



TORREYANA

THE DOCENT NEWSLETTER FOR
TORREY PINES
STATE NATURAL RESERVE

Issue 398

July 2018

The Frozen Zoo® to the Rescue

by Joan R. Simon

At the June docent meeting, Dr. Oliver Ryder, Director for Genetics at the San Diego Zoo's Institute for Conservation Research, gave us an overview of the multiple ways scientists are working to prevent vertebrate extinction. In the past few decades, the focus of preserving species has been in their natural habitats, and more recently with the aid of genome sequencing. He told us the story of the Pacific pocket mouse (*Perognathus longimembris pacificus*), a tiny mouse "the size of my thumb," which was thought to be extinct but was discovered in 1986 on the Dana Point Promontory. Other small populations were found at two places on the Pendleton Marine base and one in San Mateo (that group did not survive).



zoonooz.sandiegozoo.org/2016/06/07/endangered-pacific-pocket-mouse

A number of questions were raised when scientist tackled the problem of preserving a threatened species like the Pacific pocket mouse whose numbers had dwindled and who lived in multiple areas inaccessible to each other. First scientists had to decide whether to manage the groups of mice separately or pool them together. While inbreeding

Docent General Meeting

Date: Saturday, July 14, 9 am

Location: St. Peter's Episcopal Rec Hall, Del Mar

Speaker: Dr. David Holway, Professor of Ecology, Behavior and Evolution, UC San Diego

Topic: Ants at TPSNR: Why They Matter and Why They Are Under Threat

Refreshments: Docents with last names beginning with J, K, L will be responsible for providing snacks for this meeting.

would maintain adaptations to each local area, it tends to cause poorer fitness in small populations. So the decision was made to start a new population with representatives from each of the three groups. The new population was bred at the San Diego Zoo and reintroduced into the Laguna Coast Wilderness Park, in an area not open to the public. By evaluating genetic profiles of the different mice groups and interbreeding judiciously, the reintroduced pocket mouse is prospering today in a natural habitat.

Another well-known example of the way genetic rescue management has been used to restore an endangered species is the California condor. In 1987 27 of all the condors that existed in the world, including the last of the free-flying birds and others that had been raised in captivity, were put into breeding facilities in hopes of saving the species. DNA studies to evaluate their relatedness provided the basis for interbreeding the birds and increasing their numbers.

(Cont. on pg. 3)

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FLASH From Joy Inton: Don't forget to donate your ZooNoz magazines to the Museum Shop.

President's Letter: Exciting Times!

The new Children's/Interpretive Pavilion has been ordered thanks to funding from TPA, and is in the process of being manufactured out of Western Red Cedar in New York State. It is expected to arrive in crates in mid-July, when the Seabees and maintenance crew will work jointly on its installation. Meanwhile, the building pad must be leveled, decomposed granite applied, cement anchors installed and electrical trenches dug. This momentous occasion beckons the docent society to step into action and begin formulating plans for offering new thematic public presentations and walks.



The new docent training team has been busily meeting for the past two months, designing a new interpretive-based program for the fall. Borrowing methods from masters such as Freeman Tilden and Sam Ham, we are prioritizing our efforts in providing top-notch public and children's walks in the Reserve. Beginning in July, we will be offering Friday public walks at 10 am in hopes that docents will use these opportunities as a stepping stone for leading weekend walks. To refresh our skills and introduce new interpretive philosophies, we will hold two walk leader training sessions on 6/20 and 6/29.

"The chief aim of interpretation is not instruction, but provocation."
Freeman Tilden

This is an exciting time for the Docent Society, as we venture back to our roots and work towards new and ambitious public nature programs. Yet we can't do it without the support of adventurous and dedicated docents like you, who are willing to take a chance in creating something new. Thanks for volunteering!

