Lesser Nighthawk

Photo by Matt VanWallene
September 3, 2013


Nathaniel is a professional nature photographer based in Phoenix. He has been a photographer for 20 years and travels extensively across North America and beyond in search of images. Originally from South Portland, Maine, Smalley developed a deep appreciation for the incredible beauty of New England and its dramatic coastlines, and a desire to capture his immense passion for the natural world on film.

Smalley moved to Arizona in 2007 where he was struck by the stark contrast between the raw desert landscape and vast rock formations, in comparison to the woodlands and rugged coastlines of his youth. His image ‘Peek-A-Boo Crane’ was awarded Honorable Mention in the National Wildlife Federation’s 2012 Photography Competition. He is a USFWS certified Wildlife Educator & Bird Handler and the new Field Trip Chair for MAS. See more at www.NathanielSmalley.com

October 1, 2013

Lisa A. Langell
Alaska: Where to Go and What to See

If you have always dreamed of birding in Alaska, but don’t know where to go, this program is for you! Scottsdale-based birder and photographer, Lisa Langell, has visited Alaska 33 times. She offers invaluable tips on the best of Alaska, site-specific trends, guide and lodging recommendations, and how to access inside information from locals.

On the Cover: Lesser Nighthawk male
Focal length: 300mm, 1/2500 sec, f/5.6, ISO 400, June 6, 2013

November 5, 2013

Serengeti Safari with Mat Dry

Mat Dry, founder of TIA Safaris, will take you on a virtual safari to the Serengeti to see the annual wildebeest calving in Ndutu and Seronera. One of the greatest spectacles in nature, hundreds of thousands of wildebeest give birth within a three week period. It is a time when life is teeming in these areas, with predators ever watching the seemingly endless herds of mothers and their young, plains antelope, zebra, and giraffe. A myriad of resident and migratory birds feed on the plains and adorn the trees that dot the iconic landscape. Learn about the intricate lives of the denizens of these places and share the complexities of the ecosystems that support them.

In 2006, at 35, Mat quit his job as director of a tennis club, sold his condo and car, gave all his furniture and paraphernalia to charity, filled a backpack with his remaining personal items and moved to Africa to become a safari guide. Mat is the author of THIS is Africa. Mat is passionate about sharing the beauty and wonder of Africa’s flora and fauna and teaching how to love and understand Africa from the mountain gorillas in the Virunga Mountains of Uganda to the Cape Floral Kingdom on the top of Table Mountain in Capetown, South Africa.

December 3, 2013

Brazil with David and Diane Reeser

From the highlands to the wetlands of the Pantanal, Serra das Araras, Itatiaia, Ubatuba and Igauassu Falls, the Reesors’ adventures and stunning photography are always captivating. Combining wildlife and culture, the Reesors’ programs imbue a true sense of place.

An Investment in the Future

Bequests are an important source of support for the Maricopa Audubon Society. Your chapter has dedicated itself to the protection of the natural world through public education and advocacy for the wiser use and preservation of our land, water, air and other irreplaceable natural resources.

You can invest in the future of our natural world by making a bequest in your will to the Maricopa Audubon Society. Talk to your attorney for more information on how this can be accomplished.
President’s Message
by Mark W. Larson

I am reminded that the brutal, seemingly everlasting heat of summer is only temporary when I am asked to write a message for the Fall Cactus Wren•dition! It means that cooler, more comfortable weather is in the foreseeable future. It also means that wherever you went this summer to stay cool or whether you endured as I did the weather here in the Valley of the Sun, the days are numbered before we will be getting together again for our monthly meetings at the Desert Botanical Garden!

What I need to help me cope with our summer heat is simply an attitude adjustment. After all, heat is the defining characteristic of summer in the Sonoran Desert, the most luxuriant, most biologically diverse desert in the world. But, few of us could exist here in the summer were it not for artificial means to ameliorate the climate.

To lessen my personal impact this summer I have turned up my thermostat by two degrees—and I seem to be adapting to the slight rise in temperature. Perhaps next summer I will attempt another two degree rise!

At our first monthly meeting of the fall season I hope that you will bring an insight into nature that you gained sometime this summer. It might help if you write it down before coming. Then, I just might ask you to share this insight with rest of the members who are present that evening. Who knows, your insight, your new window into the workings of nature could open eyes to an aspect of the natural world previously unknown and unsuspected by your listeners!

This same phenomenon frequently occurs when a new member goes on a field trip for the first time. The field trip leader, or another experienced person, may impart some wisdom gained from years of experience and you could be the lucky recipient. This is one reason that Maricopa Audubon Society has field trips—to get less experienced members into nature with people of more experience, so why don’t you take advantage of the opportunity?

Letter from the Editor
by Gillian Rice

Fall comes slowly to the desert. Reptiles such as Desert Spiny Lizards are active on warm days. In his conservation column, Bob Witzeman says it’s a perfect time to seek out dragonflies and damselflies. And, butterflies too! Last November, I discovered my first Western Pygmy Blue, our smallest butterfly. Who knows what migrating birds and winter visitors we might see? Two years ago, a Yellow-breasted Chat foraged in my backyard.

Student Jasper Robinson does likewise; she shares her story in “Tales from the Field.” MAS member Tom Gatz muses about the Great-tailed Grackle and its ability to adapt to different environments. Guest writer Margarethe Brummermann considers the vital role of insects in pollination; she also shares her art with us.

