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Abstracts of Scientific Papers

BARGIEL, RAFAL, and JOHN KLICKA. **An investigation of western hybrid zones in two avian species groups: Western Flycatcher and Solitary Vireo.** *Marjorie Barrick Museum of Natural History, University of Nevada, Las Vegas, 4505 Maryland Parkway, Box 454004, Las Vegas, NV 89154-4004; bargielr@unlv.nevada.edu.*

Many western North American bird taxa are known to have genetically distinct Rocky Mountain and Sierra Nevada/Cascade Mountain populations. These genetic differences, in part, have led the taxonomists to split some such taxa into two or more species. Molecular studies on western birds have identified several potential zones of introgression where these eastern and western forms come into contact. Furthermore, the area of Great Basin extending between those mountains has been poorly sampled for most montane species and may represent a hybrid zone for some of them. This research aims to investigate the hybrid-zone dynamics of two species groups with this distribution and genetic structure, the Western Flycatcher complex [Pacific-slope (*Empidonax difficilis*) and Cordilleran Flycatcher (*E. occidentalis*)] and the Solitary Vireo complex [Plumbeous (*Vireo plumbeus*), Cassin's (*V. cassinii*), and Blue-headed Vireo (*V. solitarius*)]. The Western Flycatcher and Solitary Vireo have been objects of researchers' interest since the 1980s, but the quantity of genetic variation within species and levels of introgression between species have never been studied. Ten specimens of each taxon will be collected at every sampling site during the breeding season. Two molecular markers are to be used: mtDNA (ND2) and AFLP. Analysis of ND2—a fast evolving marker—will address the question of relationships within *Empidonax* and *Vireo*. Because of its biparental inheritance and being distributed over multiple loci, AFLP will be suitable for analysis of introgression and hybridization. Sampling deep into breeding ranges away from contact zones will allow us to identify AFLP markers typical for “pure” species. Shifts in the frequencies of those markers will be used to identify hybrids. This comparative study will illustrate the recent history of Western Flycatcher and Solitary Vireo groups upon their coming into secondary contact after 1–3 million years of separation. It will also shed light on the character of similar processes occurring among other closely related bird taxa in this part of the U.S.

BARNES, JOSEPH G. **Shorebirds and aquatic birds of lakes Mead and Mohave: Over three years of inventory and monitoring.** *Public Lands Institute, University of Nevada, Las Vegas, 4505 South Maryland Parkway, Las Vegas, NV 89154-4004; Joseph.Barnes@UNLV.edu.*

The impoundment of water behind Hoover Dam and Davis Dam in 1936 and 1953, respectively, created lakes Mead and Mohave, which comprise about 186,000 acres of open water at their high water levels. These lakes in turn created habitat for aquatic birds, waterfowl, and shorebirds that did not occur in large numbers on the lower Colorado River prior to the creation of these reservoirs. I report here on an ongoing project in cooperation with the National Park Service at Lake Mead National Recreation Area to develop baseline data on the species composition and monthly abundance of aquatic and shoreline birds on these two lakes. Four sites on Lake Mead and three sites on Lake Mohave were selected to represent areas of high activity of aquatic birds. Monthly surveys were conducted at each of these sites by traveling the targeted shoreline by boat or kayak and counting birds within the designated area. Periodic opportunistic and exploratory surveys were also conducted at other areas. Over the past three years, a total of 102 bird species have been identified, 94 on Lake Mead and 48 on Lake Mohave. The most numerous birds on Lake Mead were Clark's/Western Grebes, Eared Grebes, and Ruddy Ducks; on Lake Mojave the American Coot was by far the most numerous species, followed distantly by the Mallard and Ring-billed Gull. Total counts peaked primarily in fall and winter when large assemblages of diving birds and waterfowl were present as migrants or winter residents. Rarities included Franklin's and Sabine's Gulls, Tundra Swan, and Brown Pelican. Of note was the discovery in 2007 of the first known breeding populations of the Snowy Plover on Lake Mead, which represents a major expansion of its known distribution within the Great Basin region.

BATES, KIRK K., MICHAEL A. YATES, MARK R. FULLER, and STEVE HANSER. **American White Pelican foraging area distances in relation to nesting colonies in Nevada and South Dakota.** *Raptor Research Center, Boise State University, 1910 University Drive, Boise, ID 83725; kbates@boisestate.edu.*

During the nesting season, we equipped 17 American White Pelicans (*Pelecanus erythrorhynchos*) in Nevada and 10 in South Dakota with platform transmitter terminals and/or VHF radio transmitters to identify foraging areas and ranges of associated flight altitudes. Preliminary data indicate that the individuals we tracked by aircraft always moved in flocks with other nonmarked pelicans; we occasionally tracked flocks containing one or more pelicans to and from foraging areas in excess of 100 km from their nesting colonies. During foraging flights pelicans equipped with our instruments achieved maximum altitudes above ground level of approximately 3.0 km and 1.5 km, in Nevada and South Dakota, respectively.

