

Vermilion

FLYCATCHER

July–September 2015 | Volume 60, Number 3



Fruition

El Fuerte and the Copper Canyon

Birds and Berries

Mason Center Power Plant

The Way to Guiltless Birding

On the Trail of the Elegant Trogon



TUCSON
AUDUBON
SOCIETY
conservation
education
recreation

Tucson Audubon Society is dedicated to improving the quality of the environment by providing environmental leadership, information, and programs for education, conservation, and recreation. Tucson Audubon is a non-profit volunteer organization of people with a common interest in birding and natural history. Tucson Audubon maintains offices, a library, nature centers, and nature shops, the proceeds of which benefit all of its programs.

Tucson Audubon Society

300 E. University Blvd. #120, Tucson, AZ 85705
629-0510 (voice) or 623-3476 (fax)

All phone numbers are area code 520 unless otherwise stated.

tucsonaudubon.org

Board Officers & Directors

President—Les Corey Secretary—Claire Zucker
Vice President—Bob Herbrode Treasurer—John Kennedy

Directors at Large

Matt Bailey, Ardeh Barnhart, Gavin Bieber, Edward Curley, Kimberlyn Drew, Dave Dunford, Debra Finch, Jesus Garcia, Kathy Jacobs, John Kennedy, Cynthia Pruett, Mary Walker, Nancy Young Wright, Claire Zucker

Board Committees

Conservation Chair—Chris McVie Development—Les Corey
Education—Vacant Finance—Richard Carlson
Outreach—Vacant Personnel—Cynthia Pruett
Nominating & Governance—Dave Dunford

Programs & Activities

Field Trips Ken Murphy 629-0510
Library, Membership Meetings 629-0510
Rare Bird Alert Andrew Core | Report Rare Birds 629-0510

Staff (unless otherwise stated, dial 629-0510 plus extension)

Executive Director—Karen Fogas ext 7001
Accountant—Michelle Bourgeois ext 7003
Finance Manager—Gillian Wettstein ext 7014
Membership & Development—Diana Rosenblum ext 7002
Volunteer Coor. & Outreach Asst.—Sharon Long ext 7011
Outreach Manager—Bété Jones ext 7012
IBA Conservation Biologist—Jennie MacFarland ext 7004
Urban Program Manager—Kendall Kroesen ext 7006
Restoration Ecologist—Jonathan Horst 971-6238
Field Crew Supervisor—Rodd Lancaster 256-6909
Restoration Project Manager—Andy Bennett 262-1314
Communications & Habitat Restoration—Matthew Griffiths 971-7924
Conservation Analyst—Matt Clark 307-0956
Coordinator: Paton Center for Hummingbirds—Keith Ashley 488-2981
Associate Director—Sara Pike ext 7008
Operations & Retail Coordinator—Sarah Whelan ext 7007

Tucson Audubon Nature Shops

300 E University Blvd #120 ext 7015
Hours: 10 AM–4 PM, Mon–Sat
Agua Caliente Park, 12325 E Roger Rd 760-7881
Hours: 10 AM–1:30 PM, Thu–Sat Please call to confirm hours.
Shop opens earlier and closes later during certain months.
Nature Shop space generously provided by Pima County Natural Resources, Parks & Recreation.

Tucson Audubon Nature Centers

Mason Center
3835 W Hardy Rd, Tucson, AZ 85742
Open most weekdays 9 AM–5 PM or when chain is down.
Paton Center for Hummingbirds
477 Pennsylvania Ave, Patagonia, AZ 85624

Vermilion Flycatcher is published quarterly. For address changes or subscription issues call 629-0510. Submissions are due the 1st of the month, one month before issue date. Send submissions as Microsoft Word, RTF, or plain text files to Matt Griffiths at mgriffiths@tucsonaudubon.org.

Coordinator Matt Griffiths 971-7924

Proofreaders Tucson Audubon staff and volunteers

Design / Layout Melina Lew

© 2015 Tucson Audubon Society

CCL in photo credits = creativecommons.org/licenses/by/2.0

All photos © the photographer.

Features

- 12 El Fuerte and the Copper Canyon—Underbilled and Underappreciated
- 13 Birds and Berries
- 14 Tucson Audubon's Mason Center Power Plant
- 16 A Carbon-Offset Bird Program: The Way to "Guiltless Birding"
- 18 On the Trail of the Elegant Trogon

Departments

- 4 Events and Classes
- 5 Events Calendar
- 7 News Roundup
- 11 Volunteer Spotlight
- 20 Conservation and Education News
- 21 Wildlife Garden Plant Profile
- 23 Conservation Corner
- 24 Birding Travel from Our Business Partners
- 25 Field Trips
- 25 Birds & Business Alliance
- 26 Nature Shops
- 27 Book Review



FRONT COVER: Verdin by Gator Gray. Gator has lived in Tucson for 50 years, and loves taking pictures of birds in action. He also likes taking photos underwater.

To have your photograph considered for use in the *Vermilion Flycatcher*, please contact Matt Griffiths at mgriffiths@tucsonaudubon.org.

The Fruits of Our Labors

Kendall Kroesen, Urban Program Manager



The theme of this issue of the *Vermilion Flycatcher* is: fru-i'tion, n.

1. [by association with fruit.] the bearing of fruit.
2. A coming to fulfillment; realization; as, success was the fruition of his years of work.

Fruit, and thus fruition, is a well-worn metaphor for the successful outcome of human effort. We "pick low-hanging fruit." Our projects "bear fruit." When successful we enjoy the "fruit of our labors." And our work "comes to fruition."

The metaphor features both work and fulfillment, so it is apt for Tucson Audubon's work with birds. We work hard to protect birds from the most egregious errors of our civilization. Then, when successful, we celebrate together and enjoy the birds that flourish as a result.

Examples of fruition in this issue include new "recipe cards" for attracting backyard birds, a new revision and printing of *Finding Birds in Southeast Arizona*, and reaching net-zero energy at the Mason Center. We are on the cusp of realizing a new carbon sequestration program and the Tucson Birding Trail Map. And, more literally, we celebrate the planting of new fruit trees at Tucson Audubon's Paton Center for Hummingbirds!

In our society we tend to think of time as linear (another metaphor). Our lives are full of beginnings and endings. But when it comes to birds and the environment (and perhaps many other things), it is better have a more circular mindset. Every year there is much work to do in the field of environmentalism, so that we may harvest good outcomes for birds. The cycle repeats every year. So we savor the fruits of our labor and then go back to the important work before us.

Tucson Audubon increasingly will be engaging its members in work on behalf of birds. And we will be inviting you to celebrate with Tucson Audubon throughout the year. Look for celebratory events like the Tucson Bird and Wildlife Festival in August, the Volunteer Shindig in the fall, the Holiday Potluck in December, the Gala in February, Birdathon in spring and others. And every birding field trip is a celebration of birds! We will see you in the field and at the feast. ■



Tucson Audubon: Ripe for Change

Karen Fogas, Executive Director

If there has been a three-month period of my life that has been as full as my time since coming to Tucson, I don't remember it. I knew, preparing to move, that the changes would be significant, but it took being here for it to really settle in. New colleagues, a new (and delightfully challenging) job, new friends.... I expected those. I also expected to re-learn virtually everything about the things that I am interested in: birds, flowers, plants, animals, geology, history, etc. What I failed to fully anticipate was how overwhelming it would feel when all were combined! All the recent changes in my life are coming to fruition.

Fruition. Having spent the last three months collecting information, hearing from staff, board, and membership, and analyzing all I've heard and observed, "fruition" certainly describes the goal

that we will be working toward over the months to come. We will work to bring to fruition a new organizational structure that will yield efficiencies and create a smoother work environment. We will continue to involve board, staff, membership, and our donor investors; to build on our existing foundation; and to bring forth changes that will help take Tucson Audubon Society to the next level of effectiveness on behalf of birds, bird habitat, and the people who care about both.

I realize that the *Vermilion Flycatcher* themes are set well in advance, but this year, they couldn't more accurately describe us—both for me, as the changes in my life come to fruition, and organizationally, as the changes at Tucson Audubon come to fruition as well. ■

WELCOME NEW MEMBERS

Elizabeth & Douglas Adams, Jo Adams-Quillen, Cory Agerter, Peter Allen, Bill Auberle, Edith Bailey, Ron Beck, Joy Bell, Helen & Ed Benbow, Nora Berklich, Lou Ann Biegging, Liz & Tim Biss, Nora & Rick Bowers, Eileen Buckel, Gaye & Paul Carey, Leah Hewitt & Kevin Clark, Debbie & Tom Collazo, Merrill Collett, Sally Connelly, Sarah Cooper-Ellis, Lane & Linda Coulston, Darla Cox, Lucinda & John Cuprisin, Alan Dahl, Daren Daniels, Phyllis DeFriese, Henry Detwiler, Mary Pat & Michael DeVito, Sue Drown, Crystal Edmonds, Tura & Fred Eisele, Judith Ellyson, Glenda Voyles & Dorian Escalante, Humberto Federico, Karen Fogas, Robert Fogel, Matt Fraker, Caroline Deegan & Geraldine Gannon, Bev Garrick, Camren Gerner, Mary Jo Ghory, Ryan Gillespie, Matt Goode, Mary & Chuck Graf, Donna & Jerry Haas, Dee Hall, Carolyn & Peter Harley, Steve Heathcote, Jamie Hilton, Katherine Hornbach, Marianne & Peter Hosford, Ricki Hostetler, Kimberly Huff, Jean Windmiller & Paul Jehle, William & Nan Jessberger, Barbara Jones, Gurumeet Khalsa, Bob Kirchberger, Dean Knickerbocker, Karen Knowles, Barbara Lacey, Judith Landkamer, Anne & Don Lawrence, Maggie Leonard, Jim Lerch, Charmaine Lewis, Sidney Lissner, Gina & John Logan, Carla Lohman, Virginia Lopez, Ed Madson, Ilana & Neil Markowitz, Jeff Soder & Scott Marsh, Susan Matte-Farina, Brendan McCooey, Harriet Meador, John Migliaccio, Paula Morin, Catherine Mullaugh, James Murphy, Janet Cohn & Philip Nice, Pat Packard, Sarah & John Palmer, Carla Patberg, Gary Peasley, Prithi Phillips, Linda Powers & Larry Daily, Jane Prinz, Kirsten Prutch, Elizandro Redondo, Opal Ruth Baker & Violeta Rosales, Reta & Robert Rutledge, Bob Plymyer & Jeff Schuchart, Jan Seagraves, Antony Shrimpton, Marjorie Siegel, Myrna Silverman, Toni Skater, Myron Smith, Lalitte Smith, Shauna Smith, Michael Somers, Adele Suomela, Veronica Swanson, Cathryn & James Tarazon, Carrie Tessmer, Sharon Thrall, Cynthia VerDuin, Karen & Terry Wagner, Eileen Walter, Jan Wee, Patricia & Richard West, Gillian Wettstein, Jan & Keith Wiggers, Linda Willmore, Grady Wilson, Robert York



Saguaro fruit. Ken Boerna CCL

LETTERS TO THE EDITOR We want to hear from you! Help us institute our new Letters to the Editor section of the *Vermilion Flycatcher*. Send your feedback, comments or questions to Matt Griffiths at mgriffiths@tucsonaudubon.org

TUCSON AUDUBON EVENTS AND CLASSES

Fifth Annual Tucson Bird and Wildlife Festival **LIVE IT UP, LOCALS!**

Join us for the fifth year in a row as we showcase our region's unique wildlife and demonstrate the positive economic impact of birding and nature tourism. Participants travel far and wide to partake in our festival **AND** there are exciting and educational activities for locals as well!

Register at tucsonaudubon.org/festival today!

WORKSHOPS AND EVENING PROGRAMS

The festival is a chance to spend time with two world-class birders: Paul Baicich and Rick Wright.



PAUL BAICICH

Thursday, August 13

Friday, August 14

Friday, August 14

Saturday, August 15

Workshop: *Access Matters: Why Birders Should Care*

Field Trip to Sweetwater Wetlands

Workshop: *Wild Bird Feeding in America: Stuff You Never Knew!*

Evening Program: *The Dozen Most Important Things You Can Do for Birds and Bird Conservation*



RICK WRIGHT

Thursday, August 13

Friday, August 14

Saturday, August 15

Sunday, August 16

Workshop: *Museum Birding: From the Specimen Drawer to the Field*

Evening Program: *Prophets of Woe and Mischance: Discovering Southwestern Owls*

Field Trip to Catalina State Park

Youth Birder Outing at Sweetwater Wetlands

OTHER WORKSHOPS

Friday, August 14

Friday, August 14

Raptors—Southwest Specialties & More with Homer Hansen

Go Batty! with Karen Krebs—take a field trip to the Campbell Bridge to view bats flying from their roost into the sunset!



Montezuma Quail, John Hoffman



Kenn Kaufman at Sweetwater Wetlands, Chrissy Kondrat-Smith



Birders at Pen...