I call fall “the second spring,” because after the wearying heat of late summer, I notice the Curve-billed Thrasher singing again. Birdsong may benefit humans, as I explore in “Science Corner.” Mary Rose reflects upon the value of birds and explains why she is undertaking her Pacific rowing adventure.

Enjoy reading this issue’s articles and trip reports. Keep in touch – join us at meetings and outings, or write to me and share your wildlife experiences for “Tales from the Field.”

Notes & Announcements

Have you signed up for the e-newsletter yet?
If you would like to receive updates and supplements to The Cactus Wren•dition, sign up for the monthly (September to May) e-newsletter. It includes meeting and field trip reminders, special events, and citizen science projects. To subscribe, contact laurienessel@gmail.com Note: We do not use the email list for anything other than the described purpose.

Call to Get Involved
Do you love birds, teaching about birds, and/or protecting birds and their habitats? Then it’s time you stepped up to help board members and other MAS members take a stand for birds in Arizona. Contact Mark Larson if you are interested in finding out more about what the Board does and how you can get involved.

Submissions
Do you have an interesting story to tell about birding? Please forward your submissions to the Editor – Gillian Rice at editor.wrendition@yahoo.com. Please send any pictures to complement your article directly to me as well. Remember, all articles may not be published the first month after receipt.

Bird Walks in the McDowell Sonoran Preserve, Scottsdale
Saturday, October 26  Quartz Trail
Sunday, November 17  Brown’s Ranch
Sunday, December 29  Quartz Trail Bird Count

For full details of times and meeting places, see www.mcdowellsonoran.org
Maricopa Audubon Society Field Trips

**Car Pooling:** Please make every effort to organize your own car pool, consolidate vehicles at meeting places and/or contact leaders for car pooling assistance. Be courteous to the trip leaders and help cover their gas costs. We recommend that passengers reimburse drivers 10 cents per mile.

**Reminders:**
- Avoid wearing bright colors. Wear neutral-colored clothing and sturdy walking shoes.
- Bring sunscreen, sunglasses, head protection, and water.
- Always bring your binoculars. Bring a scope if recommended.
- Submit trip and leader suggestions to the field trip chair, Nathaniel Smalley.
- Unless stated otherwise, reservations are required.


**Saturday, September 14**

**Mesquite Wash**
This wetlands treasure in the Tonto National Forest a few minutes north of Fountain Hills on Hwy 87 has a wide variety of wildlife. We’ll be looking for birds, butterflies, dragonflies and damselflies. Meet at Denny’s Restaurant parking lot just a half mile west of the Beeline Hwy in Fountain Hills (corner of N. Saguaro Blvd. and E. Shea Blvd) at 7:00 am. Bring shoes for wading in shallow water. An excellent pocket guide of dragonflies and damselflies will be available for $10. No reservations.

**Leader:** Bob Witzeman

**Saturday, September 21**

**Sunflower and Sycamore Creek**
We will discover every sort of living thing we can including birds, beetles, butterflies, wildflowers, dragonflies and aquatic insects. Temperatures will still be hot during the day so we will start early! Leave 6:00 am from Denny’s Restaurant in Fountain Hills with possible stops at Mesquite Wash, and other points along Sycamore Creek as far as Sunflower. Finish around noon. Limit 10.

**Leader:** Mike Plagens [mjplagens@arizonensis.org](mailto:mjplagens@arizonensis.org) or 602 466-1389

**Monday, September 23**

**Aravaipa area**
This trip will focus on the road into Aravaipa Canyon, without actually entering the canyon. The road offers a variety of habitats—fields, cottonwoods, streamside vistas, and dense shrubbery. In April, these areas hosted a Great Blue Heron rookery, a Gray Hawk perch, a fly-by Great-horned Owl and several species of summer songbirds—tanagers, warblers and vireos. Let’s see what’s still hanging around, and what might be different in this season. Depending on timing and temperature, we may make a quick stop at Kearny Lake. We’ll start before dawn to catch the early activity—about 5:00 am from Scottsdale and probably catch lunch at a Mexican spot in Superior on our way back. Return about two-ish.

**Limit 8.**

**Leader:** Kathe Anderson [kathe.coot@cox.net](mailto:kathe.coot@cox.net)

**Saturday, September 28**

**Gilbert Water Ranch**
Meet at 7:00 am at the Dragonfly Pavilion, Gilbert Water Ranch. No reservations.

**Leaders:** Bob and Janet Witzeman

**Saturday, October 5, 2013**

**Pinal Mountains**
Rising 7,842 feet above sea level, the Pinal Mountains near Globe could be considered the northernmost Sky Island. As such, the range has breeding birds, such as Yellow-eyed Junco, which are at the northern limits of their ranges. In fall, however, we should see some migrating raptors overhead and perhaps some new arrivals such as Red Crossbills that may come for the winter. This trip will leave early and not return until late afternoon, so bring cool weather clothing, water, and lunch.

**Limit 6.**

**Leader:** Mark Larson [larsonwarren@gmail.com](mailto:larsonwarren@gmail.com)

**Sunday, October 6**

**Dragonflies and Butterflies of Veterans Oasis Park**
Observe the many species of dragonflies, damselflies, and butterflies buzzing about the desert and wetland habitats at Veterans Oasis Park. The one hour walk is slow paced, and the terrain is easy. Suggested $5 donation to the Environmental Education Center. Biggs Common Dragonflies of the Southwest field guides will be available for $10 each and dragonfly coloring books for $6. Meet 7:30 am at the Red-tailed Hawk Ramada just north of the parking lot. No reservations.

