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DRAS Fall Activities

Fall is here at last. The temperatures are finally dropping for which we are always grateful. Soon the birds and the snowbirds will be migrating back to the valley and we look forward to seeing both. We start another season at Desert Rivers Audubon full of programs, field trips, birdwalks, and events. After a couple of interesting programs, on November 9th we start the season off with the Tour de Bird, our annual tour of recognized bird habitats – both public and private. These spots demonstrate some of the things that you can do to help birds and

![Hummingbird Garden](image1)

butterflies in your own space, no matter what size. They are real gardens for real people. They demonstrate that you can have a lush desert landscape that is not only a pleasant oasis, but easy to maintain and important for local and migrating birds. They promote landscaping with native plants, and will demonstrate composting and rainwater harvesting. One stop will show what a community of volunteers can create. The Cactus and Quilts habitat will display western-themed quilts and will unveil the bird-themed quilt that will be the subject of a raffle. Raffle tickets will be sold all season long and the winner will be drawn at our end-of-season barbecue. The Tour de Bird is our annual fundraiser. It is the only event all year for which we charge, and it helps to support all of the other birdwalks and programs that are free and open to the public. It also highlights our Bird Habitat Recognition Program.

![Field Trip to Rocky Point](image2)

If you yard or portion of your yard qualifies, you can be recognized and purchase a sign to show that your habitat is cared for with birds, butterflies and other wildlife in mind. More details are available on the Audubon at Home tab of our website.

![Monthly Meetings](image3)

I look forward to seeing you on the Tour or at another Desert Rivers Audubon event.

Audubon at Home

Creating Wildlife Habitats

What could be better than creating your own wildlife habitat using native Southwestern plants? It is easier than you might think!! I have over 100 species of container and landscape plants in my Mesa yard. You can see these at the Tour de Bird Event.

Biodiversity is critical in nature as well as your landscape. The more plant species you have, the more animals will find your yard appealing. Planting “keystone species” is a must. The Saguaro Cactus (Carnegia gigantea) certainly fits the bill of one such species as it provides food, moisture, reproductive sites and shelter for literally hundreds of species of vertebrates, invertebrates and microbes. I have the privilege of having mature saguaros on both my properties and have spent countless hours watching the “battles” between European Starlings and Gila Woodpeckers over “housing rights,” Cactus Wrens and Curve-billed Thrashers building nests in the saguaro arms and almost every one feeding on saguaro nectar, pollen, fruit and seeds. This spring, I witnessed a pair of Common Ravens that nested in my Mesa Community College dining on saguaro fruit on plants in my front yard. Several dove species (white-winged, mourning and inca) frequent these saguaros by the dozens during its reproductive cycle. At my 3.3 acre lot in Gold Canyon, I have numerous mature saguaros as do my neighbors. A family of Harris’ Hawks nests and roosts on these saguaros. One specimen is so “whitewashed” by the hawks uric acid it looks like Tom Sawyer was at work. How fun it is to observe the “back stacking” behavior of these birds. I have found coyote and javelina scat full of saguaro seeds.

As a naturalist, I do not focus on any one group of organisms. All species are important and connected to each other. Take the often misunderstood Desert Mistletoe (Phoradendron californicum). Most individuals look at this hemiparasitic plant as something that should be completely removed from their desert trees and shrubs. If this is done, you will be missing out on the dozens of species that utilize this “keystone species.” Many birds, including Gila Woodpeckers, Northern Mockingbirds, Ash-throated Flycatchers, Gambel’s Quail, Verdins and Phainopeplas, feed on the berries. Black-tailed Gnatcatchers, Pyrrhuloxias, Cactus Wrens, Canyon Towhees and even Elf Owls will roost at night or nest in mistletoe. Mistletoe is a nutritious food plant for White-tailed and Mule Deer and Bighorn Sheep, while many butterfly species feed on the flower’s nectar. I try to find a balance of having enough mistletoe for wildlife but not too much to harm my trees.

I have found that plants such as Brittle Bush (Encelia farinosa), Desert Senna (Sennaoxia), Desert Marigold (Baileya multiradiata), penstemon species, Globe Mallow (Sphaeralcea ambigua), and Silver Puffs (Microseris linearifolia) are prolific seed producers and will attract your seed eaters, insects and birds alike. Remember, let these plants get a little “tacky” looking before you prune to insure the seeds have been released. This herbaceous foliage makes good compost.

My top hummingbird/verdin attractors are the Justicias and Penstemons. Chuparosa (Justicia californica), Mexican Honeysuckle (J. spicigera) and Red Firecracker (J. candeans) are great fall/winter bloomers that will drive these birds crazy. I have had the best luck with Pink Penstemon (Penstemon papyri), Scarlet Penstemon (Penstemon eatoni), and Coral Penstemon (Penstemon superbus). Again, these are fall/winter flowering species.

Several larger growing native shrubs are excellent for not only producing food, but providing nesting and roosting sites and just good cover especially from your neighbor’s cat. Try wolfberry (Lycium species), Desert Hackberry (Celtis pallida), Catclaw and White thorn Acacia (Acacia greggii and A. constricta), Jojoba (Simmondsia chinensis) and Green Hop Bush (Dodonaea viscosa).