FOR MORE INFORMATION ON OUR SUITE OF EDUCATION CLASSES AND TO REGISTER ONLINE, PLEASE VISIT

Elf Owl and Snake at Expo, Sara Pike



YOUTH/FAMILY ACTIVITIES

Saturday, August 15, 2:00–3:30pm Nest Box Building for Lucy's Warblers
 Saturday, August 15, 3:30pm–5:00pm Nest Box Building for Ash-throated Flycatchers
 Sunday, August 16, 6:30am–9:00am Bird Walk at Sweetwater with Festival Keynote Rick Wright

SOCIALIZE WITH FELLOW BIRDING ENTHUSIASTS!

Thursday 5:00–7:30pm
 Friday 5:00–6:00pm
 Saturday 5:00–6:00pm

FREE NATURE EXPO: LIVE SONORAN DESERT ANIMALS AND CAPTIVATING PRESENTATIONS

Friday and Saturday from 10am–6pm; Sunday 10am–2pm
 Open to the public, no registration required
 Get up close and personal with birds, reptiles, and insects! Learn about bobcats and mountain lions, bighorn sheep, rescue and rehabilitation of

July 26: STEAMSUNDAY, Children's Museum Tucson

August 8: *Conservation & Comedy: the Joke is On Us, Arizona-Sonora Desert Museum*

August 12-16: Fifth Annual Tucson Bird and Wildlife Festival at the Arizona Riverpark Inn (see pg 2)

- **August 12:** Sky Islands Birding Cup
- **August 13–16:** Free Nature Expo and Workshops
- **August 14–16:** Field Trips
- **August 14–15:** Advocacy Station
- **August 14:** Optics Day
- **August 14:** Keynote evening program with Rick Wright
- **August 15–16:** Family/Youth Activities
- **August 15:** Keynote evening program with Paul Baicich

October 10: Gardening to Attract Birds workshop (see this page)

Early November: Volunteer Shindig

November 7: Living With Nature lecture (Green Valley)

December 5: Living With Nature lecture (Green Valley)

December 7: Member Holiday Potluck at St. Philip's in the Hills Episcopal Church

FALL EDUCATION CLASSES

Gardening to Attract Birds

Saturday, October 10, 2015
 10:00–11:30 AM
 Tucson Audubon Main Office at University Blvd/5th Ave

Do you want to learn how to create desert-friendly gardens that support birds and help make up for lost habitat? Naturalist/writer/gardener Lynn Hassler has recorded over 130 species in her Tucson backyard. She will show you how to provide for birds the natural way using plants that offer seed, fruit, and nectar, as well as cover and shelter. You will get firsthand experience in Tucson Audubon's beautiful and lush demonstration garden, which Lynn has taken the lead in maintaining for the past few years. Limited to 10 participants. Cost \$25



Blanca Canyon, Richard Fray



Nature Expo, Laura Stafford



Costa's Hummingbird, Lois Manowitz

TUCSONAUDUBON.ORG/EDUCATION

Thanks for Another Great Season of Living With Nature

Our Living With Nature Lecture Series is a free public presentation held monthly that seeks to inform, educate, and entertain. We invite speakers who are experts in their fields to present on a variety of topics related to birds, including: their biology and ecology; global, regional, and local birding hot spots; and conservation issues that affect birds, other wildlife, and their habitats.

We would like to express our gratitude to our amazing line up of presenters during the 2014–2015 season, with whom we explored topics such as: how climate change is affecting birds, the life story of George Bird Grinnell, the effects of the loss of riparian areas on avifauna, some beautiful and fun stories about the birds of Mexico, and our own bluebirds and roadrunners. We were also introduced to two new exciting Tucson Audubon programs: recipe cards and our pilot nest box program.

We would like to thank: Paul Green, Hugh Grinnell, David MacKay, Rich Hoyer, Jennie MacFarland, Doris Evans, Renee Duckworth, Kendall Kroesen, R. Roy Johnson, and Jonathan Horst.

Thank you to everyone who attended. We will see you next season!

Thank You for Birding for the Birds During Birdathon 2015!

Our thanks to all our Tucson Audubon Birdathoners and their supporters for a record-breaking season! With the help of 47 Birdathoners bringing in 321 donations, we raised over \$31,000 for bird and habitat conservation throughout southeast Arizona. From April 10 to May 10, Birdathoners went birding for the birds and raised funds for each species seen. This year, the Wrenegades (Tim Helentjaris, Chris Rohrer, Jennie MacFarland, Sara Pike, and Matt Griffiths) set a personal best, seeing 163 species as they trekked all across the region. The Valiant Verdins (Kendall Kroesen, Brian Nicholas, and Janine McCabe) also put forth an incredible fundraising effort to reach a new high, raising more than \$10,000 with the help of over 70 donors. At age ten, Maia Stark was our youngest Birdathoner, but don't be fooled: she's a seasoned pro after three Birdathons, and she plans to join in the fun next year too! A special thanks goes to the expert leaders of our Birdathon teams: Richard Fray of the Birds of Fray, Matt Griffiths of Loopers Bike Birdathon, Scott Olmstead of Scott's Orioles, and Jennie MacFarland of Larking Up Lemmon. Thanks also go to our sponsor, Hughes Federal Credit Union, and to La Cocina Restaurant for hosting our Birdathon Wrap Up Celebration, where friends and family came together over tasty food, delicious drinks, and a mutual love of birding to celebrate another outstanding year. Thank you all for making Birdathon 2015 a resounding success, and see you again next year! 🍷



Clockwise from top left: Kendall Kroesen of the Valiant Verdins; Karen Fogas with Wrenegades Sara Pike, Jennie MacFarland and Tim Helentjaris; a pair of Scaled Quail seen by the Pajaro Peregrinos de Patagonia team; the crowd at La Cocina.

Scaled Quail, Kelvin Murphy

Wrenegades Birdathon, Matt Griffiths



Adding a Touch of Elegance

Counting Elegant Trogons in SE Arizona's Important Bird Areas

Jennie MacFarland, IBA Program Biologist



Southeast Arizona is one of the most desirable birding destinations in the United States and for very good reason: the variety of different habitats, the meeting of several deserts, and the northern tip of the Sierra Madre Mountain chain barely jutting over the international border create the geographic dynamic to sustain the staggering bird diversity that we all enjoy as birders. Among all the outstanding representatives of the resulting bird community, including 14 annual hummingbird species (the highest in the US), lovely warblers such as Olive, Grace's, Lucy's and Red-faced, and rarities such as Blue Mockingbird and Slate-throated Redstart, the most iconic bird of southeast Arizona is the Elegant Trogon. The male is splendidly dressed in bright red and vibrant green while the female wears warm brown and the loveliest of pinks on her lower front. Of all trogons, which include the breathtaking Resplendent Quetzal, the only species that has an established breeding population in the US is our very own Elegant Trogon, making it one of the most sought-after species of birds in this country.



Mark Cassidy

Male Elegant Trogon peering out of nest hole; photographed during 2015 survey in Madera Canyon

There is an abundance of evidence, both anecdotal and scientific, that the ecological influence of tropical Mexico has grown in Southeastern Arizona over the last century. Mammals such as Javalina and White-nosed Coati have both extended their range out of the tropics into southern Arizona as part of this larger ecological system expansion. Even today, the birding community has noted the recent increase in prevalence of Gray Hawks and rarities in general, including the recent first-ever US nesting record of Tufted Flycatcher this spring. Elegant Trogons too have expanded their United States range over the last century, tracked mainly by

anecdotal evidence and isolated incidents of collecting. To further our understanding of how many Elegant Trogons there are in the US, organized surveys were needed. That's where Rick Taylor came into the picture.

Rick has been organizing Elegant Trogon counts of the Huachuca and Chiricahua Mountains for many years. Starting in 2013, Tucson Audubon teamed up with Rick to expand these surveys to include the Santa Rita Mountains, Patagonia Mountains, and Atascosa Highlands. This year's census was the third such collaboration, and what we found in each of these Important Bird Areas (IBA) was extremely interesting.

The 16 volunteers who helped us cover the Atascosa Highlands, which include Sycamore Canyon and Peña Blanca Lake, found a staggering 19 Elegant Trogons in six canyons. This area has long been known to be Elegant Trogon nesting habitat, but that number is far higher than we expected to find here. The Santa Rita Mountains are another area long known to support Elegant Trogon nests, and the 19 Elegant Trogons found here by 26 volunteers shows their numbers to be stable over the last three years in this Sky Island. The real dark horse of the census was the Patagonia Mountains IBA; this area continues to provide surprises for an area that has long been overlooked by the birding community. A whopping 27 Elegant Trogons were found by 17 volunteers in 11 of the 13 areas surveyed, which defies all the long-standing assumptions about where Elegant Trogons nest in southeast Arizona. This surprising concentration of Elegant Trogons was a big part of what qualified the Patagonia Mountains as our newest Important Bird Area in Arizona.

This leaves the traditionally surveyed Sky Islands—the Huachucas and Chiricahuas. The results from the Huachucas were affected by some unavoidable access issues that kept Garden Canyon and all associated areas completely off-limits. This definitely cost us some trogon detections, as we had 11 birds in the canyon last year. While our 23 detected Elegant Trogons in the Huachucas was way down from the 38 we detected in 2014, when you take into account the absence of Garden Canyon from the survey, the population



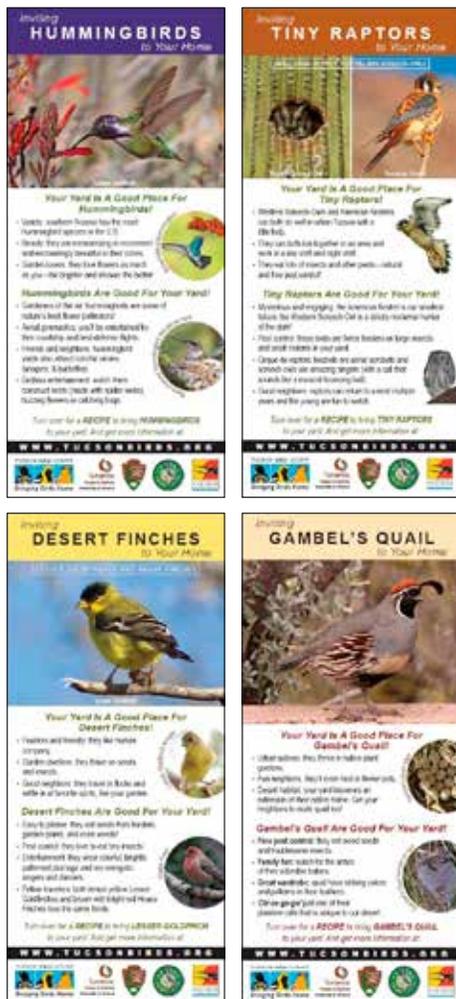
Bryan Patrick

Female Elegant Trogon photographed during the 2015 survey in Huachuca Canyon

seems steady for the Huachuca Mountains. The Chiricahua Mountains also has a long history of surveys, and in the 1990's there were normally around 20 Elegant Trogons detected in this range. In 2010, there were 13 Elegant Trogons in the South Fork-Cave Creek Complex alone. Then, in 2011, the devastating Horseshoe Two fire profoundly changed the habitat of this area. In 2014, there were only 9 Trogons found in this same complex. However, this year there were 10, a small increase despite the damaging floods of last fall that have further altered the habitat of South Fork. In short, trogon numbers seem to be slowly increasing as birds overcome the habitat degradation in the Chiricahuas of the last several years.

Overall, the Elegant Trogons seem to be doing very well in southeast Arizona with populations remaining stable or even increasing. This season also had the happy surprise of multiple Elegant Trogons in the Galiuro Mountains reported by Nick Beauregard, a Spotted Owl Surveyor with Rocky Mountain Bird Observatory, so it would seem that the expansion of Elegant Trogon's range in SE Arizona is still ongoing.

Huge thanks to the nearly 90 volunteers that helped with the most complete census of Elegant Trogons in Arizona that has ever occurred. It could not have happened without you. Thank you! ■



Bringing Birds Home Recipes for Turning Your Yard into Urban Bird Habitat

Jennie MacFarland, IBA Program Biologist

As a city, Tucson is already a reasonably good home for many native bird species. Many residents of Tucson have embraced the idea of landscaping with native flowers, shrubs, and trees, and “lush native” yards are becoming more and more prevalent. Many birders in Tucson are already working to make their yards an oasis for native birds and take pride in having bird-friendly landscaping. The intricate network of washes lined with native vegetation weaving through Tucson help to bring native birds from the surrounding natural desert habitat into the city—maybe even into your own yard!

This effect is part of what the Tucson Bird Count, a citizen science survey, has been tracking for 15 years and counting with the hope of discovering what can make Tucson an even better place for birds. The overarching goal of the Tucson Bird Count was to get a broader base of Tucsonans actively working to make their yards useful habitat for native birds.

That goal has finally been realized with the creation of the Bringing Birds Home “Recipe Cards” for attracting birds to Tucson yards. Designed with a general, non-birding audience in mind, these cards explain how inviting native birds into one’s yard is good for the humans who live there and benefits the birds. We have already tested these cards with a general audience at the last two SAHBA Home & Garden Shows and made final tweaks to make them as accessible to the larger community as possible. The cards for Gambel’s Quail, Hummingbirds, Tiny Raptors (American Kestrel & Western Screech-Owl), Desert Finches (Lesser Goldfinch & House Finch), and Cholla Dwellers (Curve-billed Thrasher & Cactus Wren) are available for free in our Tucson Audubon Nature Shop on University Blvd (west of 4th Ave) and at the Tucson Botanical Gardens. If you would like to suggest a place to distribute the cards in Tucson, please let Jennie know at jmacfarland@tucsonaudubon.org.

