Dedicated to Turtle & Tortoise Conservation, Preservation, and Education Since 1964

California Turtle & Tortoise Club

The Tortuga Gazette

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When a desert tortoise hatches, its shell is soft and wrinkled from the time it spent folded inside its egg.

featured species **Mojave Desert Tortoise, *Gopherus agassizii***

Giving Desert Tortoises a Head Start

By Emily Lou Thomas, Lead Conservation Biologist, The Living Desert Zoo and Gardens

Photography by The Living Desert Zoo and Gardens

During one of Southern California's heatwaves last September, The Living Desert and the San Diego Zoo Wildlife Alliance (SDZWA) were working hard to transport and secure nearly 70 wild desert tortoise hatchlings and eggs. Although The Living Desert's conservation team was expecting the arrival of the desert tortoise hatchlings, the animals weren't meant to arrive for a few more weeks. However, the extreme heat necessitated an emergency evacuation and transport of desert tortoise eggs and hatchlings so they could be housed in an indoor, temperature-stable environment at The Living Desert's Tennity Wildlife Hospital.

For months prior, The Living Desert had been collaborating with the team at the SDZWA on a project in which desert tortoise hatchlings would hatch on their own in a secure, outdoor holding facility at Edwards Air Force Base and then be brought to The Living Desert for their first six months of life.

For desert tortoises, their first few years are critical to survival. As eggs and hatchlings, tortoises are about the size of a golf ball and have a soft shell, making them the perfect target for a variety of predators. To help them survive their most vulnerable life stage, scientists use a technique called headstarting.

Headstart projects are used for species where surviving through

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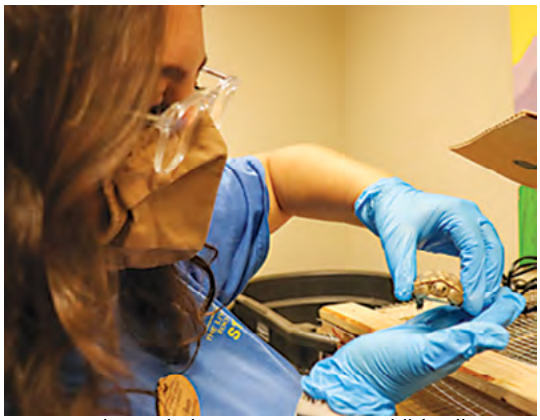
their youngest life stages dramatically increases their chances of reaching adulthood. Until they are about five years old, desert tortoise hatchlings have soft shells, meaning they are at their most vulnerable to potential predators such as ravens and coyotes for quite some time. As their shells thicken and harden with age, they are better able to fend off predators.

Through this desert tortoise headstart program — a collaboration with SDZWA, Edwards Air Force Base, U.S. Fish and Wildlife, and the U.S. Geological Survey — the hatchlings will spend their first six months growing substantially larger than they would in the wild. Thanks to a large, nutrient-rich diet and warm, climate-controlled habitat, they can grow to the size of a three-year-old tortoise within the first six months of their lives. This significant growth in size will make them less vulnerable to predation and increase their chance of survival when they are reintroduced into their native habitat.



In partnership with the San Diego Zoo Wildlife Alliance and Edwards Air Force Base, the headstart program gives these tiny tortoises a better chance for survival in the wild.

The early stages of this project began on Edwards Air Force Base, where SDZWA ecologists located and monitored adult tortoises via trackers. Mobile X-ray machines allowed the ecologists to go into the desert and determine which adult females had eggs. Those females were transported to a safe, outdoor rearing facility to lay their eggs in provided burrows. Once the females laid their eggs, they were returned back to the location where they were collected. The original plan was to allow the hatchlings to emerge naturally from their eggs and burrows in the rearing facility and then be transported to The Living Desert for headstarting. However, due to the heat wave, the burrows were getting too hot to safely contain the eggs and the ecologists had to move quickly to Plan B: evacuating the eggs prematurely and immediately transporting them to The Living Desert to hatch in incubators. The hatchlings who emerged early at the outdoor facility followed soon thereafter.

Incubators allowed the tortoise eggs to hatch safely.