**Leader:** Laurie Nessel

**Saturday, October 26th**

**Rackensack Wash and Camp Creek**
We will observe in detail every sort of living thing we can including mammals, birds, shrubs, bugs, trees, wildflowers, and psammophilous arthropods. Leave 7:00 am from a location in north Scottsdale. Finish around noon.

**Limit 10.**

**Leader:** Mike Plagens [mjplagens@arizonensis.org](mailto:mjplagens@arizonensis.org) or 602 466-1389

**Saturday, November 16, 2013**

**Tres Rios Wetlands**
We will explore these newly created wetlands in the southwest Valley which already are producing some unusual bird records. With luck, we will see several species of waterfowl and raptors that overwinter here and catch others that will soon leave for points south. Be prepared to walk for several miles on level ground. Limit 6.

**Leader:** Mark Larson [larsonwarren@gmail.com](mailto:larsonwarren@gmail.com)
Migrating Swainson’s Hawks
by Jasper Robinson

There are times when something unexpected happens and, if you are prepared for it, that one twist of fate can bring you something remarkable.

In April, I looked out into a field while driving in the Queen Creek area and noticed a hawk sitting there. Trying to identify it, I walked towards it cautiously, and the hawk flew further from me, startling several others next to it. I drove to the other side of the field, where I counted about fifteen hawks. One by one, they flew over my head and into the surrounding trees. I could feel the pulse of their wings over my head, and as they flew, one landed on a telephone wire several feet away, staring at me speculatively. After all fifteen flew away to another field, I determined to go back another time.

Several days later I encountered thirty of the same group of hawks flying to their roosting tree. I was amazed at the number of hawks, and I wondered why so many were together. Pair by pair they flew over me uttering a simple “kree” as they glided directly over my head.

Mark Larson, MAS President, explained to me that, “Swainson’s Hawks winter on the extensive, windy grasslands called the Pampas in southern Argentina, then make their way north to their breeding grounds in the grasslands of western North America.” Hawks are solitary creatures, and with the exception of the Harris’s Hawk and a few others, love being alone. However, Swainson’s Hawks migrate together in large groups across extensive distances, and it is rare to see such an event. Not only did I see them migrating, but I witnessed behavior specific to Swainson’s Hawks such as them sitting in an alfalfa field together. I came face to face with one of nature’s winged miracles.

Jasper is an electrical engineering major at ASU; she has been an avid birdwatcher since the age of eleven.

Trip Report
by Laurie Nessel

Veterans Oasis Park recharge facility offers ample opportunity for wildlife viewing, photography and other recreation. Winter waterfowl diminish during spring while resident species carry on, including Green Heron (May 31) and Common Gallinule (June 6). Several lingering Ruddy Ducks courted a lone female (June 6). This is prime time to see dragonflies and damselflies, such as the Black Setwing.

All photos by Laurie Nessel.
Far Flung Field Trip Report

By Mark W. Larson

**Rio Grande Valley**

*23-30 March 2013*

Five birders left our flowering Sonoran Desert in March to visit the south Texas floodplain of the Rio Grande Valley. We flew into Houston with a connection to McAllen almost within sight of the border with Mexico. We quickly found that the effects of the prolonged drought in that region had severely affected the habitats in the parks and refuges we visited, but we also found that there are still a great many south Texas specialty birds we had come to see such as Green Jays, Black-crested Titmice and Golden-fronted Woodpeckers!

We stayed in a marvelous lodge dedicated to birding and birders. Everyone had her/his uniquely decorated suite of rooms at the Alamo Inn in Alamo, Texas. This lodge is seven miles due north of Santa Ana National Wildlife Refuge and is within easy striking distance of most of the fine birding destinations in the region.

In addition to Santa Ana NWR, we spent a morning at Laguna Atascosa NWR near the Gulf of Mexico where we got thrilling views of a pair of handsome White-tailed Hawks. Later that morning on South Padre Island we found a few pockets of green growth and migrant warblers, flycatchers, and orioles. We also managed to track down a wonderful seafood lunch on the island. Our day at Bentsen-Rio Grande State Park produced some of the hoped for tropical species such as Clay-colored Robin and Altamira Oriole despite the dry conditions.

A high point of our trip was our two visits to Llano Estero Grande State Park in Weslaco. Here, the well-irrigated wetlands produced an abundance of sought-after species including Least Grebe, Anhinga, Green Kingfisher, Roseate Spoonbill, Yellow-crowned Night-Heron, and American Bittern. One afternoon we drove the neighborhoods of Weslaco and found the resident Red-crowned Parrots and on the campus of the University of Texas Brownsville we saw a small flock of Green Parakeets.

On this trip we visited National Audubon’s Sabal Palm Sanctuary and found the Olive Sparrows and Plain Chachalacas it is known for, but we also saw a rare visitor from Mexico, a female Crimson-collared Grosbeak!

For our last morning we travelled upstream to Falcon Dam and Salineño where we found several Crested Caracaras lining the Rio Grande on the Mexican side and just missed seeing wild Muscovy Ducks, so there is always a reason to return.

**Northern Costa Rica**

*15-26 May 2013*

Most of our prior trips to Costa Rica have explored the southern half of this friendly country. This trip was different. On arriving, we drove north to La Fortuna, in close proximity to the impressive Arenal Volcano where our hotel grounds produced a satisfying range of dazzling birds such as Black-cowled Oriole, Green and Red-legged Honeycreepers, Crimson-collared Tanager, Black-crested Coquette, and Great Curassow. The lodge is located within Arenal National Park and its forests held such Neotropical specialties as Spotted Antbird and Black-headed Nightingale-thrush, not to mention all three species of monkey—White-faced Capuchin, Spider, and the Howlers which provided daily wake-up calls.