Round Holes in Square Boxes

Kendall Kroesen, Urban Program Manager

We know that some birds will nest in nest boxes in spite of desert heat. But how often, and under what conditions? To learn more, we started the Nest Boxes for Urban Birds project, which encourages people to put up nest boxes. We are now tracking over 60 boxes and gourds in and near Tucson (including the original ones that inspired our program).

At least eight boxes have been used by Western Screech-Owls so far. Many have been in the large box we recommend, but several have been in boxes with other designs. In the right habitat, it appears Western Screech-Owls are adaptable to different architectures!

We know of four boxes used by Ash-throated Flycatchers. Three of them are in flycatcher-sized boxes, but one pair is reported to be using a big kestrel box! At least three of these nests have fledged one or more young birds. Brown-crested Flycatchers have also recently begun nesting in two boxes, one a flycatcher box on the Northwest Side and another in a large box at the Paton Center.

Before our project, there were two reports of successful Lucy’s Warbler nests—one in a very small box and one in a gourd. Since then, there has been an additional nesting attempt in another gourd, but the nest failed. So far we have seen no American Kestrels using boxes.

We have now spun off additional projects like measuring temperatures in boxes, testing four designs for Lucy’s Warbler, and supporting



Ash-throated Flycatcher



Ash-throated Flycatcher eggs in nest box

the “azure” subspecies of Eastern Bluebird in the Sonoita area with bluebird boxes. Both the latter projects are designed to have their first big test in spring of 2016. However, the boxes are already up, and as of early June, two of the bluebird boxes were hosting late-nesting Ash-throated Flycatchers!

To get more boxes up for spring of 2016, we will hold workshops at the Tucson Bird and Wildlife Festival in August and at Tucson Audubon in autumn. In addition, we need more data on the success of nests (eggs, fledglings, etc.) and we encourage people to track nests (whether in boxes or not) using Cornell Lab of Ornithology’s Nestwatch Program (nestwatch.com).

Learn more about our nest box program and how to track nest success at tucsonaudubon.org/nestbox. To support or participate in our nest box projects, contact Kendall Kroesen at (520) 209-1806 or kkroesen@tucsonaudubon.org.

Tucson Audubon's Paton Center for Hummingbirds

Larry Morgan, Ambassador to the Birds

Keith Ashley, Coordinator, Paton Center for Hummingbirds

If you have visited the Paton Center for Hummingbirds in Patagonia with any regularity over the last four years, then you have undoubtedly met Larry Morgan, Ambassador to the Birds. The title was conferred by Bonnie Paton Moon—daughter of Wally and Marion Paton—when Larry first began work as caretaker for the property in 2012. It was a great choice.

If you're visiting Patagonia in search of the eminent Violet-crowned Hummingbird, Larry will do his best to schedule an audience for you (Larry estimates about 20% of Paton visitors are super-birders in search of such rarities). If you can't tell a Wood Duck from a woodpecker, Larry will get you started on the straight and narrow to birderdom (Larry estimates 40% of Paton visitors are not [or not yet] birders). If you fall between these two groups—say a new-but-active birder, or new to the birds of the west—then Larry is the avian diplomatic official of your dreams.

Larry estimates 40% of Paton Center visitors are these fairly new birders, and he loves to help them find their birds. In the backyard, you're likely to hear a friendly southern accent announce: "Green-tailed Towhee on the left side of the brush pile. Gray Hawk overhead. That's a female Black-chinned Hummingbird at the penstemon." Larry calls them as he sees them.

Larry hasn't always been a backyard bird ambassador. He grew up on a farm in Covington County, Mississippi. "There were plenty of birds there," Larry explains, "but I didn't start properly identifying them until about 1980," when he got involved with the Pine Woods Audubon Society in Hattiesburg, Mississippi. Larry worked as a mail carrier in Hattiesburg—a career he pursued for 33 years. "That was an outdoor job," Larry explains, "so I could enjoy nature every day. But I think they would have frowned on me carrying my binoculars."

When Larry first began birding, his mentor Ron Blackwell took him to Dauphin Island annually for spring and fall migration. Eventually, Larry and his brother Mike began a series of yearly adventures to birdy corners of the country. Highlights of the Alaska trip were the Northern Hawk Owl, Willow Ptarmigan, Black Oystercatcher, and Gyrfalcon. When

heading down to the Rio Grande Valley, Larry remembers: "I was wondering if we were going to see any Chachalacas. When we got there, I was wondering how we would keep from running them over, there were so many running around."

Larry's personal yard list for the Paton Center numbers 123 species. His nemesis bird is the Groove-billed Ani, while his favorites include the Painted Bunting, Prothonotary Warbler, and all of the hummingbirds. "If you ask me about my ten favorite birds," Larry explains, "I'll give you nine and then tell you that the tenth is the one I'm looking at right now."

Larry read about Bonnie Paton Moon's search for a caretaker for the Paton property on the rare bird list serve. He and his wife, Anita, were living in Mesa, Arizona at the time, and while Larry had visited the Patons' place a couple of times, he had never seen the Violet-crowned. He wasn't too surprised at the diversity of birds—and birders—that he encountered once he moved in, but the animals were another matter—plenty of coatimundi, a neighborhood visit from a mountain lion, and a black bear in the backyard. He currently has a large king snake living in the old fountain.



Larry Morgan, Marcia Grand, Bonnie Paton Moon

Patagonia reminds Larry of the small community where he grew up: "I can ride my bike around town and folks are easy to get along with. You've still got your four seasons. June is the only month you've got to tolerate." When Larry first retired his goal was to travel around the country, spending a year here and a year there. Patagonia clearly seduced him into a longer stay, but he plans to set his travels back in motion on January 31, 2016. "A couple of weeks aren't enough to really get to know a place," Larry explains. Larry's first day at the Paton Center was January 31, 2012—he arrived the same day that the previous caretaker, Michael Marsden,

was leaving, so the birds didn't have a single day without someone watching over them.

Larry can't be out in the yard all the time, but visit the Paton Center frequently enough and you're certain to catch him fulfilling his duties as Ambassador to the Birds—a piece of the Paton experience you don't want to miss. ■



Matt Griffiths

HOMESTEAD ORCHARD

Jonathan Horst, Restoration Ecologist

When Wally and Marion Paton moved from New England to Patagonia, they planted some fruit trees to remind them of home. In doing so, they continued a legacy of planting fruit trees that began during the Homestead Era when settlers got title to land if they planted fruit trees. Today only a few aging and ailing fruit trees still survive at the Paton Center. To revitalize the Paton orchard, we have begun the search for remnant trees from the Homestead Era in Arizona and have already found a source for cuttings and scions for pears, plums, and some apples that date to trees from 1914–1916. We also have some backcountry wanderers in the Patagonia area who are going to explore old homesites looking for trees. If you know of any, or have any interest in searching for trees that exist from this era, please let us know. Starting late next winter when cuttings can be appropriately taken, look for some new fruit tree saplings at the Paton Center.



The former Paton orchard in full bloom.

Bonnie Paton Moon

Tucson Audubon Explores Silverlake Park

Kendall Kroesen, Urban Program Manager

Tucson Audubon currently has a grant from Conserve to Enhance (C2E) to improve and maintain habitat at Silverlake Park (located on the west side of Kino Parkway between Silverlake Road and 36th Street). The C2E program is a community effort born of water conservation ideas from the University of Arizona's Water Resources Research Center. The grant program gets people to conserve water in homes and businesses then asks them to donate the money saved to local riparian restoration projects (see more at conserve2enhance.org).

Katie Gannon



Kendall leading birding for adult volunteers at the park

On the surface, Silverlake Park looks like any other urban park—there's a lot of grass! But a second look reveals that the north end of the park is depressed and has a discontinuous line of vegetation running through it. Much of the vegetation consists of native species. This vegetation, along with the rock (rip-rap) lining the bottom of the basin, is designed to control stormwater by detaining it in the basin. Indeed, this is part of the 18th Street Wash, which has a series of other flood control structures along it.



Katie Gannon

Kendall leading an exercise with Holladay Elementary kids at Silverlake Park

Over a year ago, parks and recreation officials became worried that the native vegetation was getting too thick and that criminal perpetrators or the homeless could hide in it. Fire was also a concern. The flood control department, which designed the detention basin, came in with brush cutters and removed a lot of the vegetation. Tucson Audubon, through the C2E grant, is working to create a vegetation management plan for the Parks and Recreation Department that will help reach their goal of park safety while also leaving enough of the vegetation for birds and other wildlife. With volunteers from the University of Arizona, Tucson Botanical Garden, and the local neighborhood, we are trimming some of the vegetation as a model for the way we would like to see the Parks and Recreation Department manage the site.

We are also working to create an ongoing interest in the community in maintaining this park. As part of this effort, we have enlisted the help of community members, including kids in an afterschool program from adjacent Holladay Elementary School. Major partners in the project are Tucson Parks and Recreation Department, Tucson Clean and Beautiful, Trees for Tucson, and members of the Arizona Native Plant Society. ■

THANK YOU TO OUR DONORS

- In honor of Benjamin Emory Yerger from Karen Walz & Terry Morgan
- In memory of Beth Potashkin from Ilana & Neil Markowitz
- In memory of Ed Caldwell from Mary Caldwell
- In memory of Frank Hess from Susan & Greg Hess
- In honor of Friends of Fort Lowell Park from Sheila Bowden
- In memory of George Helentjaris from Diane Helentjaris
- In honor of Larry Abrams from Martin Karson
- In memory of Mae Criley from JoAnn Hinchliffe
- In honor of Maia Stark from Robert Breunig, Sherry Stark
- In memory of Patty Clark from Karen & Rick Tibbetts, Rene Sells, Albuquerque International Balloon Fiesta
- In honor of Peggy Smith from Betty Rutter
- In memory of Richard Grand from Marcia Grand
- In memory of Ronnie Sidner from Peggy & John Smith
- In memory of Tom Howell from Yvonne Howell

THANK YOU TO OUR FREQUENT FLYERS

Ardeth Barnhart, Melanie Builder, Shawn Burke, Karen Chandler, Andrea Cohen, Janet Cohn, Mich Coker, Christine Curtis, Sandy Elers, Peggy Ford, Marlesa Gray, Helen Holliday, John Kennedy, Robert King, Susan Kozacek, Erin Olmstead, Deb Vath, Frances Ann Walker, Nancy Young Wright, Claire Zucker

Monthly giving through automatic credit card or bank withdrawals is convenient, secure, and simply one of the best ways you can support Tucson Audubon's programs. For more information, visit tucsonaudubon.org/give.

WELCOME TO OUR NEW VOLUNTEERS

- | | | |
|------------------|----------------|-------------------|
| Jacob Acosta | Callie Jordan | Daisy O'Rear |
| Merced Arreola | Lynda Klasky | Jay O'Rear |
| Pat Bean | Don Larson | David Patrusevich |
| Dorothy Copps | Elena Martin | Erik Rowen |
| Phil Evans | Harriet Meador | Denielle Sillik |
| Betsy Hall | Gary Mencimer | Carrie Tessmer |
| Michael Iskandar | Tim Morey | Lorris Wendland |



Sandy banding a Gray Hawk nestling.

Intern Profile: Sandy Marin

My name is Sandy Marin and I am the summer intern for the Tucson Audubon Society. I am part of a program for undergraduate students called the Doris Duke Conservation Fellowship Program where minorities interested in conservation have the opportunity to explore this type of work for two years. I spent my first summer conducting field research and will present my findings in August at the Ecological Society of America's convention in Baltimore, Maryland.

Going into the second summer of the program, I had the freedom to seek out an organization that would be a good fit for an internship. I love that at Tucson Audubon the birds and birding are used to fuel larger efforts of ecosystem and biodiversity conservation. This holistic conservation work benefits all species, not just birds.

I have already worked on a few projects, including evaluating Tucson Audubon's social media platforms. My hope is to increase the frequency of posts, so users will continually be reminded of Tucson Audubon's impact. I have also worked at Simpson/Martin farm in Marana with the ecosystem restoration crew. This riparian area is important to maintain because it is utilized by a variety of animal species. I also worked at Atturbury Wash in Lincoln Park. This large scale planting effort is providing habitat for wildlife and aesthetic appeal for park-goers. I am excited to continue assisting with projects, creating new ideas and working to extend the reach of Tucson Audubon. 

Contact Sharon about volunteering!

volunteer@tucsonaudubon.org

520-209-1811

tucsonaudubon.org/volunteer

TUCSON AUDUBON FIELD TRIP LEADERS

Text and photos by Ken Murphy, Field Trip Coordinator

Tucson Audubon field trip leaders are, in many respects, the face of the organization. They are the volunteers the general public sees most often, sharing a wealth of information on birds and ecology throughout the year. A lot of volunteers have stepped up and led trips the past year to a variety of wonderful locations, including the Santa Cruz River, Santa Catalina Mountains, Huachuca Mountains, Patagonia / Sonoita area, Pena Blanca Lake, and many parks and preserves in and around Tucson. A couple of trips even ventured further afield to the Phoenix area and to Albuquerque, New Mexico for rosy-finches!

