

Ferril Lake



Background, Long Term Issues, and Trends

- The City Park Lakes have been sustained with [recycled water](#) since 2004. This helps conserve limited water resources, and is imperative towards Denver's ability to maintain our lakes sustainably.
- The cost of recycled water is that it comes with high nutrient loads, which contribute to productive algae and vegetation growth. This growth subsequently impacts water quality (elevated pH, variable oxygen).
- Nutrient contributions from urban runoff, waterfowl waste, and other sources also contribute to algae growth.
- Long term monitoring suggests that the switch to recycled water combined with these other factors has resulted in elevated pH over the past 10 years (see figure below; [chlorophyll-a](#) is an indicator of algae growth, primarily [phytoplankton](#) which is small floating algae).
- A 2006 renovation altered storm runoff infrastructure and increased the water volume detention capability of the lake.
- Waterfowl in City Park have experienced [avian botulism](#) die-offs for decades. Ducks are the primary birds susceptible to this, with losses of 5 to 20 birds in the park occurring annually. Extremely dry-hot summers can result in higher mortality.

Developing Issues

Improving Source Water: Inflow nutrient levels (nitrogen and phosphorus) will decrease in 2015/16 after wastewater treatment plant upgrades result in improved quality of recycled water. This should help decrease algae productivity and pH.

Island Status: Trees and vegetation on the island have deteriorated to a poor state.

Goose Management: DPR has been using a [remote control device](#) to harass geese and decrease their time spent in and around the lake (2012). The objective of this is to decrease impacts of goose waste on park visitors and on lake water quality.

Fish, Wildlife, and Habitat

Fish: The fish community was enhanced with stockings of largemouth bass and channel catfish in 2014. Although conditions were acceptable in July 2014, water quality during the past ten years has generally not been suitable for trout (high pH and temperature).

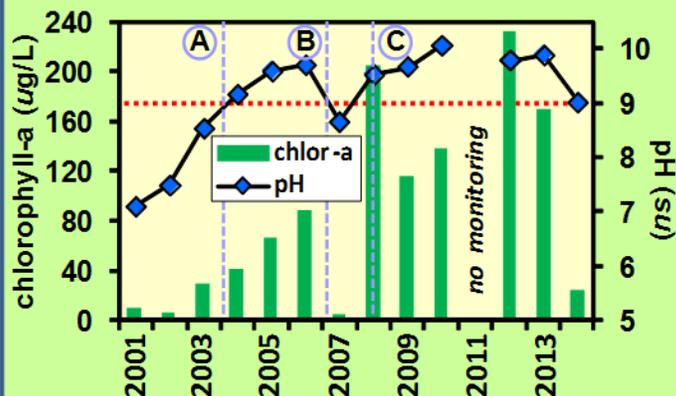
Wildlife: The Ferril Lake Island serves as a rookery for black-crowned night herons and snowy egrets. Cormorants and other waterfowl frequent the lake for feeding and **loafing** (hanging out).

Location: 17th Ave @ Monroe St
Surface Area: 24 acres
Max Depth: ~ 9 ft
Primary Source Water:
Recycled water via City Ditch
Intended Lake Uses:
Irrigation, fishing, aesthetics, concession boating
Current Regulatory Issues^{1/}:
pH

1/ Conditions exceeding state water quality standards.

Updated January 2015; questions to: alan.polonsky@denvergov.org

Mid-summer chlorophyll-a and pH (2001-2014). The red dotted line indicates the state standard for pH. See below* for event (designated by A, B, and C) explanations.



* (A) is switch to re-use water; (B) post-renovation and re-filling in 2007, benthic filamentous algae; (C) prolific filamentous algae growth.

Habitat: The in-lake and perimeter habitat is limited to narrow wetland strips scattered around the perimeter. Terrestrial habitat amenities are limited primarily to the island. Turf grass and/or hardscape dominate the perimeter.

Recommendations

- As opportunities arise, convert some of the perimeter to naturalized landscape to decrease impacts of turf maintenance (i.e., fertilizer, herbicides) and geese (waste) on water quality.
- Continue goose hazing efforts to the extent possible.
- Maintain piscivorous (fish-eating) fish (i.e., bass) population to help control planktivorous (zooplankton-eating) fish (i.e., bluegill) via predation.
- Consider alternative algae control efforts such as ultrasonic sound waves.
- Take advantage of existing amenities such as the Deboer Ditch to circulate water and improve lake water quality.