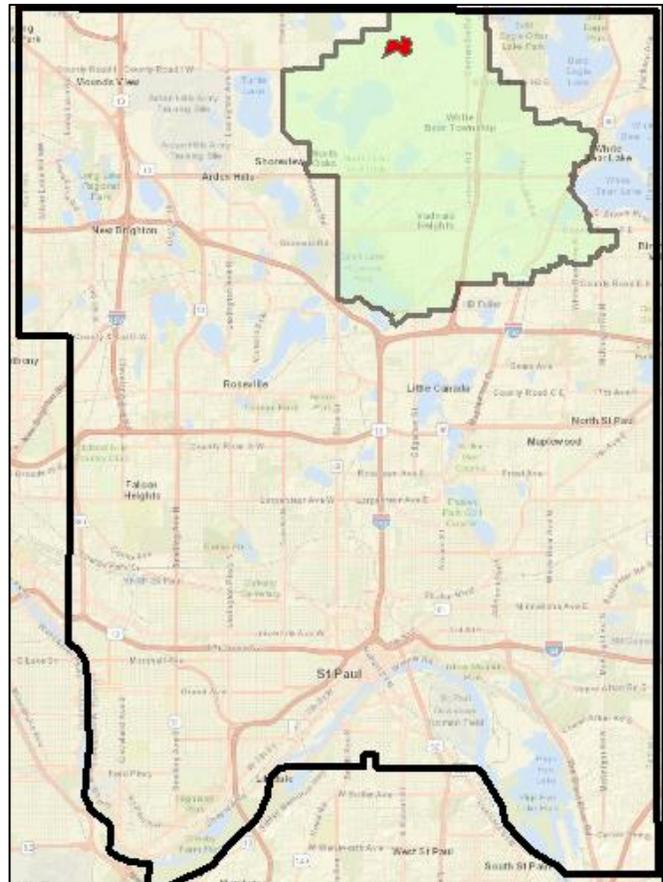


Deep Lake



Contour Survey 5/10/18



Data collected and prepared by **Ramsey
Conservation District** for

**Vadnais Lake Area Water Management
Organization**
800 East County Rd E.
Vadnais Heights, MN 55127
Phone: (651) 204-6073 <http://www.vlawmo.org/>

Figure 1. Location of Deep Lake (red) in Ramsey County within VLAWMO borders

Deep Lake Depth Survey

May 10, 2018

Methods:

A Lowrance HDS-5 Insight Global Positioning System (GPS)-enabled depth finder was used to collect bathymetry and other data on Deep Lake on May 10, 2018. The lake was transected at a maximum distance of 40 meters between transects at a speed of less than 5 miles per hour. A measuring device was used to spot check depth accuracy. Sonar log data was processed using the Contour Innovations, LLC, BioBase system and adjusted by 0.5 feet to account for the depth of the transducer in the water. Field measurements were consistent with transducer readings.

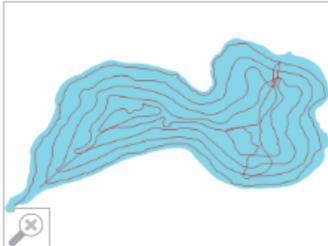
Results:

The data points were exported from BioBase and interpolated using ArcGIS software, where contour lines were generated. Results include a bathymetry map featuring depth in one-foot intervals, a bottom composition map, and a biovolume map. Contour lines will be sent with this report as a shapefile. The deepest point of this lake was recorded at 6.8 feet. The survey showed a water volume of 185 acre-feet.

VEGETATION ANALYSIS REPORT

Deep Lake,Generated: 5/15/2018 2:27:17 PM (UTC)

Waterbody Size: 31.60 ha (78.10 acres)[report link](#)



Data Collector	Survey Size	Manual Offset
Andrea Prichard	Area: 31.55 ha (77.97 acres)	0.1524 m (0.5 ft)
Data Collection Date	Percent: 99.83% of waterbody	To offset the depth of the transducer in the water
5/10/2018 4:12:23 PM (UTC)	Volume: 228325.44 cu. m (185.11 acre ft)	
Average Water Temperature	Est. Waterbody Volume ?	
17.63° C (63.73° F)	228710.47 cu. m (185.42 acre ft)	
Location	Settings	
Start: 45.11147974, -93.08876407	Track Buffer: 25 m	
End: 45.11205859, -93.08797090	Grid Cell Size: 5.0 m	
	Min. BV Detect: 5%	
	Min. Veg Depth Detect: 0.73 m	

More robust interactive map data, including sonar log trip replays, can be viewed on the ciBioBase website: www.cibiobase.com.

