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CALIFORNIA TURTLE & TORTOISE CLUB

The Tortuga Gazette

Volume 62, Number 1 • January/February 2026

An adult Flattened Musk Turtle, *Sternotherus depressus*, photographed in habitat. Photo by James Godwin, Alabama Ecological Services Field Office, USFWS

featured species

Flattened Musk Turtle, *Sternotherus depressus* (Tinkle & Webb, 1955)

The Turtle from the Black Warrior River

by M. A. Cohen

Endemic to the Black Warrior River Basin in west-central Alabama, the flattened musk turtle is a critically endangered species belonging to the chelonian family of mud and musk turtles, the Kinosternidae. Members of this family are called kinosternids, all of which are small- to medium-sized turtles that are native to North and South America. Taxonomists currently recognize at least 25 species in four genera of kinosternids.

The Black Warrior River was named after the Chocktaw tribal chief Tuskaloosa, whose name combines two words from the Native American language known as Western Muskogean: *tashka,* meaning "warrior, " and *lusa,* "black." The word Tuscaloosa is the name of an Alabama city on the shores of the Black Warrior River.

Sternotherus depressus was scientifically described in 1955 by two American herpetologists, Donald W. Tinkle (1930-1980) of the University of Michigan and Robert G. Webb (1927-2018) of the University of Texas El Paso.

The genus name *Sternotherus* derives from two Greek word roots meaning a "hinged chest/breast," and the species name *depressus* derives from a Latin word root that means "flattened." Both genus and species names refer to physical characteristics of the turtle.

Description

The flattened musk turtle is a diminutive, semi-aquatic species with a carapace length of 2.95 to 4.7 inches (7.5 to 11.9 centimeters) at maturity. The hatchling flattened musk turtle is minuscule, only 0.78 to 1.2 inches (20 to 30 millimeters) in carapace length (Post, 2025).

The adult flattened musk turtle

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has an oval carapace that is distinctly flat, yellow-brown to dark brown with dark brown or black spots or streaks and dark seams between the scutes. The hatchling has a rounded, moderately domed carapace with a noticeable medial keel that flattens out as the turtle matures. Female *S. depressus* are slightly larger than males.

The flattened carapace of the species has considerable survival value, as it enables the turtle to tuck itself into narrow rock crevices and beneath submerged logs to evade predators and survive episodes of flooding. The cryptic coloration of its carapace and limbs also helps to camouflage the turtle in its streambed habitats.

The species' plastron is typically pink or yellow, and brownish staining may occur due to environmental factors. There is a barely perceptible hinge between its pectoral and abdominal scutes that gives the anterior (front) portion of its plastron some flexibility.

The skin on the head, limbs, and tail of *S. depressus* has an olive-green background with a dark, patterned network of spots and streaks. Its chin typically has two small filaments called barbels. The turtle's feet are heavily webbed between its clawed toes. The males have tails that are longer and thicker than those of the females, and the males' tails are spine-tipped.

The musk turtle earns its common name from its ability to secrete a foul-smelling, musky odor from scent glands located on the edge of the carapace. Biologists surmise that, when the turtle is disturbed or threatened, the release of this putrid odor deters predators.

There are no recognized subspecies of *S. depressus*. Adult flattened musk turtles are primarily nocturnal. Juveniles are likely to be active during the day but also at night. The species is mainly a bottom dweller, and algae often cover its carapace. Leeches (*Placobdella parasitica*) are common ectoparasites * of the turtle, especially in degraded habitats (Post, 2025).

A juvenile flattened musk turtle. Notice the moderately domed carapace. **Photo © 2017 by John P. Friel**

Range and Habitat

As mentioned, the flattened musk turtle is endemic to a small range in the southwestern Appalachians of Alabama. The term "endemic" in this context means that a species is restricted to a single geographic location. In the case of *S. depressus*, that particular location is the Upper Black Warrior River Basin, which consists of the Black Warrior River itself, along with its three primary tributaries, Sipsey Fork, Locust Fork, Mulberry Fork, and its smaller side streams.

The term ***fall line*** refers to a geologic area in which the uplands meet the coastal plain. The uplands typically comprise hard basement rock, while the coastal plain is softer, sedimentary rock. At places where rivers cross the fall line, waterfalls and rapids occur: fall line = line of waterfalls.