BATTEN, JEREMY, and JOHN KLICKA. **The White-eyed Florida Towhee: A molecular assessment.** *School of Life Sciences & Marjorie Barrick Museum of Natural History, University of Nevada, Las Vegas, 4505 Maryland Parkway, Box 454012, Las Vegas, NV 89154; battenj@unlv.nevada.edu.*

The Eastern Towhee (*Pipilo erythrophthalmus*) is a familiar North American sparrow considered conspecific with the western Spotted Towhee (*P. maculatus*) until 1995. These sister species derive from a Mexican ancestor that likely colonized the eastern U.S. along a belt of relatively open habitats called the Gulf Coast corridor. The xeric nature of the corridor, which expanded during the low sea levels of Pleistocene glacial maxima, connected the dry open habitats of Mexico and the western U.S. with the scrub vegetation that dominated Florida at this time. Although the corridor no longer exists and scrub no longer dominates Florida, relicts of this ancient connection, such as the Florida Scrub Jay and Burrowing Owl, can still be seen today. Four subspecies of *P. erythrophthalmus* are currently recognized. Two of the described subspecies, *P. e. erythrophthalmus* and *P. e. canaster*, have a predominantly red iris. The “white-eyed towhee,” *P. e. alleni*, resident in the Florida peninsula, is the most distinct race. It has been suggested that *P. e. alleni* was separated from its ancestor as a consequence of climate change during the glacial advances of the Pleistocene and is now genetically distinct. The putative hybrid subspecies *P. e. rileyi* has a variable iris color (red to orange to white) and a distribution proposed to have resulted from relatively recent, post-Pleistocene hybridization between the “pure” red and white-eyed groups. To assess the relationships among these described forms we sampled populations representing all four subspecies. While consistent (fixed) molecular changes between red and white-eyed forms are absent, detectable differences are present. Such cases of moderate genetic divergence (supported by morphological divergence) are generally attributed to either complete but recent isolation or ongoing but limited gene flow. Distinguishing between these alternatives is problematic, but possible options are addressed.

BEARDMORE, CAROL J.¹, AND PHILIP UNITT². **Birds of the Sierra de la Laguna Biosphere Reserve: Expeditions to document bird distributions.** ¹14239 N. 10th Street, Phoenix, AZ 85022; *dendroica1@cox.net*; ²San Diego Natural History Museum, P. O. Box 121390, San Diego, CA 92112-1390; *birds@sdnhm.org*.

The Sierra de la Laguna is the mountain range in the tip of the Baja California peninsula. It is not accessible by road, and entering the Biosphere Reserve must be arranged with the Reserve’s staff. This area is of interest because of its extensive pine–oak forest, separated by about 600 miles of desert from the nearest similar habitat, in the Sierra San Pedro Mártir of northern Baja California. Two of Baja California’s three endemic species occur in addition to about 35 endemic subspecies, 14 of them found primarily or exclusively in the pine–oak woodland. Many of these, including Viosca’s Band-tailed Pigeon, Narrow-fronted Acorn Woodpecker, San Lucas Robin, Baird’s Yellow-eyed Junco, Large-billed Spotted Towhee, and Cape Pygmy-Owl are strongly differentiated from their nearest relatives. These subspecies appear derived largely from populations to the north; only the junco and Xantus’ Hummingbird clearly have their closest relatives in the Sierra Madre Occidental of mainland Mexico. We will report on three expeditions and outline a future trip to document breeding species. In April 2006, the Sonoran Joint Venture’s Technical Committee documented bird occurrences in the Reserve.

BRADEN, GERALD, LYNN CREW, and AARON MILLER. **Avian diversity, vegetation composition, and vegetation structure of the Las Vegas Wash.** *San Bernardino County Museum Biological Sciences Division, 2024 Orange Tree Lane, Redlands, CA 92374; gbraden@sbcm.sbcounty.gov; eagle4heart@hotmail.com.*

Starting in 2005, avian and vegetation monitoring began at 29 sites along the Las Vegas Wash to establish baseline data and to evaluate changes concurrent with extensive efforts at bank and channel stabilization and revegetation. Birds were recorded 26 times annually by standard 5-minute point counts. Vegetation data were recorded once annually at each survey site. Vegetation surveys were designed to quantify characteristics known or suspected to influence bird diversity. These included composition of perennial species, distribution of perennial structure in horizontal and vertical space, and the patchiness of perennial structure in horizontal and vertical space. Currently, 150 species of birds have been detected along the wash. On average, 33 species were observed per census. The high year-round avian diversity indicates the importance of the habitat to a diverse suite of species. Wash habitats were dominated by tree, shrub, and forb physiognomic-cover classes, in that order. All cover classes were patchy and unevenly distributed. Tamarisk dominated both the composition and structure of the perennial vegetation. Continued monitoring will allow correlations between habitat modifications and changes in the avian community.

BROWN, BRYAN¹, THOMAS SHARP², and DEBBIE VAN DOOREMOLEN³. **Southwestern Willow Flycatcher, Yuma Clapper Rail, and Yellow-billed Cuckoo activity along Las Vegas Wash, Clark County, Nevada.** ¹*1015 South 1400 East, Salt Lake City, UT 84105.* ²*SWCA Environmental Consultants, 257 East 200 South, Suite 200, Salt Lake City, UT 84111; tsharp@swca.com.* ³*Southern Nevada Water Authority, 100 City Parkway, Suite 700, Las Vegas, NV 89106; debbie.vandooremolen@snwa.com.*