Ingo Renner

President, TPDS

July 2018 CEED Event

Date: Thursday, July 19, 2018

Time: 9:00 am

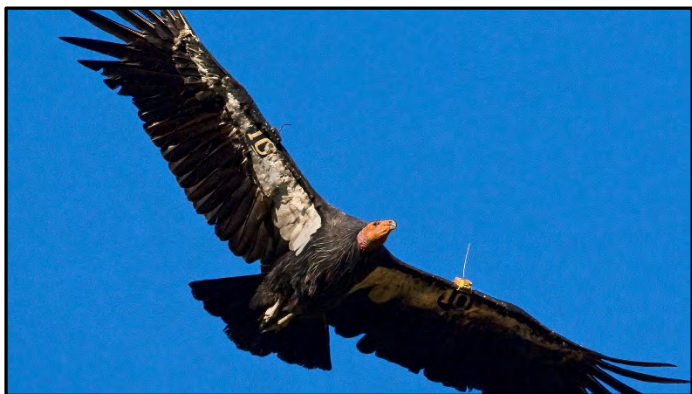
Place: SD Whale Watch – 1717 Quivara Rd., San Diego

Duration: 3 1/2 hrs.

Docent Leader: Naturalist on board the *Privateer*

(cont. from pg. 1)

Subsequently, whole genome sequencing studies have been used to determine which birds were carriers of a deadly recessive gene that caused shortened and curved legs and a swelling of the head and neck. The project was a success and there are more than 460 condors, with a free-flying population of 290 birds as of the end of 2017. However, lead toxicity of wild birds as a result of lead-based ammunition is an ongoing threat. California is the first state to outlaw lead in ammunition, starting in 2019.



Animals.sandiegozoo.org/animals/california-condor

While using genome sequencing and management to restore threatened populations has been successful for a number of species, it cannot be the salvation of all. With more than one-fifth of the terrestrial vertebrates in the world under threat of extinction, there are too many species that have dwindled to unrestorable numbers or whose habitats have been compromised or destroyed.

Enter what Dr. Ryder refers to as “the miracle of cells.” Every cell, he explained, contains the program to make the entire organism. The focus now is on securing and preserving cells from as many vertebrates as possible. The process involves taking a pea-size piece of tissue from any organism (alive or recently dead), mincing it and then cryopreserving it. The Frozen Zoo® at the Beckman Center for Conservation Research at San Diego Zoo Safari Park has accumulated one of the world’s largest and most diverse collections of cells in the world. It contains 10,000 living cell cultures, oocytes, sperm, and embryos representing nearly 1,000 taxa. This collection, and others around the world, are part of a new approach to prevent vertebrate extinction that draws on cell preservation, DNA analysis, and stem cell biology.

“Cells are life,” Dr. Ryder said, and “only a cell can make a cell.” He explained, “Nobody has ever made a cell from scratch.” He heralded the recent strides in genetic preservation as “a new era of discovery of life, analogous to the development of the microscope.”

“If this sounds kind of space age and far out,” Dr. Ryder

concluded, “we have to explore these methods,” because there aren’t enough natural habitats where we can save the thousands of species which are rapidly becoming extinct.”

Meeting Minutes – June 9, 2018

Meeting called to order at 9:00 am by President **Ingo Renner**.

Speaker: Dr. Oliver Ryder, Director of Conservation Genetics, San Diego Zoo Global, presented an interesting lecture titled “The Frozen Zoo” (see article on the front page).

Science Fair Winners: **Wayne Kornreich** introduced his team of judges for the Science Fair: **Wes Farmer, Sheldon Krueger, Lillian Lachicotte, Karen Lisi, Sally Whitlock, and Paula Shaw**. Wayne then introduced this year’s two winners. Emily Tianshi, a repeat winner from last year, presented “Biomimicry Study of Torrey Pine Needles for Moisture Harvesting,” and Eric Yang presented “Investigating Salt Tolerance of Western Plant Species.” (See photo on pg. 6 and the [June 2018 Torreyana](#) for their abstracts.)