Desert tortoises are ectotherms,

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Upon hatching, the average weight of the Mojave desert tortoises was 22 grams (0.77 ounce), the equivalent of almost four quarters. A special regimen of nutrition and a warm habitat encourages accelerated growth in the tortoises, which helps in hardening their protective shells.

meaning their body temperatures are determined by their environment. They must move around their habitats to keep their bodies in a safe temperature range. Therefore, climate-change induced heatwaves and other extreme weather events are a major concern for the conservation of the species. Hatchlings and juveniles are especially susceptible to illness and mortality due to the temperature extremes. One way tortoises keep themselves safe in the cold winter months is by staying deep in their dens and entering brumation, a reptile state of hibernation. To encourage rapid growth, The Living Desert has kept the hatchlings awake for their first winter in an indoor, temperature-controlled environment. They have heat lamps and UV lights to mimic outdoor conditions, ensure proper bone growth, and aid in nutrient absorption. There, scientists can ensure the hatchlings are kept warm enough to mature quickly and safely but are not in danger of overheating.

These hatchlings are also helping scientists better understand the species. While the hatchlings are at The Living Desert, they are going through a series of thermography and behavioral trials. Tortoises' dependency on temperature means that increasing our understanding of how climate change affects tortoises is critical to their conservation. The headstart program presents scientists with a unique opportunity to learn more about thermal ecology and hone mitigation techniques for the youngest age classes of desert tortoises. Similarly, scientists can evaluate behavioral traits amongst the tortoises to discover what role those traits may play in predicting habitat use, movement, and survival of the animals once they are back in the wild. In this way, behavior can inform or shape conservation practices to be more effective. These trials are still underway, and the teams are continuing to collect more data.

> **"Despite being the California state reptile, desert tortoises are critically endangered."**

Each tortoise is measured weekly to track growth rate. A larger size means they will be less vulnerable when released back into the wild.

Stay on the lookout for updates and key findings!

After trials are complete and the hatchlings are large enough, they will return to the designated outdoor rearing facility for another six months to re-acclimatize to the desert and learn important predator avoidance behaviors. The SDZWA staff will complete training with the hatchlings to teach them to be wary of some of their top predators, ravens and coyotes. While ravens are a native and natural predator of desert tortoises, their population is 17 times as large as it was just 40 years ago, and they now account for the majority of annual tortoise mortalities. By pairing the smell of coyote urine or the sight and smell of a raven with something unpleasant, the hatchlings will learn to steer clear of these top predators. Once the training is complete, scientists will attach radio trackers to the hatchlings' shells and release them back into the desert on Edwards Air Force Base. These radio trackers will allow scientists to monitor the dispersal, survivability, and habitat use of the hatchlings.

As The Living Desert wraps up this phase of the project, they are proud that so many guests have had the chance to see the hatchlings at the Tennity Wildlife Hospital. Similarly, they are proud of The Living Desert's team of conservation scientists and volunteers who provided daily care like feeding and cleaning, taking growth measurements, completing thermography or behavioral trials, or soaking the tortoises in their weekly bath.

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At the Living Desert's Tennity Wildlife Hospital, UV lights and heat lamps allow caretakers to control the temperature of the tortoises' environment.

The Living Desert has been a long-time supporter of desert tortoise conservation and is proud to continue this critical effort. Despite being the California state reptile, desert tortoises are critically endangered. By giving desert tortoises a head start, we hope to bolster the wild population and give the species a fighting chance of survival.

Originally published in The Living Desert newsletter *foxpaws* Spring 2023 and reprinted with the kind permission of the author and The Living Desert staff.

Since the original publication, the desert tortoises have moved on to the next phase of outdoor rearing. Learn more in the upcoming *foxpaws* Summer 2023 newsletter and a future issue of *The Tortuga Gazette*.

Thanks to CTTC Low Desert members Marlies Dietrich and Ann Clandening for their assistance in securing permission to reprint this article.

Click **The Living Desert Zoo and Gardens** for visitor information, hours, location, and directions. The park also maintains several **live web cams** streaming views of the park's animals and habitats.

Minnesota Bans Commercial Trapping of Wild Turtles

Center for Biological Diversity press release

St. Paul, Minnesota—24 May 2023—Minnesota Gov. Tim Walz today signed into law a ban on commercial collection of wild turtles in the state. Each year, for-profit trappers have collected thousands of turtles from the state's waterways, mostly to sell for food, traditional Asian medicines or pets.