Systematic surveys for the endangered Southwestern Willow Flycatcher have been conducted for 10 consecutive years (1998–2007) within the Clark County Wetlands Park along Las Vegas Wash, Nevada. Migrant Willow Flycatchers have been detected there in six of the ten years: 2 in 1998, 2002, and 2003; 7 in 2000; and 18 in 2004. No nesting Willow Flycatchers have ever been detected within the Las Vegas Wash's boundaries. Although the Las Vegas Wash contains marginal nesting habitat for the species, there are several potential barriers to its colonizing the area. Information on the status of the Yuma Clapper Rail along the wash prior to 1998 is limited; the only previous report is of nine in 1959. The 1998 surveys yielded two Yuma Clapper Rail detections. Additionally, a Yuma Clapper Rail was detected along the wash in both 2005 and 2006. The potential habitat within the wash is made up of small patches of emergent marsh that eventually become channelized and subsequently invaded by *Phragmites*. In 1998, a lone Yellow-billed Cuckoo was detected within what is now the Nature Preserve area of the Las Vegas Wash. Potential cuckoo habitat along the wash is marginal at best, and, although the cuckoo is known to nest in tamarisk habitat in Arizona and New Mexico, the patch size and stature of the tamarisk presently within the park appear suboptimal.

CARSON, REBECCA, and JOHN KLICKA. **The phylogeography of pine-oak birds.** *Marjorie Barrick Museum of Natural History, University of Nevada, Las Vegas, 4505 Maryland Parkway, Box 454012, Las Vegas, NV 89154; carsonr7@unlv.nevada.edu.*

Pine–oak forests are a common habitat in the highlands of western North America, but their distribution is highly fragmented. Often separated by broad zones of arid habitat, these forests occur as isolated pockets or “sky islands” throughout much of this region. Many of these “sky islands” have been in place for several million years. We hypothesize that if the habitats themselves have been isolated, many of the plants and animals that occur there may also show evidence of prolonged periods of isolation. We use molecular data to look for evidence of isolation among a suite of bird species associated with pine–oak forests. Our data identify several isolated populations that represent distinct lineages on independent evolutionary trajectories. These likely represent incipient species that should be recognized as distinct evolutionary units. Such information is critical for making informed management decisions and will be important in making future predictions as to how their current populations may respond to global warming.

CRAMPTON, LISA H.^{1,2}, J. H. BREEDEN, JR.³, M. S. VEKASY³, E. TWEED¹, and M. H. REYNOLDS³. **Diurnal, nocturnal, and crepuscular space use by Laysan Teal (*Anas laysanensis*) on Laysan Island.** ¹USGS Hawai'i Cooperative Studies Unit, Pacific Aquaculture and Coastal Resources Center, University of Hawai'i at Hilo, PO Box 44, Hawai'i National Park, HI 96718. ²Current address: Biology/314, University of Nevada Reno, Reno, NV 89557; crampton@unr.nevada.edu. ³USGS Biological Resources Division, Pacific Island Ecosystems Research Center, P.O. Box 44, Kilauea Field Station, Hawai'i National Park, HI 96718.

The Laysan Duck, *Anas laysanensis*, listed as endangered by the U.S. Fish and Wildlife Service, is a nonmigratory teal-sized duck previously widespread in the Hawaiian Archipelago. Recently restricted to Laysan Island National Wildlife Refuge, the population's range was expanded to Midway Atoll NWR by two experimental translocations in 2004 and 2005. As adults Laysan Teal appear to be primarily crepuscular and nocturnal. Because their use of space can differ dramatically by time of day, estimates of home ranges may be biased if they do not consider 24-h cycles. To increase understanding of the Laysan Teal's diurnal and nocturnal home ranges on Laysan, in 2005 we systematically radio-tracked a sample of the population over 24-h periods, divided into three sessions: diurnal, nocturnal, and crepuscular. Comparisons showed strong evidence of selective habitat use by time of day; some habitats were used more for nocturnal foraging, others for diurnal resting. Seventeen radio-tagged birds with > 25 locations per session were analyzed for home-range estimates. Total mean home-range size was 21.56 ha (SE ± 6.49; *n* = 17 birds), diurnal 28.33 ha (SE ± 8.72; *n* = 12 birds), nocturnal 24.84 ha (SE ± 9.58; *n* = 11 birds), and crepuscular 45.65 ha (SE ± 22.49; *n* = 5 birds) by the fixed-kernel estimator (95% kernel). Total mean core-area size was 3.16 ha (SE ± 0.81; *n* = 17 birds), diurnal 5.57 ha (SE ± 2.02; *n* = 12 birds), nocturnal 24.84 ha (SE ± 9.58; *n* = 11 birds), and crepuscular 8.43 ha (SE ± 5.06; *n* = 5 birds) by the fixed-kernel estimator (50% kernel). There was little overlap between diurnal and nocturnal use areas. This information will help plan habitat management and restoration for teal translocated on Midway.

DODGE, CHRISTOPHER. **Winter banding results from the lower Colorado River: 2002–2006.**

Bureau of Reclamation, P.O. Box 61470, Boulder City, NV 89006; cdodge@lc.usbr.gov.

Beginning in the winter of 2002–03, the Bureau of Reclamation undertook mist-netting surveys at two restoration sites along the lower Colorado River. Originally, banding was conducted at Cibola National Wildlife Refuge at the Nature Trail Restoration site and at the Pratt Agricultural Restoration Site near Yuma, AZ. During the winter of 2005–06 a third site at the Havasu National Wildlife Refuge, next to Topock Marsh, was added. The primary objective of this monitoring is to determine if restoration sites the bureau created are providing habitat used by wintering birds and these species' patterns of use. The site at Havasu National Wildlife Refuge represents more "typical" habitat found along the river and is used as a comparison for restoration sites. Twelve nets, each 12 meters long, are operated for two consecutive days each month. Banding is conducted from October to March. The first four years of the project have shown three general patterns of use. A few species are captured in relatively large numbers and are recaptured in successive months and years, in relatively high percentages. Some species are captured in high numbers with a relatively high recapture rate in the same year but are almost totally absent in other years. The third pattern is of relatively large numbers of captures each year but almost no recaptures. Species richness and diversity also varied by site with different compositions and densities of vegetation.