The fall line in Alabama runs diagonally from mountainous northwestern Alabama to the comparatively flat plains in the southern part of the state through the range of the flattened musk turtle.

S. depressus prefers clear, swiftly-flowing rivers above the fall line

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* **ectoparasite:** a parasitic organism that lives ***outside*** its host.

with good water quality throughout its range. The turtle prefers permanent, free-flowing large creeks and small rivers with low silt loads, heavily vegetated shallows, and abundant submerged logs and rock crevices for sheltering from predators and flooding episodes (Hammerson, 2004).

An adult flattened musk turtle with a juvenile on its carapace. Photo by the United States Geological Survey. Public domain.

The flattened musk turtle also prefers shallow bodies of water, such as lakes, with plentiful bedrock, overlapping rocks forming crevices, and a substrate of boulders, cobbles, and sand. Ample molluscan prey, low nutrient levels, and minimal pollution also contribute to a suitable habitat for the species (Flattened Musk Turtle Fact Sheet, 2012).

Diet

Biologists describe *S. depressus* as an ***invertivore***, meaning that the turtle's diet primarily consists of invertebrates, those animals lacking spinal columns.

The adult flattened musk turtle consumes arachnids, clams, crayfish, crustaceans, gastropods (aquatic snails), insects (adults and larvae), and mollusks. The turtle occasionally consumes carrion. Hatchlings and juveniles mainly consume soft-bodied aquatic insects. Fecal studies reveal that the species also consumes seeds.

Reproduction

The female flattened musk turtle reaches breeding age at 6 to 8 years, and the male, at 4 to 6 years. The female lays up to two clutches, each containing 1 to 3 eggs. The species' nesting season is May through September. Biologists note that the species selects nest sites within 100 feet (30 meters) of the riverbank in areas with full sun or partial shade.

S. depressus is one of many turtle species that display temperature-dependent sex determination, meaning that the temperature in the nest during incubation influences the sex of the offspring. Temperatures of 77 to 86 degrees Fahrenheit (25 to 30 degrees Celsius) yield mostly males, while higher temperatures produce female hatchlings (Tiatragul, 2017).

The length of the incubation period is poorly studied, and depends to some extent on the nest's location. Researchers believe incubation generally lasts two to three months.

Threats

The flattened musk turtle is the ***only*** reptile native to Alabama. The species' distribution is restricted to the Warrior Basin Coal Field in Alabama, where strip mining for coal has degraded many streams in the area. With its limited range and specific habitat requirements, *S. depressus* is particularly vulnerable to habitat degradation and loss (Ernst & Lovich, 2009; Tiatragul, 2017).

Siltation, also called sediment pollution, is, according to the U.S. Fish and Wildlife Service, a significant threat to the flattened musk turtle and its invertebrate prey. Coal mining is the primary source of siltation, a substantial contributor to habitat degradation. Runoff from agriculture, construction, and deforestation also contributes to siltation. The fine-textured soils that cause siltation fill the narrow underwater crevices on which the species depends for shelter and smother some of the turtle's essential food sources.

Because of habitat degradation and loss, the flattened musk turtle currently occupies a fraction of its historical range. Because of the species' secretive life, estimates of habitat loss range from 50% to 93%. This habitat loss is due to factors such as alteration of streams and rivers in their range caused by strip mining for coal and logging practices.

Predators, pollution, and exploitation for the pet trade also pose threats to the flattened musk turtle. North American river otters (*Lontra canadensis*), great blue herons (*Ardea herodias*), snowy egrets (*Egretta thula*),

An adult *Sternotherus depressus*. Notice the two barbels on its chin. Photo © 2021 by Yunan Li

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and raccoons (*Procyon lotor)* prey on hatchling and juvenile turtles, as do predatory fish, bullfrogs, wading birds, and water snakes (Post, 2025; Tiatragul, 2017).

Adult *S. depressus* are less subject to predation than younger individuals, but raccoons are the principal predator of adult *S. depressus*. Collection by humans for the commercial pet trade, numbering in the hundreds, has taken its toll on the extant populations. Some local legal protections have substantially curbed pet trade collection, but illegal collection remains a persistent problem.

Significant harm from various types of pollution occurs in the waterways in which the turtles live. Municipal pollution from urban wastewater, strip mining for coal, factory farming, and herbicide contamination from agriculture contribute to the degradation of their waterways and the fragmentation of suitable habitat for the species.