Tour de Bird on Saturday, November 9, 2013 is a great opportunity to see all these cool native plants and many more. Mark your calendar and I will see you then!!
Arizona Forests and Watersheds Restoration Conference Highlights

Pete Allard

Introduction

Audubon members are concerned by the habitat loss and ecological damage in Arizona caused by catastrophic wildfires: From 2002 to 2012, we have lost 1/4 of the Arizona conifer forest to crown fires in the old-growth trees; statewide, wildfires have consumed 4 million acres, which is more land than Connecticut and Rhode Island combined. Wildfires also damage the forest hydrologic cycle. The soil cannot retain and retard runoff, which leads to flooding, erosion, mudslides, and an increase in sedimentation in receiving streams. What can we do about it?

On October 3 and 4, 2013, I went to the Restoration Investment Strategies for Arizona’s Forests and Watersheds Conference hosted by Salt River Project (SRP). The goal was to mobilize collaborative resources to restore forests to a natural condition by harvesting small diameter trees that have grown in the absence of fire. Most of the attention was directed to wildfire issues. I want to report on some of the topics of interest to DRAS members.

The quality and scope of the conference were impressive. The event partners with SRP were Arizona Forward, Freeport-McMoran Copper & Gold, Northern Arizona University Ecological Restoration Institute (ERI), University of Arizona College of Agriculture & Life Sciences, Eastern Arizona Counties Organization, National Forest Foundation, US Forest Service (USFS), and Arizona State Forestry Division. Speakers came from federal, state, county, and city government, NAU and ASU, private industry, utilities, consultants, and nonprofit organizations. Projects and wildfire events in Arizona, several other states, Africa, and Europe were described. Total registration was around 240 attendees.

Conference Highlights

Doug Von Gausig, Mayor of Clarkdale, Director of Verde River Institute, described restoration efforts in the Middle Verde River, including how support is generated for the Verde Watershed Restoration Coalition. Much of the cottonwood-willow forest along the Verde has returned and the river is popular for kayaking. One stretch is designated as a Wild and Scenic River and another is pending.

Aaron Lien, Udall Center for Studies in Public Policy, discussed linkage of forest and watershed health in the large fire era. The forest hydrologic services of water supply, erosion control, flood mitigation, recreation, and aesthetic/cultural benefits are interrupted after a fire. A healthy watershed intercepts and stores water, slows runoff, moderates erosion, holds nutrients, supports a healthy ecosystem, and repairs itself. New approaches, aka payment for watershed services, include USFS-Utility Partnerships, Non-Governmental Organization (NGO)-utility partnerships, Water Funds, Bond Programs, User Contribution Programs, Philanthropy, and Stewardship Agreements.

Cal Joyner, Regional Forester, Southwest Region, USFS, did not come due to the federal shutdown. In the text of his presentation on New Opportunities for Investing in Our Forests and Watersheds he states that we must work at a pace and scale much larger than we have in the past to respond to the challenges facing our forests and watersheds. Under the Collaborative Forest Landscape Restoration Program authorized by Congress in 2009, agencies are encouraged to focus on restoring forest ecosystems to reduce risk of uncharacteristic wildfires, improve watersheds and wildlife habitat, and create jobs. A total of 23 projects, which are required to be collaborative, have been authorized in 14 states. The largest project (2.5 million acres) is the Four Forest Restoration Initiative (AFRI) in Arizona. The goal is to restore one million acres of ponderosa forest in northern Arizona in the next 20 years with mechanical treatments. Private businesses will probably participate by harvesting, processing, and selling wood products, which will reduce treatment costs and create jobs.

Scott Hunt, State Forester, Arizona State Forestry Division, estimates the cost of restoration treatment at $250 to 2500 per acre, decreasing to $1000 per acre for large fires. He estimated the Rodeo-Chediski fire cost $370 million and could have cost $45.5 million to treat. Arizona has about 20 million acres (27% of the state) of forest lands, which include pinyon, ponderosa, pine-conifer, riparian (cottonwood-willow), and aspen forests. Forested lands contribute 90% of Arizona streamflow, mostly from snowmelt. Half of the yield is in the Salt River watershed.

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Kevin Burke, City of Flagstaff, spoke of restoration projects after the 2010 Schultz fire burned over 15,000 acres outside Flagstaff, causing evacuation of hundreds of homes. Heavy flooding occurred after the fire, causing extensive damage to property downstream from the charred hillsides, including damage of water pipelines to the Flagstaff municipal water treatment plant. Seasonal flooding is a concern in 2013. A business case was made to justify mitigation measures on forest lands outside the city, which were funded by a $10 million special bond authorization and continuation of an existing secondary property tax.

Scott Lurich, National Wild Turkey Federation, talked about stewardship agreements and contracts for projects on forest lands. USFS and Bureau of Land Management could engage in agreements under a 10-year authority that expired on September 30, 2013 (the end of the fiscal year) and needed to be renewed. Stewardship agreements require a 20% nonfederal match of funds. In 10 years there were 1269 projects by USFS.

