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

CALIFORNIA TURTLE & TORTOISE CLUB

The Tortuga Gazette

Volume 60, Number 6 • November/December 2024

A Huastecan slider turtle (*Trachemys venusta* ssp. *cataspila*), one of the six subspecies of Meso-American pond sliders, basking in Panama. Photo © 2014 by Alvenix Zul

featured species

Meso-American Pond Slider, *Trachemys venusta* (Gray 1856)

Introduction to the Elegant Pond Slider

by M. A. Cohen

Meso-America, often written unhyphenated as Mesoamerica, is a geographical subregion also known as the Middle Americas. Meso-America includes Mexico, the seven countries in Central America, and the thirteen countries and territories that comprise the Caribbean Islands. Two South American countries adjacent to the Caribbean Sea, Colombia and Venezuela, are sometimes included in the Middle American subregion.

Trachemys genera range from the midwestern United States south to northern Argentina in South America. One subspecies, the red-eared slider, *Trachemys scripta elegans*, has been introduced in many other parts of the world where it may be considered an invasive, nonnative species.

Trachemys venusta was scientifically described by the prolific British zoologist John Edward Gray (1800-1875) in 1856. Gray classified the species as a member of the genus *Emys*, but after many subsequent taxonomic revisions, it became part of the *Trachemys* genus.

Derived from the Latin word root *venust*, meaning elegant,

article continues on page 2 ▶

CONTENTS

Introduction to the Elegant Pond Slider, *Trachemys venusta* by M. A. Cohen	1
Scientists Use Tiny 'Backpacks' on Turtle Hatchlings to Observe Their Movements	6
The Turtle's Garden: Snapdragon, *Antirrhinum majus*	8
Chips Ahoy…….New Tech for Torts by Karen Berry	10
Endangered Species Act Protection Sought for Diamondback Terrapins	12
Judge Rejects Federal Project Threatening California's Desert Tortoises	13
Kansas Releases Giant Snapping Turtles in Effort to Bring Back the Endangered Species	14
Meeting Schedule: November/December 2024	16

charming, or attractive, the species name *venusta* refers to the beauty of the turtles' carapace and head markings.

The Meso-American slider is a member of the Emydidae, the chelonian family of semi-aquatic, basking turtles. Large and diverse, the Emydid family contains one-third of all living turtle species. There are currently 15 recognized species of *Trachemys* turtles.

Description

A medium- to large-sized freshwater turtle, *T. venusta*, may reach a mature carapace length of 13 to 19 inches (33 to 48 centimeters), depending on the subspecies. The adult's carapace has a weak keel and a brown, green, or olive background color.

T. venusta is distinguished from other *Trachemys* species by the distinctive ocelli on the pleural scutes of the carapace. The word ocelli describes the contrasting, rounded, dark-centered, eye-like patterns found on the turtle's carapace.

As the turtle ages, its highly contrasting coloration may fade on both the carapace and plastron and very old male *T. venusta* may appear melantistic, which is a darkening of the body tissues caused by production of the pigment melanin.

The plastron of the *T. venusta* hatchling typically has a pale yellow background with highly contrasting dark-green patterning at its seams. The hatchling's plastral markings tend to fade as the turtle matures.

The background color of the species' skin is green to olive-brown. Yellow or orange striping marks the head, neck, and tail of the species. *T. venusta* species display a characteristic red or yellow stripe that runs from under each eye down the turtle's neck.

The plastral view of an **adult** Yucatán slider, *T. v.* ssp. *iversoni*, photographed in Yucatán, Mexico. Notice the pale pattern around the seams of the plastron. Photo © 2023 by Luis Diaz-Gamboa

Meso-American sliders have flattened, webbed feet with five clawed digits (toes) per foot. The male's forefoot claws are typically longer than the female's, and the male's tail is longer and thicker than hers.

As with many turtle species, the female *T. venusta* is typically larger than the male, and her carapace has a more rounded shape and higher dome than his. Females generally have brighter coloration than males.

T. venusta Subspecies

There are six recognized subspecies of the Meso-American pond slider, *Trachemys venusta*, inhabiting the Middle Americas from southeastern Mexico through Central America to northwestern South America.

Dozens of taxonomic changes occurred since the original species description was published. According to Uwe Fritz and his team, "for slider turtles, taxonomy is notoriously unstable." The names listed below are currently in use in scientific discourse, but changes may occur in the future.

The first three listed subspecies

article continues on page 3 ▶

Juvenile Uhrig's slider, *Trachemys venusta* ssp. *uhrigi*, photographed in Costa Rica. Photo © 2024 by Patrick Jackson

were formally described in the 19th century, specifically 1856, 1868, and 1885. The last three subspecies on the list were scientifically described in 2010. The newer subspecies are provisionally listed because there is continuing debate about their taxonomy (classification), and DNA analyses are ongoing.

▶ ***Trachemys venusta venusta* (Gray, 1856)**—the Belize or Tabasco slider. It is found in Belize, Guatemala, Honduras, and in the Mexican states of Campeche, Chiapas, Oaxaca, Quintana Roo, Tabasco, Veracruz, and Yucatán. It reaches up to 19 in. (48 cm) in carapace length.

▶ ***Trachemys venusta cataspila* (Günther, 1885)**—the Huastecan slider. It lives in the Mexican states of San Luis Potosí, Tamaulipas, and Veracruz. Its adult carapace length may reach 12 in. (31 cm).

