



Guadalupe River
at G Street

The Guadalupe River
2022
Year in Review



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.



Diane McMahon
UGRA President

Message from UGRA President

2022 has been filled with accomplishments, change and challenges, which is a healthy condition for UGRA. We have been able to return to more normal activities, having incorporated some efficiencies learned from the COVID-19 limitations. As you will see in this publication, UGRA has been involved in accomplishing diverse activities in support of our mission.

One of the changes you may be aware of is that our previous General Manager retired after 17 years of service. Many of you already know our new General Manager, Tara Bushnoe, because she has been with UGRA for 15 years. She is performing her expanded responsibilities capably and smoothly in her new leadership role. We also have some new staff members whose photos you may see in this publication.

As for challenges, drought is an unpleasant condition that has occurred frequently in recent years. In 2022, we have had a serious reminder about water, which is our most essential resource and the one we most take for granted. The back page of this publication summarizes the severity of the drought and the impact it has had on the Guadalupe River. Water uncertainty is a fact of life here, and we must always use it with care and awareness to maintain a reliable supply. We have welcomed many newcomers to our area, and I hope we long-time residents have informed our new neighbors about our water situation. The #1 use of water is for our landscapes, so our choice of style and plant types can greatly reduce pressure on our water resources.

For water-wise landscaping inspiration, visit our award-winning EduScape at 125 Lehmann Drive to get some ideas for your own property. Our website, ugra.org, also has a wealth of information on water resources and stewardship practices. I invite you to explore the Education Center page to view a map of Kerr County waterbodies, learn about low impact development and check out our annual river video to get a bird's eye view of the Guadalupe River.

We can and must be water-smart—and if you're not sure what to do, we can help. Ultimately, as a community, we are ALL partners in protecting our river.

Reduce Runoff to Improve River Health

“...we all impact the health of the Guadalupe River in numerous ways as it weaves a path across our region.”

The Guadalupe River is an integral part of the character of Kerr County. It has shaped our communities, economy, and quality of life for generations. Most of us living here value maintaining the health of the river for ourselves and for the future. Whether you realize it or not, we all impact the health of the Guadalupe River in numerous ways as it weaves a path across our region. Similarly, we all share responsibility for the stewardship of this remarkable resource.

Factors that influence a waterway rarely occur at the water's edge but instead come from a much larger area called the watershed. When it rains, water flows across land on its way to a stream, river, lake, or ocean. This drainage area is the watershed and the condition of the land and the activities taking place on it have a direct influence on water quality.

In general, urban watersheds have a greater impact on waterbodies than undeveloped land. The urban landscape is covered by impervious surfaces such as parking lots, roads, and buildings. When rain falls on these surfaces, it does not soak into the soil or slowly make its way to the nearest creek. Instead, it rushes downhill quickly and picks up contaminants along the way. These contaminants, in the form of nutrients, fecal matter, chemicals, or sediment particles, are swept up by rain and carried into a storm sewer system and then carried directly into local waterbodies that we use for swimming, fishing, and drinking water. For this reason, urban runoff is one of the leading causes of poor surface water quality in the Guadalupe River and across the U.S.



TERRACING

Terracing creates level areas within a slope which will **allow heavy rain to soak in rather than runoff**, taking soil with it. A variety of building materials can be used to create terraces such as **landscape timbers, interlocking blocks, or stones**. This terrace at the UGRA EduScape is a **gabion wall design** created by welded galvanized wire mesh baskets filled with stones.

We can be better stewards of the river by reducing the quantity and controlling the quality of the runoff that leaves the property we own or manage. As our community continues to grow, we need to adopt building and construction strategies that retain stormwater in order to prevent an increase in runoff into the river. These strategies could be:

- The use of materials that allow rain to soak into the ground like permeable pavers or structures that slow the flow of runoff over a slope like terraces.
- Rain gardens that give runoff additional opportunities to soak into the ground and rainwater harvesting that offers a way to keep rain on your property for later use.
- Large retention areas which can provide a place for sediments and contaminants to settle out of runoff instead of rushing directly into waterways. These retention areas can also release stored water during times of drought to increase the resiliency of local vegetation.

The underlying strategy of these solutions is to put structures in place that will slow the overland flow of rainfall and trap contaminants by keeping rain close to where it falls. Employing these strategies is often called low impact development, nature-based infrastructure, or landscaping with a purpose. The UGRA EduScape demonstrates many of these design features to reduce stormwater runoff and flooding, conserve water, and ultimately protect our beautiful river. We invite you to stop by 125 Lehmann Drive in Kerrville to visit the EduScape and join us in finding solutions to reduce stormwater runoff.

RAIN GARDEN



A **rain garden** is a shallow, vegetated depression designed to collect, soak up, and filter stormwater runoff from impervious surfaces like roofs, sidewalks, and driveways. Most rain gardens contain **layers of gravel, sand, and soil** to maximize the amount of water they can collect and are planted with colorful native plants and grasses. They not only provide an attractive addition to your landscape, but also **help to conserve water and protect our water quality**. For more information on rain gardens, visit www.ugra.org.