The 2023 assessment of the flattened musk turtle conducted by Jenkins and Godwin for the International Union for the Conservation of Nature's Red List of Threatened Species determined that the species is critically endangered because of "severe habitat degradation over most of [its] range due to pollution and sedimentation from coal mining, agriculture, and development has had a negative impact on populations over the past few decades and remains ongoing" (Jenkins & Godwin, 2024).

Conservation

In June 1987, the U.S. Fish and Wildlife Service listed *S. depressus* under the Endangered Species Act as threatened, affording the species some protection from human exploitation on both public and private lands. However, critical habitat for the species has not been designated, resulting in continuing habitat degradation.

The Convention on International Trade of Endangered Species listed *S. depressus* in Appendix II in 2023, providing international protection against exploitation through trade controls requiring permits and certificates.

By all accounts, the *S. depressus* populations is declining because of habitat loss and fragmentation, a decrease in the number of mature, that is, breeding, individuals, and low recruitment of subadults into the breeding population.

Biologists' recommendations for the recovery of *S. depressus* populations include restoring waterways and monitoring water quality, establishing captive assurance colonies, and conducting captive breeding projects to produce animals for reintroduction into the wild (Jenkins & Godwin, 2024). Ω

A juvenile flattened musk turtle photographed in habitat. **Photo © 2022 by Dean Stravrides**

Close-up of a juvenile flattened musk turtle. **Photo © 2017 by John P. Friel**

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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

Inland Empire Annual Show on 4 October 2025

By Gerald Rezes with photography by Phuc Huynh

The CTTC Inland Empire's Annual Turtle Show took place on October 4. We had approximately 211 visitors, 5 vendors, 11 exhibitors (5 from the Chino chapter), and 6 volunteers. We had a good show with lots of interest from the public.

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Texas Hosts The People's Microplastics Conference

Scientists, Advocates and Filmmakers Gather to Tackle Plastic Pollution at its Source

By Laurel Irvine, Turtle Island Restoration Network press release

Port O'Connor, Texas —10 December 2025— Plastic pollution isn't just washing up on our beaches and watershed, it's showing up in animals and humanity. As new research reveals alarming levels of microplastics in Texas waterways and marine life, Turtle Island Restoration Network (TIRN) and coalition partners are convening the People's Microplastics Conference: From Impact to Action on November 14 & 15, 2025, in Port O'Connor, Texas.

Nurdles that washed ashore at the Port Edgar marina in Queensferry, Scotland photographed in 2008 by hockadilly. Public domain.

This free, two-day event brings together Texas-based scientists, coastal advocates, educators and filmmakers to examine how microscopic plastic pollutants are affecting our ecosystems and communities health, and what can be done to stop the negative impact. According to the International Plastic Pellet Count Report, Texas is the leading state in nurdles production and pollution.

Over the last seven years, TIRN has collected microplastics and nurdles samples from different locations along Galveston Island. TIRN's Ocean Program Director, Joanie Steinhaus shared, "every nurdle we pick up on the beach represents an opportunity for Texas to make a positive impact on our oceans and watersheds. During last weekend's statewide Nurdle Hunt, volunteers collected 1,260 plastic pellets from local Galveston beaches — clear proof that plastic pollution is constant and widespread."

Nurdles that washed ashore from a shipwreck near Abu Ghusun, Egypt in 2012. Notice the resemblance of the plastic pellets to eggs. **Photo © 2012 by Wusel007**

With petrochemical expansion and plastic production surging along the Gulf Coast, organizers say now is the time for Texas to lead. The People's Microplastics Conference is more than a meeting of the minds – it's a call to action. Together, we can bridge the gap between research and real-world change, empowering communities to defend the health of our oceans, wildlife and future generations.

Day 1: Tiny Pollutants, Big Impact – The first day will feature presentations from leading researchers and environmental experts examining how microplastics move through our oceans, rivers and food systems. Explore what new studies reveal about their effects on ecosystems, wildlife and human health. Participants will also experience a special screening of the award-winning documentary *Plastic People*, a powerful investigation into how plastic pollution has infiltrated nearly every corner of our planet and even our own bodies.

Day 2: Grassroots Action – The second day focuses on community-led solutions. Workshops will equip participants with practical tools to reduce microplastic exposure and push for stronger protections against industrial pollution from petrochemical plants. The conference will close with a private screening of *HELLCAT*, an acclaimed new documentary by filmmaker Fax Bahr. The film follows one woman's decades-long fight against a petrochemical giant – a gripping story of courage, corruption and the quest for environmental justice. Ω

"Nurdles [are] the worst toxic waste you've probably never heard of," writes Karen McVeigh in *The Guardian* in 2021.