Marcus Selig, Director, Colorado Program, National Forest Foundation (NFF), said that NFF was set up by Congress in the 1990s as a nonprofit. They have projects in Arizona, and are seeking to quantify forest ecosystem services. NFF is the only nonprofit to generate carbon offsets on federal lands.

Rob Davis, Forest Energy, described commercial products and fuels that can be produced from the small trees that are harvested in forest thinning. Forest Energy manufactures fuel pellets, absorbents, pet litter, mulch, and animal bedding out of wood from forests.

Dee Frankforth and J. Daley, Trust for Public Land, did a breakout session on How to Manage a Successful Statewide Initiative to authorize and fund conservation efforts. In Arizona, 25 of 25 local conservation initiatives proposed from 1995 to 2007 were approved by voters. Commitments for measures that passed included parks, trails, open space, wildlife habitat, watershed protection, greenways, forests, recreation, and fire, not in any order. They described how to run a state-of-the-art political campaign for ballot propositions.

There were four additional breakout sessions as listed below:
The Importance of Cities in Restoration
Forest Stewardship Fund
Philanthropic Corporate Approaches
Market-Based Restoration: Mitigation Banking, and Biodiversity Credits

Dr. Steve Pyne, ASU, spoke on the history of wildfires and forest management in the U.S. He said that 40% of the USFS budget now goes to firefighting. Megafires are 1% of the fire events but account for 85% of the area burned.

Pat Graham, The Nature Conservancy (TNC), made a case for change in how we do forest restoration. Neither government nor business can do it alone. A lack of trust between forest managers and interest groups has led to 10 years of litigation. Thinning methods have improved. Machines can thin 20 acres per day and thinning is guided and recorded as it happens by GPS and tablet computers in the cabs of thinning machines. Woodcutters will become knowledge workers. USFS is the only federal agency that has to use its own funds to deal with natural disasters.

Charles Ester, SRP Water Supply Manager, said that the entire SRP watershed is in protected status as national forest land. SRP is looking for collaboration and partnership commitments with others for forest and watershed restoration. They will start a project with NAU to study changes in hydrologic function during restoration.

Presentations were recorded on video and will be available on a web site.

What Does This Mean for Audubon Members?
The task of restoring Arizona forests and watersheds was compared to what we did over a hundred years ago to build Roosevelt Dam and the infrastructure for water storage and flood control in central Arizona. The conference was a call to action to bring all the stakeholders together and organize another visionary project for our forests and watersheds. The effort will require cooperation and collaboration of many individuals, organizations, and interest groups. There will be roles for Audubon and its members.

Some riparian areas, which are critical to wildlife and migratory birds, are also home to the cottonwood-willow forests in Arizona. Audubon has formed the Western Rivers Action Network (WRAN) to protect our rivers, including some that pass through cottonwood-willow forests. At least four DRAS members attended the first WRAN Workshop at Audubon Arizona on June 8, 2013. (You can join WRAN to work for policies to increase river flow and restore important riverine habitats.) WRAN and forest restoration will have similar interests. There will be opportunities for collaboration and mutual support.

When Audubon first moved into its research ranch in Elgin, a fire burned through the grasslands that were to be studied. After the initial shock and disappointment, the staff decided it was the perfect time to study recovery of the grassland ecology after a fire. Audubon volunteers could be mobilized to study changes in the bird population to track the progress of recovery in fire areas and affected watersheds.

The conference showed that many organizations have interests in forest and watershed recovery similar to Audubon’s. We are not alone, and there will be many opportunities for constructive partnerships in restoration.

Finally, I was trying to capture a lot of information in a short time and apologize if I missed something.
I've often observed mallard mating behavior while out birding. Although I've rarely seen all aspects of their precopulatory behavior, it is quite ritualized. Males perform various rituals in the presence of females, which include head and tail shaking, raising wingtips, and swimming with their necks outstretched close to the water surface. Multiple males will sometimes swim around females arcing their necks, filling their bills with water and spurring it at the female while producing short nasal calls or high-pitched whistles.

A female mallard will often try to elicit displays from groups of males by swimming with her neck outstretched and her head just above the water. When a strange male approaches she swims after her preferred mate while giving a number of rapid quacks and flipping her beak back and downward to the side. When pairs are formed, each sex often lifts a wing and spreads the feathers to expose the speculum (bright feathers at the wing's trailing edge) while placing the beak behind the raised wing.

Just prior to copulation, both sexes typically face each other and pump their heads up and down. When the male mounts the female, he almost submerges her. After he dismounts, both male and female often swim around in a circle lapping their wings.

Although not thinking much about it since copulation takes place below the water surface, I always assumed mallard mating involved the cloacal kiss common to most birds. With this type of mating, the cloaca of males and females briefly touch as sperm are transferred to the females' reproductive tract. This type of copulation requires the cooperation of the females and is characteristic of about 97 percent of bird species. However, in the other 3 percent (including ducks, geese, swans, and many large flightless birds), the males have a developed penis. Males of these species can forcibly copulate with females.