▶ ***Trachemys venusta grayi* (Bocourt, 1868)**—Gray's slider. It occupies El Salvador, Guatemala and Mexican states of Chiapas and Oaxaca. It may attain an adult carapace length of 24 in. (60 cm), but most individuals are closer to 18 in. (45 cm).

▶ ***Trachemys venusta iversoni* ssp. nov.** McCord, Joseph-Ouni, Hagen & Blanck, 2010—the Yucatán slider. It inhabits the Mexican state of Yucatán. Its mature carapace length reaches 8 in. (20 cm).

▶ ***Trachemys venusta panamensis* ssp. nov.** McCord, Joseph-Ouni, Hagen & Blanck, 2010—the Panamanian slider. It occurs in Panama. This subspecies is not as well-known as other subspecies.

▶ ***Trachemys venusta uhrigi* ssp. nov.** McCord, Joseph-Ouni, Hagen & Blanck, 2010—Uhrig's slider. It lives in Costa Rica, Honduras, Nicaragua, Panama, and Colombia in the departments* of Antioquia and Chocó. The species reaches a length of 12 in. (30 cm).

Range and Habitat

Sometimes termed the Central American slider, *T. venusta* is widely distributed in subtropical and tropical regions from southeastern Mexico to northwestern Colombia.

The species favors quietly-flowing large rivers, marshes, canals, and ponds that hold water year around and contain abundant aquatic vegetation (Garat & Snow, n.d).

T. venusta species are primarily aquatic and spend most of the daylight hours basking on rocks and fallen logs that are in or near their freshwater habitats.

Meso-American sliders rarely leave the water except to forage and nest. Males tend to remain in freshwater while females may enter brackish or salt water to find suitable nesting locations on warm sand banks.

Diet

Like other members of the *Trachemys* genus, Meso-American sliders are primarily carnivorous as juveniles and largely omnivorous as adults. Juveniles consume carrion, fish, frogs, shrimp, water snakes, snails, and tadpoles. The adults add aquatic plants such as duckweed to their juvenile carnivore diet (Garat & Snow, n.d.).

Head shot of a Yucatan slider, *T. v.* ssp. *iversoni*, photographed in Yucatan. Photo © 2023 by Luis Diaz-Gamboa

Reproduction

Meso-American sliders reproduce during the warmer months of the year. Females may mate with several males at 10- to 46-day intervals during the breeding season. Females typically select nest sites within 1 mile (1.6

article continues on page 4 ▶

*Department: an administrative district in Colombia roughly equivalent to a U. S. state.

A Belize slider, *Trachemys venusta* ssp. *venusta*, basking in Belize. **Photo © 2023 by Charles J. Sharp**

kilometers) of their freshwater home range. Female *T. venusta* lay clutches of 6 to 11 eggs, nesting 1 to 4 times per season. Incubation lasts approximately 2 to 3 months.

Meso-American sliders are subject to the phenomenon of temperature-dependent sex determination. Only male hatchlings develop when nests incubate at temperatures below 84°F (29°C). Above 85°F (29.5°C), nests produce all female hatchlings. Temperatures between 84 and 85°F produce a mixture of males and females (Garat & Snow, n.d.).

Threats and Conservation

Predators of juvenile and adult Meso-American sliders include alligators, armadillos, birds, catfish, coyotes, foxes, gars (large freshwater fish species), opossums, otters, snakes, and skunks. Predators, including largemouth bass, deer, and foxes prey on the species' eggs (Garat & Snow, n.d.).

Because of their attractive markings and adaptability, wild *T. venusta* populations have suffered from overexploitation for the pet trade and for the Asian food market, where their flesh is considered to be a delicacy. To a lesser extent, local exploitation for human consumption also occurs in Central and southeastern Mexico.

According to Recino-Reyes and her team, "few studies address the population and genetic situation in the species." The team observed that far more study has gone into the taxonomy of the genus *Trachemys*. In Mexico, for example, *T. venusta* is not recognized legislatively. Where legal protection exists, the legislation refers to all slider turtles as the *T. scripta* genus, and protective measures are infrequently enforced Ω

Juvenile Belize slider, *T. v.* ssp. *venusta*, photographed in Belize. **Photo © 2023 by isaiasmorataya**

Male Huastecan slider, *T. v.* ssp. *cataspila*, photographed while basking in Mexico. **Photo © 2023 by rockdrigo**

References

Ernst, C. H., & Seidel, M. E. (2006). Trachemys venusta (Gray) Meso-American Slider. Catalog of American Amphibians and Reptiles. https://archive.org/details/catalogue-american-amphibians-and-reptiles-832-001-012.

Fritz, U., Herrmann, H.-W., Rosen, P. C., Auer, M., Vargas-Ramírez, M., & Kehlmaier, C. (2024). Trachemys in Mexico and beyond: Beautiful turtles, taxonomic nightmare, and a mitochondrial poltergeist (Testudines: Emydidae). Vertebrate Zoology. https://vertebrate-zoology.arphahub.com/article/125958/.

Garat, R., & Snow, J. (n.d.). Meso-American Slider Turtle . Mexican Terrestrial Life.Org . Retrieved October 13, 2024, from https://mexican-terrestrial-life.org/meso-american-slider-turtle/

McCord, W. P., Joseph-Ouni, M., Hagen, C., & Blanck, T. (2010). Three New Subspecies of Trachemys venusta (Testudines: Emydidae) from Honduras, Northern Yucatán (Mexico), and Pacific Coastal Panama. https://iucn-tftsg.org/wp-content/uploads/file/articles/mcCord_etal_2010.pdf.