We next travelled across miles of ranch and farm lands and north toward the border with Nicaragua. Our lodge in this region, Laguna del Lagarto, while less upscale, held charms of its own, including banana feeders that provided us with close views of Brown-hooded Parrots, Orange-chinned Parakeets, Collared Araçaris, Shining Honeycreepers, Golden-hooded Tanagers, and Chestnut-colored Woodpeckers. From one of the lodge’s namesake ponds we enjoyed views of the tiny American Pygmy Kingfisher but we missed the Agami Heron that sometimes occurs there. In the lodge’s forests we saw both White-collared and Red-capped Manakins, as well as the highly localized White-fronted Nunbird.

A hike one hot and humid afternoon brought us to the immense nest tree of a pair of Great Green Macaws. While we
were waiting for them to return, a pair of Scarlet Macaws flew past, glowing in the late afternoon sun!

Our next travel day brought us, not to a lodge, but to a boat launch. Here, we boarded a slim craft that was expertly guided through the winding, often tree-filled channel of the Rio Suerte to the town of Tortuguero on the Caribbean Sea. Our bed and breakfast lodgings fronted on the main canal. The next day we enjoyed a guided boat trip through a small part of Tortuguero National Park where three species of kingfishers—Green, Amazon, and Ringed—darted ahead of us through the narrow canals that meander through the rain forest.

Not only birds were on view that morning. We also enjoyed seeing a venomous Golden Eyelash Viper and a Spectacled Caiman, both from a safe distance.

Our final destination was the well-regarded Hotel Bougainvillea on the outskirts of the capital city, San Jose. Known among birders for its outstanding accommodations, fine dining, and productive gardens, it produced several species of birds not seen elsewhere on our trip, including White-eared Ground-Sparrow, Gray-necked Wood-Rail, and Blue-diademed Motmot.

There were many other memorable moments. For example, during this trip we saw hunting Swallow-tailed Kites on several occasions, the very definition of grace on the wing. And, we cruised past a perched King Vulture in a riverside tree. The trip included three boat rides on rain forest rivers, as well as a visit to the crater rim and high elevation elfin forest of Poás Volcano National Park, and a morning at a special middle-elevation hummingbird site.

Northern Costa Rica proved to be a rich and enriching amalgam of colorful birds, sensuous environments, flavorful food, and welcoming people.

Be watching this winter for an announcement about next spring’s Far Flung Field Trips!

All photographs © Mark W. Larson

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**The Foothills Road**

By David Chorlton

*The coyote on the foothills road stops with the cold ruffling his coat.*

*He’s come out of the thorns and winter stems where the desert runs beneath a day of frosted cloud.*

*A harrier tilts its wings to dip into the palette of muted greens. The wind is filled with day stars and ice. The coyote stiffens for a second, then thaws into motion. Away he goes, toward the mountains bad weather has turned back to granite.*
Why Row An Ocean For Birds?

By Mary Rose

People ask why on earth would I decide to row an ocean for birds? Surely I could find easier ways to raise awareness? Yes, but rowing an ocean grabs attention and helps raise funds.

Why now, and why in such a big way? I am a bit of a bookworm. If it's about birds, I'll read it. I have amassed a large library of books and journals on everything from bird behavior to conservation. The more I read, the more I see an impending crisis. My heart breaks when I read about a zoo forced to choose which species to work to save because of funding.

Birds are a key component of biodiversity and a crucial part of our ecosystem. They provide us with economic and cultural benefits. We are amazed at their beauty, which we incorporate into our religions, and even national identities. Yet through our modern lives, we directly impact the ability of these animals to survive. It is our responsibility to do all we can to save them. We have the power to do so.

Statistics illustrate why we must act immediately. BirdLife International is the official authority for birds for the IUCN (International Union for Conservation of Nature) Red List. In BirdLife's 2012 assessment, 1313 bird species and subspecies that have become extinct in the last 500 years. They showed that species extinctions peaked in the early twentieth century, fell by mid-century, and subsequently accelerated. To me this is a tragic state of affairs.

Of the birds on the IUCN Red List and those already extinct, some are very close to our home. Hawaiian birds are among the most endangered birds. Of 71 known species endemic to Hawaii, 23 are extinct, and 30 of the remaining 48 species and subspecies are classified as Endangered or Threatened. What are the problems? Predators, feral cattle, pigs, nonnative disease-carrying insects, and of course, loss of habitat. Humans play a huge role.

We need to make a concerted effort to act sooner rather than later when it comes to conservation for birds. I certainly do not want to sit back and watch it happen, so rowing an ocean to raise awareness and funding is my solution for now.

A quick update: With less than a year until the start of the race, the next stage of training has begun. I'm now fully immersed in classes for just about everything I need to know to safely do this race. I’m doing Sea Survival training in California and editing has started for the documentary about my effort. I’m also working with several groups to obtain video, which can be used as part of the awareness campaign. In September, I travel to the Keauhou Bird Conservation Center in Hawaii to examine its work. What an honor it will be to be so close to some of Hawaii’s rarest birds. I hope it will not be the last time I see them.

