

CLEAR FORK SUBWATERSHED

The Clear Fork of the Trinity River is situated in the northwestern portion of the basin west of Fort Worth. The upper portion of the Clear Fork, consisting of segment 0833, is almost entirely undeveloped, with no identified point sources and little row crop agriculture. In the middle of the subwatershed lies Lake Weatherford, which has seen a great deal of development on its shoreline around most of the reservoir and has a history of water quality concerns regarding bacte-

ria. At the bottom of the subwatershed lies Lake Benbrook, which is used as a source of water by the Tarrant Regional Water District for customers in Tarrant County with future plans calling for service to the city of Weatherford. Although most of the watershed between Lakes Weatherford and Benbrook remains undeveloped, there are a number of point sources in that stretch which influence water quality.

are 8 permitted discharges in this subwatershed which includes segments 0829, 0830, 0831, 0832, and 0833. The watershed is equally dominated by the Western Cross Timbers and Grand Prairie vegetative provinces with a small portion of the southernmost tip in the Eastern Cross Timbers. Land use is predominately rural with agricultural and oil and gas production being the largest economic activities. Agriculture in this subwatershed is largely limited to cattle grazing.



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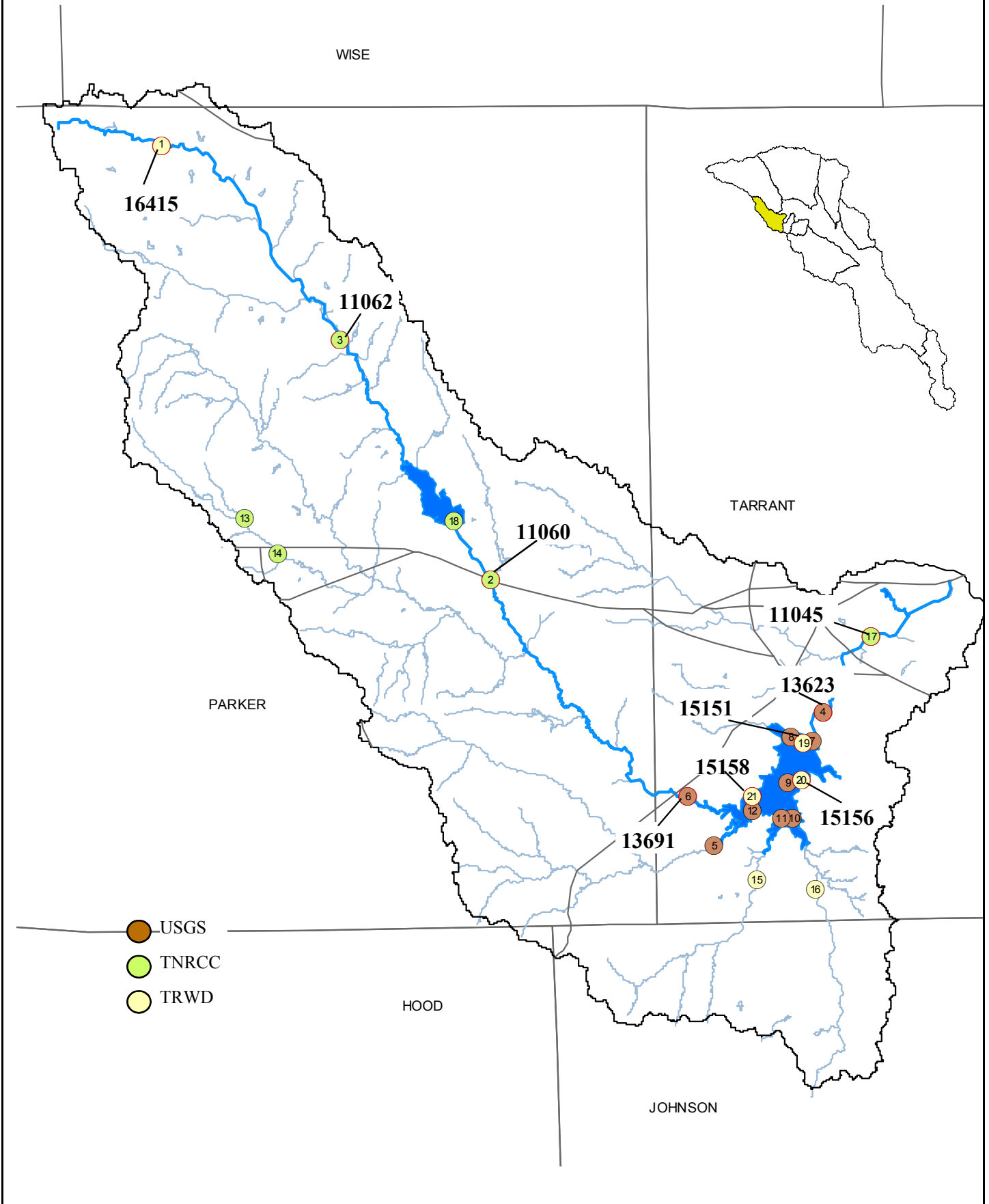
Physical Description

