

# *The Guadalupe River* **2023** *Year in Review*

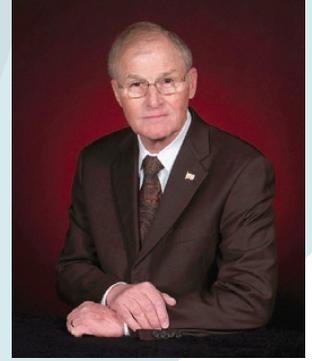


American Rubyspot Damselfly  
Photo by Travis Linscomb, UGRA





## Message from UGRA President



William Rector  
UGRA President

### UGRA

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### UGRA MISSION:

**To protect the health of the Guadalupe River watershed in Kerr County by managing water quality and water quantity, promoting stewardship, and providing services to support our communities.**

2023 has again seen devastating drought in the Hill Country of Texas. Severely impacted have been the springs that feed the origin and flow of the Guadalupe River. Flow of the Guadalupe has been the lowest in recent history with a complete absence of water within sections of our river in east Kerr County. This past year has been a reminder that water within our aquifers and our surface water are interrelated, and as one is being depleted, it impacts the other. Recharge of our aquifers depends upon rainfall to allow spring flow, and we remain significantly behind over the last decade. The change predicted from La Niña to El Niño hopefully will bring the needed rainfall to end this cycle of prolonged drought.

However, despite dramatically reduced rainfall, there are stories of ingenuity and resilience as landowners implement practices that protect our scarce water resources. Rainwater catchment systems supply an increasing number of Hill Country households with their total water needs. UGRA is proud to support the utilization of water catchment with our rebate program. During 2023, we funded 46 applications for a total of \$17,192. Since our program began in March of 2011, we have funded 635 applicants. Each household that supplies its water needs with rainwater, dew and condensation catchment is one less household depending upon our aquifer or river as a source.

Partnering with landowners on brush management is another way that UGRA is fostering increased river flow. In 2023, 14 applications for brush management were funded, removing 805 acres of Ashe Juniper or Mountain Cedar. Since the beginning of this program in 2010, 15,448 acres have been cleared and returned to healthy, native grassland.

Feral hogs continue to be a huge problem in Texas including the Guadalupe watershed. Feral hogs destroy the river's edge vegetation that filters water entering our streams. These valuable natural buffers ensure the crystal-clear water that brings thousands of tourists to our area to enjoy our river. In cooperation with Kerr County, we are one of the few places in Texas that encourage removal of feral hogs by paying a bounty upon each hog removed. In 2023, 1,935 hogs were removed in Kerr County and since the beginning of this unique program over 11,600 hogs have been removed.

Along with my eight fellow UGRA board members, I am proud to have supported and fostered these stewardship programs and the many more featured in this publication. In addition, UGRA serves our community through the important work done by our environmental laboratory. From the testing of well water to ensure its potability to the testing of collected river water samples to detect the presence of harmful bacteria, UGRA is working to ensure that our Guadalupe River remains our most valuable resource.

UGRA's service to our taxpayers was evaluated during the past few years as we underwent review by the Texas Sunset Advisory Commission. The conclusion of that review was positive, and we were given outstanding marks of excellence as a steward of one of Texas' most pristine rivers.

Thank you for your part in helping us Keep OUR River Clean!



# Native Wildlife Spotlight

The Hill Country is a part of the Edwards Plateau region in Texas characterized by its many hills and valleys carved over time by the erosion of soft limestone layers. Kerr County is situated in the Edwards Plateau at the headwaters of the Guadalupe River, which is fed by thousands of springs pulling groundwater from the aquifers.

The unique topography and geology provide a habitat for many species of plants and wildlife that are endemic to the Guadalupe River Basin and not found anywhere else including those featured below. It is important that we protect the health of the Guadalupe River for future generations of Texans and the native wildlife that call it home.

## Cagle's Map Turtle

Adult Cagle's Map Turtles are quite small, with a shell length of between 4 and 8 inches. While they are known for their intricate shell patterns, even more eye catching are the light yellow and dark green stripes covering their head and limbs. They're typically found basking on a log in the fast-flowing waters along river banks with plenty of substrate and tree roots where they can find their preferred meals of aquatic insects and mollusks. Altered riparian areas along the river make it more difficult for the turtles to find nesting habitats. To limit disturbance to the species by humans, it's important to create small targeted access points to the river and leave the majority of the riparian area untouched.



