Guadalupe River Recreation After the Flood: Water Quality, Debris, and Channel Hazards

A brief

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July 1, 2026; revised July 9, 2026

***Revision note**: This revised version clarifies the distinction between ambient recreational water-quality criteria and operational swimming-advisory or bathing-beach thresholds, especially in comparing Texas and New Jersey standards.*

Executive Summary

Nearly one year after the deadly Guadalupe River flood, the immediate pathogen contamination from the original floodwater is probably no longer the primary recreation-safety concern. Current safety should instead be judged by present water-quality testing, recent rainfall and flow conditions, and remaining physical hazards. For the upper Guadalupe River system in the Kerr County area, E. coli remains the key freshwater recreational indicator, and existing monitoring provides useful context for evaluating current conditions. However, water quality is only part of the safety question. A catastrophic flood can also reshape the riverbed, undercut banks, create scour holes, alter currents, damage boat ramps, and leave submerged debris in familiar recreation areas. Therefore, swimmers, tubers, kayakers, and other river users should not assume the river is safe simply because the water looks clear or because a year has passed; current bacteria results, debris conditions, bank stability, channel changes, and access-point safety all need to be considered.

1. Why Last Year's Floodwater Is Probably Not the Main Issue Today

With the anniversary of the deadly Guadalupe River flood approaching, it is worth restating why the immediate pathogen contamination from the original floodwater is probably not the primary concern today. In a flowing river, fecal indicator bacteria and many pathogens introduced during a flood are usually reduced over time by dilution, flushing, sunlight, settling, and natural die-off. At this point, current recreation safety should be evaluated based on present conditions, not simply on the fact that the flood occurred last year.

How long does it take bacteria levels to return to normal? There is no single fixed number of days after a flood or rainfall event. For ordinary rainfall events on the upper Guadalupe River, the Upper Guadalupe River Authority recommends avoiding swimming for approximately five days after heavy rainfall, defined as rainfall that produces significant runoff from streets and hillsides into the river. This waiting period allows time for stormwater runoff contaminants, including elevated E. coli, to dissipate and for muddy, debris-filled water to clear so submerged hazards are more visible. The guidance is especially relevant in the Texas Hill Country, where steep terrain and flash-flood-prone watersheds can rapidly deliver runoff into the river; even a brief, intense storm in the headwaters can temporarily elevate bacteria levels and turbidity downstream. After a major flood, however, recovery can take longer and should be confirmed by site-specific E. coli testing rather than by a simple waiting period. For the July 2025 Guadalupe River flood, available public reporting indicates that by August 12, 2025, UGRA had publicly confirmed that water quality in Kerr County was within normal parameters, while still urging extreme caution because of dangerous debris and other physical hazards. This supports the conclusion that, nearly one year later, bacteria from the original floodwater are probably not the main issue; current E. coli levels would depend more on recent rainfall, runoff, flow conditions, sediment disturbance, and ongoing local sources.

2. Current Water-Quality Concern: E. coli and Primary-Contact Recreation

The main current water-quality question is whether recent rainfall, runoff, wastewater inputs, septic leakage, livestock, wildlife, or sediment disturbance are causing elevated bacteria levels. For freshwater recreation, the most common routine indicator is E. coli. E. coli is not necessarily the main pathogen of concern; rather, it is used as an indicator of fecal contamination and the possible presence of other disease-causing organisms. U.S. EPA's recreational-water guidance is based on protecting people from pathogen exposure during water-contact activities such as swimming, bathing, surfing, and similar primary-contact recreation, and U.S. EPA identifies E. coli as a recommended fecal indicator for freshwater recreation.

For the upper Guadalupe River system in the Kerr County area, including the North and South Forks and nearby mainstem reaches affected by the flood, the relevant recreational indicator is generally E. coli. These are freshwater recreation waters, and Texas's Primary Contact Recreation 1 (PCR1) criteria use a geometric-mean criterion of 126 E. coli per 100 mL, along with a statewide PCR1 single-sample criterion of 399 per 100 mL.

Texas's Primary Contact Recreation 1 definition explicitly includes activities presumed to involve significant risk of water ingestion, including swimming, tubing, and whitewater activities such as kayaking, canoeing, and rafting. Therefore, for a PCR1 freshwater reach, the bacterial water-quality criterion is relevant not only to swimmers but also to high-contact river users such as tubers and whitewater paddlers.