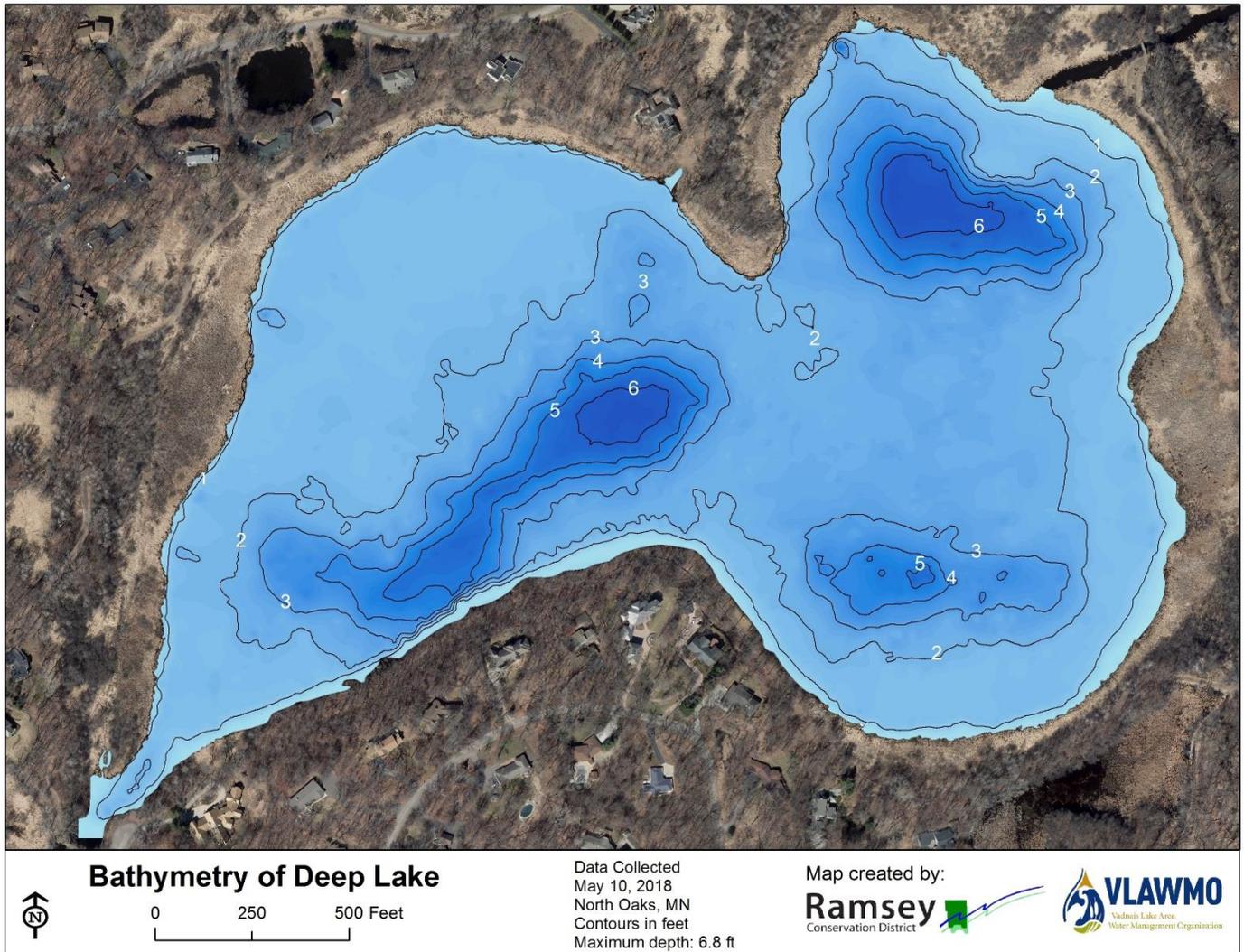


Figure 2. Bathymetry of Deep Lake with 1-ft contours. Sonar readings from May 10, 2018