Among mallards, which have been studied extensively, 40–50 percent of copulations are forced and involve males other than the female's chosen mate. These forced copulations are sometimes so frequent and intense that the female is injured or even killed.

Despite this frequent harassment by males, only 2–4 percent of these forced copulations result in insemination. The reason for this seems to be that there is a long-term coevolutionary battle of the sexes occurring. Normally, the duck's penis is carried internally in an inverted (inside-out) and unextendable state. During mating, lymph is pumped into the penis, and it flips right side out as it becomes engorged within the female's vagina. All of this happens in a matter of seconds.

Duck penises are long (in some species, longer than the male's body) and elaborate i.e., they are twisted counterclockwise and are equipped with a brush-like tip (presumably to sweep away competitors' sperm) and spines. Female duck vaginas are also elaborate and twist clockwise with numerous outpockets (dead ends).

Female ducks have evolved ways of 'selecting' which matings will lead to offspring by controlling what happens during mating. Those females subject to forced copulations use muscles to maintain a tight clockwise vagina, which slows expansion of the male's penis and precludes deep penetration. In these cases, the sperm are often shunted off to one of the outpockets and never reach the eggs for fertilization. This contrasts with when a female is receptive to her chosen mate. In this case, she relaxes the muscles around the vagina, allowing full penetration of the penis and a much greater chance of insemination.

Researchers looking at a number of bird species, have found that the longer and more elaborate the male penis, the more convoluted and elaborate the female vagina—a kind of evolutionary fit for tat. This research into birds with penises begs the question of why most birds don't have them, even though birds are closely related to reptiles all of which have penises. This is also despite the fact that all birds have the genetic capability of developing a penis.

An apparent key to halting the development of any kind of functional penis among most birds is a protein named Bmp4. This protein is involved in causing a kind of programmed cell death during embryonic development. Bmp4 also has a role in transitioning scales to feathers and in varying beak size in birds. The same protein is active in human and other animal development, where it 'carves away' unwanted body parts such as skin developing between fingers.

Getting back to birds, though, what is the advantage of being penis-less? Could it be that it makes flight easier, mating quicker, female mate selection better? Whatever the reason, whether males have a penis or not, it appears that females have the last say in the battle of the sexes.
An overnight experience in April near the foot of Aravaipa Canyon inspired a return trip in mid-September.

From Superior, drive south on AZ177 in the dark. You won’t see the miles of mining scars and slag heaps. Continue through the small towns of Kearny and Hayden in the gray cast before dawn; do you notice Dudleyville tucked just west of the road, along the banks of the San Pedro River? The morning light begins to illuminate the bright green swath of foliage of the riparian area. Turn left at the brown binoculars sign and begin your birding journey on the road to Aravaipa Canyon.

Almost pristine Sonoran Desert unwraps on both sides of the road, flat at first, then undulating and dotted with rock walls, small canyons, washes and beautiful vistas in every direction. Listen for Curve-billed Thrashers, Gambel’s Quail, Verdin, House Finches, and Rufous-crowned and Black-throated Sparrows. Some will pop into view eventually. Drive slowly to see roadrunners in unexpected spots. One was not 15 away perfectly camouflaged in a dead mesquite; another perched atop a metal tank. Stop at the washes and verdant spots to see if tanagers, orioles and vireos are actively snatching insect snacks.

Some power lines parallel portions of the road, perhaps unwelcome in the serene surroundings. But they are great perches for Red-tailed Hawks, Harris’s Hawks, American Kestrels and Loggerhead Shrikes, as well as Mourning Doves, kingbirds, Gila Woodpeckers and both kinds of flickers.

As the road turns to gravel and rises on the north side of Aravaipa Creek, a wide valley opens below. Huge cottonwoods line the banks. The autumn that seems so far away in Phoenix is already here, with golden leaves shimmering in the now bright sun. Pull over and look for an ancient panel truck on its sides, buried in mud, across the creek. Above it, in the treetops, count the nests of a heron rookery, abandoned in mid-September. As a reminder, though, a Great Blue Heron sweeps down the creek at eye level—a modern pterodactyl.

Humans can’t resist this beautiful area. Who can blame folks who build homes overlooking Aravaipa Creek? Or attempt to farm this valley? In a slatery snag arising from the center of an open meadow, a Common Black-Hawk scans the scene, making us compare field guides to distinguish it from the Zone-tailed Hawk, a summer resident. In April, this Gray Hawk territory, giving photographers their best shot ever. Unconcerned, a Vermilion Flycatcher flits about with its close cousin, a Black Phoebe. Western and Summer Tanagers showed up in April in this same spot. In September, a Yellow-rumped Warbler takes their place.

On the way back along the San Pedro River, you’ll see the ravages of the summer wildfire in broad daylight. Turkey Vultures kettle. Do they symbolize the death of the habitat wrought by the copper mines and our insatiable desire for power and electronic gizmos? The sierra mountains are colorful in the late morning sun, stained by streaks of minerals—an unnatural Painted Desert. After the abundance and beauty of Aravaipa Canyon Road, the devastation is shocking and sobering. But low growing shrubs cling to parts of the moonscape. Perhaps there is hope after all.
From the AZ Field Ornithologists. See complete listing and details on the AZFO website at: www.azfo.org - see “Photo Documentation” page.

