

Vanderbilt Lake

Background, Long Term Issues and Trends

- As with most surface waters in the metro area, Vanderbilt Lake has had a hard working past. It was created in the mid-1900's during area road construction for which it served as a gravel source.
- The lake served as a permitted industrial discharge pond for Gates Rubber Company through the 1980's. This resulted in an accumulation of organic contaminants in the sediment.
- Subsequent impacts of the high organic load have been low dissolved oxygen levels in the lower water column (*see figure below*) and high concentrations of metals and organic contaminants in the sediment.
- Mitigation of the sediment contaminants has been discussed intermittently over the past dozen years, but with no resolution. There are no public health risks posed by current uses of the lake.



Location: 950 S Huron St
Surface Area: 4.3 acres
Max Depth: ~ 10 ft
Primary Source Water:
Groundwater via South Platte River alluvium; urban runoff
Intended Lake Uses:
Wildlife habitat, aesthetics
Current Regulatory Issues^{1/}:
dissolved oxygen

1/ Conditions exceeding state water quality standards.

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Developing Issues

Planned Renovations include: removal of invasive vegetation in the upland pond perimeter (primarily trees) - to be replaced with native species; construction of pond overlooks; and expansion of wetland habitat along the northeast shore.

Ammonia: Water column ammonia levels were elevated in 2013, but were considerably lower in 2014, consistent with what had been measured in previous years. This appears to be impacted by variable dissolved oxygen levels (which were low in 2013; *see figure*).

Fish, Wildlife, & Habitat

Fish: Until the sediment pollution is mitigated, a recreational fishery is not an appropriate use at this pond. Current fish populations are likely limited to a variety of minnow species.

Wildlife: The secluded nature of the pond created by the diverse structure of riparian/

upland vegetation creates an attractive space for a variety of wildlife. Herons, kingfishers, cormorants, red-winged blackbirds, turtles, mix of waterfowl, and bullfrogs have been observed during annual visits.

Habitat: The aquatic habitat likely includes several snags and possibly other structures in the lake bottom. In-lake vegetation is chronically lacking. The mid-summer phytoplankton seems to be dominated by golden algae, rather than the more common bluegreen (*Cyanophyta*) and green *phytoplankton* species typically observed in other Denver Lakes.

Recommendations

- Aeration would improve water quality and could also provide benefits towards mitigating sediment contaminants.
- Renovation of the perimeter-riparian community should replace invasive species with non-invasives. The objective should also be to establish a diverse vegetative stand, one with a similar or improved mix of trees, shrubs, and grasses as with the existing one.
- Opportunities to create wildlife corridors between the lake habitat and the South Platte River via Habitat Park should be pursued in future park renovations.