UGRA BOARD OF DIRECTORS

UGRA is led by a **Board of Directors** appointed by the Governor. The board unanimously elected to continue their current slate of officers which includes **Diane McMahon, President; Aaron Bulkley, Vice-President; Bill Rector, Secretary; and Maggie Snow, Treasurer.**



FLOOD PLANNING

In 2019, the Texas Legislature created a **state flood planning process** for Texas which tasks water resource professionals in 15 planning areas with developing a **plan to reduce flood risk in their region.** The **Guadalupe Regional Flood Planning Group** developed the first flood plan for our river basin. **Tara Bushnoe** represents UGRA as a voting member in the Guadalupe RFPG.



WATER SAMPLING

In ongoing efforts to monitor and protect water quality, UGRA conducted **53 routine sampling events** at 41 sites with a total of approximately **2,300 parameters tested.** Additionally, we initiated or assisted with **14 water quality investigations** and **2 aquatic life monitoring events.**



LAB TESTING

UGRA's **environmental laboratory** is certified for 32 analyses under the National Environmental Laboratory Accreditation Program. In 2022, lab staff processed almost **22,000 tests** for regulated and non-regulated customers.



RAINWATER SYSTEM AWARD

UGRA awarded the **Hunt School \$5,000** to support improvements to their **20,000-gallon rainwater catchment system** which conserves water and reduces demand on surface and groundwater.



4-H SPONSORSHIP

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.**



LAND MANAGEMENT PROGRAMS

UGRA coordinates several programs that encourage **land management practices to keep the watershed healthy.** In 2022, we assisted 11 landowners in managing 550 acres of brush. This pasture will be filled with grasses after selective cedar removal. With the support of Kerr County and LCRA, we funded **bounty payments for the harvest of over 1,700 feral hogs.** Feral hogs seek out areas along waterways and cause damage to streamside vegetation increasing erosion and bacteria pollution from runoff.



HCAF YOUTH ART

UGRA partnered with the **Hill Country Arts Foundation** for the 4th 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.



VOLUNTEER PROGRAM

Thirty volunteers collected 342 surface water samples at 42 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 collected his samples from the Guadalupe River at Lower Cade Loop.



WATER CROSSING CLEANUPS

UGRA staff conducted regular **crossing cleanups** throughout the year to keep trash out of our waterways. Across 13 high priority sites in Kerr County, **thousands of pounds of trash were collected**. Mesh waterway **bags** continue to be **provided at a dispenser at Ingram Dam** to supply cleanup efforts throughout the year.



RETIREMENT TRIBUTE

In September, **Ray Buck** retired from his distinguished **17-year career at UGRA**. As a tribute to his achievements and leadership, a **goldenball leadtree** was planted in the **UGRA EduScape**. Buck is succeeded in the General Manager position by **Tara Bushnoe**, who previously led the UGRA Natural Resources Department for 15 years.



UGRA 2nd GRADE SCIENCE DAY

Since 2018, the UGRA Board has approved funding to offer the **UGRA 2nd Grade Science Day at Riverside Nature Center** field trip to all Kerr County 2nd graders. Students learn about our **River of Life** and other features of our environment in Kerr County.



DOCUMENTARY FILM

Deep in the Heart is a documentary following the majestic wildlife that makes Texas unique. One of the species highlighted in the film is our very own **Guadalupe Bass**. In 2005, UGRA teamed up with TPWD and the Hill Country Fly Fishers to increase the number of Guadalupe Bass in our river basin. When the feature film had a **special screening in Kerrville**, that included a **question-and-answer session**, they asked **UGRA staff** to help the producer answer questions.



YOUTH T-SHIRT DESIGN CONTEST

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.



UGRA ANNUAL RIVER CLEAN UP

The **19th Annual UGRA River Clean Up** was held on July 23, 2022. There were **403 volunteers** who collected **6,125 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, **137 volunteers** conducted cleanups at 15 locations.



HABITAT CONSERVATION

In 2021 the **Guadalupe fatmucket** along with four other species of freshwater mussels found in central Texas were proposed for listing under the **Endangered Species Act**. The final rule has not been decided yet, but UGRA is continuing to closely monitor this process. In support of these species and other endangered and threatened species in the Guadalupe Basin, the Guadalupe-Blanco River Authority is developing a **basin-wide Habitat Conservation Plan** that will include parts of Kerr County.



PUBLIC EDUCATION

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 2022, UGRA conducted **42 programs** educating approximately **2,141 members of the public** about our water resources.