Sharp-tailed Sandpiper (Calidris acuminata), Maricopa County. This Sharp-tailed Sandpiper was discovered by Mark Ochs and David Pearson on 28 September 2013. Three previous records from 1972, 1985, and 2003. Sharp-tailed Sandpiper (on left) next to a Pectoral Sandpiper shows size scale. Reddish crown and buffy breast without streaking distinguish immature Sharp-tail from Pectoral Sandpiper.

Plain-capped Starthroat (Heliomaster constanti), Paton’s yard in Patagonia, Santa Cruz County. This Plain-capped Starthroat was discovered on 24 September 2013 by John Saba and photographed by James Riezeck on 23 September 2013. Rare summer visitor to SE Arizona. Becoming more regular, annual since 2007. This is at least the third one reported this year. Large dull colored hummingbird, long bill, bold white and dark facial markings, grayish gorget narrow at chin with dark red near bottom, whitish midline on grayish underparts, white tipped tail feathers, white on lower back and rump.

Blue-footed Booby (Sula nebulosa), Lake Havasu, Mohave County. A Blue-footed Booby was discovered on Lake Havasu by Rick Friddel on 26 September 2013 and at a total of 3 birds were found 28 September 2013 by Brad Singer. Doug Karalun, Johnny Bovee, Bill Deppe, Gjon Hazard and Tom Benson. Two of the three were photographed by Tom Benson at that time. The birds were flying back and forth between the California and Arizona sides of the lake and were photographed in California. Prior to this year there were eight accepted records for Arizona. There has been an additional report already this fall from Lake Patagonia. There has been a massive invasion of this species this year in California and birds have been reported as far north as British Columbia. There were more than 70 present at the Salton Sea (all time high count there) and over 100 reported total in California. It is therefore not surprising that some of this invasion is spilling over into Arizona.

Reddish Egret (Egretta rufescens), Sundance Power Plant, Pinal County. This Reddish Egret was discovered and photographed by Doug Jenness on 18 September 2013. Reddish Egret is a casual mid-summer fall wanderer to southeast Arizona. Has become more regular in the past 15 years to the point that the Arizona Bird Committee removed it from the Review List. It is now on the Sketch Details list. This is the third known documented report from Pinal County. Uniform blue-gray heron with reddish highlights, dark gray legs and long, heavy bill often identifies this as an immature Reddish Egret. As with all occurrences of this species in Arizona, this is a dark morph immature.

Sinola Wren (Thryothorus sinola), Tubac, Santa Cruz County. This Sinola Wren was discovered by Dave Stejskal on 11 September 2013 and photographed by Jim Ripley on 14 September 2013. There are two accepted records for the ABA area, both from Arizona. However, this is the second bird reported this fall. If they are both accepted, this would be the fourth accepted record. This species is essentially a western flycatcher. It is regular in central Sonora and is reported to be expanding its range northward so that it now can apparently be found within 30 miles of the US border. Separated from similar species by the large bill, black and white streaking at the rear of the auriculotis, and rusty tail contrasting with the brownish back.

Hawaiian Petrel (Pterodroma sandwichensis), Yuma, Yuma County. This Hawaiian Petrel was discovered dead by Thomas and Lynee Knapp on 24 August 2013. They found the bird dead after a series of storms, at a vacant gravel lot on the north side of Yuma at the intersection of 8th Street and 6th Avenue. It was already stiffened into the position shown in the photos. First state record, probably the first inland record of this species for North America and probably the first specimen for the lower 48 states. This species breeds in Hawaii and is a very rare visitor far off the Pacific Coast in North America, although it is perhaps regular off Northern California. Its occurrence in Arizona is extraordinary and unprecedented. The specimen has been sent to the San Diego Natural History Museum to be prepared and definitively identified. Its final deposition has not been determined.

Red-necked Grebe (Podiceps grisegena), Lake Havasu, Mohave County. This Red-necked Grebe was discovered on 17 Aug. by Gjon Hazard and photographed by Brad Singer on 07 September 2013. Casual (though increasing) migrant and winter visitor. This appears to be the earliest report for the state, the previous early date being 21 September. Unmistakable in breeding plumage. Long yellow bill, dark cap contrasting with white cheeks, and reddish neck.

Rufous-capped Warbler (Basileuterus rufifrons), Hunter Canyon, Huachuca Mountains, Cochise County. This Rufous-capped Warbler was first reported by Peter Sockness on 03 September 2013 but may have been present at least a week prior. It was photographed by Lauren Halsey on 06 September 2013, when at least four and possibly six individuals were present. Rare with about 20 records; many reports include multiple and long staying birds. There was a report of one individual in nearby Miller Canyon in fall of 2012. Broad rufous median crown stripes and bright yellow chest make this species nearly unmistakable.