Recino-Reyes, E. B., Lesher-Gordillo, J., & and ten additional authors. (2020). Conservation and Management of Trachemys venusta venusta in Southern Mexico: A Genetic Approach. Tropical Conservation Sciences. https://www.researchgate.net/publication/344443359_Conservation_and_Management_of_Trachemys_venusta_venusta_in_Southern_Mexico_A_Genetic_Approach

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

Scientists use tiny 'backpacks' on turtle hatchlings to observe their movements

by Lilly Matson, University of New South Wales, Sydney, Australia

University of New South Wales —1 October 2024—New research suggests that green turtle hatchlings 'swim' to the surface of the sand, rather than 'dig', in the period between hatching and emergence. The findings have important implications for conserving a declining turtle population globally.

Published today in *Proceedings of the Royal Society B Biological Sciences*, scientists from UNSW's School of Biological, Earth and Environmental Sciences used a small device, known as an accelerometer, to uncover novel findings into the behaviours of hatchlings as they emerge from their nests.

Sea turtle eggs are buried in nests 30–80cm (12-32 in.) deep. Once hatched, the newborn turtles make their way to the surface of the sand over three to seven days. But because this all happens underground, we have very little understanding of the first few days of a hatchling's life.

The results provided through this novel method revealed that buried hatchlings maintained a head-up orientation and unexpectedly, moved vertically through the sand by rocking forwards and backwards rather than tipping side-to-side as expected with digging.

"When I visualise a hatchling that has just come out of its egg, it is completely in the dark in its surroundings. There's no sign to point which way is up toward the surface – yet, they will orientate themselves and move upwards regardless," says Mr. Davey Dor, who led the study as part of his PhD. "Our initial findings and 'proof' of this new methodology opens the door for so many new questions in sea turtle ecology."

Using lightweight accelerometers has enabled the team to study turtles when visibility of them is limited. Photo by Davey Dor. Used with permission.

How can you study something underground?

The image of newly hatched baby turtles moving enthusiastically across the sand and into the ocean is somewhat familiar. But what happens before then?

Once they emerge from their eggs, hatchlings move through the sand column and eventually emerge on the surface.

"It was about 64 years ago that the period of turtles hatching from their eggs and coming up to the surface was first observed," says Mr. Dor. "And since then, people have tried different techniques to observe this phase, such as using a glass viewing pane to watch the hatchlings, or using microphones to listen to their movement."

Each of these previous techniques has come with limitations which means it has remained difficult to study the first few days of life for turtle hatchlings. "You just don't think about how much work it takes for these tiny hatchlings to swim through the sand in the dark, with almost no oxygen," says Associate Professor Lisa Schwanz. "It happens right under everyone's feet, but we haven't had the technology to really understand what is happening during this time."

So Mr. Dor, Associate Prof. Lisa Schwanz, and Dr. David Booth, from the University of Queensland, set out to explore new ways to observe and research this obscure, little-known process.

Miniature accelerometer backpacks

Accelerometers, which measure changes in speed or direction, have previously been used to study animal movement, behaviours and physiology.

"The simple principle of the type of accelerometer we used is that it measures acceleration from three different angles," says Mr. Dor. "So it can measure a change in velocity in a forwards and backwards motion, an up and down motion and a side to side motion."

article continues on page 7 ▶

But until now, an accelerometer hadn't been used in this context.

This research took place on Heron Island, a long-term monitoring nesting site for green turtles in the southern Great Barrier Reef, where nesting season typically runs from December to March.

"After locating the nests, we waited for approximately 60 days for the eggs to develop," says Mr. Dor. "Three days before they hatched, we put a device called a hatch detector next to 10 different nests. This unique instrument measures voltage at the nest site and lets us know when the hatchlings had hatched out of their eggs."

As soon as the team became aware that the eggs had hatched, they carefully dug down into the nest, selected the hatchling closest to the surface and attached a light-weight, miniature accelerometer onto the baby turtle, before placing it back. "We then gently layered the sand back in the way it was found," says Mr Dor.

It was then a waiting game to see when the hatchlings emerged. "We checked the nest site every three hours and when they did finally emerge, we retrieved the accelerometer from the hatchling carrying it."

The accelerometer provided new data on the direction, speed and time it took for the ten hatchlings to emerge. "We analysed the data and found that hatchlings show amazingly consistent head-up orientation – despite being in the complete dark, surrounded by sand," says Mr. Dor. "We found that their movement and resting periods are generally quite short, that they move as if they were swimming rather than digging, and that as they approach the surface of the sand, they restrict their movement to nighttime," says Mr. Dor.

Conservation and nest intervention

Sea turtle populations are in decline in many parts of the world, with several species listed as endangered. The nesting phase is a major vulnerability for turtle populations and as a result, conservation management often focuses on nest intervention, including relocation, shading and watering.

Nest relocation has been used widely around the world for many years and the practice is expected to continue as the effects of climate change and rising sea levels are affecting turtle nesting. However, factors such as moisture and temperatures in the nest, which can vary when a nest is moved, can impact important performance traits of hatchlings, including their speed and movement.

