutions and knowledge gathered while facilitating demographic studies in Europe and North America.

A MANAGEMENT APPROACH TO RAPTOR DEMOGRAPHY AND CHEATGRASS INVASION RISK: MANAGING AND MODELING THE ECOLOGICAL TRAP

Robert N. Knight, U.S. Army Dugway Proving Ground, Environmental Programs, Dugway, Utah

Invasive winter annual cheatgrass *(Bromus tectorum)* has degraded military, public and private lands throughout the western United States. In particular, the West Desert region of Utah is an ecologically sensitive area and crucial to important military activities associated with key military facilities. The ecological consequences of cheatgrass invasion have broad ranging potential threats to natural floral and faunal communities. For example, certain species may prefer this novel cheatgrass-dominated habitat even though such preference leads to reduced fitness. In other words, habitats dominated by cheatgrass may represent an "ecological trap" for certain species. Our objective was to test the Ecological Trap Hypothesis (ETH) by examining habitat selection and reproductive success of the Burrowing Owl *(Athene cunicularia),* Golden Eagle *(Aquila chrysaetos)* and Ferruginous Hawk *(Buteo regalis).* The US Army at Dugway Proving Ground has directed a group of subject experts and key land managers including Hawk Watch International, Raptor Inventory Nest Survey, Bureau of Land Management, US Fish and Wildlife Service, Utah Division of Wildlife Resources, and other local entities to examine the ETH on the 12 million ac Military Operating Area (MOA) known as the Utah Test and Training Range (UTTR). We found that all three species select open, cheatgrass-dominated habitats for nesting. Specifically, birds appear to select cheatgrass dominated areas due to open foraging habitat, but may be experiencing lower nest success and productivity due to a potential lower prey base in monoculture cheatgrass coverage. We recommend a more comprehensive examination of interactions between invasive species and organisms at other trophic levels (e.g., influence on the ecology of native species; specifically, of nest success, natal dispersal, territory occupancy, etc.). In addition, a comprehensive multi-agency approach is necessary to better manage for the conservation of animal communities as exotic vegetative invades the landscape.

TROPHIC ECOLOGY OF BURROWING OWLS IN NATURAL AND AGRICULTURAL HABITATS AND AN ANALYSIS OF PREDATOR COMMUNITIES USING STABLE ISOTOPBES OF CARBON AND NITROGEN

Kathlyn J. McVey, US Fish and Wildlife Service, Bear River Migratory Bird Refuge, Brigham City, Utah

Stable isotopes of carbon and nitrogen can provide powerful tools for estimating the trophic positions of animals and determining the source or the primary producer of a food web. I used stable isotopes analysis of carbon ($\delta^{13}C$) and nitrogen ($\delta^{15}N$) to investigate the trophic position of

Burrowing Owls *(Athene cunicularia)* in agricultural and natural habitats and trophic relationships of a community of vertebrate predators in the Morley Nelson Snake River Birds of Prey National Conservation Area (NCA), located in southern Idaho.

Burrowing Owl populations have declined across much of North America owing to loss of habitat. However, Burrowing Owls show affinity for nesting near agriculture in some portions of their range, including s. Idaho. I used analysis of $\delta^{13}C$ and $\delta^{15}N$ to investigate Burrowing Owl food habits and trophic relationships in agricultural and natural habitats in the NCA. $\delta^{13}C$ did not differ between natural and agricultural habitats and indicated carbon sources in Burrowing Owl diet contained primarily C3 plants. Conversely, $\delta^{13}C$ differed between nestling and adult owls, which may indicate that adults provisioned nestlings with a values different diet than they consumed. Burrowing Owl $\delta^{15}N$ depended on both habitat (i.e., natural or agricultural) and group (i.e., samples from juveniles, adult females or adult males), although owls nesting in natural habitat generally had higher $\delta^{15}N$ values than owls nesting in agricultural habitat. Owls in natural habitat potentially fed on more secondary consumers, which may help explain elevated $\delta^{15}N$ values for owls nesting in natural habitat. As adults in natural areas had higher $\delta^{15}N$ values, this may be further evidence that adult owls consumed different prey than they used to provision nestlings. Food webs, of which Burrowing Owls are a part, for both natural and agricultural habitats were similar despite the introduction of irrigated agriculture into a naturally and landscape.