Parasitic Jaeger (Stercorarius parasiticus), Willow Creek Reservoir aka Willow Lake, Yavapai County. This Parasitic Jaeger was discovered and photographed by David Moll on 30 August 2013. About 10 previous records. This is the first county record for Yavapai. Relatively small bill that is less than half black, relatively small head, light tips on outer primaries, much streaking on buffy hind neck.

Least Tern (Sternula antillarum), South of Wellington, Coyote Wash Golf Course, Yuma County. This Least Tern was photographed by Henry Detwiler on 24 August 2013. Very rare in Yuma County. Once a casual visitor to Arizona, this species has increased steadily over the last few years and the first nesting record for the state occurred recently in Glendale. It is nearly annual at Gilbert Water Ranch and at Willcox.

Allen’s Hummingbird (Selasphorus sasin), Backyard, Arizona Ave and Riggs Rd, Chandler, Maricopa County. This Allen’s Hummingbird was photographed by Matt VanWaller on 11 August 2013. ID confirmed by Richard Horer, George West PhD, and Kelly Bryant (Texas). This is the first record for Maricopa County, although the difficulty of the ID means it is probably overlooked.

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Breeding at the right time...

By Pierre Deviche, PhD

A general consensus among biologists is that most seasonally breeding organisms have evolved mechanisms so that they reproduce at a time of the year when the probability of survival of their offspring is highest, thus maximizing reproductive outcome. Ask anyone living in temperate or cold climates when most birds normally breed, and the usual (and in many cases correct) answer will be that they do so in spring and early summer. At these times of the year, increasing ambient temperatures generally stimulate growth of new vegetation and, concurrently, the emergence of many arthropods that depend on this vegetation for food and shelter. These arthropods, rich in proteins and fat, serve as a main food source to many consumers and in particular to birds that rely on them extensively to feed their young. Given these observations, it is not surprising that the majority of birds inhabiting middle and high latitudes reproduce in the spring and early summer.

But here in the Sonoran Desert, environmental conditions are radically different from those at most middle latitudes and this has resulted in numerous fascinating adaptations by desert-dwelling organisms. In particular, a number of desert bird species breed not in spring and early summer, but for the most part in late summer and early fall. Following good fall and winter rains the desert can experience lush spring conditions including, every few years, an explosion of vegetative growth and spectacular wildflower displays. This botanical exuberance is, however, usually short-lived. As spring settles in and progresses toward summer, ambient temperature climbs rapidly and in addition, the desert usually receives little precipitation. Annuals that bloomed in spring complete their life cycle and dwindle, many perennials enter a state of dormancy, and insect populations decrease. Many desert birds have evolved mechanisms to deal with this seasonal boom and bust situation. For these species, during most years late spring and early summer are not favorable times to breed. Instead, reproduction is delayed until the summer monsoon, when new precipitation causes the desert to green up again and food becomes sufficiently abundant to successfully raise young. Thus, as temperate and northern latitude species complete their annual breeding cycle and in some cases already prepare to migrate, desert species are just gearing up to reproduce.

Two monsoon-dependent species that have been particularly well studied are the Rufous-winged Sparrow, *P. carpalis*, and the Cassin’s Sparrow, *P. cassinii*. The Rufous-winged Sparrow is a year-round resident that is endemic to Southern Arizona and Northwest Mexico. In appropriate habitats within its range, it is one of the commonest sparrows and is easily seen in thornbush and grassy areas. The Rufous-winged Sparrow has been described as the species that, of all North American birds, depends the most on rainfall as a stimulus for breeding. Birds develop their reproductive system starting in March, and by the end of April are fully capable of breeding if conditions are favorable. However, in most years this is not yet the case. In fact, breeding does not take place until the monsoon begins two or more months later, usually during the first half of July. At this time and following enough rain, the sparrows rapidly come into full breeding condition, with males markedly increasing their song rate and, within a few days, pairs building nests and then females laying. Breeding can continue until September, when precipitation usually tapers off. Even though a lot of basic information on Rufous-winged Sparrows is available, many questions are unanswered. What environmental information do these and other monsoon-dependent birds actually use to “decide” when to breed? Does the sight or smell of rain itself dictate this decision? Do birds react to changes in vegetation that follow the onset of the monsoon? Do they answer to an increase in food (small arthropods) that they preferentially use to feed their young? Breeding may, of course, be stimulated by a combination of these and/or other environmental factors, each contributing in its own right. Answering these questions is important and worth researching because it will help us better understand the biology of these Sonoran Desert representatives, including their habitat and other environmental requirements. Equally important, researching this subject may assist us to anticipate how populations of these birds will be affected by climate changes, such as an increase in ambient temperature and a decrease in annual precipitation that are predicted by many scientists to occur in the coming decades in the Southwest United States. Will birds adapt to these changes or will climate changes lead to a geographic shift in breeding range?