"Altering nest characteristics, such as substrate moisture and depth, could have consequences for hatchlings that we currently don't understand," says Mr. Dor. "This means knowledge of hatchling behaviour in the sand column – and its links to offspring success – is key to future conservation practices."

While we know that in the scramble across the sand to the water, hatchlings are at great risk from predators, "it's also true that some hatchlings don't even make it to that point," says Associate Prof. Schwanz. "We have so little knowledge of what makes one hatchling successfully emerge while another doesn't, so it's really important that we figure out what might contribute to this."

Opening the door to further research

The latest publication confirms that using accelerometers to monitor hatchlings provides many benefits, including data of movement and behaviours, and crucially, the ability to study turtles when our visibility of them is limited.

These findings have also provided new insights and changed previous assumptions about hatchlings' earliest days in the sand.

"There are lots of factors that we don't really understand because we haven't been able to observe this stage of their lives, but we hope this will change as a result of this new method, particularly in answering questions about best conservation practices," says Mr. Dor.

The following summer, Mr. Dor returned to Heron Island to put accelerometers on multiple hatchlings in a single nest. "So using the next year's data, we'll get a sense of how coordinated the nests are, because there is a theory about whether the turtles coordinate their movements, or if they have a division of labour," says Associate Prof. Schwanz. Ω

—University of New South Wales press release

What is an Accelerometer?

A device that measures acceleration, distance, and/or vibration. Accelerometers are used in biology, consumer products, engineering, transportation, and many other industries.

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

Antirrhinum majus
Common Snapdragon

Close-up of bicolored snapdragon blossoms photographed in Belgium.
Photo © 2020 by Mathieu Gilbert

***Antirrhinum majus*, the** common snapdragon, is a member of the plantain family, the Plantaginaceae. It is a flowering, herbaceous, short-lived perennial that may be grown as an annual.

The species' common name derives from the fact that the blossom, when gently squeezed laterally, opens like a dragon's mouth.

Originating in the Mediterranean region, snapdragons are popular worldwide and have naturalized in many areas. The species is adaptable to many garden uses because of its various heights and blossom colors.

Description

The growth habit of snapdragons is upright with moderate branching from the base. Horticulturists describe snapdragons in terms of four heights:

[1] **dwarf** varieties are 6-9 inches (15-22 centimeters) tall;

[2] **short** varieties are 9-12 in. (22-30 cm) tall;

[3] **intermediate** varieties are 12-24 in. (30-60 cm) tall; and

[4] **tall** varieties are 24-36 in. (60-90 cm) in height (Antirrhinum Majus (Snapdragon), 2024).

The bright green, narrow, oval leaves of the snapdragon taper to a point and spiral around the snapdragon's lower stems. Depending on the type, the leaves grow to 3 in. (8 cm) in length.

Colorful landscape planting of snapdragons in Japan's Awaji Hanasajiki Floral Park. Public domain.

Nearly every color except true blue can be found in snapdragon blossoms, including magenta, orange, pink, peach, purple, red, white, and yellow, plus bicolors and tricolors. Hues range from delicate pastel tints to bright and deep shades.

The snapdragon's leaves grow close to the bottom of the plant's stems, and the flower stalks rise above the groupings of leaves. The flower buds at the bottom of the flower stalk open first and continue opening upward to the top of the stalk.

Many snapdragon blossoms have a fragrance described as "light and fruity." Some of the named varieties such as the Aromas Series feature blossoms with pleasant fragrances like vanilla or lemon. The double-flowering types generally taste sweeter than others (Lofgren, 2022).

Following flowering and fertilization, the snapdragon blossom fades and small, brown seed

article continues on page 9 ▶

"Alien head" seed pods of the snapdragon. Photo © 2015 by K. Chaikovska

pods form. The pods are also known as seed capsules or seed heads. The seed pods resemble alien "faces" and contain numerous small brown seeds. Many gardeners collect these seeds and store them to propagate future plants.

Cultivation

Snapdragons grow best when planted in a sunny location in a well-drained soil that is rich in organic matter. They will also grow in *partial* shade.

A. majus favors the cooler weather of spring and fall, and will slow or stop its growth and flowering when mid-summer temperatures reach the 70s°F (21°C). Flowering will resume when the air temperatures fall in autumn.

In mild-winter areas, snapdragons may flower throughout the year. They will survive light frost, but they will not tolerate severe or prolonged cold. In areas where winters are harsh, gardeners grow snapdragons as annuals.

When plants are about 3 in. (8 cm) tall, tip-pinch them to promote a more compact plant with better branching. In horticulture, consistently removing spent blossoms, known as deadheading, will promote more plentiful flowering for an extended period.

Snapdragons benefit from consistent watering and the occasional application of a balanced fertilizer.

A. majus is easy to start from seeds that are available from garden centers and online. Collecting seeds set by a plant in the garden is simple but timing is important. Once the flowers fade, the seed capsules develop. Wait until the seed capsules dry out and turn brown before harvesting the seeds. The capsules will be open and ready to release their seeds.

Gently twist the seed capsules to remove them from the plant stem. Open the seed capsules, remove the seeds and store them in a paper bag in a cool, dry place until planting time. Start the seeds in containers in moistened potting mix or directly in the garden.

Pests

A. majus may be attacked by aphids or spider mites. If kept too wet, rust, powdery mildew, or root rot may become problems.

Edibility

The flowers, leaves, and stems of the snapdragon are all edible. Nursery grown plants are treated with potentially toxic horticultural chemicals and should ***not*** be eaten immediately.