## American Rubyspot Damselfly

Most people have seen their fair share of dragonflies but may be less familiar with damselflies. The easiest way to tell them apart is by observing them when they rest on a branch or blade of grass. Damselflies will fold their wings along their body while dragonflies leave them out perpendicular to the body. Unlike the other species featured here, the American Rubyspot damselfly is widespread across most of North America. Adult males can be easily recognized by their bright green and red colors like the specimen on the front cover of this publication. Dragonflies and damselflies spend most of their lives under water in the immature nymph stage. Only a short time at the end of their life is spent flying around as an adult. In both their nymph and adult stages, they are predators that hunt down other insects like mayfly larvae and mosquitoes. American Rubyspots rely on clean clear streams and rivers with undisturbed riparian areas to live and hunt.



## Plains Orangethroat Darter

The Plains Orangethroat Darter is mostly easily identified by its namesake beautiful orange and blue markings. They're a very small species with adults measuring less than 3 inches in length. The darter prefers riffle environments with cool, fast-flowing, shallow water and plenty of rocks to hide in and hunt around. They mostly feed on small aquatic insects like midge fly and caddisfly larvae. Luckily, Orangethroat Darters are abundant, but their largest threats are the same as many other aquatic species. Pollution from runoff coupled with habitat destruction puts a strain on many species, especially those found only in one region.



## Guadalupe Bass

The unofficial mascot of the City of Kerrville and the official state fish of Texas, the Guadalupe Bass is endemic to shallow, spring-fed rivers of the Edwards Plateau. Anglers who enjoy fishing in the Texas Hill Country are no doubt familiar with the tough fight that can be put up by these small fish. They are valuable indicator species since they prefer pristine stream habitats considered emblematic of the Texas Hill Country: clear streams skirting limestone bluffs and banks lined with Bald Cypress, Pecan, and Cottonwood trees. Healthy populations of Guadalupe Bass are a reflection of a healthy ecosystem.





In November, UGRA was visited by **Texas Senator Pete Flores** who represents **District 24**. UGRA Board members spoke with Senator Flores about our stewardship programs and water resource concerns for the upper Guadalupe River watershed.



In ongoing efforts to monitor and protect water quality, UGRA conducted **57 routine sampling events at 43 sites with a total of almost 2,400 parameters tested**. Additionally, we initiated or assisted with 17 water quality investigations and three aquatic life monitoring events.



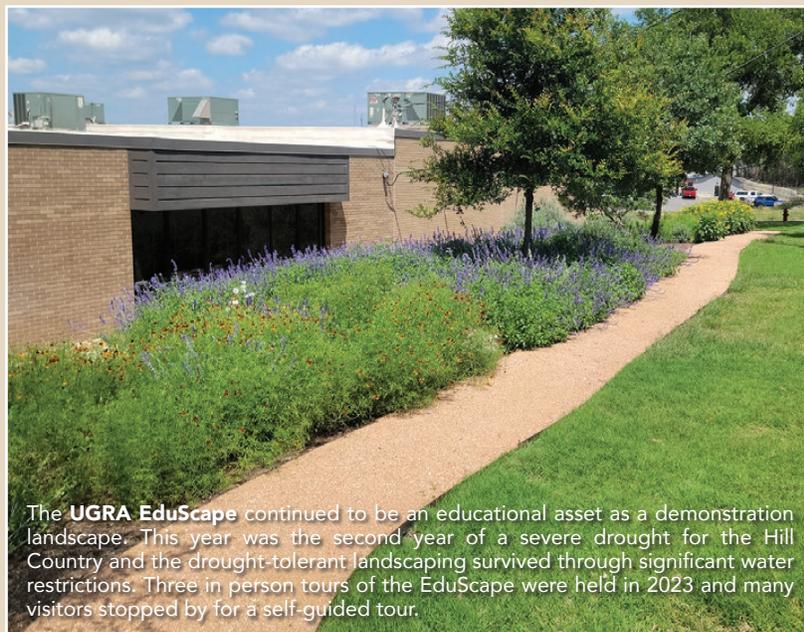
UGRA staff conducted regular crossing cleanups throughout the year to keep trash out of our waterways. Across 13 high priority sites in Kerr County, **2,500 pounds of trash were collected**. Mesh waterway cleanup bags continue to be provided at a dispenser at Ingram Dam to supply cleanup efforts throughout the year. UGRA and Kerr County also funded litter patrols with licensed peace officers at the most popular river crossings to promote the message, "Pack it in...pack it out."



UGRA's **environmental laboratory** is certified for 33 analyses under the National Environmental Laboratory Accreditation Program. In 2023, lab staff processed **over 23,000 tests** for regulated and non-regulated customers.



UGRA sponsors the **Texas 4-H Water Ambassadors program** to provide high school students with an opportunity to develop leadership skills and learn about management of water resources across Texas. When visiting UGRA this summer, students learned about water testing, watershed management, and how our unique river authority serves the community.