"Tens of thousands of Minnesota's turtles are now safe from trappers out to make a quick buck," said Collette Adkins, a biologist and senior attorney at the Center for Biological Diversity. "The science shows that even a small number of turtle traffickers can quickly devastate turtle populations. This ban is a big victory for all of us who care about the health of our state's wildlife and waterways."

About two decades ago, the Minnesota Department of Natural Resources placed a moratorium on issuing new licenses for commercial turtle trappers. Since then, the remaining licensees have continued to collect and sell tens of thousands of turtles using baited turtle traps. For example, in 2021, 19 licensees removed approximately 10,000 painted turtles from the wild in Minnesota.

A Minnesota study found lower turtle population levels in lakes where commercial turtle trapping had previously occurred. Many studies have shown that wild turtles cannot withstand commercial exploitation without facing severe declines because, unlike deer and other traditional "game" animals, turtles take many years to mature and reproduce.

"It's time to *shellebrate*," said Christopher Smith, conservation committee chair for the Minnesota Herpetological Society. "Minnesota's ban on the commercial harvest of wild-caught turtles has been a long time coming and has been a group effort spanning over two decades."

As part of a campaign to protect freshwater turtles in the United States, advocacy by the Center and its partners has led to bans or important restrictions on commercial turtle trapping in Alabama, Florida, Georgia, Iowa, Missouri, New York, Nevada, South Carolina and Texas. Prior to enactment of this new legislation, Minnesota was one of just six states that still allowed unrestricted commercial collection of wild turtles.

The legislation enacted today goes into effect on January 1, 2024.

Native Turtles of Minnesota

Blanding's turtle
False map turtle
Northern map turtle
Ouachita map turtle
Painted turtle
Smooth softshell turtle
Snapping turtle
Spiny softshell turtle
Wood turtle

For more information click on **Turtles of Minnesota**

In Memoriam
Marc D. Graff M.D.

Marc D. Graff, M.D.

By Michael J. Connor

With a heavy heart I pass on the sad news that my old friend Marc D. Graff M.D. died on June 2, 2023, at the age of 74 at his home in Porter Ranch. Marc was well known to many of you having served as President of California Turtle and Tortoise Club's Valley Chapter and as Chair of California Turtle and Tortoise Club's Executive Board for many years in the 1980s though early 2000s.

Like many of us, Marc joined CTTC when his family adopted a desert tortoise. After attending a few meetings Marc moved up the ranks to become Vice President of the newly fledged CTTC Valley Chapter in April 1983, and then President in December 1983. He would remain Valley Chapter President until December 1992. Marc was elected Vice Chair of CTTC's Executive Board in January 1989. In August that same year he was propelled into the Chair's seat by the sudden resignation of Martha Young who was moving away. He continued as Chair until December 1992. Then served as Vice Chair for 2 years. And then served as Chair again from 1995-2003. All told, he gave CTTC twenty years of unstinting service.

Marc accomplished many things as Chair. Under his watch the CTTC incorporated as a non-profit entity; the Club held its First International Turtle and Tortoise Symposium and published the Proceedings; and CTTC began to work with other groups and organizations to promote turtle and tortoise conservation in concrete and meaningful ways. California Turtle and Tortoise Club flourished, growing to 10 Chapters and over 2,200 members.

Marc at the CTTC 50th Anniversary Celebration accepting a plaque presented by Robin Robb.

In addition to his service to CTTC, during that same period Marc was also on the board of the Desert Tortoise Council. He was a regular session chair at the Annual Desert Tortoise Council Symposium until 2004.

I first met Marc at a CTTC Executive Board meeting in the late 1980s and we became good friends. Marc was a psychiatrist in his civilian life. He had excellent organizational skills and was adept at getting the Board to do its job. Most of the time that he served as Executive Board Chair I was either Editor of the *Tortuga Gazette* or the Vice Chair so we got know each other very, very well. After I became Editor of the *Tortuga Gazette* in 1991 at Marc's instigation, we started a regular Chairman or Conservation Front column. At that time the *Tortuga Gazette* was published monthly. Knowing that I would have page of copy ready to insert each month was a godsend to me as Editor. And Marc wrote about such interesting stuff. All kinds of topics—the pros and cons of Kemp's Ridley head-starting programs, desert tortoise conservation, and even the 1994 Northridge Earthquake, to name a few. All delivered with interesting philosophical and psychological underpinnings.