EIDEL, JIM¹, ELISABETH AMMON², JIM LYTLE³, BILL CLARK⁴, and BETH CLARK⁴. **Breeding birds of the Carson River, western Nevada.** ¹4150 Meadow Wood Road Road, Carson City, NV 89703. ²Great Basin Bird Observatory, 1755 E. Plumb Lane, Suite 256A, Reno, NV 89502. ³34713 Perkin's Creek Road, Cottage Grove, OR. ⁴4470 Mission Road, Tucson, AZ 85746.

Historically, the birds of the Carson River in western Nevada were little studied. The Great Basin Bird Observatory conducted three Mapping Avian Productivity and Survivorship (MAPS) stations 2001–2005, eight point-count transects 2002–2006, and covered eight Nevada breeding bird atlas blocks (1997–2000) along the Carson River from Carson Valley west of Minden to the Carson River delta at Lake Lahontan south of Silver Springs. Data from these efforts on the Carson River and Ridgway's 1877 data from Ft. Churchill are discussed in comparison with historical perspectives from the region provided by data of Ridgway (1877), Klebenow and Oakleaf (1984), and Ammon (2002) from the nearby lower Truckee River. Compared to the Truckee River, the Carson River has more riparian shrub undergrowth under and adjacent

to open mature cottonwood groves, accounting for greater bird diversity on the Carson River. The abundance of undergrowth likely accounts for high numbers of Bewick's Wren in comparison to the House Wren. Cliffs adjacent to the Carson River have nesting White-throated Swifts and Canyon Wrens. Golden Eagles have nested on both cliffs and in cottonwoods. Black Phoebes have nested at two sites on the Carson River. Four Bank Swallow cavity sites are known to be occupied on the Carson River. The current paucity of the Willow Flycatcher, Warbling Vireo, and Yellow Warbler contrasts with their historic status in the area. Yellow-billed Cuckoos were observed at the Carson River delta from 1988 to 2000. They were not observed during the banding and survey efforts, which extended through the cuckoo's later breeding season.

FARNSWORTH, ANDREW¹, MICHAEL E. POWERS¹, RICHARD FISCHER², KENNETH V. ROSENBERG¹, and R. STEFAN HAMES¹. **Nocturnal passerine migration in the southwestern United States, as documented by automated recording of night flight calls.** ¹*Conservation Science Program, Cornell Laboratory of Ornithology, 159 Sapsucker Woods Rd., Ithaca, NY 14850; af27@cornell.edu.* ²*Environmental Laboratory, U.S. Army Engineer R&D Center, Vicksburg, MS.*

Acoustic monitoring can reliably document the species composition of vocal nocturnal migrants and migration phenology, though to date this approach has been used rarely in the western United States. As part of a multi-year migration study, we used digital autonomous recording units to record the flight calls of birds at six sites along two 1.5-km transects along the Colorado River north of Yuma, AZ, during April and May 2007. Using bioacoustic software (Raven, XBAT) to sample flight calls from roughly 3200 hours of recordings, we identified temporal patterns of call counts by night and location and compared these nocturnal patterns with daily diurnal point counts. Temporal patterns of flight-call frequencies, both within nights at each location and across nights and locations, revealed species-specific migration behaviors across the local area. This technique also proved useful in identifying nocturnal passage times for numerous species, increasing the value of the data collected by standard means such as point counts. The study is part of a larger effort to use new acoustic technologies to monitor bird migration, with the goal of developing a continental network of fully automated recording stations.

FLETCHER, DAWN¹, and JOSEPH HUTCHESON². **Distribution and site selection of the Le Conte's, Crissal, and Bendire's Thrashers across the eastern Mojave Desert.** ¹*Public Lands Institute, University of Nevada, Las Vegas, 4505 S. Maryland Parkway, Las Vegas, NV 89154-4004; dawn_fletcher@partner.nps.gov.* ²*Harry Reid Center for Environmental Studies, University of Nevada, Las Vegas.*

The Le Conte's Thrasher (*Toxostoma lecontei*) is an uncommon resident of the deserts of the American Southwest. It has been listed as a "watch species" and is considered a bird of conservation concern by Partners in Flight. Currently, little is known about the distribution and relative abundance of this species within the Mojave Desert, nor that of two related and geographically overlapping species, the Crissal (*T. crissale*) and Bendire's Thrashers (*T. bendirei*). Because these thrashers are elusive, adequate information about their distribution and habitat selection has not been obtained by standard point counts. Therefore, we surveyed for these species by using a call-broadcast method, which has been shown to elicit a response from several cryptic bird species. We focused surveys within Clark County, NV, on the eastern edge of the Mojave Desert with the goal of determining distribution within a set of stratified random points within several vegetation communities. The analytical approach includes exploring a suite of site-specific environmental factors that may explain the presence/nondetection of these species. Our aim is to use knowledge of site-selection variables to develop landscape-scale habitat-suitability maps that may provide effective tools for the conservation of these thrashers. Knowledge of influencing environmental factors and habitat-suitability maps may serve as tools for land managers to identify potential effects of habitat change and to assess potential effects of development on habitat quality and availability for these species.

