

Mapping and Dissolved Oxygen Limitations of a Private Two Acre Pond

Introduction

- Dusenbery Pond is a, privately owned, constructed 2 acre pond located in Bayfield County, WI.
- The maximum depth is 8'11". Fish productivity is very low with only a few minnow species present.
- The landowners are interested in stocking the pond with bluegill (*Lepomis macrochirus*).

Objective

- To create a depth contour map of Dusenbery Pond and determine its potential to support a stocked fish population.

Results – Depth Contour Map

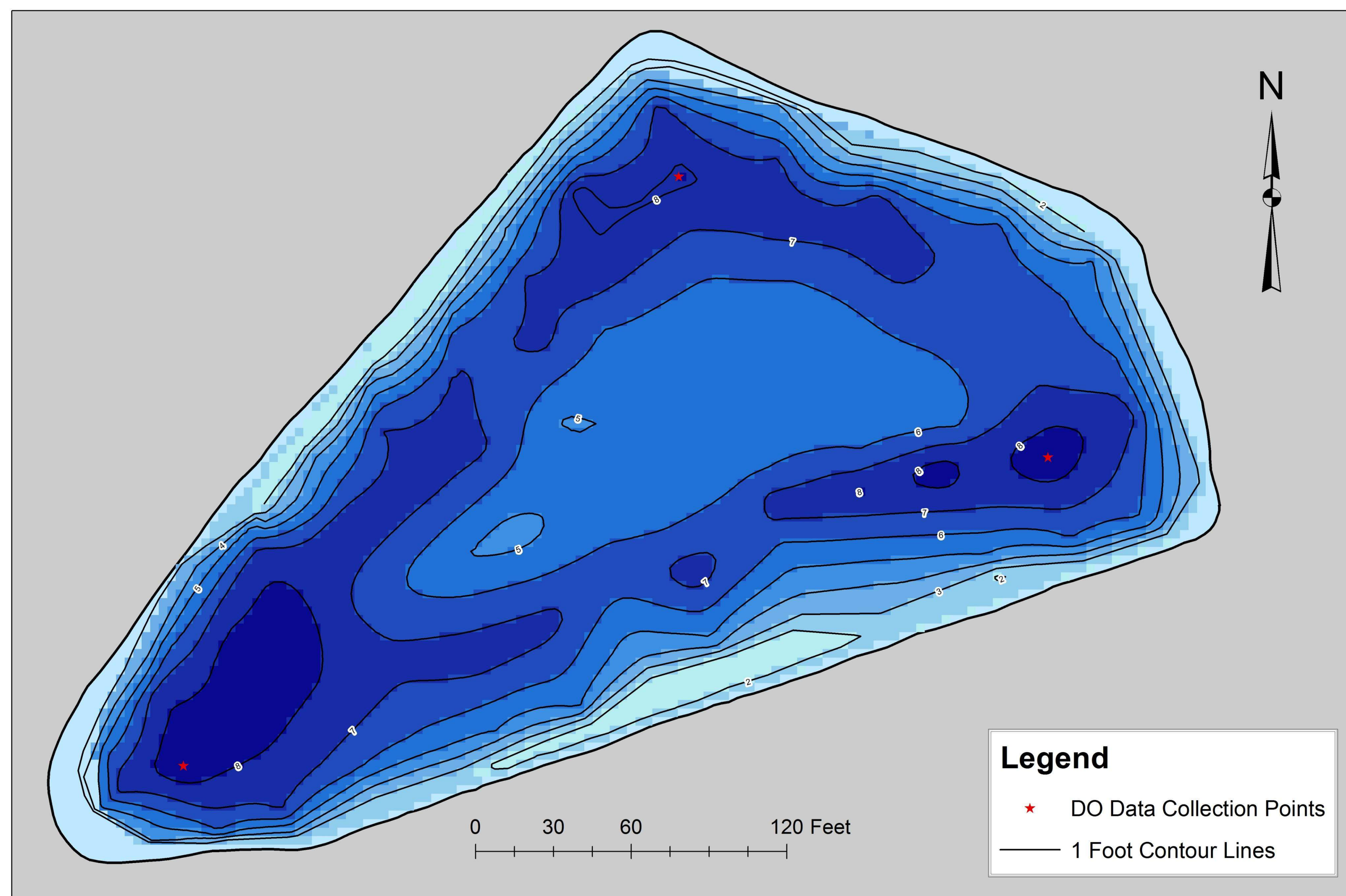


Figure 3. Depth contour map of Dusenbery Pond.