3. Monitoring and Pre-Flood Baseline Conditions

The upper Guadalupe River also has a pre-flood recreational water-quality monitoring context. The Upper Guadalupe River Authority's longstanding Summer Swimability Study monitors E. coli at popular swimming holes in Kerr County from Memorial Day to Labor Day, with sampling at 21 sites during 15 consecutive weeks of the summer recreation season. Historically, TCEQ identified bacteria concerns before 2006 in two small Kerrville-area assessment areas of the Guadalupe River Above Canyon Lake segment, but the previously impaired mainstem portions were later found in the 2014 assessment to be fully supporting contact recreation. Some tributaries, including Quinlan Creek and Town Creek, continued to have bacteria-related concerns. This suggests that, before the 2025 flood, the upper Guadalupe River was regularly monitored and generally managed as a contact-recreation waterbody, with localized or episodic bacteria concerns rather than a uniformly unsafe baseline condition.

4. Standards Context: Texas, New Jersey, and the Fecal-Coliform-to-E. coli Shift

New Jersey now also uses E. coli for freshwater primary-contact recreation, although it previously used fecal coliform. The earlier use of fecal coliform was not unique to New Jersey; fecal coliform was widely used in older recreational water-quality standards across the United States. The later shift toward E. coli for freshwater recreation and enterococci for marine or high-salinity waters followed U.S. EPA epidemiological studies showing that these indicators correlate better with swimming-related gastrointestinal illness risk than fecal coliform. U.S. EPA's recommended recreational water-quality criteria are ambient criteria under the Clean Water Act for waters designated for recreation. They use a geometric mean and a Statistical Threshold Value (STV) to evaluate both typical water quality and short-term high-bacteria episodes. EPA also recognizes Beach Action Values or similar notification thresholds as conservative "do not exceed" tools for timely beach advisories or closures. These operational values are related to, but not the same as, long-term ambient water-quality standards.

Texas's freshwater Primary Contact Recreation 1 (PCR1) criteria, within the Texas Surface Water Quality Standards, already include both a long-term geometric-mean criterion of 126 E. coli per 100 mL and a statewide single-sample criterion of 399 E. coli per 100 mL. Local swimming advisory or closure programs may also consider short-term indicators, rainfall, flow, turbidity, visibility, and site-specific conditions.

Therefore, for the Guadalupe River, the 126 and 399 values should be read together as part of the Texas freshwater contact-recreation framework, not as two unrelated standards.

New Jersey uses a somewhat different two-layer structure that can be confusing if the numbers are compared out of context. For freshwater primary-contact surface waters, New Jersey's ambient Surface Water Quality Standards use an E. coli geometric mean of 100 CFU/100 mL over a 90-day period, paired with an STV of 320 CFU/100 mL, not to be exceeded by more than 10 percent of samples over that same 90-day period. For regulated freshwater bathing beaches, however, the 320 E. coli CFU/100 mL value is used more directly as an operational public-health threshold for beach advisories or closures. Thus, the same numerical value can appear in both contexts, but it serves different regulatory and management purposes.

The Texas-New Jersey comparison should therefore be understood as a comparison of regulatory and management frameworks, not just a comparison of single numbers. New Jersey's ambient geometric-mean and STV values are more protective numerically than Texas's PCR1 geometric-mean and single-sample criteria, but operational swimming decisions in any state depend on timely sampling, local advisories, recent rainfall and runoff, flow conditions, turbidity and visibility, and physical hazards. A single "good" sample is not enough to determine that a river is safe for recreation, but a single high sample can be important for immediate public-health decision-making.

5. Flow Conditions Matter

Flow conditions are also important. Low flow can cut both ways: less water means less dilution of any bacterial input, so E. coli concentrations can be higher for a given source load than they would be at normal flow. Low water can also expose rocks, ledges, debris, and channel irregularities that would ordinarily be submerged. In contrast, higher flows after rainfall can resuspend contaminated sediment, move debris, and create stronger currents. In either case, water quality and physical safety should be judged from current conditions, not from memory of what the river used to be. This is not merely hypothetical for the upper Guadalupe region, which has experienced recurring drought and periods of low flow in recent years; before entering the water, current flow and rainfall conditions should be checked against available USGS streamflow gauges and UGRA's RiverHub or other river-condition information rather than assumed from a typical summer. RiverHub and streamflow gauges are useful for rainfall, river level, streamflow, and forecast context; current E. coli results should be checked through UGRA's Swimability Study or other posted water-quality monitoring results.