WHAT IS SO GREAT ABOUT THE GREAT SALT LAKE, UTAH?

John Neill, John Luft, Phil Brown, and Jim Van Leeuwen, Great Salt Lake Ecosystem Program, Utah Division of Wildlife Resources, Hooper, Utah

Sheer size alone could cualify Great Salt Lake as great. On average, the lake covers over 1,600 square miles (4,100 ha) classifying it among the largest terminal lakes in the world. But size is just one of many impressive characteristics of Great Salt Lake. At five times the salinity of the ocean, mineral companies take advantage of this by concentrating the salts further and harvesting them in evaporation ponds. However, this seemingly inhospitable lake teems with life. Incredibly abundant brine shrimp *(Arlemiafranciscana)* support a multi-million dollar harvest industry. Harvesters collect and sell brine shrimp eggs world-wide to aquaculture enterprises. Brine flies *(Ephydra* spp.*)* also thrive in the salty water. One rough calculation estimates 370 million adult flies along each mile of shoreline. These two invertebrate species draw millions of migratory, breeding, and wintering birds to the lake each year. Birds also flock to the bordering freshwater wetlands.

Three large drainage basins enter Great Salt Lake along its eastern edge through an expansive network of diversions and impoundments managed by private duck clubs and preserves, state Waterfowl Management Areas, and the Bear River Migratory Bird refuge. Almost 75% of Utah's total wetlands fringe the lake, creating many diverse habitats for 257 bird species. Each of the lake's five major bays is a Globally Important Bird Area and the lake is a site of hemispheric importance to shorebirds as designated by the Western Hemisphere Shorebird Reserve Network. This Great Salt Lake overview will touch on the lake's "greatness" while highlighting many of its incredible avian resources.

A NEW TOOL FOR INTEGRATED ANALYSIS OF LIFE HISTORY DATA FROM CAPTURE AND RECAPTURE

C. John Ralph[1], Peter Ralph [2], Brent Campos[3], Ana Carneiroi[1], Pablo Elizondo[4], Kim Hollinger[5] Josée Rousseau[5], Leo Salas[6], Judit Szabo[7], and Jared Wolfe[8].

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We explore a solution to the "problem" of banding generating too many data. Since the 1960s, the number of landbirds banded has increased logarithmically, with an ever-increasing number of banding stations.

We are completing a platform called SPLATS, for Summary Plots from LaMNA Analysis Tables. We have been using R, an open-source software environment for statistical computing and graphics (http://www.r-proiect.orgl). Here we present a systematic approach to banding data that: (1) involves data exploration, giving a series of cross-tabulations between specific variables, which helps the analyst to assess data quality and explore the file contents; (2) a method of systematically removing outliers, using histograms and the quartile method; and (3) creating visualizations using the metrics afforded by banding data such as condition, fat, breeding class, and others, by proportion of all birds in each selected age and sex category, to form theories of regional life history strategies within a species. This tool allows exploration of newly available data sets numbering in the hundreds of thousands, as well as the few thousands of records from many smaller operations.

THE VALUES OF UNBANDED DATA: WHAT WE LEARNED FROM ANNA'S HUMMINGBIRD CAPTURES IN THE KLAMATH-SISKIYOU

Josée Rousseau, Klamath Bird Observatory, Ashland, Oregon and Humboldt Bay Bird Observatory, Arcata, California; Ana Bertoldi Carneiro, Klamath Bird Observatory, Ashland, Oregon and US Forest Service; and C. J. Ralph, Redwood Sciences Laboratory, US Forest Service, Arcata, California