Nurdles are the minuscule, pre-production, microplastic pellets used by the plastics industry to manufacture ***every*** plastic product that humans use. The pellets, consisting of fossil fuels, are less than 0.20 inch (5 millimeters) in diameter, roughly the size of a lentil.

"Through leaks, spills, and other storage or transportation errors, nurdles end up in the environment," writes Rachael Carlberg for the Carnegie Museum of Natural History. The 'escaped' nurdles typically wind up as pollution on land, in waterways, and in the ocean, causing numerous problems.

What are Nurdles?

Over time nurdles break down into ever smaller pieces of pollution in the environment; they persist indefinitely unless removed by humans.

The surfaces of the nurdles become "toxic sponges" that attract other chemical pollutants, thereby concentrating their poisonous effects.

Many animals mistake the noxious nurdles for food items and ingest them, often with tragic consequences. Birds, fish, reptiles, and other marine animals that accidentally consume the nurdles suffer both chemical and physical injuries with fatal consequences. The animals typically perish from starvation, and scientists performing necropsies on their bodies find nurdles blocking their digestive systems that their bodies cannot process and pass.

The food chain aggregates nurdles: bigger fish eat smaller fish all the way up the food chain, culminating with the serving of fish on a human's dinner plate along with the persistent plastics and chemicals the fish has absorbed during its lifetime. Ω

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Lawsuit Launched to Secure Habitat Protections for Pearl River Map Turtle

Proposed Dam Threatens Imperiled Turtles in Louisiana, Mississippi

Jackson, Mississippi—4 December 2025—The Center for Biological Diversity notified the U.S. Fish and Wildlife Service today that it intends to sue over the agency's failure to finalize critical habitat for the threatened Pearl River map turtle (*Graptemys pearlensis*). The rare turtles' habitat is threatened by a dam proposed by the U.S. Army Corps of Engineers to be built on Pearl River in Louisiana and Mississippi — the only place in the world where they live.

"The Fish and Wildlife Service needs to do its job and protect the last remaining places on Earth where Pearl River map turtles live," said Lindsay Reeves, a senior attorney at the Center. "The Corps' proposal to dam the Pearl River would destroy this struggling turtle's habitat and alter the Pearl River forever. If the Service delays any longer, it may be too late."

Pearl River map turtles are named for the beautiful and intricate patterns on their shell, which resemble topographic maps. These turtles depend on the Pearl River's flowing freshwater to find food and shelter and they need its sandy beaches to build their nests.

The project proposed by the Corps would dredge out the banks of the Pearl River and build a dam to create an enormous lake. This would be especially harmful because Pearl River map turtles can't survive in lakes and construction of the dam would flood their nesting sites.

Despite protecting the Pearl River map turtles as threatened in 2024, the Service failed to protect any of the turtles' critical habitat within one year, in violation of the Endangered Species Act.

The Pearl River map turtle photographed in habitat in Louisiana. **Photo © 2021 by evangrimes**

The Service now has 60 days to designate critical habitat. The designation of critical habitat is an important step in the turtle's recovery. A Center study found that plants and animals with federally protected critical habitat are more than twice as likely to be moving toward recovery than species without it. Ω

—Center for Biological Diversity press release

New England Aquarium treating hundreds of hypothermic sea turtles amid annual stranding season

Cold-stunned turtles washing onto Massachusetts shores in critical condition

Quincy, Massachusetts—20 November 2025—As winds increase and temperatures drop, the New England Aquarium is treating more than 200 hypothermic* sea turtles that have washed ashore on Massachusetts beaches in critical condition.

New England Aquarium staff examining cold-stunned turtles. Photo by Vanessa Kahn/New England Aquarium.

The annual stranding season has ramped up quickly, with 207 live sea turtles arriving at the Aquarium's Sea Turtle Hospital in Quincy, Massachusetts, since Nov. 7. Staff and volunteers from Massachusetts Audubon Wellfleet Bay Wildlife Sanctuary have been searching for cold-stunned turtles on the beaches along Cape Cod Bay and transporting the animals to the Aquarium's facility, where they are gradually warmed and receive care for life-threatening medical conditions resulting from hypothermia and the inability to feed or swim. With Cape Cod Bay at 50.9 degrees Fahrenheit (10.5 degrees Celsius), the season is just beginning.