Reference:

June 7, 2014 marks the start of the race to show that Extinction is Optional™. Through the Pacific Rowing Race, Mary Rose will be rowing almost 3000 miles from California to Hawaii to raise funds to benefit avian conservation. A 90 day journey across the Pacific Ocean, powered only by oars. Don’t let another species become another Carolina Parakeet or Passenger Pigeon. Let’s do something now to help the birds. For more information visit www.chirpingcentral.com
Do you hate grackles? Lots of folks do. These messy and noisy tropical blackbirds often consume the eggs and young of other birds. I once watched a pair of mockingbirds repeatedly chase a marauding grackle away from their nest site. Even ornithologists don’t have much good to say about them. In the Cornell Laboratory of Ornithology series, The Birds of North America Online, researchers Kristine Johnson and Brian Peer comment that individuals of both sexes are frequently unfaithful to their mates. But they do have some redeeming qualities. They eat large quantities of grasshoppers, crickets, spiders, and true bugs. And you have to admire a bird from the tropical forest that is adapting to the harsh winters of our northern states.

The Great-tailed Grackle (Quiscalus mexicanus) did not even occur in Arizona until the 1930s. The remains of a single grackle were found in a Hohokam archeological site in south central Arizona. Like macaw bones and seashells, was it also a pre-Columbian trade item from further south? We rescued a grackle that was firmly attached to a cholla cactus branch at the Desert Botanical Garden, demonstrating that this tropical species still has poorly evolved desert survival skills. Grackles were originally confined to the coastal lowlands of Mexico and South and Central America, with the very curious exception of an isolated population in the cooler Central Highlands of Mexico at an elevation of almost 7000 feet. So how did the grackles get here in the first place? Their expansion north has coincided with human-induced habitat changes such as irrigation, urbanization, cattle feed lots, and open dumpsters. They moved into Colorado in the 1970s and are now as far north as Montana and Wisconsin, with scattered records from Canada; one of the greatest range expansions of any native ‘pest’ bird species in western North America.

But how did a low-elevation, tropical species like this become adapted to living in higher, colder climes of central Mexico and now all the way to Canada? A possible explanation was published in the journal Biotropica by Paul Haemig at UC Santa Barbara in 1978. The exotic bird trade was thriving way back in the late 1400s throughout tropical America. Rulers in the highlands of Mexico often demanded tropical bird feathers and live birds as a form of tax from their coastal subjects. Published accounts by the Spanish missionary Bernardino de Sahagún, regarded as highly reliable by anthropologists and historians, contain the specifics.

Friar Sahagún’s detailed account tells us that the Great-tailed Grackle was introduced to the Highlands of Mexico sometime between the years 1486 and 1502 by Aztec Emperor Auitzotl from birds captured in what is now northern Veracruz, about 200 miles east of present day Mexico City. The Aztecs called the grackle “Teotznatl” which translates to “divine” or “marvelous” grackle. He tells us that after the grackles were introduced, they multiplied and spread into other areas. At first the common people fed and protected the birds according to their emperor’s wishes. But after the grackles became abundant, they evidently became somewhat of a nuisance (sounds familiar?) and so lost their esteemed position.

Haemig believes that the isolated population of grackles currently found in the Central Highlands all descended from the original birds imported from Veracruz by Emperor Auitzotl. Although not all researchers agree with Haemig’s conclusions, Jeff Mitton at the University of Colorado does. He even suggests that the early years in the Highlands of Mexico may have provided Great-tailed Grackles with the temperature adaptation and the behavioral flexibility to live in human settlements, perhaps launching their invasion of Northern Mexico and the rest of North America as they adapted to more and more challenging winters as they moved northward.

Researchers Johnson and Peer concluded that the U.S. and Canada are being colonized by grackles of three subspecies, each from a different part of Mexico, resulting in “hybrid swarms” in some places. So it’s still possible that at least some of our grackles may have genes inherited from birds first acclimated to urban life in a more temperate climate by an Aztec emperor.

Thanks to Dr. Andrew Salywon of the Desert Botanical Garden for helping me track down the information used in this article.
Pollination is the transfer of pollen from anther (male flower part) to stigma (female flower part) and leads to fertilization and fruting. For plants it is the only means of sexual reproduction. Plants have other vegetative forms of propagation, but pollination is essential for the recombination of genes which is prerequisite for evolutionary adaptation.

Cross-pollination occurs when pollen from the anthers of one plant reaches the stigma of a different individual of the same species and fertilizes the egg cell. This is the ideal situation that ensures the healthiest exchange of genes.

Not being mobile themselves, plants rely on agents to transport pollen between individuals. Wind can play this role, but 90 per cent of all plant species are dependent on animals as pollinators.

Even though many plant species are routinely pollinated by birds or mammals, the most intricate symbiotic relationships doubtless evolved between plants and insects. Most of the incredible variety in the color of flowers, their scent, and their anatomy, and of course the offerings of nectar and an over-abundance of sticky pollen evolved as a result of the ongoing fine-tuning of this relationship.

The resulting symbiosis is of extreme importance to humans: 90 per cent of the food consumed by humans is either directly produced by plants dependent on insect pollination or stems from animals that were feeding on such plant products.

Today, many of the insect partners of this relationship are in steep decline and the symbiotic system itself may be threatened. As the first step in intervention, it is important to learn about and understand the intricate plant/pollinator dependencies.

Insects do not visit flowers with the intention to pollinate. Instead insects are driven by almost all the basic needs of their time-limited adult existence. They find nourishment in the form of plant tissues, pollen, nectar, plant oils, or by preying on other flower visitors.