Within the Klamath Bird Monitoring Network of southern Oregon and northern California, unbanded birds, aside from not getting a band, get processed at the same level as banded birds. Birds do not get banded for several reasons from escaping from bander, to absence of appropriate permit (for example, game birds). Valuable information such as species distribution and life history can be extracted from unbanded data. Anna's Hummingbird (ANHU) unbanded data were analyzed using the SPLATS (Summary Plots from LaMNA Analyses Tables) program we have developed. A total of 523 records from 1982 to 2009 and at 170 banding stations were standardized as number of hummingbirds per 100 net-hours /15-day period / station. The within-year recapture rate, determined through using information from rectrix feather clipping, is less then 5 percent. The main peaks of ANHU captures are during the months of November to April, with the highest number of captures being at the Humboldt Bay Bird Observatory's (HBBO) coastal banding station (less than one mile from the ocean). In other regions, the species has been recorded breeding from December to May. At our stations, more adults were captured from mid-December to April. The few captures we have at HBBO during the summer months are mainly hatching-year birds. Within the adult population, a disproportionally higher number of females were captured from early March to end of May when very few adults were captured at all. In accordance with data from Arizona, males tended to have higher weights than females in the Klamath-Siskiyou bioregion. The body molt of young males was protracted over a longer period than adult males, with molting being observed from April to October.

EXPERIMENTAL USE OF UNMANNED AERIAL AIRCRAFT TO MONITOR COLONIAL NESTING BIRDS ON BEAR RIVER MIGRATORY BIRD REFUGE

Bradley Stringer, Utah Center for Aeronautical Innovation and Design, Weber State University, Ogden, Utah.

The Utah Center for Aeronautical Innovation & Design (UCAID) is a professional-level applied research and development laboratory at Weber State University in Ogden, Utah. UCAID has recently developed a small, autonomous, unmanned aerial aircraft used as an aerial photographic platform. UCAID has just completed a number of flights over the Bear River Migratory Bird Refuge where over 100,000 photographs of nesting White-faced Ibis and Franklin's Gull were taken. The photographs are currently being mosaiced together and analyzed for a number of metrics related to colony health and viability. Data collection and analysis will be discussed.

POPULATION SIZE OF SNOWY PLOVERS BREEDING IN NORTH AMERICA

Sue Thomas [1, 2], James E. Lyons[2], Brad A. Andres[3], Elise Elliot-Smith [4], Eduardo Palacios[5], John F. Cavitt[6], J. Andrew Royle[7], Suzanne D. Fellows[8], Kendra Maty[1], William H. Howe[9], Eric Mellink'°, Stefani Melvin[11,13] and Tara Zimmerman[1,14]

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The Snowy Plover *(Charadrius nivosus)* is thought to be one of the rarest shorebirds in North America, yet a comprehensive assessment of their abundance and distribution has not been completed. We therefore developed a series of surveys and used existing survey information to index population size of Snowy Plovers breeding in North America. During 2007 and 2008, we surveyed the entirety of 566 discrete wetlands and sampled 10 additional large wetland complexes in Mexico and the USA. From these surveys, we estimated a population of 23,559 breeding Snowy Plovers. Combining our estimate with information from areas we did not survey, including the population inhabiting the USA Pacific coast, we suggest a total North American population of 25,873 (17,630-33,647) Snowy Plovers. About 42% of all North American breeding Snowy Plovers resided at just two sites (Great Salt Lake, Utah, and Salt Plains National Wildlife Refuge, Oklahoma), and 33% of all breeding Snowy Plovers were found on wetlands in the Great Basin (including Great Salt Lake). Coastal habitats in central and southern Texas also supported large numbers of breeding plovers. New breeding sites were discovered in Mexico in interior deserts and highlands and along the Pacific coast; about 9% of the North American breeding population occurs in Mexico. Because of uncertainties about effects of climate change and current stresses to breeding habitats, Snowy Plovers should be a management and conservation priority. Periodic monitoring should be undertaken at important sites to ensure high quality habitat is available to support current Snowy Plover populations.