"The sea turtle stranding season is off to a very quick start. With over 200 turtles arriving at our facility in such a short time—and so early in the season—we need to pace ourselves for likely big numbers this year. Thanks to decades of doing this conservation work, the New England Aquarium is well positioned to ensure high-quality care for the weeks and months ahead," said Adam Kennedy, the Aquarium's Director of Rescue and Rehabilitation.

Upon arrival at the Aquarium's Sea Turtle Hospital, turtles receive a physical exam, heart rate and respiration assessment, wound care as needed, and a trial swim. Turtles also get X-rays to assess their lung condition and look for any bone fractures. Critically endangered Kemp's ridleys (*Lepidochelys kempii*), the majority of the patients, and green sea turtles (*Chelonia mydas*) receive antibiotics. They also receive replacement fluids as prescribed by veterinarians.

"Many of these sea turtles suffer from chronic medical conditions—including pneumonia, bone infection, and sepsis—and may require months of treatment before they can be released into the ocean, which is always our ultimate goal," said Dr. Melissa Joblon, Director of Animal Health at the Aquarium.

Each fall and early winter, hundreds of cold-stunned sea turtles wash up on the beaches of Cape Cod. Because of the rapidly changing water temperature and wind pattern, many turtles cannot escape the hook-like area of Cape Cod Bay and become hypothermic. As the Aquarium's Sea Turtle Hospital reaches full capacity, the team is working closely with the National Oceanic and Atmospheric Administration's (NOAA) Fisheries Service to transfer turtles to partner organizations to continue rehabilitation and make room for new arrivals at the Aquarium's facility. Just this week, the global nonprofit organization Greater Good Charities flew 35 turtles to two facilities in North Carolina, Karen Beasley Sea Turtle Rescue and Rehabilitation Center and NC Aquarium at Pine Knoll Shores. The most seriously ill turtles will remain in New England Aquarium care, where many will complete their full rehabilitation process before being released back into the ocean in the spring and summer months.

— *New England Aquarium press release*

Recovering turtles in rehabilitation. Photo by Vanessa Kahn/New England Aquarium.

* **hypothermic**: having an abnormally low core body temperature, often dangerously low and life-threatening.

California Turtle & Tortoise Club Directory 2026

CTTC Executive Board

The Executive Board is strictly an administrative body for the corporate portion of CTTC and does not handle animals or adoptions. Please contact the Chapter nearest to you for questions and referrals regarding adoptions inquiries.

General Information:
CTTCEBOfficers@tortoise.org
Chief Executive Officer: **Gerald Rezes**
Vice Chief Executive Officer: **Erica Shafer**
Chief Financial Officer: **John Kim**
Executive Secretary: **Heather Ponek**

Chino Valley Chapter

President: **Lynda Misiak**
Vice president: **David Bowman**
Secretary: **Rachelle Buck**
Adoptions: **Jim Misiak**
Meeting: Third Friday at 7:30 PM at Chino Girl Scout House, 5007 Center St., Chino, CA 91710.

Foothill Chapter

President/Adoptions: **Nothy Garcia**
Vice president: **Valerie Zamudio**
Secretary/Historian: **Mardy Graves**
Rec. Secretary: **Valerie Zamudio**
Treasurer: **Art Garcia**
Meeting: Second Friday at 7:00 PM in the Palm Room, Los Angeles County Arboretum, 301 North Baldwin Ave., Arcadia, CA 91007.

High Desert Chapter

President: **Regene Fonville**
Vice president: **Dave Cheney**
Secretary/Adoptions: **Erica Shafer**
Treasurer: **Jose Zamudio**
Meeting: Second Monday at 6:00 PM at the Sterling Inn Regency Room, 17738 Francesca Rd., Victorville CA 92392.

Inland Empire Chapter

Chapter Information:
CTTCIE@tortoise.org
President: **Phuc Huynh**
Vice president: **Eunice "Sal" Bautista**
Treasurer: **Gerald Rezes**
Corr. Secretary: **Amy Taylor**
Rec. Secretary: **Robyn Kohr**
Meeting: First Friday at 7:30 PM at "The Ark" Church of the Nazarenes in the Fellowship Hall in Young Hall, 1307 E. Citrus Ave., Redlands, CA 92374.