To get an idea of their impact on our organization, here are some stats for you: in the past 12 months, these 37 leaders have taken over 1500 participants on roughly 225 trips and found 217 bird species!

Join us in giving big thanks to these leaders who have offered trips in the past year!

Jeff Babson	Tim Helentjaris	Anthony Mendoza
Michael Bissontz	Jean & Mark Hengesbaugh	Doug Moore
Prudy & Bob Bowers	John Higgins	Larry Morgan
Richard Carlson	Sally Johnsen	Ken Murphy
Cliff Cathers	Betty Jones	Scott Olmstead
Peter Collins	Jim Karp	Mike Sadatmousavi
Dave Dunford	Melody Kehl	Luke Safford
Mary Ellen Flynn	Kendall Kroesen	Ginny Seabrook
Richard Fray	Sonja Ladoucer	Jean Smith
Jim Gessaman	Bryon Lichtenhan	Rob Tutledge
Liz Harrison	Jennie MacFarland	Christopher Vincent
Jim Hays	Vivian MacKinnon	Rick Wright

Learn more about these leaders and check the current trip schedule at tucsonaudubon.org/fieldtrips



Clockwise from top left: Green Heron, Broad-billed Hummingbird, Vermillion Flycatcher, American Wigeon

El Fuerte and the Copper Canyon—Underbirded and Underappreciated

Bob Bowers

Mexico, with more than 1,000 bird species, offers a wealth of rarely-birded sites with enormous rewards. Surprisingly, one of these areas is the popular Copper Canyon area, which draws thousands of visitors throughout the year, but apparently not many birders — at least, not those who report on eBird. Prudy and I have always wanted to visit the Copper Canyon, and in March of this year we finally had an opportunity.

The Copper Canyon actually consists of three separate canyons that meet at a deep intersection overlooked by sweeping viewpoints along seven-thousand-foot high rims. Named after the copper colors of rugged rock walls, the canyon itself is spectacular and stunning, but the train ride that takes you into the canyon is an adventure as remarkable as the destination. Two passenger trains cover this 406-mile route daily, one traveling from Chihuahua in the east to Los Mochis on the Sea of Cortez and another back from Los Mochis to Chihuahua. Both of these trains make brief stops at three canyon sites—Bahuichivo, Posada Barrancas, and Creel—and passengers can arrange to stay overnight at these stops in order to tour (and bird) the surrounding canyon area.

From Arizona, the canyon is most easily accessed from the town of El Fuerte, where you board the eastbound train at 8:15 in the morning. El Fuerte is in Sinaloa, across the border from Sonora, and an easy 540-mile drive south of Tucson. I recommend stopping for a night or two in San Carlos to break up the trip and to bird that rich area along the way. Birders will also want to stay two nights in El Fuerte, which offers two eBird hotspots, the pueblo (town) itself, and the wide, bird-rich Fuerte River which runs directly through the town. The Posada del Hidalgo is a lovely garden hotel where you can enjoy Broad-billed Hummingbirds at the open-air bar, take an inexpensive guided boat birding trip down the Fuerte River, and leave your car safely parked while you take the train into the canyon. Between the hotel and a two-hour river trip, we recorded more than 60 species of birds, including such highlights as

Black-throated Magpie-Jay, Rufous-bellied Chachalaca, Green Kingfisher, Happy Wren, White-fronted Parrot, and Streak-backed Oriole. Incredibly, other than two short-list reports in 2014, the most recent eBird checklist for the pueblo hotspot was in 2006 (2010 for the rich river hotspot). This area is clearly an underbirded opportunity.

The canyon sites are equally underbirded and offer many species not found in El Fuerte at elevations up to 7,000 feet and more. Birding from a train that often reaches 60 miles per hour is not easy, although we were able to identify birds ranging from Crested Caracara to Brown Pelican. Travel packages arranged through Baldorama Hotels, which owns four hotels along the route, provide overnight accommodations and worthwhile tours at two of the canyon sites. In order to bird the canyon adequately, however, you should stay at least two nights in each of these sites (Hotel Mision at 5,200

feet in Cerocahui near the stop in Bahuichivo, and Hotel Mirador at 7,200 feet in Posada Barrancas.) We stayed only a single night in each place, and although we were able to do some birding as well as the tours, we lacked the time to take advantage of other nearby birding sites. Similar to reports from El Fuerte prior to our visit, the ten or so eBird hotspots in the canyon had not been reported since 2010, and in some cases much earlier.

The Copper Canyon in spring is glorious. The train follows the white water descent of the Temoris River, and dozens of waterfalls cascade down terra cotta-colored walls. Pink-blooming amapa trees blanket the mountain slopes, and sweeping 360-degree views are everywhere. Maybe the scenery-overloaded birders just forgot to report their birds. ■

Bob writes nature and travel articles. He writes a birding column for an Arizona newspaper, and he and his wife, Prudy, travel and bird extensively throughout Mexico.

All photos by Bob and Prudy Bowers



Top: Blue-throated Hummingbird; Bottom, clockwise from top left: Amapa Trees, Gallego Point Overlook, White-fronted Parrot, Tarahumara Indian Baskets

Birds and Berries

Rich Hoyer

The fruition of my transformational learning experience with how birds relate to the plant species in their habitats moves from the metaphorical to the literal in knowing which plants attract birds with their delicious fruit. As you walk the woods, keep an eye out for the following plants in fruit, pause, and stand for a while to see what comes in.

This time of year, watch for Canyon Grape (*Vitis arizonica*) and Chokecherry (*Prunus virginiana*). Grapes are so cherished by birds and other animals that one hardly ever sees a vine with any ripe fruit left, but the cherries are also short-lived. Over a decade ago, seven Aztec Thrushes appeared together in a fruiting Chokecherry at the seldom-visited Sawmill Spring up a trail from the Reef Townsite on the Carr Canyon road. A couple years later, I noticed in early August that the tree was heavily laden with green fruits and planned a revisit, but I didn't make it there until the latter half of September, when my friends and I found that the tree had been stripped clean of fruit. We imagined that a huge flock of Aztec Thrushes appeared one day, ate their fill, and moved on. We did find a wandering Rufous-capped Warbler at the same spot, though, so it wasn't a totally wasted hike. There are also several Chokecherries in Madera Canyon, the most famous ones just before the first stream crossing on the Carrie Nation trail. These have hosted Aztec Thrush on multiple occasions, as well as Elegant Trogon and Sulphur-bellied Flycatchers.

From the fall through the winter, keep an eye on Netleaf Hackberry (*Celtis laevigata*), the fruiting tree with perhaps the most diverse assemblage of diners, from thrushes to woodpeckers and cardinals to flycatchers. Dense stands adjacent to other trees that form a woodland (such as mesquite and oak) seem to be the most attractive, and the list of birds I've seen feeding in them grows each year. Our most famous regular rarity found in hackberries must be the Rufous-backed Robin, but the 1997-98 Nutting's Flycatcher at Patagonia Lake State Park competed with Ash-throated Flycatchers for this sweet fruit. You should try them too, as the flesh is intensely sweet and flavorful, something like brown-sugar-coated sweet potatoes. First break off the popcorn hull-like outer cover by rubbing a fruit (not a true berry but rather a drupe) between your fingers, and then mull the orange berry between your teeth to wear off the very thin layer



Netleaf Hackberry, Rich Hoyer

of edible flesh that coats the hard, woody seed. Birds swallow them whole, grind off the pulp in their crop and later regurgitate the seed where it might grow into a new tree, duly dispersed from the parent.

Another hard seed with a fleshy coating—and also edible for us—is the Redberry Juniper (*Juniperus arizonica*, recently split from *J. coahuilensis*), found only in a few places in any numbers in southeast Arizona. Watch this tree especially for Townsend's Solitaires, though other thrushes such as American Robins and all three species of bluebirds are happy to eat their berry-like cones as well.

Also edible but rather mealy and tasteless for humans are the berries of the otherwise beautiful Arizona Madrone (*Arbutus arizonica*), which has a very long ripening period, blooming in April and ripening only in winter. The fruit crop varies greatly from year to year (perhaps requiring a winter of good rains for the spring bloom), but good stands can be found on many of the higher-elevation trails in the Santa Rita Mountains. The occasional wintering Elegant Trogons especially love them, as do thrushes (especially Hermit Thrush), and an Aztec Thrush subsisted on some Madrones below Josephine Saddle a few winters ago.



Arizona Madrone, Rich Hoyer

Yet another winter source of fruit are members of the cashew-sumac family, Anacardiaceae. Here we have Evergreen Sumac (*Rhus virens*) and Skunkbush Sumac (*Rhus trilobata*), which often form dense thickets where a wintering Hermit Thrush is certain to be found. The thickets of Evergreen Sumac in the Atascosa Mountains are also a good place to watch for wintering Elegant Trogons.

You might be surprised to hear that both Eastern and Western Poison Ivy (*Toxicodendron radicans* and *T. rydbergii*) also have fruits to keep an eye on, and you shouldn't worry about getting too close, as reactions to contact with this plant here seem to be uncommon. On the Atascosa Highlands Christmas Bird Count last year, I enjoyed watching a Hammond's Flycatcher grabbing berry after berry from a lanky vine growing up an Arizona Sycamore in the bottom of Sycamore Canyon.

Finally, as the winter fruits begin to dwindle, a spring source of food to watch for is the uncommon Texas Mulberry (*Morus microphylla*). The fruits are deliciously sweet and juicy and must be relished by a number of species, but they ripen in late April and early May when many birds are breeding and probably prefer to feed on insects. Look for this species close to densely-vegetated washes in the mesquite zone below the oaks, such as at Proctor Road in Madera Canyon. ■

Rich Hoyer is a Senior Leader for WINGS Birding Tours Worldwide, wingsbirds.com/leaders/rich-hoyer.

TUCSON AUDUBON'S MASON CENTER POWER PLANT

KENDALL KROESEN, URBAN PROGRAM MANAGER

Two thousand and thirteen was a big year for Tucson Audubon's Mason Center. That was the year we installed 23 high-yield photovoltaic panels on the house. George Villec, owner of local solar energy specialist company GeoInnovation (geoinnovation.com), donated and installed the panels pro bono.

The panels were the final step in an effort to produce at least as much energy at the Mason Center as we use ("net-zero energy"—see sidebar). The first graph accompanying this article shows our production of solar energy from May 2012 to May 2015. Twelve years ago, Villec installed 27 photovoltaic panels on our Mason Center classroom. Although standard panels at the time, they are much less efficient than current models. In the graph you can see the output of these panels up to December 2013, when they were joined by the higher energy production from the new ones.

WHY NET-ZERO ENERGY?

We wanted to demonstrate that net-zero energy is within the reach of Tucson homeowners. The bungalow-style house at the Mason Center is like tens of thousands of other homes in Tucson—energy-inefficient but capable of being modified for sustainability. Why? Because the costs of fossil fuel-based energy production to our natural environment are huge. And these costs are externalized by energy generators; that is, they charge customers only enough to cover the short-term cost of producing the energy. As energy users, we are not paying to mitigate the long-term health and environmental costs from the discharge of mercury, nitrous oxides, and greenhouse gases to our atmosphere. Nor do we pay for the cost to the environment of the huge quantities of water used in energy plants. Instead, all of us will eventually pay these costs in degraded environments, health concerns, and climate change. We can avoid contributing to this problem by using clean energy in our homes.

But net-zero energy is more than just producing electricity: it requires conservation to avoid spending money for more solar panels than you really need. The conservation part of the equation involved several steps. By mid-2013, through the generosity of donors, we had replaced all the 1950s single-pane windows with modern double-paned thermal units. To go beyond that, however, we needed expert assistance.

Robert Bulechek, a local energy efficiency expert, did a study of where energy was being transferred between outdoors and indoors. Transfers of energy, whether it is warmth escaping in the winter or heat entering in the summer, make a building inherently inefficient. This work was continued in November 2013 when Nader V. Chalfoun, Ph.D., Professor of Architecture and Environmental Sciences and Director of the House Energy Doctor Program, brought his team of students to Mason Center to perform a level III energy audit. Both Bulechek and the University of Arizona suggested that the uninsulated attic was the area of most concern. Summer heat easily entered the attic through the roof and then radiated heat into the living space of the building. By mid-2013 we had HeatBloc radiant spray applied to the underside of the roof, then blew cellulose insulation into the attic to achieve R49 insulation. This greatly improved the building's efficiency.



Gree HVAC wall unit

The final step was to address the heating and cooling system. For years, the only cooling was an evaporative cooler and heat that came from 1950s-era wall-mounted, radiant heaters. The radiant heaters were too hot for people sitting near them and not effective

for people farther away. The evaporative cooler was inefficient when the humidity went up in the summer. More recently, we had used portable heating and cooling units, which kept us more comfortable but used a lot of electricity. In summer they discharged hot air to the outdoors which was replaced by new hot air coming down the chimneys and through gaps in the doors.