When planning to consume snapdragons or feed them to pets, it is best to wait for the second crop of blossoms or to grow plants from seed to avoid toxic chemicals (Lofgren, 2022). Ω

References

Antirrhinum majus (Snapdragon). (2024). Gardenia. https://www.gardenia.net/plant/antirrhinum-majus-snapdragon

Lofgren, K. (2022). Eating Snapdragons: How to Harvest and Use the Flowers and Leaves. Gardener's Path. https://gardenerspath.com/plants/flowers/edible-snapdragons/

Schiller, N. (2021). How to Grow and Care for Snapdragon Flowers (Antirrhinum Majus). Gardener's Path. https://gardenerspath.com/plants/annuals/antirrhinum-majus

Snapdragon Seed Pods. (2024). Global Ideas. https://globalideas.org.au/blog/gardening/flowers/snapdragon-seed-pods-a-close-look-at-the-lifecycle-of-these-fascinating-flowers.html

Close-up of a red snapdragon blossom. Photo © 2015 by Shadowmeld Photography

Chips Ahoy…….New Tech for Torts

Story by Karen Berry, photos by Cristina Perovich and Karen Berry

Valley chapter's Microchip Clinic Team from left to right: Cathy Carpenter, Barbara Devries, Monica Haynes, Cristina Perovich, Karen Berry, Maria Kennedy, Rick Meyer, and Carlo Inzerella.

Valley Chapter held its first microchip clinic on Saturday, September 28, 2024. For now, we are chipping members' tortoises only and one tortoise per member. We have started with desert tortoises and will extend to other species.

The tiny microchip is encased in epoxy, but is easily read by the chip reader.

The first group to get their tortoises microchipped was limited to 20 members, and seven took advantage of the opportunity. We chose the exterior method of affixing the AVID microchip to the rear of the carapace with two-part extra-quick drying epoxy.

Maria Kennedy is the chairman of the Chip Committee, and she organized and executed the clinic with military precision. She gathered a team of members who are among the "regulars" at the show and other community events, and always have a good time doing them.

Those members interested in getting their tortoises chipped signed up and selected their appointment times at the September chapter meeting the week before the clinic. They also completed the AVID registration form and any other needed paperwork. That way, it was finished ahead of time, and the chipping would flow much easier. We all know how paperwork drags down just about everything…

All members were asked to bring their Department of Fish and Wildlife desert tortoise permits to verify they had one and that the tags were on the tortoises. The adoption team leader issued new permits to those with no permit or missing or unreadable tags, and the tag was affixed to the tortoise at the clinic.

The chip team members practiced the exterior chip application with grains of rice and rocks. Definitely not the same as a potentially wiggling tortoise, but they learned the steps to complete the chip application and how to keep good control over the epoxy.

Left to right: Karen Berry, Monica Haynes, and Rick Meyer. Monica Haynes prepares the epoxy for the first tortoise, "Mo", with her caretaker, Rick Meyer, looking on.

Success!!! Maria Kennedy checks Mo's chip with the reader and it registers.

article continues on page 11 ▶

Barbara Devries with “Figaro” (left) and Cathy Carpenter with “Bowser” (right).

The clinic itself went smoothly, with no issues. Each tortoise’s chip was checked following application to make sure it could be read by the chip reader through the epoxy, and all chips passed their final read from the microchip reader. The tortoises were all well-behaved, so no “Romper Room” with toddlers wearing suits of armor. There were different-sized clay and plastic pots to accommodate both smaller and larger, heavier tortoises.

Did I mention the team members like to have fun at our events…? When Barbara Devries’ tortoise, “Figaro”, was up for his chipping, the entire group, none of whom would ever be performing at the Met, broke out into a little opera, calling him to the table- “Fi-ga-ro, Fi-ga-ro, Figaro, Figaro”, amid plenty of laughter, and fueled only by water, coffee, and donuts. Ω

Carlo Inzerella prepares the epoxy for “Moe”.

Jennifer Edward and “Moe”. All finished and checked out. The green object on the corner of the table is the microchip reader.

Monica Haynes (right) affixes the chip, assisted by Carlo Inzerella (left), and Cristina Perovich (center) is standing by to scan the chip.

◀ Monica Haynes, aka “Mo”, with tortoise friends “Mo” and “Moe”.

Wishing our Members a Holiday Season Filled with Hope, Joy, and Peace

Endangered Species Act Protection Sought for Diamondback Terrapins

—Iconic Turtles Disappearing From Atlantic, Gulf Coasts—*Center for Biological Diversity press release*

Diamondback terrapin (*Malaclemys terrapin*). Photographed by Christina Mohrmann, Grand Bay National Estuarine Research Reserve. Used with permission.

Baltimore, Maryland—19 September 2024—The Center for Biological Diversity and 20 partner organizations petitioned NOAA Fisheries today to protect diamondback terrapins as endangered under the Endangered Species Act. Aquatic turtles who live primarily in coastal marshes and estuaries from Massachusetts to Texas, these animals have declined by 75% across most of their range in the past 50 years.

"Tens of thousands of terrapins are drowning in crab traps each year. Without the lifeline of Endangered Species Act protection, they'll sink into extinction," said Will Harlan, a senior scientist at the Center for Biological Diversity.

In many locations along the Atlantic and Gulf coasts, terrapin populations have been wiped out completely.