GILL, ROBERT¹, S. CHINNADURAI², D. DOUGLAS³, B. MCCAFFERY⁴, D. MULCAHY¹, A. PURGUE⁵, D. RUTHRAUFF¹, N. SENNER⁵, S. TALBOT¹, L. TIBBITTS¹, D. WINKLER⁵, N. WARNOCK⁶, and S. WARNOCK⁶. **Migration strategies of two populations of Bristle-thighed**

Curlews: What the satellite tracking data shows. ¹*U.S. Geological Survey, 1011 E. Tudor Rd., Anchorage, AK 99503; robert_gill@usgs.gov.* ²*College of Veterinary Medicine, North Carolina State University, Raleigh, NC 27606.* ³*U.S. Geological Survey, 3100 National Park Rd., Juneau, AK 99801.* ⁴*U.S. Fish and Wildlife Service, Box 346, Bethel, AK 99559.* ⁵*Cornell Laboratory of Ornithology, Ithaca, NY 14850.* ⁶*PRBO Conservation Science, 3820 Cypress Dr., Petaluma, CA 94954.*

During 19–23 June 2007, 15 Bristle-thighed Curlews from the southern breeding area were fitted with satellite transmitters (platform transmitting terminals) to compare their southward migration with that of birds from the northern breeding area that we studied in 2006. But once again the deadline for submissions of abstracts for talks at the Western Field Ornithologists meeting occurred on the eve of the curlews' southward migration, so what follows is but prologue to a developing story. During 8–9 August three birds departed Alaska from the Yukon Delta, while on 12 and 13 August two other birds departed, one from the Yukon Delta and one from the Alaska Peninsula. As of 13 August, two birds had crossed the Hawaiian Archipelago and were within hours of reaching the Marshall Islands; the other three were on trajectories for the Hawaiian Islands. As in 2006, weather appears to play a major role in when and how birds migrate, but this year might be even more revealing. A category 4 hurricane (Flossie) is currently 800 km SE of Hawaii and tracking NW along the south side of the archipelago. Attend the 2007 annual meeting to find out how the story ends.

HAAS, WILLIAM E., and ALISA C. ZYCH. A 10-year study of the Southwestern Willow Flycatcher in southern California. *Pacific Coast Conservation Alliance, 10650 Scripps Ranch Boulevard, Suite 200, San Diego, CA 92131; wehaas1@pccconservation.org; alisazych@pccconservation.org.*

The largest population of the Southwestern Willow Flycatcher in the state of California, stable at about 50 pairs since 1995, occupies 7.2 km of the San Luis Rey River along State Road 76 at the base of Palomar Mountain, San Diego County, California. Outside of this 10-year study, the colony has received little attention; it is frequently overlooked in local planning documents and has played no major role in state or federal planning of the species' conservation. Nesting primarily in oaks (*Quercus* spp.), this colony is little affected by cowbird parasitism while depredation, especially by corvids and murid rodents, may depress breeding success in some years. Although the habitat along the San Luis Rey River differs considerably from that occupied by the subspecies elsewhere, the birds' territoriality, nest-site selection, and feeding strategies along the San Luis Rey are similar to those at other sites. The Southwestern Willow Flycatcher is typically described as a species of dense riparian forest, but a more accurate description of the species' preferred habitat, especially of habitat structure and complexity, is required for habitat suitability to be assessed, especially when restoration sites for the species are designed. The San Luis Rey colony occupies a narrow canyon and lacks nearby suitable habitat into which it might move or expand its population. The area's burgeoning human population and plans for the construction of a casino nearby will continue the increase in traffic along SR-76. Any proposal to widen this road would threaten this critical population with extirpation.

HALTERMAN, MURRELET, and LEWIS ORING. Detection probabilities of the Yellow-billed Cuckoo on the San Pedro River, 2004–05, and implications for population estimation. *University of Nevada, Reno, and Southern Sierra Research Station, NRES, 1000 Valley Rd, Reno, NV 89512; mhalterman@unr.edu.*

We studied Yellow-billed Cuckoos on the BLM's San Pedro Riparian National Conservation Area (Arizona) from 2001 to 2006. Inherent in the survey method currently in use are three assumptions: 1, All cuckoos within 100 m will respond to call playback; 2, All responding cuckoos will be detected by a surveyor; 3, Cuckoos will not respond to a broadcast call that is 300 m distant. In 2004 and 2005 we determined detection probabilities for Yellow-billed Cuckoos on the San Pedro by two different methods. The first used call-playback to cuckoos with transmitters, the second used double-observer call-playback surveys. The first method, a single blind test with two observers, was conducted on 17 cuckoos of known sex. Each individual was tested every four days until it left the area or the transmitter fell off. Cuckoos responded less than 50% of the time, and we found an overall detection probability of 22.5% to 32.4%, depending on which subset of the data was considered. Probability of detection was much lower for

females (6.3%) than for males (33.3%). The response rates for both sexes are similar, but since males often fly closer to call, they are detected more frequently. Cuckoos at 300 m responded occasionally but were not detected. Detection probability in the double-observer test was much higher (89.5%). This method assumes that the majority of individuals present are detected, which is not the case for this species. With a detection probability of 33.4%, four surveys are required to detect 80% of the population of an area. If the probability of detection is 22.5%, between seven and eight surveys are required to detect 80% of the population. Because this call-playback test was conducted on a small sample size, and in an area of high cuckoo density, tests on other populations may have different results.