Insects come to flowers for love potions: As plants are much more potent chemists than animals, some insects come to gather chemical precursors for pheromones. This is the reason that in late summer the purple flowers of *Eupatorium* are visited by hundreds of male Queen and Monarch butterflies.

Insects find mating partners: In Arizona certain spring flowers seem to function like beacons for several species of moths and beetles. Watch for a blooming mesquite tree in April: you may find it covered in thousands of mating lycid beetles. Many flowers will also host the offspring of those couples. Day active flower moths spend their whole lives on and around their host flower. Their colors and patterns match those of the flower to an astonishing degree. Their eggs are laid on the flower and the caterpillars grow up feeding on the developing seeds. Other flowers give young insects the chance to meet their foster parents: The larvae of brood parasitic beetles (*Ripiphorus* and several Blister Beetles) hitch a ride on visiting bees to be taken to their nests where they will feed on the bees’ food provisions.

Flowers can also be the source of chemicals or fibers that are used as nesting material by several bee and wasp species.

Insects seek shelter in flowers. Many solitary bees sleep inside mallow blossoms that close at night. Night-active *Cyclocephala* beetles spend the day resting.
deeply inside *Datura* flowers where they find protection and metabolic warmth.

**How plants manipulate insects to perform pollination**

Remember, the goal is cross-pollination: the pollen from one flower has to be carried to the pistil of another flower of the same species.

Flowering plants have had about 100 million years to develop strategies ranging from favoritism, bribes, deception, and entrapment to addiction and dependency in order to press insects that visit for their own selfish reasons into service as dependable and faithful pollinators. A dazzling array of flower shapes, colors and scents, sweat nectar, and an abundance of sticky pollen are part of the arsenal. Insects in turn developed physical attributes and behaviors to best exploit the offerings of the flowers.

Attracting generalists: Some plants seem to rely on quantity over quality: their flowers are disk shaped and the nectar is easily accessible. For example, a great number of generalists (beetles, honey bees, wasps, flies, true bugs, butterflies) can be found on the umbels of plants in the parsley family, in the genus *Heracleum*. Noticeably, these plants grow in coherent groups along creeks and bloom early in the vegetation period and often in very inhospitable habitats where not many other flowers compete for attention. I have seen the same invasive species of *Heracleum* thriving in the tundra of arctic Tromso, Norway, and on top of Mt Lemmon in Tucson, Arizona. This indicates the advantage of using a great variety of generalist pollinators: some of them can be found anywhere.

Our native Desert Broom also attracts an amazing number of different insect species, all of them generalists. This bush blooms late October into November, at a time when most other plants are entering their winter pause.

Most fascinating are the examples of plants and insects that have evolved to form close and specific interdependent host-pollinator bonds. Many orchids are completely dependent on their specific species of orchid bee; the fig trees that were introduced from Europe could only be propagated when fig wasps were also imported; and all the beautiful yuccas and soap trees in the Arizona grasslands rely completely on the pollination services of the little white yucca moths. In turn, the offspring of the latter two insects can only develop within the fruit that their parents helped create by pollinating the flower.

I want to close with the example of a flower that we all know. Every year the monsoon rains stimulate the growth and bloom of the Sacred Datura. This plant combines a number of different strategies to ensure quality cross-pollination. Its fragrance, white/purple color scheme, and late evening opening of the buds characterize it as a moth-flower that mostly excludes bees. The petals are fused and shaped into a deep-throated narrow funnel, allowing access only to a select few moths with a very long proboscis: the big *Manduca* species in the *Sphingidae* family (hawk moths and sphinx moths) are the perfect primary pollinators. Coevolving with deep throated plants, *Sphingidae* have developed some of the longest proboscices in our insect fauna. Together with their ability to hover in place, this would allow them to harvest the *Datura* nectar without ever getting close to stamen and pistil. But yet, the moth lands, pushes itself deeply into the flower, even beats its wings inside, stays for an inordinate length of time, and when it finally emerges, pollen clings all over its furry body. And from there, the moth heads straight for the next *Datura* flower. The reason for this dedication lies in the chemical composition of the *Datura* nectar. Among its components are alkaloids that are narcotic as well as hallucinogenic. The moths may visit the flowers for food, but their attachment results from the associated “high” they enjoy. They get so addicted to it that they can be found hovering above the unopened buds in the afternoon, waiting for their next fix. (Don’t try this at home; it can be deadly for humans). The moths also lay their eggs on the *Datura* leaves. Because of the ingested alkaloids, the voracious eaters enjoy some protection against predators.

**Biologist Margarethe Brummermann, Ph.D. blogs about wildlife and her natural history adventures at [http://arizonabeetlesbugsbirdsandmore.blogspot.com](http://arizonabeetlesbugsbirdsandmore.blogspot.com)**
A cold mid-February morning with a good covering of snow on the ground. Birding around Mormon Lake in Flagstaff many years ago, I heard a loud, beautiful birdsong. Atop a pine tree sat a Western Meadowlark, colors brilliant against the clear blue sky, declaring its territory. My family listened and watched in delight for several minutes. This moment was so special that I recall it often with pleasure.

Have you noticed how you feel refreshed and happier after a morning spent birding? “Nature can aid recovery from stress and mental fatigue,” says Eleanor Ratcliffe of the University of Surrey in England.