Cassin’s Sparrows are an open grassland species with a wider North American distribution than Rufous-winged Sparrows. Here in Arizona, Cassin’s Sparrows are notoriously rain-dependent. For example, some areas where the species is absent during summer in most years can have a substantial number of sparrows after receiving a larger than average amount of summer rain. At least in some parts of the state, Cassin’s Sparrows do not become visible until several weeks into the monsoon, when they can then be abundant and the vocal behavior and display flights of males are particularly conspicuous and noticeable. Despite this feature, many aspects of Cassin’s Sparrow biology remain poorly understood, largely because the birds are particularly secretive outside their short breeding season and so difficult to find and follow. For instance, it was thought for a long time that Cassin’s Sparrows do not breed in Arizona, but rather move in summer from regions where they reproduced earlier in the year and presumably to take advantage of locally abundant monsoon-associated food resources. We now know that this is not (at least entirely) the case and Cassin’s Sparrows do breed in Arizona, but we still understand little about their seasonal movements. Do birds that breed here also spend the winter in our state or, as some studies rather suggest, are they then replaced with birds coming from elsewhere? If so, where do these replacement birds originate and where do “our” sparrows spend the winter? And as in the case of Rufous-winged Sparrows, what environmental changes trigger actual breeding in Cassin’s Sparrows?

Much has been learned, but much remains to be discovered, about the adaptations of desert birds in order to understand how these birds survive and are successful despite regularly facing particularly harsh conditions of temperature as well as food and water availability.
The National Audubon Society has conducted Christmas bird counts since the year 1900. Volunteers from throughout the Western Hemisphere go afield during one calendar day between December 14 and January 5 to record every bird species and individual bird encountered within a designated 15-mile diameter circle. These records now comprise an extensive ornithological database that enables monitoring of winter bird populations and the overall health of the environment.

Participants are typically assigned to teams based on their bird identification skills and endurance. Many counts hold a compilation dinner at the end of the day where results are tabulated and stories shared. There is no longer a participation fee. Help is needed on most of these counts, so find one or more of interest to you and contact the compiler for information.

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Nearby New Mexico Count:

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*Change at to @ and delete spaces before sending

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ANNOUNCEMENTS

DONORS AND GIFTS
The Desert Rivers Audubon Society recently received significant contributions from these companies and individuals in support of our work and mission:

- Ely & Hazel Meyer Charitable Fund
- LPL Financial
- Intel
- Arizona Medical Network

Desert Rivers also thanks Mr. B.J. Shortridge for a significant donation.

Our appreciation goes to the following corporate donors who have given to support a program or overall operating costs of the Desert Rivers Audubon Society from July through September, 2013:

- Bass Pro Shops for use of their meeting room for monthly Desert Rivers Board meetings in the Phoenix store, Dobson Road and the AZ 202 Freeway.

- Wild Birds Unlimited - David Covey and MaryAnne Kenefic for their donations of great raffle items at our monthly meetings. Please visit their store for your birding/nature needs at the southeast corner of Baseline and Gilbert roads in Mesa.

- Corporate Members: Salt River Project, Bass Pro Shops, Wild Birds Unlimited, Arizona Medical Network.

DRAS MONTHLY MEETINGS HAVE RETURNED TO THE SOUTHEAST REGIONAL LIBRARY - GILBERT

Starting September 10, 2013, Desert Rivers moved its monthly meetings back to the Southeast Regional Library at the southeast corner of Guadalupe and Greenfield roads in Gilbert. Doors open at 6:30pm and light refreshments are available. Meeting starts at 7pm and ends by 9pm.
With the first day of autumn now past and the weather cooling off a bit, the birding season in central Arizona is once again upon us. Yes, there are birds here year round. But as our winter residents begin to arrive with the lower temperatures, birding gets more comfortable for everyone. Even with the more comfortable winter climate, sometimes it's more fun to have the birds come to you rather than going out to them. One way to do that is to put up a birdfeeder.

You can go out to a hardware or home improvement store and buy one, but that can be expensive. You can get plans and help your parents build one, but you might not have the tools you need. Or, you can take things you may already have at home, and make your own. Below are the instructions for making two simple birdfeeders made at least in part with recycled materials. You will need help from your parents, as they both involve the use of a knife.

**Soda Bottle Feeder**

**Materials**
- A clean 1-liter soda or water bottle with cap
- Two (2) wooden spoons
- Small eye screw
- Fine-point marker
- Craft or utility knife

1. Draw a ½-inch asterisk (*) on the side of the 1-liter bottle about 4 inches from the bottom. Rotate the bottle 90 degrees and draw another ½-inch asterisk 2 inches from the bottom. Draw a 1-inch circle opposite each asterisk. You may need to experiment with the diameter of the hole to prevent seed from spilling out of the feeder.
2. **PARENT JOB:** With the craft knife, cut slits on the asterisk lines. Then cut out the two circles. Insert one of the wooden spoons handle-first through the hole and then through the asterisk on the other side until the bowl of the spoon is against the bottle. Repeat with the other spoon through the other hole and asterisk.
3. Screw the eye screw into the top of the cap of the bottle for hanging.
4. Fill the feeder with birdseed, replace the cap on the bottle.