JOHNSON, MATTHEW J. Yellow-billed Cuckoo surveys along the lower Colorado River: 2006–07. *U.S. Geological Survey, 2255 N. Gemini Dr., Flagstaff, AZ 86001; mjjohnson@usgs.gov.*

Yellow-billed Cuckoos inhabit mature cottonwood–willow habitat and may act as an umbrella species for other birds using these mature habitats and covered by the Lower Colorado River Multi-Species Conservation Program. Existing cuckoo populations and habitat are being monitored along the river as systematic surveys are conducted over the project area. Data recorded during these surveys and studies will be used to design sites for the creation of cuckoo habitat. Cuckoo surveys were conducted at 55 sites, within 17 areas, between 11 June and 13 September 2006. In 2006, field biologists made 243 visits and recorded 180 cuckoo detections. Cuckoos were detected at 27 of 55 sites, primarily in the Bill Williams River National Wildlife Refuge (117 detections) and the Grand Canyon National Park/Lake Mead National Recreation Area (29 detections). Cuckoos were also detected at the Colorado/Gila River confluence, AZ ($n = 9$), Overton Wildlife Management Area, NV ($n = 7$), and Limitrophe Division North, AZ ($n = 6$). In 2006, breeding was confirmed five times, including one nest and sightings of four juveniles; all confirmed breeding was at the Bill Williams and Lake Mead delta sites. Also detected were 17 probable breeders (e.g., carrying nesting material or food) and 40 possible breeders (e.g., detected in the same area on repeated surveys). Preliminary analysis of vegetation data recorded at occupied and unoccupied sites in 2006 focused on general patterns of the distribution and abundance of woody species within riparian habitats of the study region. The dominant tree species at cuckoo survey sites were cottonwood, willow, and tamarisk. Tamarisk was the most common tree because of the abundance of small individuals. Occupied sites tended to have greater canopy cover, attributable to greater average cover of the mid- and low canopy. Microclimate variables (temperature, relative humidity, soil moisture) at occupied and unoccupied sites were also measured. At a regional scale, locations occupied by the cuckoo tended to be cooler and more humid on average than randomly chosen unoccupied sites. On average, soil moisture was higher at cuckoo-occupied locations.

KAHL, JOSEPH. Marshbird surveys along the lower Colorado River. *Bureau of Reclamation, P.O. Box 61470, Boulder City, NV 89006; jkahl@lc.usbr.gov.*

Surveys for the Yuma Clapper Rail have been conducted along the lower Colorado River annually since the 1980s. Prior to implementation of the Lower Colorado River Multi-Species Conservation Program (LCR MSCP), the University of Arizona conducted a study to determine if Clapper Rail surveys could be expanded to a multi-species protocol without compromising Clapper Rail detection rates. Information obtained from this study has contributed to a new multi-species protocol for all marsh birds, including other species covered by the LCR MSCP, the Black Rail and Least Bittern. Marshbird surveys have been conducted by the multi-species protocol at designated survey points to track detections of covered species. Marshbird surveys were conducted by the Bureau of Reclamation between the I-40 bridge, near Needles, California, and Lake Havasu during March, April, and May 2007. Total Clapper Rail detections ranged from 17 to 64 individuals per survey period. Total Least Bittern detections ranged from 4 to 21. Two Black Rails were detected in 2007, one during the March survey and one during the April survey. These are the first Black Rails detected along this section of the Colorado River. During surveys in 2006, total Clapper Rail detections ranged from 19 to 31 individuals per survey period. Total Least Bittern detections ranged from 8 in March to 37 during the May survey period. No Black Rails were detected in 2006.

KLICKA, JOHN¹, ELDRIDGE BERMINGHAM², ROBERT E. RICKLEFS³, PATRICIA ESCALANTE-PLIEGO⁴, and GARTH M. SPELLMAN¹. **The evolutionary history of House Wrens.** ¹*Marjorie Barrick Museum of Natural History, University of Nevada, Las Vegas, 4505 Maryland Parkway, Box 454012, Las Vegas, NV 89154; Klicka@unlv.nevada.edu.* ²*Smithsonian Tropical Research Institute, Balboa, Panama.* ³*Department of Biology, University of Missouri–St. Louis, St. Louis, MO.* ⁴*Instituto de Biología, Universidad Nacional Autónoma de México, México, D.F.*

The House Wren (*Troglodytes aedon*) has the largest breeding distribution of any New World songbird, occurring from southern Canada to Tierra del Fuego. Although currently recognized as a single species, it is widely regarded as a complex composed of several historically recognized forms, many of which have previously been considered species. These include the nominate *aedon* (Northern House Wren; North America, north of Mexico), *brunneicollis* (Brown-throated House Wren; Mexican highlands), and *musculus* (Southern House Wren; southern Mexico through South America). The complex also includes a number of morphologically distinctive island populations such as *martinicensis* (Lesser Antilles), *beani* (Isla Cozumel), and *tanneri* (Isla Clarión). Previous molecular studies on this assemblage have led to conflicting results and a comprehensive analysis including representation from all of these groups is lacking. Using mtDNA sequence data and dense taxon sampling ($n = 188$) we reconstruct a phylogenetic hypothesis for the House Wren complex. Preliminary analyses indicate that the Northern House Wren as presently recognized consists of two very distinct lineages. Western House Wrens (*T. a. parkmanii*) form a well-supported clade most closely related to the Clarión Island form, *tanneri*. Eastern House Wrens (*T. a. aedon*) are part of a lowland radiation that includes the southern (*musculus*), Lesser Antillean (*martinicensis*), and Cozumel (*beani*) forms. The Mexican highland form *brunneicollis* diverged early in the history of the complex and is sister to all other groups.