Methods

- Water depth was measured at 116 locations to create a depth contour map.
- Dissolved oxygen (DO) concentrations and temperature were measured at 1-foot intervals in the three deepest points during February and March 2013.

Results – Dissolved Oxygen and Temperature

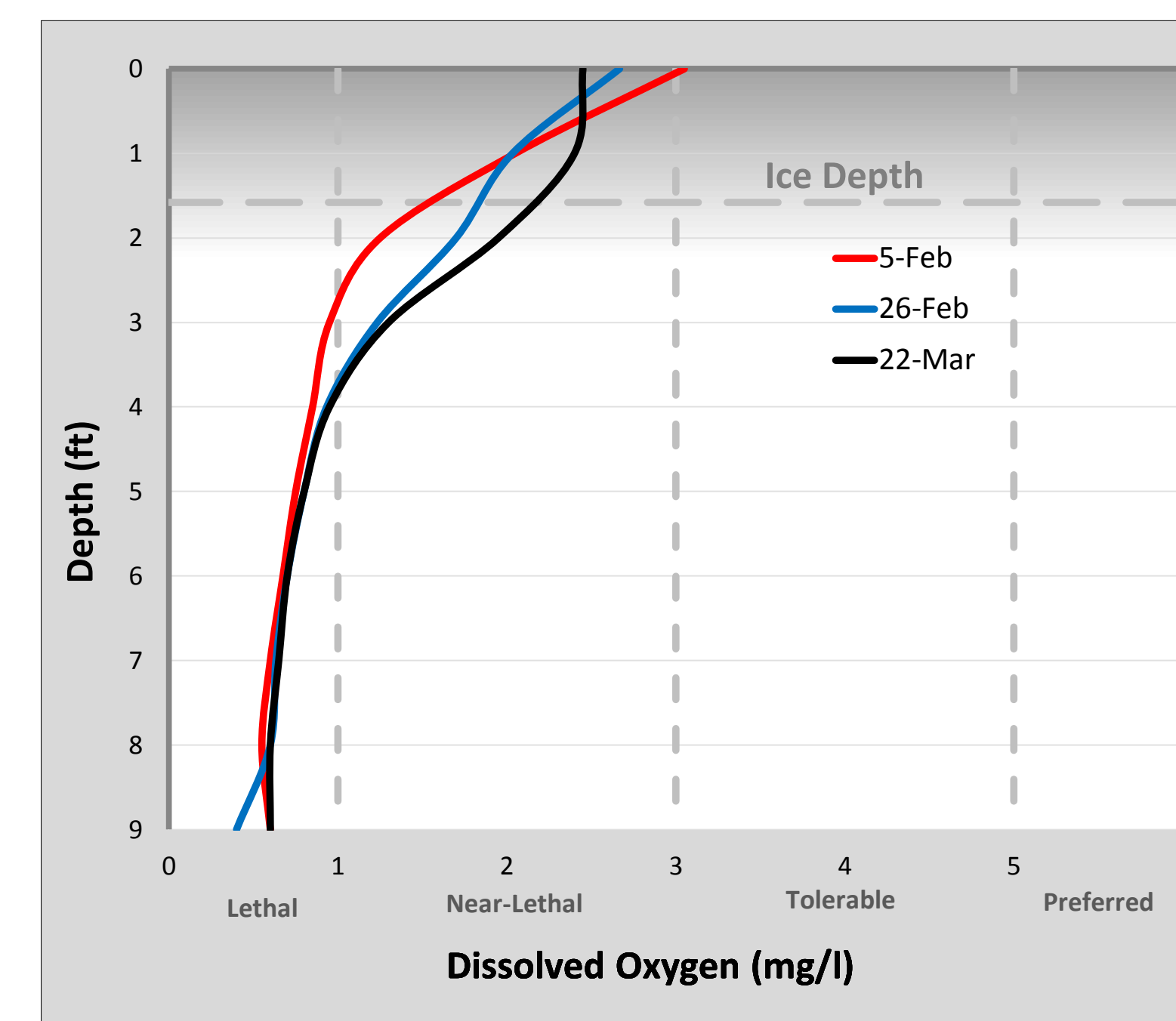


Figure 1. Dissolved oxygen by depth with lethal, near-lethal, tolerable, and preferred levels for bluegill (*Lepomis macrochirus*) and ice depth in gray.