Gree HVAC heat exchanger

The solution was a new, high-efficiency HVAC system from Gree: a 16 Seer, ½-ton Gree 3 mini-split system (also referred to as a "ductless" system) installed by Joe Klinger of Comfort Zone, Inc. (comfortzoneinc.biz). Now, instead of a central unit blowing air through relatively inefficient ducts, we have wall-mounted combined heating/cooling units in four rooms. These units are connected to an outdoor heat exchanger by small-diameter coolant lines (the "mini-split"). The four units heat and cool very efficiently and have the added benefit of being very quiet.

A final step before switching on the new photovoltaic panels was to upgrade our connection to the electrical grid. Tucson Electric Power installed a new transformer near the street and GeoInnovation connected it to the buildings via underground lines. This replaced the original 1950s connection, which could not have supported the new "grid-tied" photovoltaic system. GeoInnovation also installed a ground-breaking inverter (the equipment that converts DC electricity from the solar panels to AC), which will divert power directly to the house and away from the grid in the event of a power outage on the grid.



Some of the newer solar panels on the house roof

Our conservation accomplishments can be seen in the energy consumption graph accompanying this article. The left side of graph 2, prior to autumn of 2013, shows high peaks of energy use during summer and winter of 2012 when cooling and heating costs were at their highest. By autumn of 2013, when conservation measures had been fully implemented, you no longer see big summer and winter spikes, and there is much lower energy use overall.

The third graph shows the months when we used more energy than we made (on the left through December 2013) and the months in which we made more than we used (most months starting in January 2014).

In the 2014 calendar year, we generated substantially more energy than we used (3,875 kilowatt hours used versus 7,303 kilowatt hours banked from solar production—a balance of 3,428 kilowatt hours we made available to the grid for other people to use). We have reached net-zero energy and beyond. This extra capacity bodes well for future expanded operations at the Mason Center. 🏡

Mason Center demonstrates sustainability in others ways which may also help save energy.

WATER

Rainwater from roofs is directed into four tanks with a total storage capacity of 5,775 gallons. We use as much of this water as we can to water our gardens to avoid putting an additional burden on our dwindling groundwater supplies (Mason Center has a well).

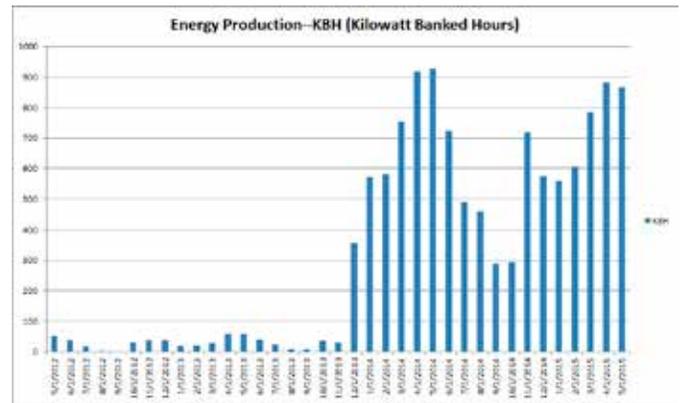
By using rainwater whenever possible, we save the large amount of electricity required for our well pump and pressure tank. When we water plants with rainwater from the tanks, gravity takes care of the process.

GARDEN DESIGN

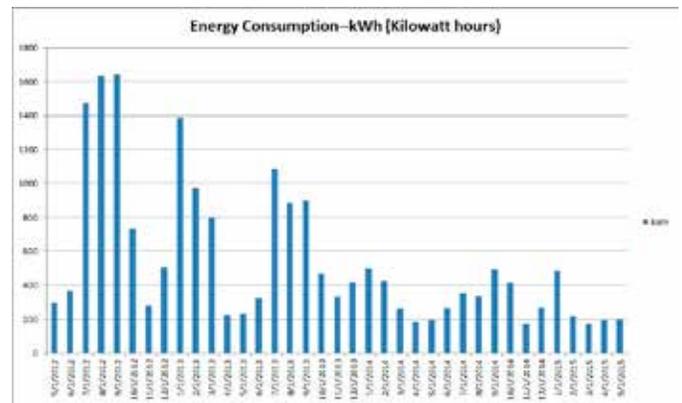
Our demonstration gardens and landscapes use sunken areas for planting, surrounded by raised pathways. This channels rainwater to plants and reduces waste of rainwater through runoff. In addition, rainwater that falls on half of the bathroom roof is piped directly into a French drain in our food garden, which infiltrates the ground near the roots of our three Kino Heritage fruit trees (quince, pomegranate, lime) and our seasonal vegetable garden.

WASTE BECOMES RESOURCE

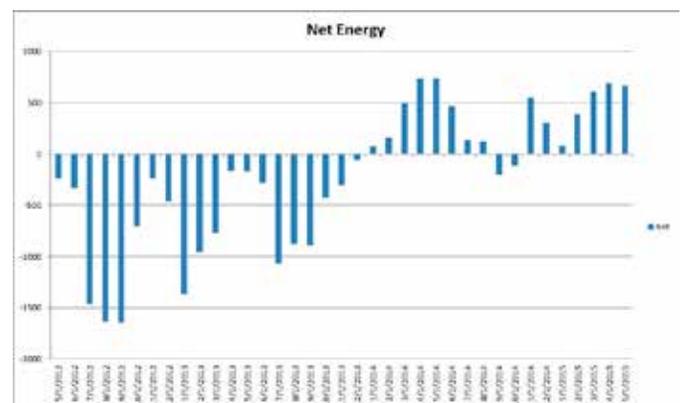
We compost kitchen waste and yard clippings in a composting bin so that neither resource gets wasted. We also compost human waste in our Clivus Multrum composting toilets. Our bathrooms use no water, except a little bit to keep the composting beds moist. These will provide compost for landscape areas.



GRAPH 1, ENERGY PRODUCTION. Low energy production increased at the end of 2013 when the new solar panels came online. With the new panels, energy production seems to peak in April and May (in both 2014 and 2015). In these months, the days are longer than they were in the winter and the skies are almost always clear. Starting in July, the days are still long but more often cloudy.



GRAPH 2, ENERGY CONSUMPTION. This graph shows *energy use only*. Prior to autumn of 2013, there were peaks of energy use in the summer monsoon season and, to a lesser extent, in the winter. These reflect cooling and heating in a thermally inefficient building. By late 2013, before the new solar energy production came on line, our consumption had dramatically declined.



GRAPH 3, NET ENERGY. In this graph, the bars below the zero-line represent the energy we *used* beyond what we *made*. Bars above the zero-line represent *energy we made* beyond what we *used*. Almost every month since we implemented the combination of energy conservation and new energy production, we have made more energy than we used. September–October 2014 are an anomaly, perhaps partly due to some thrown breaker switches that took the solar energy production offline.

A CARBON-OFFSET BIRD THE WAY TO “GUILTLESS”

PAUL J. BAICICH

I have a friend in New York City who will regularly remind me that every time I turn on a light-switch at home, I’m probably killing a bird.

His reasoning is that given my local electrical company’s dependence on coal-fired power-plants that spew earth-warming greenhouse gasses into the atmosphere—along with toxic elements such as sulphur dioxide, nitrogen oxides, mercury, dioxins, and lead—that I’m contributing to long-lasting, global, and deadly consequences that have already negatively impacted birds, bird habitats, and migratory patterns.

Now, how’s that for a major bummer?

Just to raise my guilt levels a bit higher, my friend may add my driving of a gasoline-powered car, my airline flights to go birding away from home, or any vacation trips I dare take to satisfy my egocentric and narcissistic lifestyle. His arguments are compelling, but I can’t stop turning on the lights... or traveling in my car or on a plane. So what is a bird watcher like me to do?

I soon discovered the growing movement toward carbon offset programs that mitigate our energy and carbon “footprint.” Carbon offset programs deliver financial resources to projects that either reduce greenhouse gas emissions or sequester carbon that is emitted. There are numerous carbon offset programs already underway at both the corporate and individual level, involving laudable mitigation and renewable energy campaigns. These often include carbon reforestation projects in developing countries,

renewable energy projects in the United States (e.g. solar or wind), and renewable energy and energy efficiency projects in developing countries.

Of course, I don’t know much about the quality of the trees I may be planting in East Africa to “pay for” my carbon footprint here in the USA, and I may not be excited about a wind-power project that I’m helping pay to set up in the Great Plains if I suspect that it, too, may be killing birds! What I want is a simple, local, and bird-friendly carbon offset, one I can see myself, one I can show to others that is unequivocally beneficial to birds.

About eight years ago, former Tucson Audubon Executive Director Paul Green worked with Jane Poynter and David Schaller of The Local Trust in Tucson, Arizona to establish a program that would enhance and expand “urban bird habitats” that are at risk, while at the same time sequestering carbon from the atmosphere. The Local Trust accepted donations from people who wanted to offset their carbon emissions and provided Tucson Audubon with native trees to plant that would support habitat for WatchList birds like Gilded Flicker, Costa’s Hummingbird, and Lucy’s Warbler. This way, each neighborhood impacted could also enjoy the results.



Coincidentally, some birders in the East—mostly around Ohio, the Ohio Ornithological Society, and the folks around *Bird Watcher’s Digest*—launched a Carbon Offset Bird Project (COBP) which helped birders calculate their carbon footprint and use the money to fund restoration

Simpson Farm, a Tucson Audubon restoration site, Matt Clark



Volunteers restoring habitat, Kendall Kroesen



PROGRAM: BIRDING”



Bell's Vireo, Lois Mancowitz

and revegetation projects associated with birding sites near the Midwest Birding Symposium. This idea was launched in the hopes that the COBP approach would be embraced by more birders and spread accordingly— not solely to offset carbon, but to do the most good for birds.



As the Local Trust has since disbanded, Tucson Audubon is ready to continue their work by taking the concept to the next important level, demonstrating leadership in this movement within the Audubon network by piloting a COBP at their fifth annual Tucson Bird and Wildlife Festival from August 12–16. The intent is to offset the carbon emissions generated by the travel of festival participants with a particular local solution directly related to local birds.

During the pilot program, Tucson Audubon will direct any received funds towards planting at one of their restoration mitigation sites, the Simpson Farm, located along the lower Santa Cruz River in northern Pima County. The project site has a riparian zone fed by effluent from Tucson and adjacent abandoned farm land in the river's floodplain. Project personnel produced a site assessment and work plan to do planting, seeding, invasive plant control, and other work at this site. Avian surveys already show that a good number of southern Arizona bird species are utilizing the site. Many of these species, such as Abert's Towhee, Bell's Vireo and Loggerhead Shrike, are already threatened by the loss of habitat.

Tucson Audubon hopes the COBP will continue beyond the festival as a regular program to showcase what can be done locally to use carbon offset contributions to enhance bird habitat and serve as an example for others to emulate. Carbon will be sequestered as the vegetation grows, providing future habitat for birds.

To make the process of calculating carbon offset easier for people, Tucson Audubon provides an online calculator, geared to birders and birding habitat, which can be found here: tucsonaudubon.org/carbonoffset. Festival participants can either calculate their offset before arriving for the festival or do it at the festival with the assistance of experienced Tucson Audubon staff and volunteers.

When I fly out to Tucson from Maryland in August for the festival, I will fly about 3,900 miles round-trip. According to the Tucson Audubon calculator, that means I can engage in “guiltless birding” for the festival trip for the cost of \$27.86. Of course, I could also calculate the carbon footprint I'll make when I drive around southeast Arizona in my rental car... and add that to my payment. How handy! Best of all, I have now given myself permission to enjoy myself! 🍷

*Paul J. Baicich will be speaking, presenting workshops, and leading a field trip during the Tucson Bird and Wildlife Festival. Registration is still open for his workshops and evening presentation at tucsonaudubon.org/festival. Paul also just co-authored a social history of bird feeding, *Feeding Wild Birds in America: Culture, Commerce, and Conservation* (Texas A & M University Press.), the topic of one of his festival workshops.*

Matt Griffiths



Habitat Restoration Plantings, Kendall Kroesen



Loggerhead Shrike, Joan Gellatly



ON THE TRAIL OF THE

STORY BY PINAU MERLIN AND PHOTOGRAPHS BY GEORGE ANDREJKO

We stand quietly in the shady forest of sycamores, listening to the soft, throaty call of “ko-ah, ko-ah, ko-ah, ko-ah” wafting toward us. We know the Elegant Trogon is nearby, yet we can’t see it. You might think it would be easy to spot a 12-inch bird that looks like a Mexican flag, with an iridescent green head and breast, white chest band and brilliant red belly, but the Elegant Trogon can be elusive and hard to find. Most birders listen for its distinctive, hoarse call to locate one.

This one is hiding with his back to us. Despite the trogon’s size, long tail and bright colors, it can be nearly invisible when it perches in dense, shady foliage with its back to the viewer. When nervous or suspicious, the trogon knows to hide its brilliant red belly. The iridescent green on the trogon’s back appears black when in shade, also effectively camouflaging the bird. Trogons still can watch for danger, though; like owls, trogons can rotate their heads around to peer over their backs and watch the goings-on behind them with their large eyes and excellent vision.