**Milk Carton Feeder**

**Materials**
- Clean 1-quart milk carton
- ¼” dowel or wooden pencil
- Craft or utility knife
- Pen or pencil
- Twine

1. Draw a line 2 inches from the bottom of the carton, around from the middle of one side to the middle of the opposite side of the carton. Draw another line like the first 6 inches from the bottom of the carton. Both lines should cross the same full face of the carton. On the sides where the lines end, connect the lines.
2. One inch above the bottom, center a ½-inch asterisk (*) on the back (no lines) and front (2 lines) of the carton. Mark holes on either side of the top of the carton for the twine to pass through.
3. **PARENT JOB:** With the craft knife, cut along the lines marked in step 1 above. Cut slits in the lines of the asterisks, and cut holes for the twine, as marked in step 2 above.
4. Insert the dowel or wooden pencil through the asterisks. Pass a length of twine through the holes in the top.
5. Fill the bottom with birdseed and hang from a tree.

Both of these feeders are simple to make and use. When hanging the feeder, look for a location that you can easily see from a window, as seeing who comes to visit is a big part of the fun. Also look for a location that provides shelter, both to allow birds to rest between feeding sessions, and to have a place to hide if a hawk flies by. For filling your feeder, try sunflower seeds as a starting point, as most backyard birds will eat them. Many stores sell bird seed mixes that include sunflower seeds, millet, and corn, and these can work well. Keep the birdseed stored in a cool, dry place in a sealed container. The birdseed can develop mold and can go bad if stored for a long time, so if it smells or looks bad, throw it away. Try keeping a notebook to track what birds come to your feeder and make some notes about them. Here are some questions you might ask: What birds seem to like to use the feeder? Which ones prefer to eat seed that has fallen to the ground?

What birds like what food? Which birds try to keep other birds from using the feeder? If you know what birds you normally see in your yard, what new birds did your feeder bring in? One final idea, if you would like to share your feeder sightings with scientists. The Cornell Lab of Ornithology and Bird Studies Canada have a joint citizen science program called Project Feederwatch (http://www.birds.cornell.edu/pfw/) that runs from November to April. There is a $15 annual participation fee that is used to support some of the project’s work, and which gets participants a kit of materials to run their counts and the year-end report. The data from this project are used to track winter bird distribution and abundance trends, as well as their movements. Good birding!
MONTHLY MEETINGS

Meetings are held at the Southeast Regional Library, 775 N. Greenfield Road, Gilbert on second Tuesdays from 7pm to 9pm, September through April. Doors open at 6:30pm and everyone is welcome. The library is located on the southeast corner of Greenfield and Guadalupe roads. See the “Events” page on the DRAS website for a list of topics and speakers. Light refreshments are served. An annual picnic is held in May.

GILBERT/CHANDLER BIRDWALKS

Our very popular Family Birdwalks are held at two locations each month. Binoculars and experienced guides are provided, and Liberty Wildlife has live raptors in attendance. The Gilbert Family Birdwalks are held on the third Saturday, October through March, at the Gilbert Riparian Preserve, 2757 E. Guadalupe Rd, just east of the regional library, at 8am. The Chandler Family Birdwalks are held on the first Saturdays, November through April, at 8am at the Veterans Oasis Park, 4050 E. Chandler Heights Rd, Chandler. No reservations are needed and there is no cost.

BIRD LISTSERV/RARE BIRD ALERT

Rare bird information for Arizona is best obtained from AZNMBirds, the birding listserv run by the University of AZ. To join the list, send an email to list@list.arizona.edu. Put the command Subscribe AZNMBirds in the subject line and leave the message section blank. You can elect to receive daily reports on rare birds and other announcements.

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MEMBERSHIP INFORMATION

We welcome your interest in joining the Desert Rivers Audubon Society as a member and participating in Desert Rivers activities. Your membership dues help support our chapter's outreach activities and operating costs. You can join National Audubon and Desert Rivers Audubon by signing up on our Members Page online and receive the bi-monthly Audubon magazine. A chapter membership entitles you to our quarterly newsletter, event priorities, and discounts on products and services.

- Students/Senior (65+) Membership..........................$20 annually
- Individual Membership....................................$25 annually
- Senior Couples Membership.............................$35 annually
- Family Membership..........................................$40 annually
- Corporate Membership.....................................$300+ annually

What is the difference between a Desert Rivers chapter membership and National Audubon membership? National Audubon Society and chapters are separate entities. All dues and gifts to Desert Rivers are used for local programs. You can be a member of both Desert Rivers and National Audubon Society, or become a member of Desert Rivers without joining National Audubon. You can even be a member of more than one Audubon chapter at the same time, regardless of your home address. If you are a National member, you can assist this chapter by designating Desert Rivers as your “assigned chapter” by contacting audubon@emailcustomerservice.com and requesting that they “hard-code” your membership to Chapter 808, Desert Rivers Audubon Society.

The Desert Rivers Audubon Society is a 501(c)(3) non-profit organization incorporated in Arizona, formed to provide environmental education and conservation opportunities to valley residents and advocate for our environment. For information on planned giving or bequests to the chapter, see our Giving/Support page online.

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