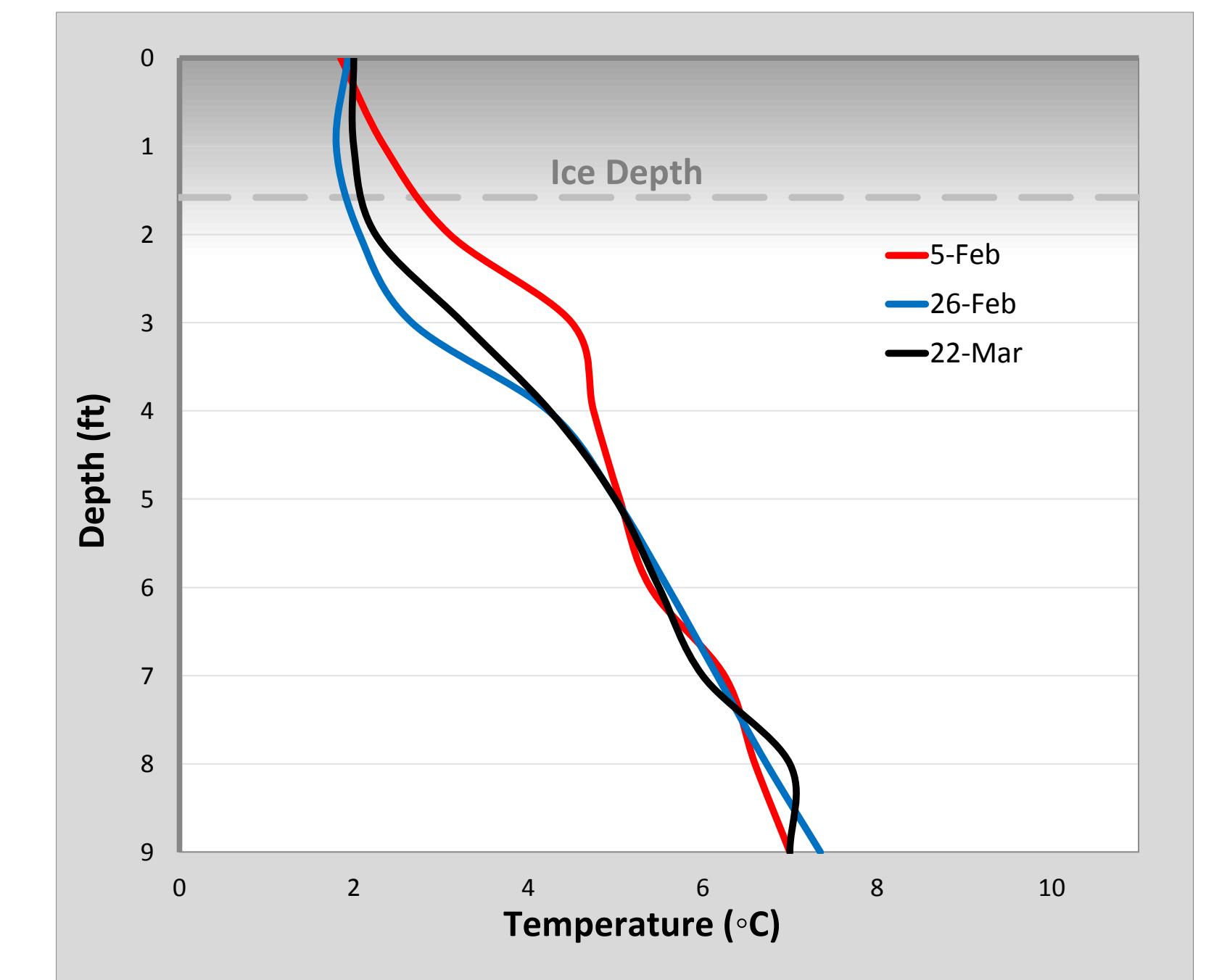


Figure 2. Temperature by depth with ice depth in gray.

Conclusions

- Winter DO concentrations are too low to support a stocked fish population (Figure 1).
- A 1-foot depth contour map of the pond was created (Figure 3).

Acknowledgements

- Cindy May : Professor of GIS, Northland College
- Hunter Shira: Student, Northland College