Interpretive Trail Patrol: See **Annette Ring** if you qualify and have not received the new trail interpreter patch.

Public Walks: **Ingo Renner** and Park Aide **Krista DeBusschere** encouraged docents to try leading public walks and being goodwill ambassadors for the Reserve. Ingo had a signup sheet for docents to attend a 3-hour training session for leading walks: Wed, 6/20 or Fri, 6/29. Due to docent feedback, it was decided to change the afternoon public walk back to 2 pm. The board agreed to proceed with a Friday morning walk at 10 am for July and August. These Friday walks have been added to the Volgistics sign-up calendar.

Santa Rosa Island: **Ray Barger** gave a “Spotlight On” slide show of the docent trip to Santa Rosa Island in May, when 14 docents spent three days on the island. (See the article in the [June 2018 Torreyana](#).)

Docent of the Month: **Greg Lafreniere** for all his efforts with the Children’s Program and Seabees.

Refreshments: At July’s meeting, docents with last names starting with letters **J, K, L** are responsible for snacks.

Meeting ended at 11:43 am.

Children's Program

by Janet Ugalde, Children's Program Director

On May 24, the Children's Program completed another successful school year. This year we served 4171 students from 50 schools. We are especially proud of our Title I school participation—62%.

Forty-five amazing, awesome docents donated 1533 hours. Please join in a cheer for all who shared their time and talents. An extra round of applause, please, for those who participated 20 or more times: **Walt Burkhard, Pao Chau, Susan Elliott, Wes Farmer, Mary Friestedt, Paul Howard, Greg Lafreniere, Bruce Montgomery, Patty Montgomery, and Janet Ugalde.**

THANK YOU **Louis Sands**, our effervescent and efficient coordinator. Thanks to all who contributed to our success, including Lodge hosts, park aides, Seabees, the TPDS Board of Directors and the TPA. See you in September.

Docent of the Month:

Greg Lafreniere

Photo by Herb Knüfken

Thank you for choosing me as docent of the month. It was very much a surprise and an honor to be recognized. I am very thankful to be part of the legacy of stewardship at Torrey Pines that was started by the Ellen Browning Scripps and continues today with the Torrey Pines Docent Society and the TPA.



I first learned about Torrey Pines State Natural Reserve when I was commuting past the Reserve and noticed a sign at the entrance advertising for new docents. While growing up, my family would often visit Cuyamaca State Park and hiked all their trails over time. We would also backpack in the Sierra mountains during the summer, going on successively longer trips up to 18 days out in the wilderness. One summer when I was in elementary

school, my family did a 10-week road trip in a camper up the west coast to Canada and back through Montana, Wyoming, and Utah. During that trip I had the opportunity to see many Western state and national parks. Exposure to the parks through backpacking and camping has made me care deeply for our park systems.

I was part of the class of 2011 and my first involvement was with the public walks. I gravitated towards the children's program because people do not always show up for the weekend walks and this way I would always have an audience, making the two-hour commute to the Reserve worthwhile. Talking about the Kumeyaay Indians was a natural fit because I grew up next to the Sycuan Indian Reservation in the Dehesa Valley and was familiar with many of the local Indians and some of their native traditions. There was archaeological evidence in the remains of the grinding rocks and broken pottery near oak trees along the streams. These gave testament to the presence of local tribes who lived off the land during their seasonal migrations from the coast areas to their harvesting inland camps. I also learned about native plants and animals while hiking and biking on the roads and trails in east county when I was growing up from the 70s to the mid-90s. Many of these same species live in the Reserve today.

I immensely enjoy working with all the folks involved with the Seabees. Most people who aren't part of the Seabees would never realize the number of projects that we get done under the direction of Supervising Ranger **Dylan Hardenbrook** and the supervision of Senior Park Aide **Jake Mumma**.