The **UGRA EduScape** continued to be an educational asset as a demonstration landscape. This year was the second year of a severe drought for the Hill Country and the drought-tolerant landscaping survived through significant water restrictions. Three in person tours of the EduScape were held in 2023 and many visitors stopped by for a self-guided tour.



This September, UGRA hosted a **Waterwise Landscaping Seminar** to encourage homeowners and professionals alike to adopt best practices for conserving water. Speakers at the event covered a wide range of topics including rainwater harvesting, native plants, and irrigation methods. Recordings and materials from the seminar are available on our website at [ugra.org/public-information/education/blog/seminar-2023](https://ugra.org/public-information/education/blog/seminar-2023)



Since 2017, with the support of Kerr County and LCRA, UGRA has funded **bounty payments for the harvest of over 11,000 feral hogs**. Feral hogs seek out areas along waterways and cause damage to streamside vegetation increasing erosion and bacteria pollution from runoff.

# UGRA 2023

## Year in Review

Each January, the Guadalupe River corridor in Kerr County is filmed in order to track watershed changes over time. Here is the view over Seago Crossing. Aerial footage can be accessed at [www.ugra.org/public-information/education/river-corridor-panels](http://www.ugra.org/public-information/education/river-corridor-panels)



Our **public education program** includes materials and presentations designed to teach about our local water resources and how we can all be stewards to protect the health of the river. In 2023, UGRA conducted 40 programs educating approximately 2,438 members of the public about our water resources.



UGRA awarded the Hunt Volunteer Fire Department \$15,000 to expand the capacity of their 50,000-gallon rainwater catchment system that allows them to more effectively and efficiently protect West Kerr County. The project was the 2023 recipient of UGRA Rainwater System Grant Program funding. The program is available to all nonprofit organizations, schools, and public entities.



As a part of UGRA's mission to support the water resource interests of Kerr County, UGRA staff participate in state water planning processes for both water supply and flood. The **Plateau Water Planning Group** includes representatives from 6 counties who cooperatively plan for future water supply needs. Staff is also a member of the **Guadalupe Regional Flood Planning Group** who proposed their first basin wide plan to mitigate flood risk in 2023.



Young artists throughout Kerr County submitted their work for a chance to win the **River Clean Up art** contest and design the event t-shirt. The top three artists received a cash prize and the winner had her artwork displayed on the t-shirt.



**Twenty-seven volunteers** (some with canine companions) collected **330 surface water samples at 40 locations throughout Kerr County** as part of our **Volunteer Summer Study Program**. The additional volunteer samples supplement the data collected by UGRA and identify areas that need further investigation. This volunteer and her helper collected their samples from the South Fork downstream of Angel Falls.



In 2023, UGRA launched the **Water Resources Preservation Grant Program** to help address pollution from surface water runoff caused by development. Staff spoke throughout the community to encourage applications to this incentive program that provides cost share funding for the design and construction of Green Stormwater Infrastructure such as rainwater harvesting, bioretention, and vegetated filter strips. More information is available on the UGRA website.