Kern County Chapter

General information:
KernCTTC@tortoise.org
President/membership: **Heather Ponek**
Vice president: **Tim Brennan**
Treasurer: **Kathy Studer**
Meeting: Second Monday at 6:30 PM at Bakersfield College SouthWest, 9400 Camino Media, Room #214, Bakersfield, CA 93311.

Low Desert Chapter

General Information: **Tony Vaninetti**
Secretary: **Marlies Dietrich**
Adoptions: **Bill Powers**
Meeting: Information to be announced.

Orange County Chapter

General Information:
OrangeCounty@tortoise.org
President: **John Kim**
VP/Membership: **Linda Grunnet**
Secretary: **Joyce Keyak**
Treasurer/membership:
Virginia Doepping
Adoptions: Adoptions Inquiries Meeting: First Friday at 7:30 PM at the First Christian Church of Orange, 1130 East Walnut Ave., Orange, CA 92867.

Ridgecrest Chapter

President: **Robert Parker**
Treasurer: **Sue Parker**
Adoptions: **Montynne Yates**
Meeting: Second Monday at 7:30 PM at the Maturango Museum, 100 East Las Flores Ave., Ridgecrest, CA 93555. No meetings in July and August.

Santa Barbara-Ventura Chapter

Chapter Information:
SB.Ventura@tortoise.org
President: **Wendy Dasgupta**
Vice president: **Christina Vanarelli**
Treasurer: **Sue Alvarez**
Secretary: **Chuck Alvarez**
Meeting: Quarterly meetings in January, April, July, and October. Dates and locations to be announced.

Santa Clarita Chapter

General Information: **Abigail DeSesa**
President: **George Ordway**
Treasurer/membership/adoptions:
Abigail DeSesa
Secretary: **Jennifer Fields**
Meeting: Date and location to be announced.

TOOSLO (San Luis Obispo) Chapter

Chapter Information:
TOOSLO@tortoise.org
President: **Brandon Froelicher**
Vice president: **Emma White**
Treasurer: **Diane Olear**
Meeting: Fourth Tuesday of January, March, May, July, September, and November at 6:00 PM at Ludwick Community Center, 864 Santa Rosa Street, San Luis Obispo, CA 93401.

Turtle & Tortoise Care Society Chapter

President: **Richard Roosman**
Vice president: **John Kim**
Secretary/Treasurer: **Yolanda Keh**
Meeting: Third Saturday at 7:30 PM at St. Gregory's Episcopal Church, 6201 East Willow St., Long Beach, CA. 90815.

Valley Chapter

President: **Maria Kennedy**
Vice president: **Bob Hazard**
Rec. Secretary: **Carlo Inzerella**
Treasurer: **Karen Berry**
Adoptions: **Valley Adoption Team**
Meeting: Third Friday at 7:00 PM at Woodland Hills Christian Church, 5920 Shoup Ave., Woodland Hills 91367-3327.

For more information, click on the chapter name to visit its website

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

Bouteloua gracilis
Blue Grama Grass

Recently opened reddish-purple flower spikes of blue grama grass photographed in Mexico. Photo © 2018 by andreajs

Native to North America, blue grama, *Bouteloua gracilis*, is a long-lived, warm-season, perennial bunchgrass that, historically, was the dominant plant on the short-grass prairies of the western United States. Today, the species occurs in prairies, plains, open woodlands, foothills, and disturbed areas from southwestern Canada southward through the west and Midwest United States to the northern Mexican Plateau.

Blue grama belongs to the Poaceae, the botanical family of true grasses. Its genus name honors brothers Esteban and Claudio Boutelou, Spanish botanists who made significant contributions to botany and agronomy in the late 18th century. Its species name, *gracilis*, derives from a Latin word root meaning "graceful."

The common name blue refers to the blue-green coloration of the plant leaves, and grama derives from the Spanish word *gramsinea*, meaning "grass." While *B. gracilis* is most often referred to as blue grama, another common name is sometimes used: eyelash grass because of the spikelet's resemblance to an eyelash.

Description

B. gracilis is a small, densely-tufted ornamental grass that grows from 6 to 24 inches (15 to 61 centimeters) in height with a spread of 18 to 24 in. (46 to 61 cm). In most of its range, it forms a bunchgrass, but in areas where continued heavy grazing by wildlife or domesticated animals occurs, it looks more like sod or turfgrass.