6. Post-Flood Channel Hazards: The River May Have Changed

Nearly one year after a catastrophic flood, however, a major continuing concern may be physical and geomorphic risk rather than pathogens from the original flood. The river people remember may not be the same river they encounter after the flood. A major flood can reshape the channel bed, erode or undercut banks, create new scour holes, deposit sediment bars, move boulders and logs, damage boat ramps, and leave submerged debris in familiar recreation areas.

This is especially important for swimmers, tubers, and kayakers who have used the river for many years and assume they know the environment. A familiar swimming hole may now have a sudden drop-off. A boat ramp or riverbank may have been undermined. A kayaking route may now include new eddies, hydraulic recirculation, log jams, or strainers—obstructions that allow water to pass through but can trap a person, tube, or boat. These are not simply "debris" issues; they are post-flood channel hazards.

This concern is not merely theoretical, although examples from other regions should be understood as illustrative rather than identical to the upper Guadalupe River. After recent flooding in Washington State, King County officials warned that high flows had shifted riverbeds, moved logs and rocks into rivers, and created hidden drowning hazards for swimmers, tubers, boaters, and kayakers. Yakima County officials similarly warned that post-flood rivers may have reshaped channels, changed water depths, altered currents, formed new deep holes and scour pools, shifted gravel bars and sand deposits, and damaged or altered river access areas.

The upper Guadalupe River has different geology, hydrology, and channel characteristics from those Washington rivers, but the same general principle applies: a major flood can leave a familiar river physically changed. After Hurricane Helene, North Carolina officials also warned that some waterways remained unsafe for recreation because of debris, limited emergency access, damaged boat-launch infrastructure, and changes to the underwater landscape.

7. Debris Removal and Remaining Safety Concerns

There is evidence that post-flood debris removal and river-corridor restoration have occurred along the Guadalupe River, including underwater debris surveys and removal at popular recreation areas. According to an April 2026 San Antonio Express-News report, Kerr Together funded a 90-day pilot project in which nonprofit dive teams would survey and remove submerged debris from more than 20 high-contact recreation sites along the river, from Hunt to Center Point. The report noted that these sites are popular for swimming, kayaking, tubing, and other recreation uses, and that underwater debris remained a safety concern as summer recreation resumed.

Public safety concerns remain because targeted debris removal is not the same thing as comprehensive in-channel inspection, hazard removal, or confirmation that all submerged hazards have been addressed. A May 2026 KSAT-TV San Antonio report stated that a diver involved in the cleanup effort estimated it could take up to two years to reach and clear all 20 high-traffic swimming areas because of limited manpower. The same KSAT-TV report described difficult low-visibility diving conditions and submerged debris, including rebar and concrete, in popular swimming areas.

The Upper Guadalupe River Authority also continues to provide swimability information and cautions that cloudy water can hide hazards such as logs, branches, broken glass, and metal. Therefore, even if water-quality testing looks acceptable, the riverbed, banks, currents, access points, boat ramps, and submerged conditions may have changed. Local users may be at particular risk because familiarity can create a false sense of safety.

8. Practical Public-Safety Message

Do not assume the Guadalupe River is safe simply because a year has passed or the water looks clear. Current E. coli testing, recent rainfall and flow conditions, remaining debris, bank stability, channel changes, boat ramps, access points, and known recreation areas should all be evaluated before people return to swimming, tubing, or kayaking.

Concise Quote:

> *"After a major flood, the river may look familiar, but it may not behave the same way. At this point, the original floodwater contamination is probably not the main issue. The more important questions are what current water-quality testing shows and whether the riverbed, banks, boat ramps, currents, and submerged debris have changed in ways that create new hazards."*

Sources Consulted

U.S. EPA recreational water-quality criteria and methods, including the historical basis for replacing fecal coliform with E. coli and enterococci indicators, the geometric-mean/STV framework, and Beach Action Value or beach-notification guidance; TCEQ Texas Surface Water Quality Standards, Guadalupe River Basin recreational-use information, and Guadalupe River Above Canyon Lake bacteria/TMDL materials; NJDEP Surface Water Quality Standards for freshwater primary-contact recreation and New Jersey recreational bathing-beach standards; Upper Guadalupe River Authority swimability guidance, Summer Swimability Study information, and RiverHub/current river-condition resources; Kerr County Lead, KSAT-TV San Antonio, and San Antonio Express-News reporting on Guadalupe River water quality, public access, and submerged-debris removal; and public-agency river-safety examples from other post-flood settings, including King County and

Yakima County, Washington river-safety advisories after recent flooding, and North Carolina waterways after Hurricane Helene.