Marc was well known for keeping his sense of humor even in the most trying situations. In 2004, I drove to Las Vegas to attend the Desert Tortoise Council Symposium. Marc was flying in that same day. When I arrived at the hotel a message was waiting for me that Marc had had a heart attack at the airport and was hospitalized. Later that day, while his girlfriend Karin Forrest (who he later married) and I sat anxiously at his bedside, Marc beguiled us by explaining that Las Vegas—with its fast living and older demographic—was the heart attack capital of the world and accordingly well prepared to deal with it—so he had picked the ideal place to have his heart attack! So typical of Marc to endeavor to defuse other people's sufferings with a little humor.

In the early 1990s we made an informational video. This was decades before Youtube and smartphones and had to be shot in a studio with only sufficient studio time allocated for one shoot and not much editing. It was a typical panel format with four of us sitting at a table. I'd brought a few turtles to share including a hatchling red-eared slider. As it was handed to Marc he unfortunately fumbled the pass and dropped the hapless hatchling a few inches onto the table. Fortunately, young sliders are quite robust and the hatchling was unscathed by her tumble. After initially feeling aghast I spent the rest of the video trying not to giggle. And now when I look back on it, that's the only part of that video that I can remember.

Farewell Marc. You will be missed, and you will be remembered.

—Michael J. Connor

A Comeback is Like a Tortoise Because.....

Story by Karen Berry with Photos by Cristina Perovich & Karen Berry, Valley Chapter

Encouraging the public to attend a larger scale event can be a slow process, especially after a four-year hiatus from our annual educational and fundraising show. Covid not only caused harmful physical effects to the public, but a lot of the psychological effects remain, and people are still cautious about larger gatherings.

"Bubba" the Sulcata, the official show greeter, with his chaperone, Jacob Vignale, who donned a sea turtle suit to greet visitors.

Abigail DeSesa of the Santa Clarita chapter (the lady in the tan T-shirt) brought three exotic Radiated tortoises. One male is 70 years old and still quite the specimen!!

It will take a while to return to pre-Covid level attendance, but on May 20th people did come out, albeit in smaller numbers, to see the turtles and tortoises exhibited by our members. Our attendees supported the gift shop and other fundraising activities, and made donations for the veterinary care of our foster tortoises.

Visitors were welcomed at the front gate by members Carlo and Jodi Inzerella. Jodi has been a fixture at the front gate for many years, working with Howard Suer, who passed away late last year. Jodi's son Carlo filled in for Howard, and they were a wonderful duo.

The spring weather was beautiful in Woodland Hills, CA, and the turtles and tortoises were active in our outdoor show venue. The show's official greeter, Kirk Weber's male Sulcata "Bubba" and his chaperones Jacob Vignale and Frankie Vignale, Jr. entertained the attendees and visited with the small children.

Everybody loves the babies!!! Sioux Ratcovic staffs the most popular booth at the show, the hatchling and juvenile display. These are all in the juvenile size range and have been with us for a while.

There were exotic tortoises, such as radiated, leopard, red foot, Russian, and Egyptian, plus more native species, box turtles and desert tortoises. Informative displays about species and their care helped educate people

Maggie Elliott and her male Russian tortoise who is wearing the latest in "small tortoise couture." He and Maggie are show veterans.

Janelle Gallegos and her box turtle "Thaddeus" who have been at the show many times.

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Valley Chapter president Bob Hazard, aka "Bob the Builder," explains the different kinds of housing, especially above ground burrows, to our visitors at the show. The object of desert tortoise housing is to provide something as close to a natural burrow as we can, within the limitations of our yards, soil, and other factors.

about the different kinds of turtles and tortoises they have as pets or might be interested in adopting.

Also joining us again was Vicki Anderholt, who is a bunny groomer, and she also adopts rabbits to new homes. To see those available for adoption, contact **http://www.adoptabunnyrabbit.org**; for rabbit grooming services, contact **http://www.bunnygroomer.com/**

Dr. Kenneth Coscarelli, from Newbury Park Veterinary Clinic, **https://newburyparkvet.com/**, staffed the "Ask the Vet" booth for us again this year. He has a lot of experience with turtles and tortoises, especially desert tortoises, and is one of the veterinarians who treat our "foster kids."

The last three years have been very difficult for veterinarians everywhere. Covid turned traditional vet care upside down for most everybody, and that, too, is taking a while to fully return to normal. Some vets are still experiencing staffing shortages and other situations that impair business as usual. For various reasons, we are finding that there are fewer vets with the specialized experience to treat our shelled friends.