The leaf blades of blue grama vary from blue-green or gray-green to bright green. The blades are very narrow, 1/8 in. (3 millimeters) wide, 1 to 6 in. (2.5 to 15 cm) long, and may be flat or rolled (Anderson, 2003; Bebeau, 2014). As the plant goes dormant, its leaves turn from green to golden brown, eventually becoming straw-colored.

Blue grama grass produces an eyelash-like flower spike with many spikelets; this close-up was photographed in Montana. Photo © 2023 by Matt Lavin

In botany, an inflorescence is a group of flowers forming the flower head of a plant, and botanists name the types of inflorescences according to the arrangement of their flowers.

Botanists use the term ***panicle*** to describe the inflorescence of blue grama grass. The panicle consists of a thin stalk rising above the clump of leaves. Each stalk bears one to three floral spikes, each spike consisting of 30 to 90 tightly-crowded spikelets.

Blue grama grass produces an abundance of little, lightweight seeds and will freely self-sow in a naturalized meadow garden.

Cultivation

Being a warm-season grass, the growth season of *B. gracilis* is generally April to October, and it produces flowers from June through August, followed by seeds that ripen and disperse through October. In the fall, the plant enters dormancy but retains some nutritional value for grazing animals.

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To successfully cultivate blue grama grass, good drainage is essential. The species tolerates many soils types except those with poor drainage or too much acidity. Blue grama grows best in full sun and will tolerate partial shade but not deep shade.

B. gracilis has excellent drought tolerance once it's established. It will develop a strong system of fibrous roots with regular watering during its period of establishment, typically one growing season.

Blue grama grass has low maintenance and watering requirements once established. To promote fresh new growth each spring, cut the dormant plant back to the ground in late winter.

Propagation

There are many sources for blue grama grass seed, including native plant nurseries, botanical gardens, and heirloom seed specialists.

Division is a standard method of propagation for bunch grasses. Digging up a portion of the clump by the roots enables the gardener to replant the "division" elsewhere. The best times to use division for propagation are early spring or late fall, when the plant not actively growing.

A mature clump of blue grama photographed in New Mexico. Notice that the reddish-purple flowers turn straw-colored as they mature. **Photo © 2021 by Clifton Webb, C.W.B.**

Garden Uses

B. gracilis can be utilized in many types of informal garden settings, including native plant gardens, meadow and prairie plantings, cottage gardens, and borders.

Economic Uses

Contemporary ranchers and Native Americans alike consider blue grama grass to be one of the most important forage grasses in the genus *Bouteloua*. The species has good palatability and substantial nutritional values for both livestock and wildlife.

Rehabilitation and reclamation projects frequently use blue grama grass for "abandoned farmlands and severely depleted pastures," and "in mixtures of grasses used in erosion control, low maintenance turf plantings, and surface mine revegetation" (Blue Grama, n.d.).

Ethnobotany

For those unfamiliar with the term, ***ethnobotany*** refers to the scientific study of "how people of a particular culture and region make use of indigenous (native) plants," according to the US Forest Service.

In this column, we mention the uses of blue grama grass by Native American tribes, including the Apache, Hopi, Navajo, and Zuni. Their household uses of blue grama include brushes, brooms, and basket making. Native Americans ate the seeds of blue grama raw or cooked them as porridge. They also ground up blue grama seeds and mixed the resulting meal with other grains for bread making (Blue Grama, n.d.). Ω

As the blue grama seedhead matures and goes dormant, it may curl into a circle. This one was photographed in Arizona. **Photo © 2018 by Damon Tighe.**

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Chapter Meeting Schedule: January/February 2026

Check your chapter website for program information.

Chino Valley
January 16; February 20

Foothill
January 9; February 13

High Desert
January 12; February 9

Inland Empire
January 2; February 6

Kern County
January 12; February 9

Low Desert
Meeting information to be announced.

Orange County
NO January meeting; February 6

Ridgecrest
January 12; February 9

Santa Barbara-Ventura
Meeting information to be announced.

Santa Clarita
Meeting information to be announced.

TOOSLO (San Luis Obispo)
January 27

TTCS (Long Beach)
January 17; February 21

Valley
January 16; February 20

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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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.

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- Individual membership 25^{00}
- Family membership 35^{00}
- Life membership 500^{00}

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