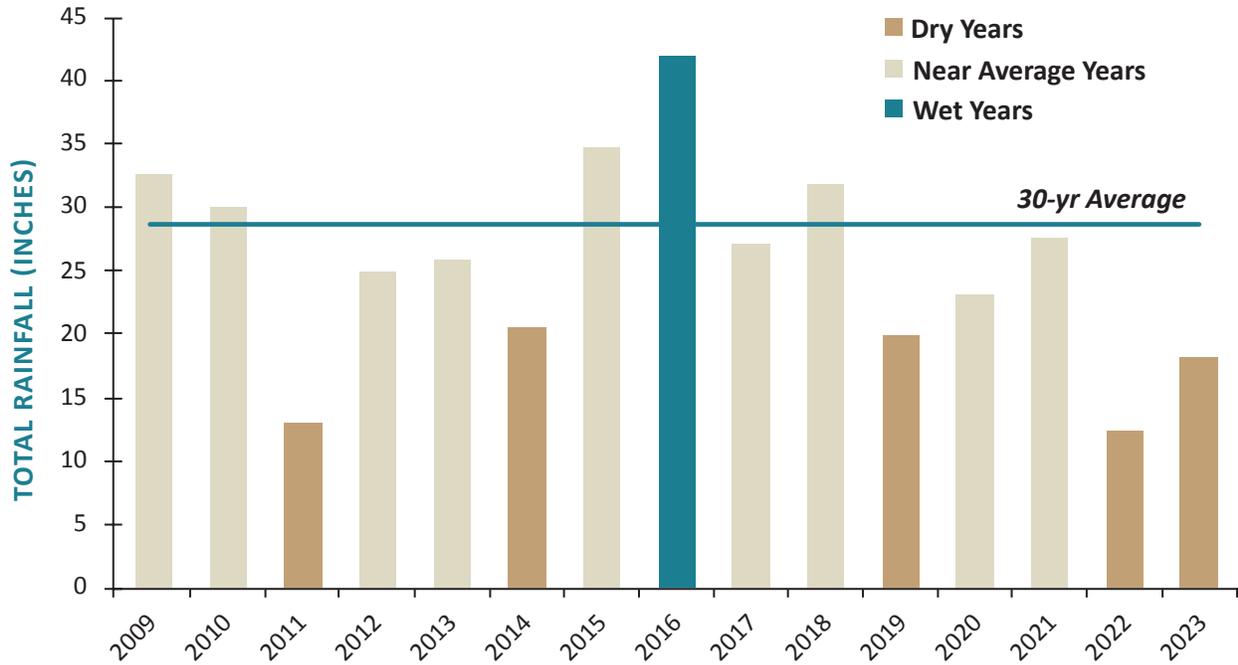
The **20th Annual UGRA River Clean Up** was held on July 22, 2023. There were 549 volunteers who collected 8,110 pounds of trash from the Guadalupe River watershed in Kerr County. This year, there was also an OYO (On Your Own) River Clean Up that went from September to October and during it, 59 volunteers conducted cleanups at 7 locations.



UGRA partnered with the **Hill Country Arts Foundation** for the 5th year in a row to sponsor a youth art assemblage workshop that highlighted the prevalence of trash in our waterways and gave litter a new life through art.

# 2023 Rainfall and Surface Water Levels

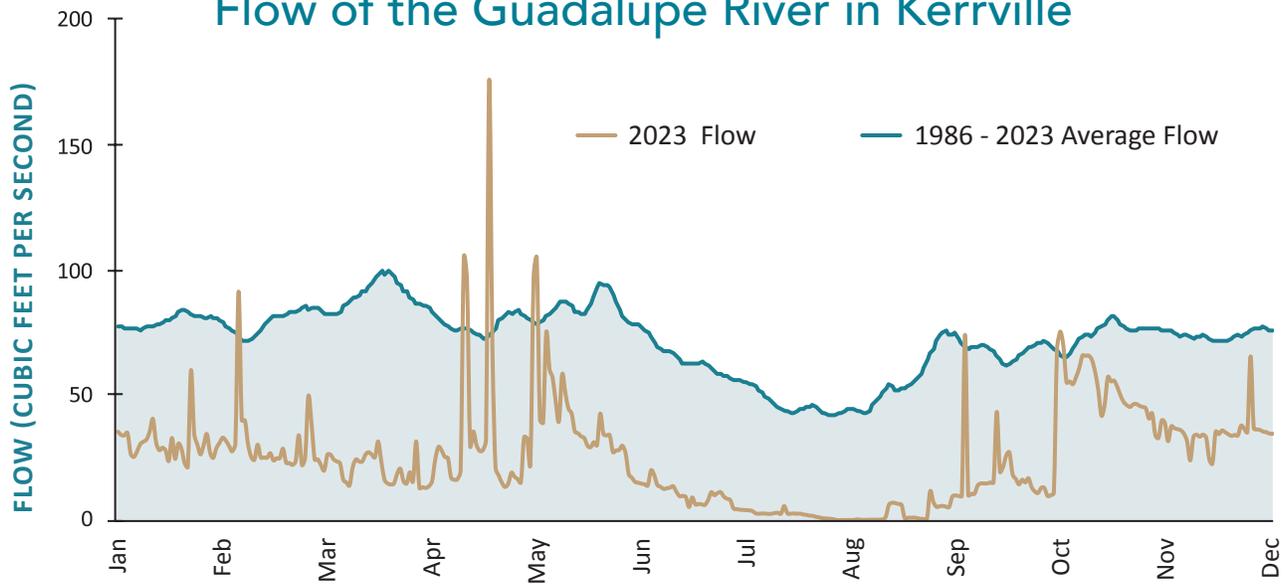
## Fifteen Years of Rainfall in Kerrville



Data Source: USDA Knippling-Bushland Livestock Insects Research Laboratory



## Flow of the Guadalupe River in Kerrville



Data Source: USGS Water Data for Texas



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(830) 896-5445 • [www.ugra.org](http://www.ugra.org)

125 Lehmann Drive - Suite 100 • Kerrville, Texas 78028