

## History of Georgetown Lake



Georgetown Flats was a meadow perched near the divide of Warm Springs and Flint Creek in the upper Clark Fork drainage. This divide also serves as the border between Granite and Deer Lodge counties. Georgetown Flats was transformed into a reservoir by the impoundment of the North Fork of Flint Creek. The first version of the reservoir was created in 1885 to produce power. The dam was raised to a full pool elevation of 1958.2 m (6424.5 feet) around 1900, and again in 1919 to its current full pool elevation of 1959.7 (6429.5 feet). The reservoir is currently used for water storage, recreation and power production.

The deepest spot in the lake is 10.7 m at full pool and is located near the dam, and the average full pool depth is 4.9 m. The reservoir has a full pool surface area of 1479 and has an irregular shape with numerous bays. The lake is fed primarily by the North Fork of Flint Creek and groundwater inputs with smaller volumes from spring fed Stewart Mill Creek.

The high levels of primary production are both an asset and a liability to the fishery. The high levels of production help support a rich prey base for the sport fishery (primarily hatchery rainbows with smaller catches of self-sustaining kokanee and brook trout). Indeed, Georgetown Lake's renowned fishery supports the highest angler use per surface area of any lake in Montana. However, the decaying plant materials lead to a depletion of oxygen particularly in deeper waters. This depletion can be severe under ice, as the reservoir is sealed off from atmospheric exchange of oxygen and little light penetrates to stimulate oxygen production via photosynthesis particularly when deep snow overlays the ice. Low oxygen levels in late winter have led to fish kills in Georgetown Lake.

Another fishery concern is that anglers have reported that brook trout catches have declined in recent years, however the extent of this change has not been formally documented and reasons for the decline remain unclear.

Concerns have been raised that added nutrients from septic tanks are reducing water quality by adding nutrients and pathogens. Septic leachate contains UV fluorescent organics particularly from whiteners and surfactants used in households which can be detected with a fluorometer. Household wastes also add inorganic salts (such as sodium and chloride) which can be detected with a conductivity meter.

Toxic metals are of potential concern in Georgetown Lake because of some historic mining in the watershed, historic use of smelter slag for road sanding, naturally occurring metals in the water, and historic smelting in the region (Garrett 1984). Research done by Garrett found that metals levels in Georgetown Lake generally were near or below detection for cadmium, arsenic, copper, cobalt, lead, chromium, silver, mercury and zinc. Inspection of EPA current drinking water standards found that the metals levels reported by Garrett for Georgetown Lake water were not exceeded.