It was a fun event, and we did raise funds to support our adoption and educational activities. We are already looking forward to next year. A lot of work goes into the planning and execution of a big event like our show.

Kirk Weber and some of his exotic tortoise friends: female Leopard (top), female Radiated (center), and female Egyptian (bottom right).

Dr. Coscarelli brought a slide show on his iPad with x-rays and other interesting veterinary photos.

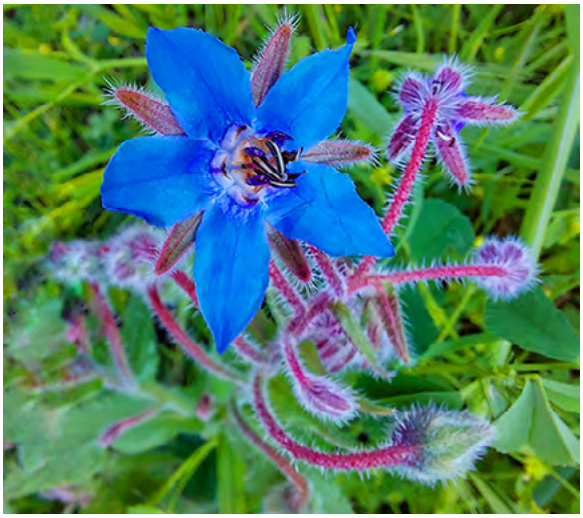
A BIG thanks goes to all of the members who promoted the show via flyers, word of mouth, and social media, exhibited their turtles and tortoises, donated items for our fundraising activities, and especially those who did the set-up, break down, and cleanup after the event!!

One of the displays of species and care information for people with turtles and tortoises and those who are considering adoption.

Jacob and Bubba at the end of the show. Jacob: "We worked pretty hard today, didn't we, Bubba ?"

the Turtle's Garden
planting for chelonians
by M A Cohen

Borago officinalis
Borage; Starflower



Star-shaped borage blossom with flower buds. Photo © 2022 by PROPOLI87

Borage, a beautiful annual herb known as the starflower, is a member of the Boraginaceae, the forget-me-not family comprising some 2000 species of trees, shrubs, and herbaceous plants. Borage is endemic to the Mediterranean region and has naturalized in many other parts of the world. Some sources report that borage originated in Syria. Settlers from Europe brought the herb to North America.

In addition to starflower, two other common names of *B. officinalis* are bee bread and bee bush because the herb produces copious amounts of nectar and pollen and attracts honeybees, bumblebees, and other native bees. These insects are prime pollinators in any garden. See the section titled "Pollinators" for more information.

Description

A fast-growing ornamental and edible herb, *B. officinalis* benefits the garden in numerous ways. It has an annual life cycle: the herb grows vegetatively, blooms, and sets its seeds in a single season. However, it freely reseeds, perpetuating its presence in the garden.

Borage typically grows 12 to 36 inches (30 to 90 centimeters) tall with a spread of 9 to 18 inches (23 to 45 centimeters). Its growth habit is somewhat sprawling, so it may benefit from staking as it grows taller.

The large, thick leaves of the borage plant are gray-green to medium green with a wrinkled surface and rippled margins. Fine hairs called trichomes cover the young leaves, stems, and flower buds with a fuzzy texture. Leaves becomes prickly as they mature.

The blossoms of borage are about one inch (2.5 centimeters) in diameter and have five pointed petals. Flowers are star-shaped and range in color from intense blue through pale blue, lavender, and rose to white.

Flowers appear in clusters known in botany as racemes that arise from fuzzy stems. The flowers themselves are typically nodding rather than upright. Flowering occurs from late spring throughout summer and may continue into fall in mild-weather areas.

Deadheading (removal of spent flowers) will promote more flowering and control the setting of seeds.

Borage seedling photographed prior to bearing flowers. Photo © 2021 by Zoya Akulova

Four Varieties of Borage

Common borage (*Borago officinalis*)
The most familiar variety of borage, *B. officinalis* is an annual that features intense blue blossoms and medium green leaves.

Variegata (*Borago officinalis 'Variegata'*)
Variegated borage is an annual herb that features blue blossoms with variegated green and white leaves.

Alba (*Borago officinalis 'Alba'*)
White borage, another annual variety, combines bright white blossoms with medium green leaves.