Drowning in crab traps is a leading cause of death. These traps are submerged cages with funneled entrances that catch both crabs and air-breathing terrapins. Around 3 million crab traps are deployed each year by recreational and commercial crabbers, which kill tens of thousands of diamondback terrapins annually.

In addition, between 25% and 50% of all crab traps are lost or abandoned annually in coastal waters. These derelict cages — called ghost traps — kill tens of thousands more terrapins every year. Researchers estimate 60,000 to 80,000 terrapins are killed in active and abandoned crab traps each year.

Yet simple, proven solutions exist that could save terrapins. Bycatch reduction devices installed on crab traps have no negative effects on crab harvests, but they reduce diamondback terrapin deaths by 94%.

Terrapins are also threatened by habitat loss from sea-level rise and development. They've already lost half of their original wetlands and are expected to lose up to 60% of their coastal marsh habitat by the end of the century.

As these animals travel farther in search of habitat, thousands of egg-bearing females are killed along roads each year. Increasing pollution, poaching, predators, boat strikes and climate change also threaten them.

The Sierra Club, Project Terrapin, Healthy Gulf and American Littoral Society are among the 20 organizations joining the Center's petition to protect diamondback terrapins.

The International Union for Conservation of Nature's Tortoise and Freshwater Turtle Specialist Group has expressed its support for the petition and its concern for the species' future.

"On behalf of more than 400 scientists and conservationists who comprise the IUCN Tortoise and Freshwater Turtle Specialist Group, I urge you to take action to protect the diamondback terrapin at the federal level," said Craig Stanford, PhD., chair of the group. "Extensive scientific studies have shown that — from habitat loss to roadkill mortality to crab pot drownings — this species is in peril."

Diamondback terrapins have freckled bodies and distinct concentric diamond-shaped patterns on their shells. Adults can live up to 40 years, but only 1% of hatchlings survive to adulthood.

Ω

"When we pay attention to other animals, our own world expands and deepens."

—Ed Yong (b. 1981), British-American science journalist and author

Judge Rejects Federal Project Threatening California's Desert Tortoises

San Francisco, California—16 October 2024—A judge has rejected federal agencies' approval of activities in the California Desert Conservation Area, including a vast network of off-road vehicle routes in the West Mojave Desert. The activities are driving desert tortoises and other threatened and endangered wildlife toward extinction.

"I'm grateful the court found that federal officials can't just make empty promises to protect desert tortoises and other wildlife on our public lands from off-road vehicles," said Lisa Belenky, an attorney at the Center for Biological Diversity. "The Western Mojave's desert tortoises are sliding toward extinction, so it's long past time for the Bureau of Land Management (BLM) to curb these vehicles' threats to the tortoises and all the rare plants and animals in California's beautiful deserts."

Tuesday's ruling is a victory for conservationists. In 2021 environmental groups sued the Interior Department, BLM and Fish and Wildlife Service (FWS) over the 2019 West Mojave Route Network Project, which failed to minimize off-road vehicles' harms to public lands and protect endangered and threatened species and their habitats.

"This ruling makes clear that the BLM hasn't done nearly enough to minimize impacts from off road vehicles in the West Mojave," said Tom Budlong of the Sierra Club. "The BLM's empty promises and FWS's failure to use the best available science have allowed increasing degradation of our public lands and pushed the desert tortoise closer to extinction."

U.S. District Judge Susan Illston ruled that the BLM violated the Federal Land Policy and Management Act by designating off-road vehicle routes without basing its criteria on minimizing damage to resources. That includes habitat for species such as the endangered Lane Mountain milk vetch, which is found only in the western Mojave Desert.

"The court got it right in finding that the FWS's biological opinion ignored the best available science that shows the need to proactively protect rapidly declining desert tortoise populations and habitats in the Western Mojave Desert," said Ed LaRue of the Desert Tortoise Council. "The BLM cannot continue to prioritize recreational vehicle opportunities in fragile desert tortoise habitats over the species' survival."

The judge also ruled that the BLM wrongly assumed that there would be no growth in off-road vehicle activity or harm to air quality from the new routes.

Under the West Mojave plan, the BLM adopted nearly 6,000 miles of dirt roads for off-road vehicle use (that's enough to go approximately one-quarter of the way around the Earth's circumference). This has led off-roaders to create hundreds of new illegal roads in fragile habitat that is supposed to be protected for desert tortoises. The desert tortoise population has now declined to unsustainable levels in the western Mojave Desert.

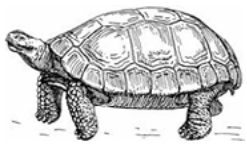
"The Mojave Desert is one of North America's largest remaining areas of connected habitat, and the BLM's management decisions have consequences," said Nick Jensen, conservation program director at the California Native Plant Society. "Today's ruling is a reminder that we must do more to protect sensitive ecosystems and imperiled species, like the Lane Mountain milk vetch."

The court also invalidated the FWS's biological opinion, ruling that the agency violated the Endangered Species Act by ignoring studies showing threats to the desert tortoise and harm from off-road vehicles and by relying on unenforceable mitigation measures. The judge also said the FWS used an irrational "surrogate" approach to determine the number of desert tortoises that would be killed or taken and failed to require enforceable measures to minimize harm to the animals. The BLM violated the Act by relying on the FWS flawed analysis, the judge ruled.