OLSON, THERESA. **The Lower Colorado River Multi-Species Conservation Program: An overview.** *Bureau of Reclamation, PO Box 61470, Boulder City, NV, 89006; toolson@lc.usbr.gov.*

The Lower Colorado River Multi-Species Conservation Program (LCR MSCP) is a multi-stakeholder federal and nonfederal partnership responding to the need to balance human use of lower Colorado River water and the conservation of native species and their habitats in compliance with the Endangered Species Act. The LCR MSCP is a 50-year plan to conserve at least 26 covered species along the lower Colorado River from Lake Mead to the Mexican border through the implementation of a Habitat Conservation Plan (HCP). The Bureau of Reclamation began implementation of the HCP in October 2005. Initial efforts concentrated on continuing ongoing research and monitoring programs for covered fish, wildlife, and habitat; developing new research and monitoring programs; planning and initiating several large-scale habitat-creation projects; and establishing procedures necessary for implementation of the LCR MSCP, including the development of site-selection criteria for future habitat-creation opportunities and the development of a science strategy to insure that implementation of the conservation measures outlined in the HCP is based on scientific information, methods, principles, and standards. Implementation of the HCP must be both biologically effective and cost efficient while ensuring that the decision-making processes are conducted as transparently as possible.

POWELL, ROBIN. **Nevada's Important Bird Areas.** *Nevada Important Bird Areas Program, Lahontan Audubon Society, P.O. Box 5046, Sparks, NV 89432; rpowell@aububon.org.*

The Important Bird Areas, or IBAs, Program is a worldwide effort to identify the most important places for bird populations and to focus conservation efforts. Within Nevada, there are 39 recognized IBAs, which are sites that provide essential breeding, migration, or wintering habitat for one or more species of birds. In order to be an IBA, an area must be:

- important to a Nevada species of concern or a federally listed species under the Endangered Species Act
- an area that supports a species specific to that habitat type
- an area that supports a congregation of many species
- an area that has high avian species diversity

The Nevada IBA Program is focused on the protection, preservation, conservation, and restoration of habitat beneficial not only to bird species but to wildlife in general. Each IBA has varying degrees of

resource challenges and issues ranging from invasive plants, habitat degradation, development, and water quantity/quality. The Nevada IBA program is focused on monitoring and conserving the unique habitats that make these sites Important Bird Areas.

RYAN, THOMAS¹, LAUREN SECKEL¹, STACEY VIGALLON², GARRY GEORGE², and LUCIEN PLAULOLES³. **Snowy Plovers in Los Angeles County: Survey results and management recommendations.** ¹*SWCA Environmental Consultants, 625 Fair Oaks Avenue, Suite 190, South Pasadena, CA 91030; tryan@swca.com.* ²*Los Angeles Audubon Society.* ³*Santa Monica Bay Audubon Society.*

Prior to 1945, the Western Snowy Plover (*Charadrius alexandrinus nivosus*) nested on beaches throughout Los Angeles County. Since 1947, however, increased recreation and heavy beach grooming have contributed to the abandonment of nesting areas on these beaches. This study provides beach managers with the timing and locations of Snowy Plover occurrences during the winter and spring of 2007 and probable locations of future nesting sites. We provide recommendations for management action, including the increased protection of specific sections of beach. Thirty-five volunteers contributed 430 hours to complete the six surveys that covered more than 40 miles of beaches within Los Angeles County between January and June 2007. We found that Snowy Plovers occurred on 16 beach segments; seven beaches accounted for 88% of all detections and 98% of breeding-season detections. There were approximately 200 Snowy Plovers using Los Angeles County beaches in 2007. The largest number occurred between early January and late March. Numbers of observed Snowy Plovers declined in April, and no sightings were made during the May or early June survey periods. Snowy Plovers were observed on Los Angeles County beaches during their known breeding season. A possible nest scrape was detected at Dockweiler State Beach, and a confirmed nest scrape was detected at Hermosa Beach. These represent the first reported and documented nesting attempts by the Snowy Plover in Los Angeles County since 1947. We suggest that, despite the presence of suitable habitat, it is nearly impossible for Snowy Plovers to nest on beaches within Los Angeles County under existing management practices. We recommend that beach managers consider the use of seasonal enclosures, reduce beach grooming, limit vehicle speeds in sensitive areas, enforce existing leash laws in sensitive areas, provide public outreach via a volunteer monitoring program, begin regular monitoring of protected areas, and use nest-protection and predator-control measures where appropriate if and when nesting occurs.