Creeping borage (*Borago pygmaea*)
With its sprawling growth habit, creeping borage is a short-lived perennial with pale blue blossoms that appear from late spring into early fall (Dyer, n.d.).

Cultivation

Herb and vegetable gardens, cottage gardens, wildlife gardens, planting beds, and borders provide suitable settings for the borage. It also grows well in containers.

B. officinalis is easy to grow if the garden plot has good drainage. In most locations, the borage requires full sun for an abundance of blossoms. It will grow in light shade, especially in hotter areas.

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This herb tolerates various soil textures as long as it is well-drained. Adding some organic matter to the garden soil will benefit the plant's growth.

Borage grows a deep taproot that makes transplanting seedlings challenging, so it is best to sow seeds in place. The species is somewhat drought-tolerant and requires moderate watering until established in the garden. Once it is actively growing, the borage needs only light watering. During drought, the plant will perform better with some supplemental irrigation.

When its life cycle ends, many gardeners "chop and drop" borage stems and leaves into the garden because the plant parts enrich the soil with nutrients as they decompose (Stross, 2020).

If borage begins to overtake its allotted space, remove the flowers before they go to seed or pull the seedlings as soon as they sprout.

Companion Planting

The concept of companion planting is popular among gardeners. It "is based on the idea that some plants perform better if they are located near a strategic plant partner. This partner may attract beneficial insects, improve soil quality, or even share root space in a mutually beneficial manner" (Boness, n.d.).

Borage is an excellent partner for many vegetables and flowers, including tomatoes, cabbage, the squash family (cucumbers, melons, pumpkins, and zucchini), and strawberries. Borage repels tomato horn worms and cabbage worms, while it attracts beneficial insects such as bees and tiny braconid wasps (Stross, 2020).

Because it adds trace minerals and other nutrients to the garden soil, the borage greatly improves the performance and flavor of fruits and vegetables (Boness, n.d.).

Clusters of 'nodding' flowers and flower buds of borage photographed in Denmark. Photo © 2022 by rolfkrake

Pollinators and Beneficial Insects

B. officinalis is attractive to many other pollinators besides species of bees. Hummingbirds and butterflies enjoy the nectar that borage produces.

Borage also attracts many species of beneficial insects, including hoverflies, lacewings, ladybugs, and parasitoid wasps that prey on pest insects in the garden.

Because the species produces an abundance of seeds, borage provides nutritious food for many varieties of seed-eating birds.

Culinary Uses

The term "potherb" refers to any plant with culinary uses. For centuries borage has been a potherb used for culinary and medicinal purposes in the Mediterranean region and the Middle East. Borage leaves are quite nutritious, containing vitamins A and C, iron, and niacin (Stross, 2020).

Except for the roots, all parts of the borage plant are edible and have a flavor similar to cucumber.

Younger leaves are fuzzy, but they develop small prickles as they mature, so it is best to eat the leaves when they are young and tender.

Cooks use borage leaves like spinach leaves, for example, raw in vegetable and pasta salads. Cooked borage leaves are prepared like other greens, adding them to soups and stews, ravioli fillings, and sautéed side dishes.

Borage blossoms can be floated atop drinks, frozen into ice cubes, and candied for a sweet treat.

A honeybee visiting a borage blossom photographed in France. Photo © 2014 by MarionCharbonnier

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Mike's Turtle Net Picks by Michael J. Connor, Ph.D.

A varied selection of recent articles, stories and sites on the Web that some of you may find as interesting as I did. This list is also posted at tortoise.org/turtlenetpicks/turtlenetpicks2023.html

Desert Tortoise Captive Breeding Problems
Despite environmental red flags Edward's Airforce Base continues its "head-starting" desert tortoise program.

Florida Couple Arrested After Police Find Stolen Tortoises
Couple arrested after St. Petersburg police find chipped Galapagos tortoises taken from the Saint Augustine Alligator Farm.

Captive Aldabra Survey
Seychelles and IOTA sign agreement for new survey of captive Aldabra tortoises.

Minnesota Bans Commercial Turtle Trapping
After 20 years of trying to phase out commercial turtle trapping in Minnesota, lawmakers have finally banned the practice.

Homosassa River Alligator Snappers
New population of Suwannee alligator snapping turtles found 45 miles away in the Homosassa River in Florida.