The Clear Fork subwatershed originates in north-west Parker County and terminates in Tarrant County at the confluence with the West Fork in Fort Worth. There

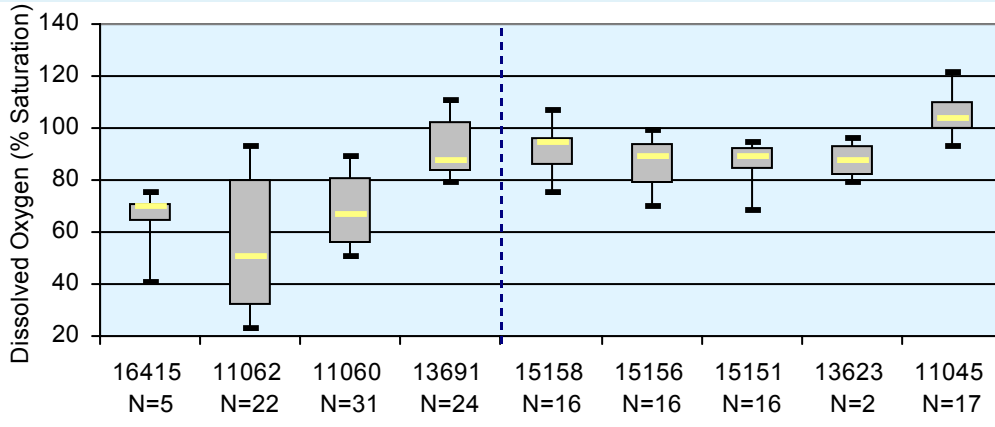
Water Quality

The Clear Fork below Lake Weatherford was identified on the 2002 305(b) report as having elevated concentrations of fecal coliforms, which could indicate contamination by human fecal material. An examination of the data shows that concentrations of bacteria (fecal coliforms) are inversely correlated with stream flows (see graph on page 32). This is contrary to most observations regarding bacteria, which tend to be present in higher numbers after rain events, probably due to resuspension of sediments which contain very high bacterial concentrations. The observations in the Clear Fork therefore suggest a constant source of bacteria, such as leaking

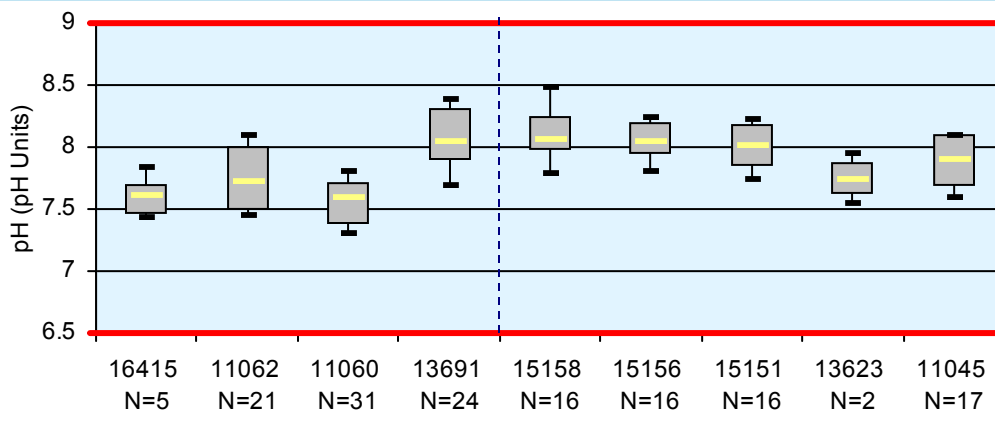
Clear Fork Subwatershed



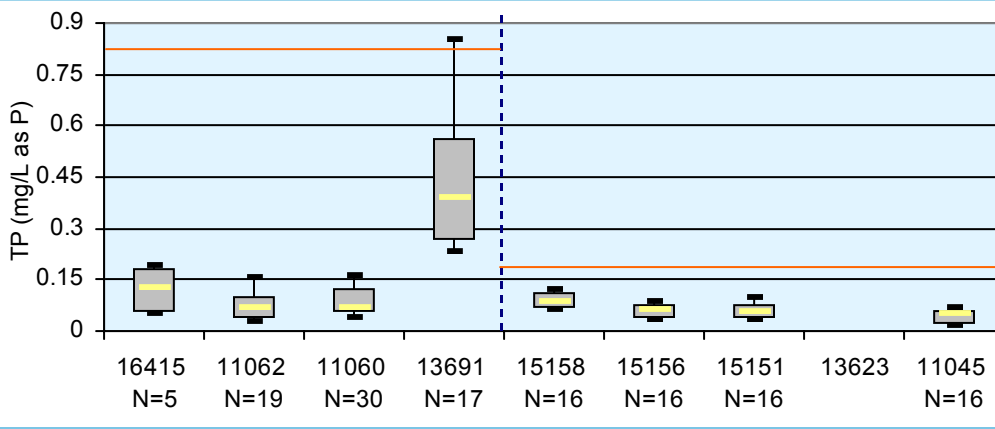
Water Quality Overview



Dissolved oxygen concentrations can be extremely low in segments 833 and 831, but show a sharp downstream increase as one progresses towards Lake Benbrook. These low concentrations are believed to be the result of natural conditions tied to summertime low flows.