SFERRA, SUSAN J.¹, MARK K. SOGGE², and EBEN H. PAXTON³. **Saltcedar as habitat for birds: Implications for riparian restoration in the southwestern United States.** ¹*Bureau of Reclamation, 6150 West Thunderbird Road, Glendale, Arizona 85306; ssferra@lc.usbr.gov.* ²*U.S. Geological Survey, Southwest Biological Science Center, Southwest Biological Science Center, 2255 Gemini Drive, Flagstaff, AZ 86001; mark_sogge@usgs.gov.* ³*U.S. Geological Survey, Southwest Biological Science Center, Colorado Plateau Research Station, Box 5614, Northern Arizona University, Flagstaff, AZ 86011; Eben.Paxton@nau.edu.*

In the southwestern United States, intensive management of riparian ecosystems has led to the establishment and subsequent control of exotic saltcedar (*Tamarix ramosissima*, *T. chinensis*, or hybrid). The purpose of this paper is to convey that (a) saltcedar-dominated woodlands are important to southwestern riparian bird species where native habitat can no longer exist, (b) saltcedar-control and restoration projects that do not produce native riparian habitat higher in quality than the saltcedar habitat replaced are likely to result in a net loss for riparian obligate birds, and (c) appropriate post-control monitoring is needed wherever projects are implemented to determine whether control and restoration goals have been achieved and bird populations have benefited. Although saltcedar habitat tends to support fewer species and individual birds than does native habitat, in the Southwest many riparian-dependent species use saltcedar. The *Arizona Breeding Bird Atlas* and *Birds of North America* document 49 species breeding in saltcedar habitat. Eleven of these species, many of which are considered priority species by Partners in Flight or the U.S. Fish and Wildlife Service, have the potential to be negatively affected by widespread saltcedar control in at least part of their range within Arizona and New Mexico. The Yellow-billed Cuckoo (*Coccyzus americanus*) has declined greatly following a large-scale saltcedar removal project in the lower Pecos Valley, New Mexico. The federally endangered Southwestern Willow Flycatcher (*Empidonax traillii extimus*) is as reproductively successful in saltcedar-dominated habitat as in native habitat. Given

that almost 30% of all Southwestern Willow Flycatchers breed in saltcedar-dominated habitat, the recovery plan cautions that extensive saltcedar defoliation via biocontrol insects could render the flycatcher's breeding sites unsuitable or inferior to their pre-control state. Saltcedar control and restoration projects that do not assure replacement by high-quality native habitat have the potential to reduce the net riparian habitat value for bird populations.

SMITH, BRIAN T., and JOHN KLICKA. **What can DNA tell us about birds? Exploring the role of DNA in avian systematics, biogeography, and conservation.** *Marjorie Barrick Museum of Natural History, University of Nevada, Las Vegas, 4505 Maryland Parkway, Box 454004, Las Vegas, NV 89154; btsmith@unlv.nevada.edu.*

Over the past 30 years a clear picture of the evolution of birds has emerged from the development of DNA technology. We will discuss how the use of molecular data has revolutionized avian systematics from its application to determining phylogenetic relationships of birds, its role in conservation, and the use of molecular clocks to estimate the timing of diversification events. These points will be illustrated by reviewing the methods and analyses of molecular phylogenetics and put into context by their relevance in recent systematic findings.

WONG, DIANE. **Riparian restoration and bird monitoring on the lower Truckee River.** *Otis Bay Ecological Consultants, 110 Mule Deer Drive, Reno, NV 89523; dwong_obec@charter.net.*

Over the past century, the Truckee River has experienced declines in riparian forest cover and the extent of wetlands. A comparison of early bird-observation records with data from recent surveys shows a contemporary bird community composed of species better adapted to more disturbed landscapes, while formerly common species associated with extensive wetlands and intact gallery cottonwood-willow forests are now on the decline. Restoration efforts that may benefit riparian birds have been implemented at The Nature Conservancy's McCarran Ranch property on the lower Truckee River, and similar efforts on nearby river segments are planned for the near future. A review of the recently completed riparian restoration activity will be presented, and completed baseline bird surveys will be highlighted, with suggestions for future monitoring as the native riparian forest becomes re-established.

YATES, MICHAEL A., MARK R. FULLER, CHARLES J. HENNY, WILLIAM S. SEEGAR, and JAQUELINE GARCIA. **Determining remote sources of contaminants in a local White-faced Ibis population.** *Raptor Research Center, Boise State University, 2656 Wade St., Minden, NV 89423; MYfalcon@charter.net.*

As recently as 1996 a large segment of the migratory White-faced Ibis (*Plegadis chihi*) population nesting at Carson Lake in western Nevada was still burdened with high DDE levels in eggs, adversely affecting reproduction; the source of contamination was not local. Seeking to identify the source(s), we blood-sampled and then tracked 12 sentinel ibises via satellite-received telemetry to wintering areas ranging from California's northern Central Valley to the Mexican state of Jalisco. We visited those wintering sites and collected earthworms (an important part of the diet) in areas frequented by ibises. Preliminary analyses of White-faced Ibis blood and earthworms revealed that four ibises had high (>0.5 ppm, ww) blood DDE levels, and three of those wintered in a small area of the Mexicali Valley SSE of Mexicali, Mexico. The mean DDE level of earthworms collected within that area was 0.27 ppm (ww). No sample collected in any other wintering area contained DDE levels as high as those present in 14 of 15 Mexicali Valley earthworm samples. Results point to one source of contaminants on the wintering grounds that could account for the DDE levels in ibis eggs laid at Carson Lake some 850 km away. The study provides additional documentation of continued DDE availability in the Mexicali Valley and contributes to confirming the use of these methods in suitable species for locating remote sources of contaminants.