"Yesterday's court decision is the culmination of our 18-year legal battle to adequately protect the threatened desert tortoise and its critical habitat from off-highway vehicle use on public lands in the western Mojave Desert," said Jeff Aardahl, senior California representative for Defenders of Wildlife. "This is clearly a win for the desert tortoise, which has been on a path toward extinction for decades."

The groups are represented by the Stanford Law Clinic and the Center for Biological Diversity. Ω

—Center for Biological Diversity press release



Kansas releases giant snapping turtles into waterways in effort to bring back the endangered species—Julie Freijat, Flatland/Kansas City Public Broadcasting Service

5 October 2024—An aura of excitement filled the air near the Neosho River in Kansas on a hot September morning. State wildlife officials gathered around several large, gray bins, snapping photos and eagerly chatting. Why the excitement?

Forty, dinner-plate-sized alligator snapping turtles, about to be released into the wild.

The last known living alligator snapping turtle collected in Kansas was found in Onion Creek, a tributary of the Verdigris River in southeast Kansas, said Trevor Starks, aquatic species recovery coordinator for the Kansas Department of Wildlife and Parks (KDWP).

In the 33 years since, not a single community turtle survey had identified another living alligator snapping turtle in the state, despite Kansas being within the species' native range. That range encompasses a large portion of the lower Mississippi River basin, stretching up from the south along the Mississippi River and many of its tributaries, such as the Arkansas River and the Red River.

While you may have seen a common snapping turtle in a local creek or pond, it's unlikely you've ever encountered an alligator snapping turtle, because they are very elusive. Daren Riedle, wildlife diversity coordinator for KDWP, said while common snapping turtles are very mobile, alligator snapping turtles typically only surface from the water to lay eggs.

They are the biggest freshwater turtle in North America, sporting jagged, pointy shells, and a hooked beak. While alligator snapping turtles might get a bad rap for their frightening appearance, they provide beneficial ecological services by eating dead and dying animals, and dispersing seeds from vegetation they consume.

An alligator snapping turtle, *Macrochelys temminckii*, photographed in Mississippi. **Photo © 2017 by Grover J. Brown**

The turtles being released in the Neosho River range in age from about 7 to 10 years old, according to Starks. They could live to be 45, or even older, and males can weigh up to 250 pounds.

The prehistoric-looking, river-dwelling creatures' population has been shrinking for the last several decades. This is attributed, in part, to commercial harvest of the species and the construction of dams in waterways, Starks said.

The turtles used to be hunted for their meat, which was particularly popular in the '60s and '70s. Their populations have also been threatened by exotic pet trading and poaching.

Commercial harvest is now illegal, but recreational harvest is still allowed in Louisiana and Mississippi. In 2021, the U.S. Fish & Wildlife Service proposed adding the turtles under the Endangered Species Act, which would provide it further protections, though nothing on that front has come to fruition.

Dams impede the turtles' ability to move up and downstream, Starks said. However, Kansas officials released the turtles in a fragment of the river they believe is long enough to allow the turtles to survive, according to Starks.

"So the thought is, (those populations will be able to) sustain themselves within those fragments," Starks said.

A regional effort to bring back an ancient species

Kansas is among several states releasing alligator snapping turtles. The turtles released this month were bred and raised at the Tishomingo National Fish Hatchery in Oklahoma, according to Starks. The hatchery has also provided turtles for reintroduction in Illinois, Tennessee, Louisiana and Oklahoma.

More than 20 years ago, Riedle collected the first wild turtles that were then used in the captive breeding program at the hatchery.

Riedle said they noticed the species was declining, and anticipated they may soon be listed as endangered. "So the whole idea

article continues on page 15 ▶

(of) this release program is to be proactive. What can we do to start recovery efforts now?" he said.

Daren Riedle, wildlife diversity coordinator for the Kansas Department of Wildlife & Parks, holds an alligator snapping turtle near the Neosho River in Kansas. Riedle caught the first wild alligator snapping turtles brought to Tishomingo National Fish Hatchery to breed for releases.

The reintroduction of the turtles is part of the Kansas Aquatic Species Recovery Program, an initiative which seeks to work with private landowners to reintroduce locally extinct species to Kansas waters.

About 98% of the land in Kansas is privately owned, which means that in order for species reintroduction to occur, cooperation between the state and landowners is required.

Under Section 9 of the Endangered Species Act, it is illegal to "take" any listed species, which can mean anything from handling the species to killing it. KDWP has special permission under a permit with the U.S. Fish and Wildlife Service, which allows them to handle the species for conservation purposes.

If a landowner chooses to participate in the program, which is entirely voluntary, they are extended the same regulatory protections that are provided to KDWP. That means that if any of the endangered or protected animals on the land are disturbed or killed due to any legal practices, like farming or ranching, the landowner is not held liable.

"What's really awesome (is the) Kansas Department of Wildlife and Parks is actually the first state agency to have a statewide conservation benefit agreement," Starks said.

That means that KDWP has the authority to work in any county and water system in the state, according to Starks.

"Alligator snapping turtles, mussels, minnows — these are all just pieces of that puzzle that we want to keep intact," Starks said.

The turtles are released with trackers so officials can monitor their progress. The hope, Riedle said, is to eventually have a first generation of wild-born turtles.