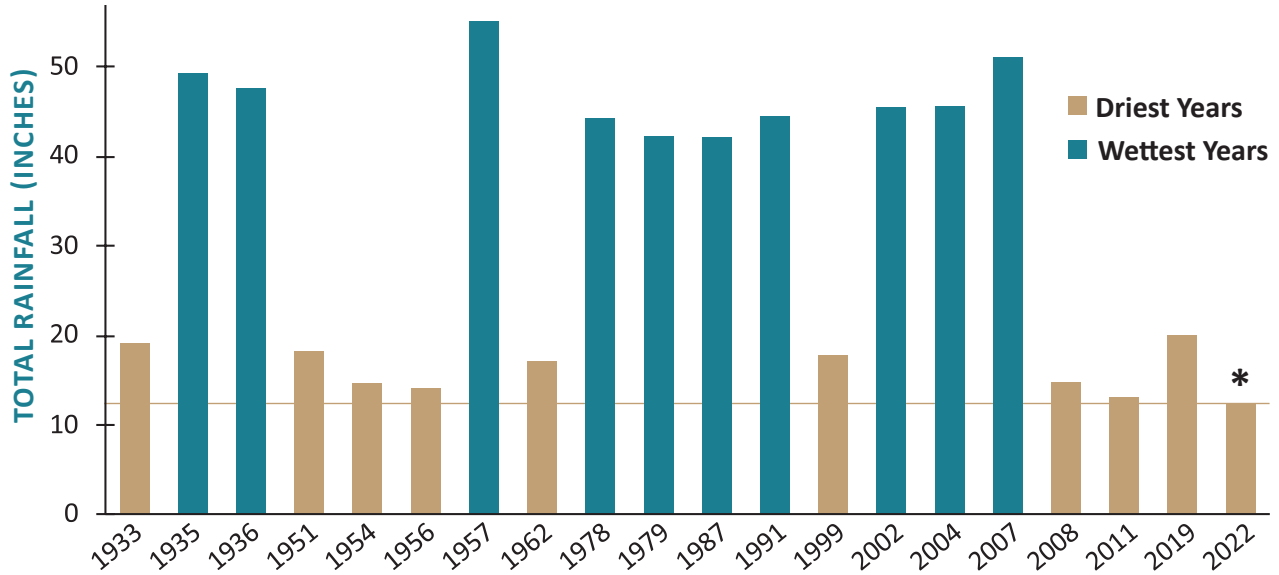


EDUSCAPE POLLINATOR GARDEN

Earlier this year, UGRA was awarded funding through the **Native Plant Society of Texas Monarch Garden Grant** with the goal of furthering monarch butterfly conservation and promoting the use of Texas native plants. **Hill Country Master Naturalists** members assisted UGRA staff with the installation of the new plants around the **UGRA EduScape** and have continued to help maintain the **pollinator garden** throughout the year.

2022 RAINFALL AND SURFACE WATER LEVELS

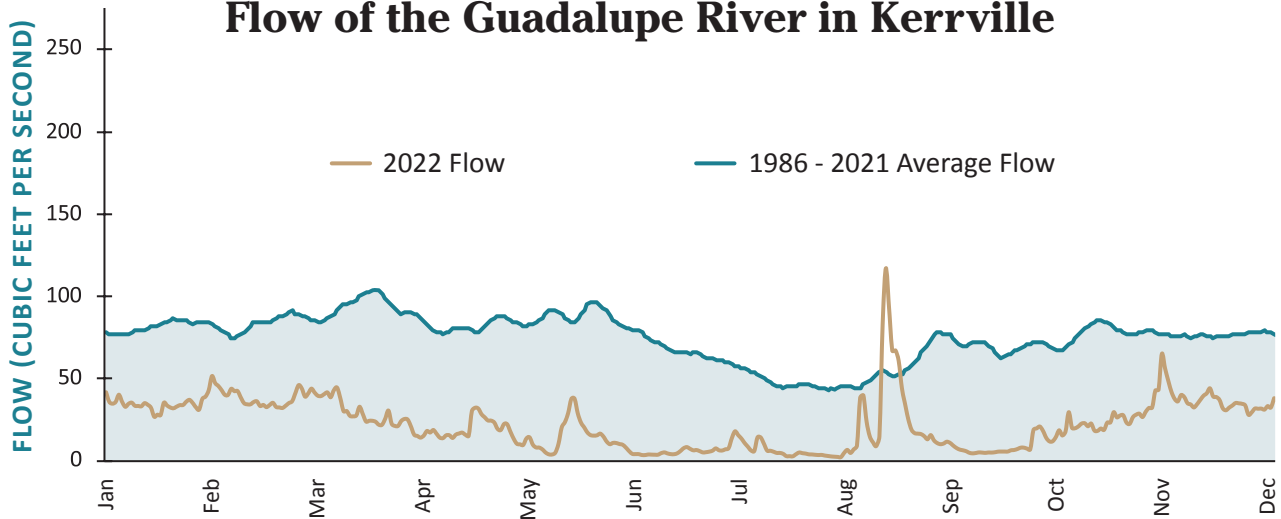
Top Ten Driest and Wettest Years in Kerrville



***2022 was the driest year ever recorded in Kerrville with only 12.38" of rain.**

Source: USDA Knippling-Bushland Livestock Insects Research Laboratory

Flow of the Guadalupe River in Kerrville



Source: USGS Water Data for Texas



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