During guided walks or trail interpretation, a great conversation starter is asking the question "Why is the TPSNR a state reserve and not a state park?" People are usually very interested in knowing that a reserve has specific rules to protect its more fragile environment and it increases their concern for preserving our special pines. Happy interpretation trail hiking to all!



Photo-news Briefs

CEED outing on June 12 at Shaw's Trail, Carmel Valley



Peter Jensen (Torrey Pines Association president), **Joe Meyer** and **Rick Vogel** with 25 friends from the California State Parks Foundation (CSPF) who were on a special visit from all over southern California. We introduced our visitors to the Reserve and its history and then went on a short hike. The visit was organized by CSPF as a reward to some of their most loyal supporters. A meaningful visit for all concerned.

San Diego Science Fair Winners



Emily Tianshi, a 9th grader at The Cambridge School, and Eric Yang, a 7th grader at The Rhoades School, presented their research at the June docent meeting. They were each given a Certificate of Achievement and a TPDS award of \$250; a State Parks annual pass was provided for each of them by Supervising Ranger Dylan Hardenbrook. Their abstracts can be found in the [June issue of the Torreyana](#).

Torrey Pines Book Club

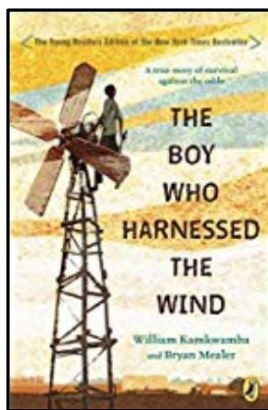
When: Tuesday, July 10, 1:00 pm

Where: Ann Gaarder's new home in Carmel Valley

What: *The Boy Who Harnessed the Wind: Creating Currents of Electricity and Hope* by William Kamkwamba and Bryan Mealer

From Amazon:

The Boy Who Harnessed the Wind is the immensely engaging and inspiring true account of an enterprising African teenager who constructed a windmill from scraps to create electricity for his entire community. William Kamkwamba shares the remarkable story of his youth in Malawi, Africa -- a nation crippled by intense poverty, famine, and the AIDS plague -- and how, with tenacity and imagination, he built a better life for himself, his family, and his village. The poignant and uplifting story of Kamkwamba's inspiration and personal triumph, co-written with Bryan Mealer, *The Boy Who Harnessed the Wind* has already won ringing praise from former Vice President and Nobel Laureate Al Gore as well as Paolo Coelho, internationally bestselling author of *The Alchemist*.



All TPDS docents are welcome. Meetings usually last a couple of hours. Please call Ann Gaarder at (858) 261-0294 to RSVP so she can give you directions.

August 14: *Ahab's Wife: Or, The Star-gazer: A Novel* by Sena Jeter Naslund

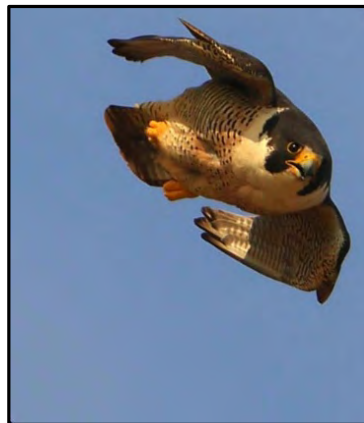
Torrey Pines Birds: Trivia Quiz

(answers on pg. 7)

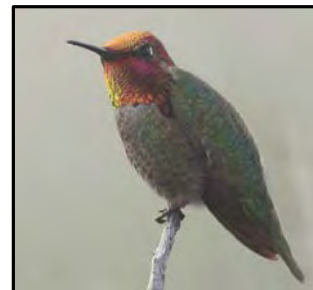
by Jack Friery; photos courtesy of Herb Knüfken

Test your knowledge of our avian companions:

1. Which is the heaviest passerine (perching) bird in the world, and what does it weigh?
2. What is a "stoop"?
3. What birds have the most rapid wingbeat?
4. What are piscivorous birds?
5. Which common Reserve bird may be the most sedentary bird species in North America? (They rarely travel more than 1300 feet from where they were born).
6. Do Wrentits mate for life?