A study by Peter Aspinall and colleagues published in the *British Journal of Sports Medicine* finds that walking in an urban green space is mood-enhancing and has benefits equivalent to those achieved through meditation. Several other studies demonstrate the restorative effects of nature. The next time you or a loved one has to stay in hospital, try to get a room from which you can see trees or another view of nature. In 1984, a study revealed that patients whose windows faced a park recovered faster compared with patients whose windows faced a brick wall.

In addition to visual stimuli, the soundscape, or the sum of the sounds emanating from a particular landscape, is an important aspect of our environment. Julian Treasure of The Sound Agency contends that our relationship with sound is usually unconscious and we suppress many accidental unpleasant sounds.

In a TED talk, he explains that sound affects us in four ways. The first is physiological. Ocean waves have a positive effect while a loud alarm clock has a negative effect. The second way is psychological. Music can make us feel sad or happy, for example. “We find birdsong reassuring because over hundreds of thousands of years we’ve learned that when the birds are singing, things are safe,” says Treasure.

A third way sound affects us is cognitively: noisy open plan offices have an extremely detrimental effect on productivity, according to research cited by Treasure. He suggests that people who must work in such environments wear headphones with a soothing sound like birdsong. The final way that sound affects us is behaviorally: might you drive in different ways depending on which music you play in your car, for example?

Sometimes it’s impossible to eliminate unpleasant sounds such as traffic noise. A study in the *Journal of the Acoustical Society of America* examined the benefits of adding natural sounds to traffic noise. In an experiment, subjects rated soundscapes as more pleasant when traffic sounds were combined with bird sounds. Also, research by Alvarsson and colleagues showed that after psychological stress, physiological recovery was faster during exposure to pleasant nature sounds (a mixture of fountain and bird sounds) than to noise.

Ratcliffe is interested in finding out whether birdsong works alone in having positive effects on our well-being and recovery from stress and whether different bird sounds might play a role. With colleagues Birgitta Gatersleben and Paul Sowden, she conducted an
interview
study to explore people’s relationships with birdsong.

Not all birdsongs have restorative properties. (Consider the Great-tailed Grackle’s shriek, which is becoming more common in the Valley; see article on page 9). Commented one of Ratcliffe’s interviewees: “When a magpie’s very raucous it means it’s probably being aggressive to something else, and therefore it’s a stressful sound because it’s against something. It’s antagonizing another bird….”

Birdsong can foster positive mood, and help you to concentrate, to escape, and to connect with nature. Ratcliffe learned, however, that the effects of birdsong depend on personality. Not all people enjoy nature sounds. “I am also interested in finding out whether context plays a role,” says Ratcliffe. “For example, is there a difference between birdsong heard indoors or in nature settings?”

Ratcliffe and her colleagues also have completed an online study, not yet published, of how the various properties of bird sounds might predict their restorative potential for people. Study participants rated 50 bird sound clips according to their perceived restorative potential (PRP) and variables such as novelty, complexity, and pattern. The researchers also computed objective qualities of each bird sound: loudness, pitch, brightness, and smoothness. Complexity, pattern, smoothness, and brightness were significant positive predictors of PRP. Loudness and novelty were significant negative predictors. High-PRP sounds were associated with themes of familiar outdoor environments and spring/summer. Low-PRP sounds were associated with aggression and uncertainty.

“These results may be explained by psycho-evolutionary factors since quiet, smooth, and bright sounds tend to be associated with non-threatening animals,” explains Ratcliffe.

The Western Meadowlark singing on a bright winter’s day remains a magical moment for me. Here in the desert, the Curve-billed Thrasher makes my favorite bird sounds. I even love its alarm call as well as its mellifluous song. What’s your favorite birdsong?”

Useful links:

http://askabiologist.asu.edu/explore/birds-and-their-songs
Search a database of Arizona birdsongs.

www.solitudes.com
Listen to music interspersed with natural and wildlife sounds.

http://www.ted.com/talks/julian_treasure_the_4_ways_sound_affects_us.html
Watch Julian Treasure’s talk about soundscapes.

https://itunes.apple.com/us/app/study/id528999600?mt=8
Improve your focus and cognition with this smartphone app that combines musical and bird sounds to help mask ambient noise.

http://athome.audubon.org
Learn how to create a healthy backyard environment that will attract birds.

References:


Dragonflies and Damselflies
By Bob Witzeman

With the very dry weather, the dragonflies and damselflies at the Oak Flat USFS campground have been less spectacular than usual. But even in dry years the dragonflies appear in varying degrees around our ponds, lakes, and wetlands vegetation.

MAS leads dragonfly walks at Gilbert Water Ranch (Bob and Janet Witzeman) and Veterans Oasis Park (Laurie Nessel) and elsewhere during the summer and fall months. Last fall, we had a spectacular cover photo of a damselfly on our newsletter by Dr. Pierre Deviche. While I can’t match Pierre’s photo, included here are some of the beauties regularly found in the Valley and at Oak Flat USFS campground in Superior, Arizona.

We have some hope for Oak Flat’s salvation as the current Democratic majority Senate was maintained with the last elections. Turning over Oak Flat USFS land to a proposed NEPA-exempt land swap as is being proposed by Australian and British copper mining companies and their Republican sponsors in Congress is perhaps less likely as the result of those elections.

To watch dragonflies and damselflies, all you need are close-focus binoculars (you should be able to see your shoes) and the $10 Kathy Biggs field guide “Common Dragonflies of the Southwest” (for sale by MAS). Then you are ready for the 70 or so dragonfly and damselfly species in Maricopa County, the 125 in Arizona and 460 in North America.

