



JOE POOL LAKE



Watershed Protection Plan



Water Body: Joe Pool Lake (Segment 0838)

River Basin: Trinity River

Location: Dallas, Ellis, Johnson, and Tarrant Counties

Joe Pool Lake (JPL) is a vital body of water for the Dallas-Fort Worth area and its use as a water source is expected to only grow as DFW cities continue to experience enormous growth and expansion. Due to bacteria concerns starting in 2014, a watershed protection plan (WPP) was developed for the JPL watershed to improve water quality and to mitigate future impacts of rapid urbanization. The goals of the WPP are to protect water quality in JPL and improve water quality in its tributaries, while simultaneously accounting for the socio-economic needs and recreational wants of those that live, work, and play in the JPL watershed.

In October 2022, the U.S. Environmental Protection Agency approved the Joe Pool Lake WPP, opening the door for additional grant funding assistance to implement many of the best management practices (BMPs) recommended by the stakeholders. These include educational components for homeowners and businesses, as well as construction projects using improved technologies and landscaping techniques that will help stakeholders achieve the water quality goals they have set for their watershed.

Results

Through the use of several pollutant load calculation techniques, it was determined that pet waste, livestock, feral hogs, and septic systems were significant sources of *E. coli*. However, after much discussion about the relative cost effectiveness of the BMPs associated with reducing loads for each of these pollutant source categories, stakeholders were able to adjust their priorities and incorporate

management measures to address significant sources of *E. coli* as well as supplementary sources of *E. coli*. While illegal dumping and lawn wastes and lawn residue are not directly related to significant *E. coli* loads, both still present real threats to water quality if left unchecked, so stakeholders chose to make these additional priorities in addition to the efforts focused on *E. coli* load reductions.

Significant sources of *E. coli*:

- ▶ Pet waste
- ▶ Livestock
- ▶ Feral hogs
- ▶ Septic systems

Other sources:

- ▶ Illegal dumping
- ▶ Lawn wastes
- ▶ Lawn residue

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Accomplishments (Sept. 2018 – Aug. 2023)

- Completed a characterization of the watershed
- Routinely conducted bi-monthly water quality monitoring at 14 sites within JPL
- Identified pollutant contributions
- Created, expanded and defined involvement of stakeholder groups
- Developed an effective WPP that will provide implementation guidance for restoring water quality in the JPL watershed

Background

Joe Pool Lake (JPL) has a total drainage area of 304 sq. miles and is fed by the waters of Walnut Creek and Mountain Creek. Currently, water from Joe Pool Lake is being withdrawn by the City of Midlothian and used to support the communities of Venus, Rockett, Mountain Peak, Sardis, and parts of southern Grand Prairie.

In 2014, portions of Mountain Creek had concerns for nitrate, and Walnut Creek did not meet state water quality standards for bacteria. Walnut Creek was delisted for bacteria in the 2018 Texas Integrated Report and Mountain Creek is no longer listed for concerns for nitrate as of the 2016 Texas Integrated Report. However, limited data precluded the full assessment of Walnut Creek in the 2022 Texas Integrated Report, and it was listed as a concern for bacteria.

The Cities of Cedar Hill, Grand Prairie, Mansfield, and Midlothian, in conjunction with the Trinity River Authority of Texas (TRA) and Texas Commission on Environmental Quality (TCEQ), began developing the JPL WPP in 2018. Over the next three years, stakeholders gathered to form the JPL Watershed Protection Partnership, meeting to discuss priorities for water quality improvements and strategies for preventing further degradation.

Funding Agencies

- Texas Commission on Environmental Quality
- U.S. Environmental Protection Agency
- Local Partnership Group consisting of the Cities of Cedar Hill, Grand Prairie, Mansfield, and Midlothian and the TRA

For More Information

TCEQ NPS Program • nps@tceq.texas.gov • www.trinityra.org/basin_planning/joe_pool_lake_wpp