"The goal of any conservation project is to have self-sustaining, reproducing populations back in their historic distribution, where there's still habitat present," Riedel said. "And in our case, the Verdigris, the Neosho rivers are great." Ω

—KUNC National Public Radio press release

U.S. Fish and Wildlife Service opens public review period for desert tortoise conservation plan

Palm Springs, California—15 October 2024—The U.S. Fish and Wildlife Service (USFWS) announces the opening of a public review period of a draft environmental impact statement for a general conservation plan for the federally threatened Mojave desert tortoise (*Gopherus agassizii*) in California.

The general conservation plan will support local agencies and individuals proposing a range of covered activities on non-federal lands in meeting the statutory and regulatory requirements of the Endangered Species Act of 1973.

"The general conservation plan will advance desert tortoise conservation by working with project proponents to direct mitigation to focused areas that have more protection and higher quality habitat. This proposal would focus mitigation within conservation areas, create a more consistent approach...and allow more staff time for on-the ground conservation work for the desert tortoise," said Peter Sanzenbacher, Palm Springs USFWS, Mojave Desert Division Supervisor.

The USFWS is proposing to streamline ESA compliance for the species on non-federal lands during commercial, agricultural, residential, industrial and infrastructure development while providing for a more consistent and durable approach to off-setting potential effects. The Bureau of Land Management is a cooperating agency for the environmental impact statement because some areas of public land could be used for relocation of desert tortoises displaced by covered activities.

The draft general conservation plan and instructions on how to submit comments are available at **www.regulations.gov**, by searching Docket No. FWS-R8-ES-2023-0084. Comments will be accepted until December 10, 2024.

Additionally, the USFWS will hold two virtual public meetings scheduled for November 12 from 10 a.m. to 11:30 a.m. and November 13 from 6 p.m. to 7:30 p.m. Pacific Time. Meeting details are available at **https://www.virtualpublicmeeting.com/usfws-desert-tortoise-gcp-eis**

—USFWS press release

Meeting Schedule: November/December 2024

Check your chapter website for program information.

Chino Valley
November 15; December 20

Foothill
November 22; December 27

High Desert
November 11; December 9

Inland Empire
November 1; December 6

Kern County
November 11; December 9

Low Desert
Meeting information to be announced.

Orange County
November 1; December 6

Ridgecrest
November 11; December 9

Santa Barbara-Ventura
Meeting information to be announced.

Santa Clarita
Meeting information to be announced.

TOOSLO (San Luis Obispo)
November 26

TTCS (Long Beach)
November 16; December 21

Valley
November 15; December 20

The California Turtle & Tortoise Club (CTTC) is a non-profit 501(c)(3) corporation. Contributions are tax deductible to the full extent of the law. Please pay by USA funds only (US bank check, money order, or International Postal Order).

Membership in the CTTC and subscriptions to the *Tortuga Gazette* are handled through the CTTC Chapters. The Chapters also manage membership renewals (see postal addresses to the right).

Many members choose to join a nearby Chapter to participate in Chapter meetings and other activities. Print membership forms from the CTTC website.

Your Chapter and your renewal date (month/year) are displayed on your newsletter notification. Mail your new or renewal membership/subscription to the Chapter of your choice.

Membership fees

- Student membership $15.00
- Individual membership $25.00
- Family membership $35.00
- Life membership $500.00

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.

§ § §

The *Tortuga Gazette* (ISSN 1073-1334) is owned by the California Turtle & Tortoise Club Executive Board, which is incorporated in the State of California as a Not-for-Profit Corporation and is tax-exempt under IRS code 501(c)(3).

All material is copyright © CTTC unless otherwise attributed. CTTC policy permits reproduction of articles by other not-for-profit groups and educational institutions when permission is requested. Permission is granted on a case-by-case basis and CTTC must be cited as the source of the material.

Views expressed in the *Tortuga Gazette* are those of the contributors and not necessarily those of the Editor or the California Turtle & Tortoise Club.

§ § §

CTTC Memberships and Renewals

Each chapter handles its own memberships/renewals.

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.
2. Renew your membership in person at your chapter's meeting.
3. Some chapters have PayPal accounts that enable their members to renew memberships online.

CTTC Chapter Mailing Addresses

Chino Valley Chapter: P.O. Box 1753, Chino, CA 91708-1753

Foothill Chapter: P.O. Box 51002, Pasadena, CA 91115-1002

High Desert Chapter: P.O. Box 163, Victorville, CA 92393

Inland Empire Chapter: P.O. Box 7205, Redlands, CA 92375

Kern County Chapter: P.O. Box 81772, Bakersfield, CA 93380-1772

Low Desert Chapter: P.O. Box 4156, Palm Desert, CA 92261

Orange County Chapter: P.O. Box 11124, Santa Ana, CA 92711

Ridgecrest Chapter: P.O. Box 1272, Ridgecrest, CA 93555

Santa Barbara-Ventura Chapter: P.O. Box 3086, Camarillo, CA 93011-3086

Santa Clarita Chapter: P.O. Box 4012, Castaic, CA 91310

TOOSLO Chapter: P.O. Box 763, Grover Beach, CA 93483

Turtle & Tortoise Care Society Chapter: PO Box 15952, Long Beach, CA 90815

Valley Chapter: P.O. Box 7364, Van Nuys, CA 91409-7364

Tortuga Gazette
California Turtle & Tortoise Club
P.O. Box 7300
Van Nuys, California 91409-7300

Is your email address changing?

Update your email address through your MailChimp account by clicking the "Update Your Preferences" link on your newsletter notice. You can also send your changes and corrections to tgdistribution@tortoise.org