Fiscal Year Ending May 31, 2013, Report and Wrap-up
By Herb Fibel, Treasurer

On the right is our fiscal year wrap-up report of income and expenditures for the fiscal year, which ended May 31, 2013. By the time you read this, the books will be either on their way to, or already in the hands of, our CPA for review. Nevertheless, if you have any questions, please feel free to contact me.

By the way, I could sure use a backup volunteer—a person devoted to MAS, who has a basic understanding of accounting, and is willing to learn, and help update, our accounting system—a wingman (or wingwoman) so to speak. Please give it some thought, and, if interested, let me know.

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<td>Educational</td>
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In her work as a watercolor painter, Margarethe Brummermann loves to build on her background in the life sciences. Born and raised in Dortmund, Germany, she received her M.S. and Ph.D. in Biology from the Ruhr University of Bochum and the Max-Planck Institute in Bad Nauheim. She worked as a researcher and teacher at universities and field stations in France, Italy, the former Yugoslavia, Norway, New Zealand, and the U.S., and is now associated with the Entomology Department of the University of Arizona.

“I had access to art museums and collections at an early age,” relates Brummermann. “As a teenager, I studied life drawing and etching at the Academy for Photography and Design in Dortmund, illustrated articles for an equestrian magazine, and experimented with many different media: sculpture, batik, oil painting, and photographs.”

Now, watercolor is her preferred medium. “In Arizona I refined my skills by studying at the Scottsdale Artists’ School, says Brummerman. “I also spent three years in Laguna Beach, where I studied the work of the California Impressionists and Plein Air Painters.”

In 2002, Brummerman and her husband Randall Kaul settled with four dogs and two cats in the pristine desert of the Tucson Mountains. The plant and animal life of her little desert preserve are the best inspiration for her paintings. “The models for all of my cactus flowers and agave portraits grow right in my backyard,” says Brummerman. “Cottontails and jackrabbits and also the neighbors’ horses drop in regularly to have their picture taken.”

“Most of my paintings are based on a number of life sketches and my own photographs,” she explains. “I adhere to the principles of traditional transparent watercolor, but I’m pushing the medium to depict strong contrast and chiaroscuro. As an immigrant from a northern climate, I find the stark light and shadow of the desert light to be my most interesting challenge.”

Brummerman’s paintings hang in private and corporate collections in Europe, Israel, India, Japan, Australia, and the U.S. Her work has been exhibited in juried exhibitions in most western states. She has received numerous awards from, among others, the Western Art Show of the Phippen Museum, the Grumbacher Gold Medallion Show in Prescott, and “The Best and the Brightest” of the Scottsdale Artists’ School. Prints of her work can be found in Tucson at Old Town Artisans, and at the gift shops of the Tucson Museum of Art, La Plilita Museum, the Arizona Sonora Desert Museum, and Tohono Chul Park.

For information about her new work and shows, and galleries of available reproductions, see her blog: http://margarethebrummermannwatercolors.blogspot.com/
Contact her at: mbrummermann@comcast.net
Tel: 520 682-2837
Time-dated material; do not delay!

Monthly Meeting
First Tuesday of the month, unless otherwise announced, September through April, 7:30 p.m. Our meeting place is Dorrance Hall or Webster Auditorium, at the Desert Botanical Garden (DBG), except for our annual banquet in May, the location to be announced. The DBG is located at 1201 N. Galvin Parkway, Phoenix, Arizona. This is approximately 1/4 mile north of the Phoenix Zoo. For a map, please see the DBG website at www dbg.org.

Dorrance Hall is located just off the main parking lot and entry to the DBG. Webster is in the far southeast side of the gardens. Please contact a board member if you have any questions, or check out our web site at www maricopaaudubon.org Pre-meeting dinners (September through April) are held at Rolling Hills 19th Tee Restaurant, 1405 N. Mill Avenue, starting at 6:00 p.m.

Membership Information
There are two ways to become a Maricopa Audubon member and to receive The Cactus Wren•dition by mail:
1. By joining the National Audubon Society. If you live in the Phoenix metro area generally east of 43rd Avenue, or in the East Valley other than in Gilbert, Chandler or most of Mesa, when National Audubon Society receives your check made payable to National Audubon Society and your membership application, you will be assigned to Maricopa Audubon Society and your National Audubon Society membership application to Scott Burge, membership chair, and he will send it on in to National Audubon for you, or
2. By becoming a “Friend of Maricopa Audubon”. In this case you will become a member of Maricopa Audubon Society only, and you will not receive the Audubon magazine or any of the other “benefits” of National Audubon membership, but you will receive a one-year subscription to The Cactus Wren•dition. “Friends” contribution categories are: Anna’s Hummingbird-$20; Verdin-$35-$99; LeConte’s Thrasher-$100-$249; Cactus Wren-$250-$999; Harris’s Hawk-$1,000-$9,999 and California Condor-$10,000+. Mail your Friends membership application and your check made payable to Maricopa Audubon to Scott Burge, membership chair, and he will send it on in to National Audubon for you, or

Submissions
Copy for The Cactus Wren•dition must be received by the editor by e-mail, by January 15, April 1, July 1, and October 1. Articles not received by the deadlines may not appear in the upcoming issue. Email to: The Cactus Wren•dition Editor, Gillian Rice: editor.wrendition@yahoo.com

Opinions
The opinions expressed by authors in this newsletter do not necessarily reflect the policy of the National Audubon Society or the Maricopa Audubon Society.

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