Elegant Trogon with lizard



Elegant Trogon in nest cavity

Finally, our patience is rewarded. The trogon flies several yards to land in an oak tree. The easiest time to see a trogon is when it flies and its brilliant red underparts are exposed. The trogon’s slow, undulating flight is similar to a woodpecker’s, and it usually doesn’t fly too far at once.

We watch as the bird forages in the oak tree. Because it has short legs and weak feet, the trogon can’t lean or stretch on a branch to reach food. Instead, it depends on its wings, hovering briefly as it gleans insects or fruit from the outer foliage of trees. It also sallies out to catch flying insects in the air. The trogon forages most frequently in white oak trees, searching for larvae and large insects, which it munches with its yellow, serrated beak. (The species’ scientific name, *Trogon elegans*, derives from the Greek word trogonurus, meaning “gnawer.”)

IT’S A TROGON’S LIFE

Trogons arrive in Arizona each April to raise their families in the quiet forests. Home ownership is the male’s trump card in attracting a mate. When the male

finds a nest cavity of the proper size and height, usually in a large sycamore tree (living or dead), he begins calling for eligible females, trying to entice them with his great nest site.

Maintaining rights to the nest cavity is critical to breeding success. Nesting cavities, often made by Northern Flickers, are a limited resource. Competition for them is fierce. In addition to the flickers, other secondary cavity-nesters such as Whiskered Screech-Owls and Sulphurbellied Flycatchers fight for these nest sites, often attacking the birds already occupying the cavity. Many times, the flickers win these fights, taking over the cavity and leaving the trogons homeless.

The female examines the male’s chosen nest cavity. If she finds it pleasing, the pair will mate, lay eggs and begin raising little trogons. The couple are monogamous, at least for the season, remaining together until the young are independent. The gorgeous male is not just a pretty face. He is a good father, helping equally in the raising and feeding of the family. The female incubates eggs at night and during the middle of the day, while the male takes over in early morning and late afternoon.



Acorn Woodpeckers are one of several species competing with trogons for nest cavities

ELEGANT TROGON

The youngsters grow quickly on a diet of mostly insects with a little added fruit. The young trogon's first flights from the nest often end embarrassingly, with the fledgling sprawled on the ground. The concerned and protective parents defend and feed their youngster on the ground until it is able to flop up to a branch. The young are particularly vulnerable to attack by Mexican Jays, Sulphur-bellied Flycatchers, tree squirrels and snakes. An outraged mother will guard her fledgling, protecting it with one wing as she fights off the marauder. In about a month, when the youngster's tail grows in and it has graduated from flying school, it is more able to hunt for itself.

THE PROBLEM WITH POPULARITY

The elegant trogon has become so popular, it is now an important economic factor in Arizona, helping to lure tens of thousands of tourists, birders, nature lovers and photographers to the state. People come from all over the country to see this gorgeous bird. It's not hard to figure out why. Literally dressed to the nines in nine showy colors, not only is the bird stunning, it lives in some of



Northern Flickers create many of the nest holes favored by trogons

the most beautiful places in Arizona: the canyons of the sky island mountains along the Arizona-Sonora border. Just seeing a trogon lets you know you're in high-quality habitat with dense trees, undergrowth, fruit-bearing bushes, plentiful insects and exceptional biodiversity. The presence of trogons indicates the biotic health of the canyon.

The trogon also is relatively rare here. It can be reliably seen only in five Arizona mountain ranges: the Atascosas, Chiricahuas, Huachucas, Patagonias and Santa Ritas, where 50 to 75 pairs reside (See results of the 2015 trogon census on page 5). The rest of the population live in Mexico and Central America and are non-migrating homebodies.

The ever-popular trogons are quite susceptible to disturbance at nest sites. The Arizona Game and Fish Department lists them as a sensitive species of concern, needing more studies and surveys. Little is known about some aspects of the trogon's life, but it's obvious that trogons prefer the same beautiful places that people find attractive. People camping and picnicking, loud music or noises, birders, photographers and vehicle noise all distress trogons and even may lead to nest failures.

Individual trogons often are inundated by hundreds of birders wanting to observe and photograph them, particularly at their nests. They can become severely stressed by birders playing recordings of the trogon's calls. The use of any bird calls is discouraged or banned in heavily visited places such as Sheelite and Garden canyons in the Huachuca Mountains, the south fork of Cave Creek Canyon in the Chiricahuas and Madera Canyon in the Santa Ritas.

But in general, trogons appear to be doing well. Sometimes in September and October, young males go wandering about, searching for new territory and exploring suitable habitat. They may be



The "coppery" tail of an Elegant Trogon

expanding their range, possibly due to our warmer winters, with birders reporting new sightings in Brown Canyon in the Baboquivaries, the Pena Blanca Lake area and other places. Although not tolerant of cold, a few trogons even seem to be overwintering in warmer canyons such as Sycamore Canyon in the Atascosas in recent years.

The trogon's beauty and rarity continue to attract people who love wild places and wild creatures, bringing great socio-economic benefits to Arizona. In a state renowned for its superlative birding, with more than 35 specialty birds seen almost nowhere else in the United States, the elegant trogon is still the prize—probably the most sought-after bird in Arizona. ■

Pinau Merlin delights in the many surprises to be found in nature. In one special canyon she once saw seven trogons in two hours. She also spotted a wandering male trogon in Aravaipa Canyon.

CONSERVATION AND EDUCATION NEWS

Matt Clark and Christine McVie

Tuscany in the Desert? Audubon Network Calls on Army Corps of Engineers to Re-evaluate Impacts of Proposed City-sized “Villages at Vigneto” Development Near Benson

On average, Tuscany, Italy receives 36 inches of rain per year. Benson, Arizona receives less than 13 inches. Is attempting to re-create Tuscany in the desert sustainable and responsible?

The Villages at Vigneto (Vigneto) is a Tuscany-inspired development proposed by El Dorado Benson LLC (El Dorado) on 12,000+ acres of private land. Vigneto would include 27,760 new homes, commercial developments, golf courses, parks, vineyards, orchards, and resorts, as well as an extensive road and utility network. Vigneto would potentially attract up to 70,000 new residents. This population explosion would dramatically impact the quality of life of Benson, which currently has only 5,100 residents.

A primary concern with Vigneto's construction is the significant projected increase in ground water pumping. Over time, the extensive deep ground water pumping required to support Vigneto could contribute to long term ground water depletion and ultimately reduced surface water flows in the San Pedro River, putting the region's birds, biodiversity, downstream water users, and economy at risk.

You can help! Write the U.S. Army Corps of Engineers and request that they re-evaluate the Clean Water Act Section 404 permit based on changed circumstances and new information. We also request that they initiate consultation with the U.S. Fish & Wildlife Service (USFWS) to quantify Vigneto's potential impacts to threatened and endangered species and ensure commitments to adequate conservation and mitigation measures. See bit.ly/1Mhay4b or background and contact information, and to read Tucson Audubon's detailed letter to the Army Corps.

Pima County Approves Special Bond Election—We Need Your Votes to Conserve Natural Areas for Birds!

On April 21, 2015, the Pima County Board of Supervisors approved a resolution calling a special bond election for November 3, 2015, “for the purposes of road and highway improvements, economic development, libraries and workforce training, tourism promotion, parks and recreation, public health, welfare and safety, neighborhoods and housing, natural area conservation and historic preservation and flood control.” Executive Director Karen Fogas, on behalf of Tucson Audubon and the entire Coalition for Sonoran Desert Protection, spoke eloquently at the public hearing in favor of putting the bond to the voters and maintaining the recommended \$95 Million for Open Space protection. The Board voted 4-1 in favor of the resolution; the no vote came from District 1 Supervisor Ally Miller.

Seven bond propositions will be put before voters, which total \$815 million when combined. However, voters will be able to vote on each proposition separately, so the total cost of the bond package depends on which propositions pass. **Proposition 430** will enable our community

to purchase and preserve the crucial wildlife habitat and natural open space required to mitigate development impacts of roads, utilities, homes and businesses; support a thriving nature-based economic engine; and fund projects that will enhance jobs, neighborhoods, economic opportunity, and our quality of life in the Sonoran Desert.

Our thanks to those who responded to our Conservation Action Alert by writing your Supervisors and attending the public hearing. Now we need to encourage all voters to support the entire recommended bond package on November 3rd. In particular, passing **Proposition 430: Natural Area Conservation and Historic Preservation** is crucial to achieving Pima County's Multi-species Habitat Conservation Plan goals and Tucson Audubon's conservation mission. **Get out the Vote!**

SR 77/Oracle Road Wildlife Crossings Are Under Construction!

Have you driven on Oracle Road recently and seen all of the ongoing construction? The Santa Catalina-Tortolita Mountains Wildlife Linkage, which Oracle Road bisects, is one of the most threatened wildlife linkages in Arizona. This construction project integrates two major wildlife-dedicated crossing structures: one an underpass, the other a vegetated wildlife bridge crossing over the highway. Both are dedicated solely to facilitating wildlife movement across this busy transportation corridor. The twin goals of these structures are 1) to improve motorist safety by preventing wildlife from causing deadly accidents; and 2) to improve habitat connectivity between the Santa Catalina and Tortolita Mountains for species such as mountain lion, deer, bighorn sheep, fox, bobcat, desert tortoise, and many others. Though this technology has previously been implemented around the world, this wildlife bridge will be the first of its kind ever built in the Sonoran Desert! These crossing structures, along with fencing designed to funnel wildlife to them, are paid for by dedicated voter-approved wildlife crossing funds from the Regional Transportation Authority (RTA). **Your support has made this vision a reality!**

This project is informed by the best available science, utilizing the 2006 Arizona Wildlife Linkage Assessment produced by the Az. Dept. of Transportation (ADOT) and Az. Game & Fish Dept. (AzGFD), available here: azgfd.gov/w_c/conn_whatGFDdoing.shtml. Video and still cameras on each end of the crossing structures will monitor and study wildlife use. For more information, see this FAQ from our Coalition: sonorandesert.org/learning-more/wildlifecrossings/.



Coalition for Sonoran Desert Protection

Arizona Field Ornithologists 9th Annual Meeting



Plan to join your fellow birders and ornithologists in the cool pines of Show Low for the Annual AZFO state meeting 18-20 September. We will kick off with mini-field expeditions to area birding spots on Friday afternoon. Saturday, you'll hear interesting presentations, followed by dinner and keynote speaker Chris Benesh. The weekend finishes with more field expeditions to under-birded locations of the White Mountains region. Online registration and additional details about the meeting at azfo.org.

This September, Tucson Audubon's Restoration Crew will be working with the Santa Catalina Catholic Church, the Coalition for Sonoran Desert Protection, and the Sky Island Alliance to plant vegetative screening along the bridge's southern boundary to shield wildlife from noise and lights so that human-sensitive animals are not deterred from approaching and using the overpass. **We need volunteers**, so please contact Sharon Long at slong@tucsonaudubon.org to participate.

EPA Clarifies Clean Water Act with Long-awaited New Rule

After over a decade of requests from members of Congress, state and local officials, industry, agriculture, environmental groups, scientists, and the public, the U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (ACE) have finalized the Clean Water Rule to protect the streams and wetlands that form the foundation of the nation's water resources from pollution and degradation. **About 117 million Americans—one in three people—get drinking water from streams that previously lacked clear protection.**

Protection for many of the nation's streams and wetlands has been confusing, complex, and time-consuming as the result of Supreme Court decisions in 2001 and 2006. "Protecting our water sources is a

critical component of adapting to climate change impacts like drought, sea level rise, stronger storms, and warmer temperatures," said EPA Administrator Gina McCarthy. Streams and wetlands provide many benefits to communities by trapping floodwaters, recharging groundwater supplies, filtering pollution, and providing habitat for fish and wildlife.

The rule does not create any new permitting requirements for agriculture and maintains all previous exemptions and exclusions. Instead, the rule ensures that waters protected under the 1972 Clean Water Act are more precisely defined and predictably determined, making permitting easier, faster, and less costly for businesses and industry. EPA and the Army utilized the latest science, including a report

Wildlife Garden Plant Profile

Lynn Hassler, Garden Volunteer Captain

ENGELMANN PRICKLY PEAR

Scientific name: *Opuntia engelmannii*

Family: Cactaceae (Cactus)

Native range: Arizona, southern California, New Mexico, western Texas, northern Mexico; 1000–8000 feet; valleys, canyons, along slopes and open grasslands.

Wildlife value: Flowers attract many pollinators. Fruits devoured by birds, mammals, lizards.

Engelmann prickly pear forms a spreading mound 3–10 feet high and 8 feet wide. Clusters of whitish spines are widely spaced on sizable pads. Flashy flowers 3 inches across bloom in April–May, yellow when they open and turning orange the next day. Green, egg-shaped fruits ripen in late summer, deepening to red. Fleshy and filled with seeds, the fruits are 2–3 inches long and provide moisture as well as nutrition to nearly every creature—from doves, woodpeckers, thrashers, finches, and hummingbirds to ground squirrels, rabbits, wood rats, coyotes, javelinas, and lizards. In August and September, it's not unusual to see birds with purple stains around

their bills, evidence of a recent meal.