Large Snapper Spotted in Northern California Lake
California might have declared snappers as illegal aliens but like me the public see them as impressive, lovely animals.

Burmese Peacock Softshell
First time video recording of wild critically endangered Burmese peacock softshells.

Manning River Turtle Insurance Colony Successful Breeding
Evidently love is in the air at this New South Wales breeding facility for the critically endangered Manning River turtle.

Western Swamp Tortoise Hatchlings Born at Perth Zoo
Video of endangered Western Swamp Tortoise hatchlings welcomed by the Perth Zoo.

Australian Western Swamp Tortoise Hatchlings Released
Perth Zoo releases endangered western swamp tortoise hatchlings.

Cambodia Royal Turtle Breeding Program
The Khmer press agency reports that 167 head-started Southern River Terrapins, *Batagur affinis*, have been bred in captivity for release into estuaries near the sea.

***Rafetus swinhoei* on the Brink of Extinction**
The last known female Yangtze giant softshell turtle washed up on the shores of Dong Mo Lake in Vietnam. She measured 156 cm long and weighed 93 kg.

Hong Kong Bigheads
Platysternon persists but continues to face problems in Hong Kong.

Light Skinned Bighead
Thai locals believe a leucistic bighead turtle will bring them good luck in the lottery.

Panama Gives Sea Turtles Legal Rights
New law will "hold governments, corporations, and public citizens legally accountable for violations of the rights of sea turtles."

Correlating Turtle Shell Shape to Habitat
A global-scale analysis of how turtle shape relates to the habitat they live in.

Oldest Dortokid Turtle and First UK Occurrence
A well preserved Dortokid fossil from the Wessex Formation (Hauterivian-Barremian) on the Isle of Wight.

CTTC's Turtle and Tortoise Listserve
To engage with other turtle and tortoise fans in a friendly atmosphere join CTTC's Turtle and Tortoise list or send an email to: <CTTC-TurtleAndTortoise-list+subscribe@groups.io>.

CTTC On Facebook
For breaking news updates follow CTTC on Facebook!

A panorama of the Desert Tortoise Research Natural Area in California that was created by Robert Parker, founding member and president of the CTTC Ridgecrest Chapter.

Classified Advertisements

Classified advertisements run for one issue at 5^{00} for up to four lines. Ads are accepted at the discretion of the Editor. Classified ads are available to members and subscribers only and are run as a service to our members. California Turtle & Tortoise Club is not responsible for merchandise placed for sale in the *Tortuga Gazette*.

Please make your check payable to the California Turtle & Tortoise Club.

Please send ad fee to: CTTC Tortuga Gazette, attn Treasurer, P. O. Box 7300, Van Nuys, CA 91409-7300. Mail fee with ad copy to the *Tortuga Gazette* mailing address; OR, mail fee to the postal address above, and email the ad copy to the Gazette Editor.

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FOR SALE: Captive-bred 2023 Egyptian tortoises (3 bloodlines). CB 2022 Chinese box turtles (*C. flavomarginata*). Contact Martha Garcia for info: diamonddove15@gmail.com

ZOO MED IS A PROUD SPONSOR OF THE TSA

ZOOMED.COM

A CRITICALLY ENDANGERED TORTOISE ENJOYS ZOO MED GRASSLAND TORTOISE FOOD

The Radiated Tortoise *(Astrochelys radiata)* is the 6th rarest tortoise in the world, and the heroes at Turtle Survival Alliance (TSA) are fighting for its future. As a non-profit, the TSA relies on support from the community. Zoo Med has pledged to donate pallets of their Natural Grassland Tortoise Food to TSA's Madagascar location 3 times a year. This food prevents shell and spinal growth deformities by matching the nutrient profile and high fiber content of a wild tortoise diet.

Join Zoo Med in supporting the TSA's conservation efforts; visit their website to learn more and how to contribute: turtlesurvival.org

TSA
turtle survival alliance

Death of the Last Female Yangtze Softshell Turtle Signals the End for the 'God' Turtle

by Jeremy Hance as posted on Mongabay 9 May 2023

- The last known female Yangtze giant softshell turtle died in April of unknown causes, leaving only two males as the final known living members of a species that has for years been teetering on the brink of extinction.
- "We are devastated," says the Asian Turtle Program, an NGO working to protect the Yangtze turtle and its habitat.
- The only hope for the species lies in the possibility that a few of these giant creatures may still roam, unknown, in lakes and rivers in Vietnam or Laos.