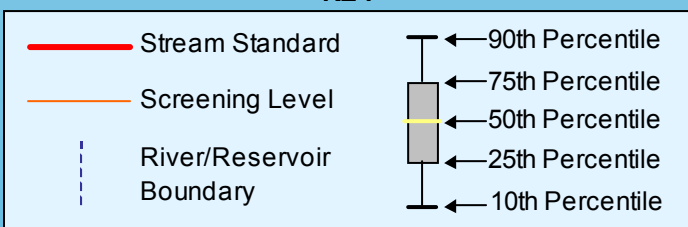


pH in the Clear Fork is clearly within normal ranges, and indicates that eutrophication is probably not a concern for Lake Benbrook.



Total phosphorus and other nutrient concentrations tend to be elevated below Lake Weatherford. This is a result of multiple point sources contributing flow to the segment. Elevated concentrations do not however, seem to be carried on into Lake Benbrook. Concentrations above Lake Weatherford are also low in respect to the TNRCC screening criterion.

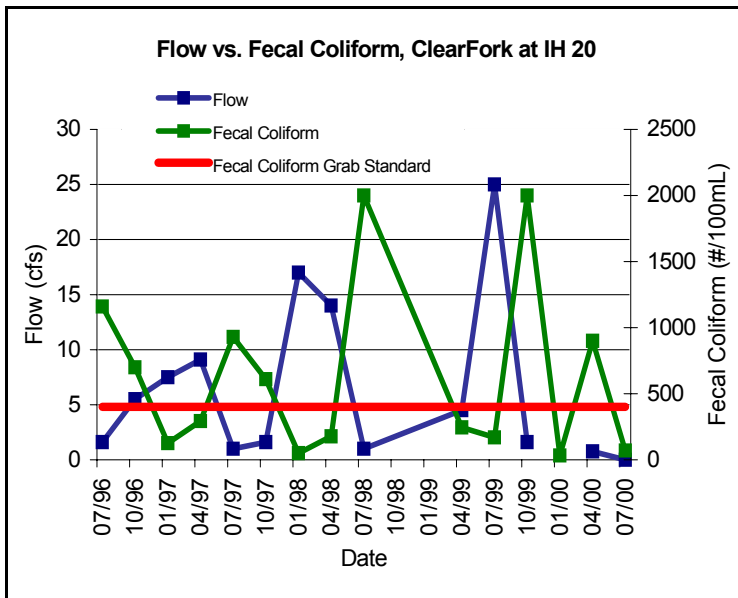
KEY



Stations presented in hydrologic order
N = number of measurements

septic tanks, etc. A small special study is planned for the summer of 2002 to identify any such sources.

Dissolved oxygen concentrations have been a concern in segments 833 and 831 (above and below Lake Weatherford respectively) since the 1998 303 (d) list was released. Although not discernable from the graph on the previous page, dissolved oxygen concentrations are correlated to season and through association, flow. Therefore the low dissolved oxygen concentrations appear to be the result of natural summertime conditions and are not the result of human impacts. In fact there is evidence to suggest that municipal point sources are, by contributing flow, increasing concentrations of dissolved oxygen



Draft 2002 305(b) Results

Segment	Description	Impairments/Concerns/Threats
833	Clear Fork above Lake Weatherford	Aquatic Life (ps) Contact Recreation (uc)
832	Lake Weatherford	Fully Supporting
831	Clear Fork below Lake Weatherford	Aquatic Life (ps) Contact Recreation (ns) Nutrient Enrichment (c)
830	Benbrook Reservoir	Nutrient Enrichment (c)
829	Clear Fork below Benbrook Reservoir	Fish Consumption (ns)
829A	Lake Como	Fish Consumption (ns)

ns—non-support; ps—partial support; uc—use concern; c—concern; t—threatened

it is likely that new numeric criteria for DO and other parameters will be recommended for these segments as a result of this project.

TRA is currently planning to investigate the sources of the high fecal coliforms seen in segment 831. This project is likely to be small in scope, and will require only two or three visits to collect water quality samples along the reach of the river from immediately below Lake Weatherford to just above Lake Benbrook with the goal of identifying potential sources of the bacteria.

in the Clear Fork below Lake Weatherford. The TNRCC has also identified eutrophication as a concern in this subwatershed, specifically for the river below Lake Weatherford and for Benbrook Reservoir.

Special Studies

The Texas Institute of Applied Environmental Research (TIAER) a research branch of Tarleton University, is in the process of conducting a TMDL related study on segments 831 and 833. The goal of this study, termed a UAA, or Use Attainability Analysis, is to determine whether existing stream standards are appropriate. Because the existing standards were created by default (i.e. in the absence of any data from these segments) and given the sound body of data which has now been examined regarding dissolved oxygen in this subwatershed,