Prickly pears store moisture in their succulent pads and can go long periods without water. In the garden, they make interesting accents or can function as barriers, but beware of planting too close to paths or patios; the spines are wicked. Particularly large specimens often attract white-throated wood rats (a.k.a. packrats), small rodents that make dens of sticks and other "found" objects in prickly pear clusters. Try pruning your cactus into wheel-like spokes; this opens it up, making it less attractive to packrats.

A group of scale-like insects, called cochineal, often secrete a white waxy material on prickly pear pads. The actual insects are tiny and red, and pigment harvested from them is popular in the colored dye industry. If the bugs are worrisome, blast them away with a strong stream of water, but note that Gambel's quail and other critters often eat these minuscule insects.

This species is named in honor of George Engelmann, a 19th century German-born American physician and botanist.



Both photos Lynn Hassler

This series profiles plants that grow in the Tucson Audubon Wildlife Garden at University Boulevard and 5th Avenue.

summarizing more than 1,200 peer-reviewed, published scientific studies, which showed that small streams and wetlands play an integral role in the health of larger downstream water bodies.

Specifically, the Clean Water Rule:

- 1) Says that a **tributary must show physical features of flowing water**—a bed, bank, and ordinary high water mark—to warrant protection. The rule provides protection for headwaters with these features, which science shows can have a significant effect on downstream waters.
- 2) **Sets boundaries on covering nearby waters** that are physical and measurable for the first time.
- 3) Maintains the status of waters within Municipal Separate Storm Sewer Systems and **encourages the use of green infrastructure**.

The Clean Water Rule protects only the same types of waters that have historically been covered under the 1972 Clean Water Act. It does not regulate most ditches, groundwater, shallow subsurface flows, or tile drains. It does not make changes to current policies on irrigation or water transfers nor apply to erosion in a field. A Clean Water Act permit is only needed if a “water of the US” is going to be polluted or adversely impacted.

McCain’s Border Bill (S.750) Would Put Customs and Border Protection Above All Laws, Including Habitat Protections

If enacted, Senator John McCain (R-AZ)’s controversial “Arizona Borderland Protection and Preservation Act” (S.750) would put the Department of Homeland Security’s Customs and Border Protection (CBP) above all laws on tribal and public lands, including those that protect our civil rights and shared environment. Under the unsubstantiated pretext of boosting border security, S.750 would roll back laws that protect our water and air quality, national parks, wilderness, wildlife refuges, endangered wildlife, and sensitive cultural resources. S.750 would waive laws across millions of acres of our

most treasured tribal and public lands within 100 miles of the border, including the Tohono O’odham Nation, Saguaro National Park, Coronado National Forest, Sonoran Desert National Monument, Buenos Aires National Wildlife Refuge, and Cabeza Prieta. (See map below). S.750 would also eliminate processes that enable public input into government decision-making and would undermine inter-agency collaboration. CBP has never requested this un-American waiver and has repeatedly stated that such waivers are unnecessary. CBP and the Department of the Interior already have a standing memorandum of understanding that effectively balances border security, access, and legal compliance. As he did successfully last year with the highly controversial Oak Flat Land Exchange, McCain attempted, but failed to attach this act as an amendment to the unrelated National Defense Authorization Act (NDAA). **Call your Senator and Representative today to express your opposition to S.750.**

Patagonia Mountains Mining Could Affect a Recognized Important Bird Area

The Patagonia Mountains are a recently-designated Important Bird Area (IBA) that provide habitat for diverse wildlife, including threatened and endangered species such as the jaguar, ocelot, lesser long-nosed bat, Mexican Spotted Owl, and Western Yellow-billed Cuckoo. The Patagonias are also a stronghold for the Azure Bluebird and Elegant Trogon, among others.

AZ Mining Inc. (formerly Wildcat Silver) proposes exploratory operations to validate mineral resources for its Hermosa Project, one of several major mining projects proposed in the Patagonia Mountains. The final Environmental Assessment (EA) for this project is estimated to be released by the Coronado National Forest (CNF) in October 2015. EAs are less rigorous than Environmental Impact Statements (EIS), and Tucson Audubon maintains that a project of this size in such sensitive wildlife habitat deserves a full EIS. **Sign the petition to the CNF requesting that a detailed EIS be completed:** greatergood.me/1CbTsiO.





Tucson Audubon On Western Yellow-billed Cuckoo Critical Habitat Designation

In March, Tucson Audubon submitted a detailed comment letter to the USFWS regarding the Service's proposed designation of critical habitat for the threatened Western Yellow-billed Cuckoo. Our review of the best available scientific

data indicates that the draft critical habitat designation should be expanded to 1) more comprehensively reflect cuckoo occupancy at the time of listing and 2) include areas suitable for restoration, suitable habitat patches less than 10 acres in size, and additional suitable habitats/vegetation utilized by cuckoo that are not adequately described in the literature or reflected in the draft critical habitat proposal. We suggest that the final designation should encompass lands and waters that provide stopover sites, which are important habitat for foraging, dispersal, and habitat connectivity, as well as key tributaries, confluences, uplands, and distinct sky island habitats. We believe these additional lands and waters will play an increasingly important role in the survival, expansion, and adaptation of cuckoo populations in the face of habitat degradation, pollution, long-term drought, and hotter and drier conditions that are predicted to occur in the Southwest as a result of climate change. **See our letter:** tucsonaudubon.org/cuckoo.

Agency Decision on Southline Could Impact Migratory Birds

Southline Transmission LLC proposes to construct, operate, and maintain a high-voltage power line in two segments that will span 360

miles in southern New Mexico and Arizona. As of this writing, the Final Environmental Impact Statement (EIS) has not been released by the Bureau of Land Management (BLM). Tucson Audubon will review the final EIS upon its release, to be found at: blm.gov/nm/st/en/prog/more/lands_realty/southline_transmission.html.

Our primary concern is the project's close proximity to the Willcox Playa Global Important Bird Area, which could negatively impact migratory species such as Sandhill Cranes and Snow Geese. Many avian species find power lines and towers difficult to perceive and are therefore at risk for deadly collisions. The Sandhill Crane's circling, cumbersome flight patterns when approaching or leaving the Willcox Playa may heighten this risk. **Help us call for Southline to avoid the Willcox Playa Global IBA**—see our Conservation Action Alert at: tucsonaudubon.org/images/stories/conservation/TAS-CAA-Southline.pdf.

Congressman Grijalva Introduces "Save Oak Flat Act"

On June 17, Congressman Raúl M. Grijalva introduced the "Save Oak Flat Act," which would repeal a controversial land exchange that was quietly tucked into last year's defense spending bill. The provision in question authorized the transfer of 2,422 acres of public land to Resolution Copper for the construction of a massive block-cave mine under Oak Flat, a culturally and environmentally sensitive area located on the Tonto National Forest. Oak Flat is held sacred to the San Carlos Apache Tribe and the Yavapai-Apache Nation, as it has been utilized for centuries for tribal acorn gathering and traditional religious ceremonies. Oak Flat supports habitat for a diversity of birds and wildlife, and has been nominated to be listed on the National Register of Historic Places. **Call or write your rep in support of saving Oak Flat!**

CONSERVATION CORNER! Bird Baths for a Small Planet

Kendall Kroesen, Urban Program Manager

If you are landscaping for birds and have no birdbath, you will still attract birds: many of our native Sonoran Desert birds thrive in places with no predictable water supply. For landscaping strategies, see our *Guide to Food-rich Landscapes for Birds and People*, available at tucsonaudubon.org/urban (under the "Resources" link).

However, many birds do benefit from the presence of water, and you will enjoy seeing a greater diversity of species if you include one. Ideally, your water source should be safe for birds, non-wasteful, low maintenance, and designed not to breed mosquitoes.

A "solar birdbath" design by Mel Hinton, which has been circulating among Audubon chapters recently, provides one model for a safe and effective water source. It incorporates a five-

gallon bucket that is either set in the ground or hidden, with a typical bird bath saucer on top. A solar-powered pump circulates water.

Whatever your approach to providing water for birds, keep it small to conserve water. Backyard birds do not need ponds or pools. The "solar" design has a small covered tank that reduces evaporation.

Keep the water feature clean. If you have a standard bird bath, clean it often to reduce disease transmission. In warm weather, dump and refill frequently, since some mosquito species can go from egg to adult in only a few days. In water features such as the "solar" design, use Mosquito Dunks, a product with BTI bacteria that controls mosquito larvae but is safe for birds.



Kendall Kroesen

Place the water feature in the open with perches nearby so that birds can land and inspect the area for predators before approaching the water.

The "solar" design and other information about water sources for birds are available at tucsonaudubon.org/urban.

BIRDING TRAVEL FROM OUR BUSINESS PARTNERS

ROCKJUMPER—WORLDWIDE BIRDING ADVENTURES

info@rockjumperbirding.com
rockjumperbirding.com

COLOMBIA HIGHLIGHTS

December 1–15, 2015

Tour Price: \$5550 (per person sharing)

Colombia has a staggering 1,900 bird species of which over 80 are endemic! Rockjumper's Highlights of Colombia birding tour offers a remarkable collection of birds including tanagers, antpittas, and over 50 species of hummingbirds! Specialties we will be looking for include Black Inca, Beautiful Woodpecker, White-mantled Barbet, Gold-ringed Tanager, Red-bellied Grackle, Tanager Finch, Brown-banded Antpitta, Buffy Helmetcrest and Cauca Guan.

NORTHERN ECUADOR—BIRDING THE ANDES TO THE AMAZON II

November 6–21, 2015

Tour Price: \$5125 (per person sharing)

Join Rockjumper on a 16-day Northern Ecuador tour! From the fabulous Sacha Lodge, with its world-famous Canopy Tower and Canopy Walkway, to the endemic-rich Andean slopes, this tour serves up the very best of South American birding! Key target species range from Giant Antpitta, Hoatzin, and Black-billed Mountain Toucan to Sword-billed Hummingbird and Andean Cock-of-the-rock.

SOLIPASO TOURS

BAJA BIRDS AND WINE

October 15-22, 2015

Tour Price: \$2750

Leader: David MacKay

This fun trip is a winning combination of birds, fine Mexican wines, gourmet food, and the rugged beauty of northern Baja! The Valle



California Thrasher, Linda Tanner / CCL

de Guadalupe wine country is becoming well-known for its high-quality wines and is also on the cutting edge of innovative gourmet cuisine in Mexico. Birds of interest include Gray and California Thrasher, Clark's Nutcracker, and Black Oystercatcher. We visit the wine region, Ensenada, the valley of San Quintin, Bahia de San Quintin, and San Pedro Martir, starting and ending in San Diego.

WEST MEXICO

February 4-18, 2016

Tour Price: \$4350

Leader: David MacKay

From Mazatlan to Manzanillo, an extensive variety of habitats can be found in the geographic region bordered by the Sierra Madre to the east, the tropical lowlands near the town of San Blas to the west, and the dramatic central volcanic belt of Colima and Jalisco to the south. In this rather small area, it is possible to see more than a third of the bird species that exist in the entire country, including upwards of 55 endemics! Beyond the excellent birding, this area is home to a mind-boggling variety of plants and trees, one of the most biodiverse regions on earth.



Buffy Helmetcrest, Juan José Arango / CCL

AVAILABLE IN OUR NATURE SHOPS

BIRDS of the Southeastern Arizona \$19.95

The BIRDS of SONORA \$77.00



Tucson Audubon thanks our Birds & Business Alliance Members, who have shown their support for bird conservation through annual contributions and in-kind donations. **Please show them you appreciate their support for us by supporting them.** Visit tucsonaudubon.org/alliance for more info, including links to member websites.

GOLD

Carl Zeiss Sports Optics
Circle Z Ranch
Freeport-McMoRan Copper & Gold
GeolInnovation LLC
Riverpark Inn
Tucson Electric Power

STERLING

Adventure Birding Company
Rockjumper BirdingTours
Solipaso Tours

SILVER

Celestron
Farmers Investment Co (FICO)
Leica Sport Optics
Lori Pascarella, Merrill Lynch
Sunglow Ranch
Swarovski Optik

COPPER

A Feathered Nest in Amado
Associated Benefits Specialists, Inc.
Arizona Birder Casitas
Bed and Bagels of Tucson
Brooklyn Pizza Company
Casitas at Smokey Springs Ranch
Desert Trails Bed & Breakfast
Down By the River B&B
Dr. Gann's Diet of Hope
Financial Architects
Hughes Federal Credit Union
Kimberlyn Drew, Realtor
The Living Fence
Visit Tucson
Opticron USA
Originate Natural Building
Materials Showroom
Pima Federal Credit Union
Quailway Cottage
Staybridge Suites Tucson
Sundance Press
Victor Emanuel Nature Tours
WINGS Birding Tours Worldwide

Visit tucsonaudubon.org/alliance to learn about the products and services offered by our Bird & Business Alliance partners

TUCSON AUDUBON FIELD TRIPS

Tucson Audubon Field Trips Listings Are Now Online

For a full listing of trips and details, visit tucsonaudubon.org/fieldtrips, call the trip hotline at 520-629-0510 x4, or pick up a printout at our Nature Shops.