In a temple on an island in Hoan Kiem Lake, Hanoi, Vietnam, ceramics comprise a mural depicting the legend of Kim Qui (the Golden Turtle) and the Restored Sword. Photo © 2008 by Rdavout

Sometimes, our current mass extinction crisis can be represented by the loss of a single individual.

On April 21, locals spotted a 93-kilogram (205-pound) body in the waters of Dong Mo Lake in northern Vietnam: it was the carcass of the last known female of the Yangtze giant softshell turtle (*Rafetus swinhoei*). "We are devastated," the Asian Turtle Program (ATP) wrote on. "We have spent 17 years working to protect this turtle and its habitat."

A cause of death hasn't been released yet, but with her passing, there are only two known Yangtze softshell turtles left in the world, both male. One is in a nearby lake, Xuan Khanh, and the other in Suzhou Zoo in the city of the same name in eastern China. It's also possible another turtle survives in Dong Mo Lake, but that hasn't been confirmed. With only two or three survivors left, the Yangtze giant softshell turtle, also known as Swinhoe's softshell turtle, is arguably the most endangered animal on the planet.

The Yangtze giant softshell turtle used to live in China's Red River basin and lower Yangtze River as well as northern Vietnam. It was wiped out across much of its range due to the damming of rivers, destruction of wetlands, overfishing, pollution, and hunting, both for its meat and eggs.

In Vietnamese mythology, the Yangtze giant softshell turtle is a representative of Kim Qui, a turtle god who helped the Vietnamese overthrow the Chinese after a millennium of rule. Hoan Kiem Lake, in modern day Hanoi, was the site where Emperor Lê Lói was said to have returned a magic sword to the turtle god Kim Qui, after using it to expel the Chinese. A Yangtze giant softshell turtle survived in Hoan Kiem until 2016; today, it is bereft of gods.

The closest living species to the Yangtze river turtle is the Euphrates softshell turtle (*Rafetus euphraticus*) found in the Euphrates River in West Asia. The IUCN Red List currently categorizes the Euphrates softshell turtle as endangered.

Tim McCormack, the head of the ATP, told Mongabay in 2019 that it's possible a number of individual Yangtze giant softshell turtles still remain hidden in lakes and rivers in Vietnam and Laos. A female can lay more than 30 eggs in a clutch, and more than one clutch a year, so even a single breeding pair could forestall extinction.

But for that to happen, any remaining turtles need to be found quickly. At that time McCormack said what the group needed most was funding to keep searching for more turtles and then attempt breeding.

"The species is so rare but if you look at funding and resources available it's quite limited. If you look at tiger conservation or elephant, you're talking about millions of dollars being put into it," he said. "For these species, there's very little in comparison."

Scientists estimate that the current rate of extinction globally is 100 to 1,000 higher than the background rate of extinctions that would be expected naturally, putting us squarely in a mass extinction crisis, often dubbed the sixth mass extinction. In response, global governments at the U.N. Biodiversity Conference (COP15) in Montreal last year pledged to protect 30% of their land and waters by 2030.

Yet for many species already on the edge of extinction, habitat protection won't be enough—more direct help and funding is required.

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Meeting Schedule: July/August 2023

Click on your Chapter's website link for the latest program information which is posted as it becomes available.

Chino Valley
July 21; August 18

Foothill
July 14; August 25

High Desert
July 10; August 14

Inland Empire
July 7; August 4

Kern County
July 10; August 14

Low Desert
Meeting information to be announced.

Orange County
July 7; August 4

Ridgecrest
NO Meeting in July or August (summer hiatus)

Santa Barbara-Ventura
Meeting information to be announced.

Santa Clarita
Meeting information to be announced.

TOOSLO (San Luis Obispo)
Contact the chapter for meeting information.

TTCS (Long Beach)
July 15; August 19

Valley
July 21; August 18

California Turtle & Tortoise Club: a Society Dedicated to Turtle & Tortoise Preservation, Conservation and Education since 1964. Promoting and Facilitating the Care, Rehoming, and Adoption of Native and Nonnative Turtles and Tortoises.

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There are three options for membership renewal:

1. Send a check to the mailing address of your chapter. In the panel below, you will find the current membership fees and the mailing addresses for each chapter.
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