Peregrine Falcon



Allen's Hummingbird



Very loud Common Raven

Answers to pg. 6 Trivia Quiz:

1. The Common Raven is the heaviest perching bird. The males average 3.7 pounds, the females 2.4 pounds.
2. A “stoop” describes the steep dive of raptors, such as the Peregrine Falcon, as they strike prey in the air.
3. The hummingbirds have the most rapid wingbeat. As a rule, the smaller the bird, the more rapid the wingbeat. Our Allen’s Hummingbird has a wingbeat of around 53 beats per second.
4. Piscivorous birds are fish-eaters, such as our Brown Pelicans, Caspian Terns, and Red-breasted Merganser ducks. (“Piscivorous” from the Latin: piscis, pl., pisces, for fish; vorare for devour.)
5. The Wrentit, the bird we call “The Voice of the Chaparral,” rarely wanders more than 1300 feet from where they are born. Additionally, they are the only member of their family in North America.
6. Wrentits apparently do mate for life.



Wrentits at TPSNR

Sources: Todd, Frank S. *10,001 Titillating Tidbits of Avian Trivia*. Vista, CA: Ibis Publishing Company, 1994;

<https://www.allaboutbirds.org/guide/Wrentit/overview>.

Torrey Pines Docent Society Bird Survey: June 2, 2018

Number of species: 64
(+2 other taxa)

Gadwall 3
Mallard 9
Western Grebe 21
Black-vented Shearwater 150
Brandt's Cormorant 3
Double-crested Cormorant 3
Brown Pelican 20
Great Blue Heron 1
Great Egret 2
Snowy Egret 7
Black-crowned Night-Heron 4
Cooper's Hawk 2
Red-shouldered Hawk 1
Red-tailed Hawk 7
Killdeer 1
Western Gull 41

California Gull 7
Caspian Tern 2
Royal Tern 7
Eurasian Collared-Dove 2
Mourning Dove 38
Lesser Nighthawk 1
Vaux's Swift 2
White-throated Swift 19
Anna's Hummingbird 9
Allen's Hummingbird 8
hummingbird sp. 3
Nuttall's Woodpecker 4
American Kestrel 1
Peregrine Falcon 4
Western Wood-Pewee 5
Pacific-slope Flycatcher 2
Black Phoebe 5
Say's Phoebe 2
Ash-throated Flycatcher 8
Cassin's Kingbird 6

Western Kingbird 1
Hutton's Vireo 1
California Scrub-Jay 9
American Crow 22
Common Raven 15
Northern Rough-winged Swallow 41
Cliff Swallow 7
Bushtit 58
Bewick's Wren 4
California Gnatcatcher 9
Wrentit 27
Catharus sp. 1
California Thrasher 4
Northern Mockingbird 6
Phainopepla 1
Orange-crowned Warbler 2
Common Yellowthroat 13
Dark-eyed Junco 2
Savannah Sparrow 5

Song Sparrow 7
California Towhee 38
Rufous-crowned Sparrow 1
Spotted Towhee 24
Yellow-breasted Chat 5
Black-headed Grosbeak 4
Hooded Oriole 1
Red-winged Blackbird 15
House Finch 106
Lesser Goldfinch 26
House Sparrow 2

Observers: Frank Wong,
Gary Grantham, Jack Friery,
Bob Glaser, Herb Knüfken,
Kathy Dickey, Andy
Rathbone, Marty Hales,
Tsaiwei Olee, Steve Neal,
and Anonymous

View this checklist online at ebird.org/view/checklist/S46664388

Herb Knüfken's amazing photo gallery, including many birds, may be found here: pbase.com/herb1rm



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