FEATURED FIELD TRIP

SEPTEMBER 5

Chiricahuas Mexican Chickadee

It's been a long time since we've done this trip, but it's time for a targeted search for Mexican Chickadee on the west side of the Chiricahuas. There should be good numbers of mountain transients as well. We'll also check Cochise Lakes for water birds. Meet at I-10 and Houghton (NW corner) at 6:30 AM. Bring water, lunch and sunscreen. You must register online. Please do not attend if you haven't signed up. Back in late afternoon.

Leader: Clifford Cathers
520.982.3272 or AZCliffy@Q.com



Matt Griffiths

Weekly bird walks are listed at tucsonaudubon.org/fieldtrips

General Information Tucson Audubon field trips are offered at no charge and are led by expert volunteers. Bring money to cover your share of the carpooling and any required entry fees (e.g. for state parks). For specific information about a trip, contact the leader of that trip. Please dress appropriately for your field trip. Always wear sturdy shoes, a hat, and sun protection. Bring plenty of snacks and water for yourself. Always bring binoculars and a field guide. For most trips a scope can be useful.

Arrival Times Arrive *before* listed departure times. Trips will leave promptly at the time given.

Carpooling Sites Tucson Audubon strongly encourages carpooling, and for some trips it may be required. Check our website for frequently used carpooling sites. You are expected to reimburse the driver for the actual cost of fuel. Drivers and trip leaders are not expected to contribute.

Rare Bird Alert Listen to the latest rare bird alert at 520-629-0510 x3. Report rare birds at 520-629-0510 x3 or rarebirdalert@tucsonaudubon.org.

Putting Tucson Birding On the Map

Kendall Kroesen, Urban Program Manager



We are putting the final touches on the Tucson Birding Trail Map. This great new product contains information on 43 birding sites around the Tucson metropolitan area. It will be available at the Nature Shops and other locations. There also will be an online version with expanded site descriptions.

The map describes birding sites, shows amenities, gives directions and helps you know what kinds of birds to expect. One side has written descriptions and the other side shows the locations on a map. The greater Tucson area is covered by the Southern Arizona Birding Trail Map and our book, *Finding Birds in Southeast Arizona*. However, this new map describes far more birding locations.

This birding trail map is designed to be helpful to expert and beginner alike. Do you know somebody with a beginning interest in birds? Do you know somebody visiting Tucson with limited time to go birding? This map will help them find a place to go birding near their home or hotel.

The map is funded with a Heritage Fund grant from the Arizona Game and Fish Department. Our partner in creating the map is Tucson Parks and Recreation Department.

TUCSON AUDUBON NATURE SHOPS

When you support your local Tucson Audubon Society you are supporting birds and bird habitat conservation. Thank you!

SHOP HOURS

MAIN SHOP

Monday–Saturday, 10 AM–4 PM

Phone: 520-629-0510 ext 7015

On SE corner of University Blvd and 5th Avenue.

AGUA CALIENTE PARK SHOP

*Thursday–Saturday, 10 AM–1:30 PM

Phone: 520-760-7881

**Please call to confirm hours. The shop opens earlier and closes later during certain months. Nature Shop space generously provided by Pima County Natural Resources, Parks & Recreation*

From Tanque Verde Rd and Houghton, continue east on Tanque Verde 2 miles. Turn left (north) onto Soldier Trail, continue north for 2 miles. Turn right (east) onto Roger Rd, continue ¼ mile to the park entrance on the left (north).

When you need a book, think of Tucson Audubon's Nature Shops first! Support your local book store.

Support Tucson Audubon... Become a Friend Today!

Annual Membership subscription

- | | |
|--------------------------------------------|---------------------------------------------------|
| <input type="checkbox"/> \$35 Individual | <input type="checkbox"/> \$500 Guardian |
| <input type="checkbox"/> \$50 Family | <input type="checkbox"/> \$1000 Steward |
| <input type="checkbox"/> \$100 Contributor | <input type="checkbox"/> \$2500 Leadership Circle |
| <input type="checkbox"/> \$250 Sponsor | |

Name

Address

City / State / Zip

Email

Phone

- New membership
 Renewing membership
 Please email me about Tucson Audubon events and conservation issues.
 Please do not mail me *Vermilion Flycatcher*. I'll read it online.

DONATION

- I would like to support Tucson Audubon with an additional contribution of
 \$25 \$50 \$100 \$250.
 Tucson Audubon Frequent Flyer Monthly Donor Program: I authorize the charge of \$___ per month for ___ months to my credit card (\$5/month minimum).

Tucson Audubon Society will use the full amount of your tax-deductible gift for its environmental, educational and recreational programs.

Method of payment

- Check (payable to Tucson Audubon Society)
 MasterCard Visa AMEX Discover

Credit Card No.

Expiration Date

Amount \$

Signature

Please send completed form with payment to:
Tucson Audubon Society (Attn: Membership)
300 E. University Blvd, #120
Tucson, AZ 85705
OR join, renew or donate online at:
tucsonaudubon.org



TUCSON AUDUBON NATURE SHOPS

Tucson Audubon's Nature Shops provide for your needs in natural history books and guides, birding optics and accessories, and gifts right here in Tucson. We offer a great selection, the best prices, and member discounts. Remember to shop locally.

Celebrating Over 50 Years of Guiding Birdwatchers in Southeast Arizona

Sarah Whelan, Operations and Retail Coordinator

Hot off the press in 2015!

Imagine that every time you went birding in southeast Arizona, your partner was one of the region's most accomplished guides. Having this book in your pocket is the next best thing! Local experts and Tucson Audubon have updated more than 170 of the book's birding locations in the premier birding destination that is southeast Arizona. For visitor and resident alike, this book is an essential planning tool to make the most of the time you have and search for your target birds.

Finding Birds in Southeast Arizona divides the region into twelve areas, each with its own section. Detailed maps are included to help you find the birding sites. Major place names are in bold throughout, and a clear set of driving directions follow each site description.

We also include comprehensive supporting material. For example, you will find an updated checklist and bar charts as well as tips on birding in an arid climate and on visiting Mexico. Our special spiral binding allows you to keep your guide open at whatever page you need!

Special thanks to those volunteer editors who have continued over the years to provide the professional input needed to make this book a success:

Gavin Bieber	Matt Brooks
Jeff Coker	Andrew Core
Matt Griffiths	Homer Hansen
Tim Helentjaris	John Higgins
Doug Jenness	Jennie MacFarland
David MacKay	Sara Pike
Diana Rosenblum	Gary Rosenberg
Dave Stejskal	Mark Stevenson
Erika Wilson	John Yerger

And to Eng-Li Green for design support.

Pick up your copy today and get out birding in the world renown birding destination we call home!

Just \$24.95. (Members receive 10% off!)



Optics



Swarovski CL Companion 8x30

It's hard to believe Swarovski can pack its renowned optical excellence into such a compact unit, but they did! Take out your ruler to get an exact feel of how small the 4.7 x 4.5 inch, 17.6 ounce Swarovski CL Companion binocular is. Take a look through this binocular and it will become your constant companion.

MSRP \$1,110.0 / Member Price \$999.00

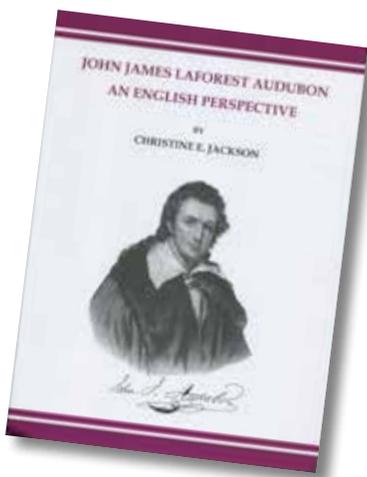
NEW AUDUBONIANA

Rick Wright

Jackson, Christine E. *John James LaForest Audubon: An English Perspective*. Privately published, 2013. \$130.50; 256 pages—softcover. Available at cejacksonbirdart@waitrose.com.

He was born on Hispaniola, raised in northern France, married in Pennsylvania, and spent the last sad years of his life on a farm on Manhattan Island. America, he proudly proclaimed, was his country—but there is a good case to be made that the most important years of John James Audubon's life were those he spent in Scotland and England. In the latter part of the 1820s and early 1830s, Manchester, Edinburgh, and London were the sites of the almost miraculous transformation of this “American woodsman” into the greatest ornithological painter the world had ever known.

Critical as they were to the creation and publication of the *Birds of America*, those years have generally been of less interest to the authors of Auduboniana: they lack the romance of the courtship at Fatlands Ford, the excitement of the travels through the wilderness frontier, or the heartbreak of business failures and ruptured friendships. Christine Jackson's *English Perspective* seeks to fill the gap with a vast hoard of historical information from the artist's time in the United Kingdom.



There is much here of value. Jackson tracks down the biographies of Audubon's original British subscribers and, wherever possible, traces the fates of their books; she documents his contacts with engravers, natural historians, potential patrons, and a startling range of

literary and historical luminaries. In many cases, she reproduces the only portraits I have ever seen of these associates, a precious contribution indeed.

Essential as a reference work for any Audubon fan or devotee of the history of ornithology and American art, this is a book meant to be used rather than read. Unfortunately, all this fascinating information is rather poorly organized in an almost topsy-turvy sequence of lists, biographical sketches, and fragmentary travel narratives, making it necessary to turn every page in the search for an anecdote that will inspire the researcher. It's worth it, though, to run across such hitherto unknown figures as a young English lady given to composing sonnets in Audubon's honor. Jackson's book should be on the shelf of anyone interested in the history of American ornithology—or for that matter, in the history of natural history and the relations between Britain and the young America of the nineteenth century.

Nancy Plain, the author of several historical works for younger readers, takes a more conventionally narrative approach in *This Strange Wilderness*. As its subtitle announces, this short, handsomely-produced book tells the story of Audubon's improbable life and the production of *Birds of America* and *Viviparous Quadrupeds*. Beautifully illustrated with drawings, paintings, engravings, and photographs—many reproduced as full pages—Plain's work will prove an excellent introduction for middle-schoolers to stories that were once a staple in American schools. Young readers may be especially entertained by the account of Jean-Jacques's own school days in Rochefort: an “expert hooky player and adventurer,” the young Audubon soon enough flunked out of the academy and turned to nature for the rest of his education.

Plain's prose style is appropriately simple and straightforward, but never infantilizing. She takes pains to avoid assuming extensive previous knowledge on her reader's part: for example, rather than simply mentioning a

Plain, Nancy. *This Strange Wilderness: The Life and Art of John James Audubon*. University of Nebraska Press, 2015. \$19.95; 112 pages—softcover.

figure every adult in the western world has heard of, she explicitly introduces “a general named Napoleon Bonaparte,” and four pages are devoted to a glossary defining terms and names, from “Bachman” to “zoology,” that might be new to the young reader.



This is well-told history, warts and all, and Plain's readers will find that she pulls no narrative punches in dealing with some of the more delicate aspects of the artist's biography; Audubon's “parents had not been married to each other,” he was continually “accused of flirting” with his models and acquaintances, and he failed to visit his sister Rose on his final trip to France. The dementia that marred his final years is briefly and movingly described: “withdrawn and silent,” Audubon—still a young man by today's standard—eventually failed to recognize his own sons.

Not having darkened the doorway of a schoolroom for decades now, I do not know if the natural history of the American frontier is even a glimmer on the curriculum nowadays. It should be, though, and *This Strange Wilderness* is just the book to ignite the young reader's interest in a fascinating figure from a fascinating time in American history.

Rick Wright leads birding and birds and art tours for Victor Emanuel Nature Tours and is the author of the forthcoming ABA Guide to Birds of Arizona. You can follow his travels at birdaz.com/blog.



300 E University Blvd, #120
Tucson, AZ 85705

Address Service Requested

NON-PROFIT ORG
US POSTAGE PAID
TUCSON, AZ
PERMIT #1345

Vermilion Flycatcher

Volume 60, Number 3, July–September 2015

© 2015 Tucson Audubon Society

The *Vermilion Flycatcher* is the newsletter of the Tucson Audubon Society, a chapter of the National Audubon Society. National Audubon Society members and members of other chapters may receive the *Flycatcher* by joining the Friends of Tucson Audubon. See membership at tucsonaudubon.org.



TUCSON AUDUBON PRESENTS

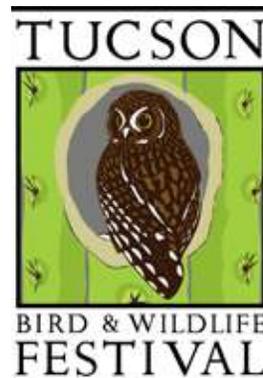
Southeast Arizona BIRDING AT ITS BEST

August 12–16, 2015 / Tucson, Arizona

Expert-led Field Trips, Workshops, Nature Expo, Free Talks, Live Birds

Keynote speakers: Paul Baicich & Rick Wright / Plus: Don't miss the Sky Islands Birding Cup!

(L to R): Rufous-capped Warbler, Jim Burns; Violet-crowned Hummingbird, Axel Elfner; Elegant Trogon, Bruce Taubert



FOR DETAILS AND REGISTRATION, VISIT TUCSONAUDUBON.ORG/FESTIVAL