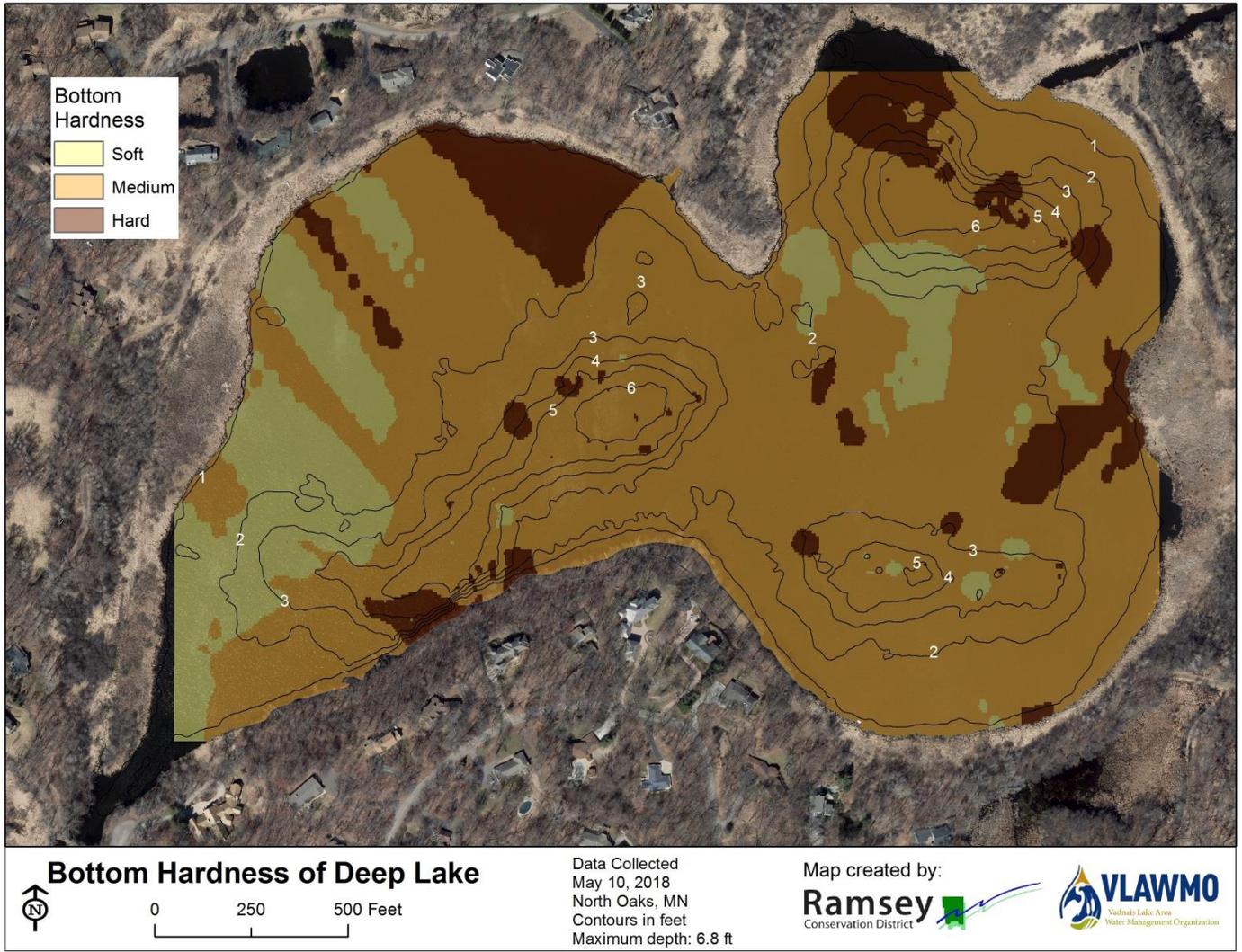


Figure 3. Bottom Hardness of Deep Lake with 1-ft contours

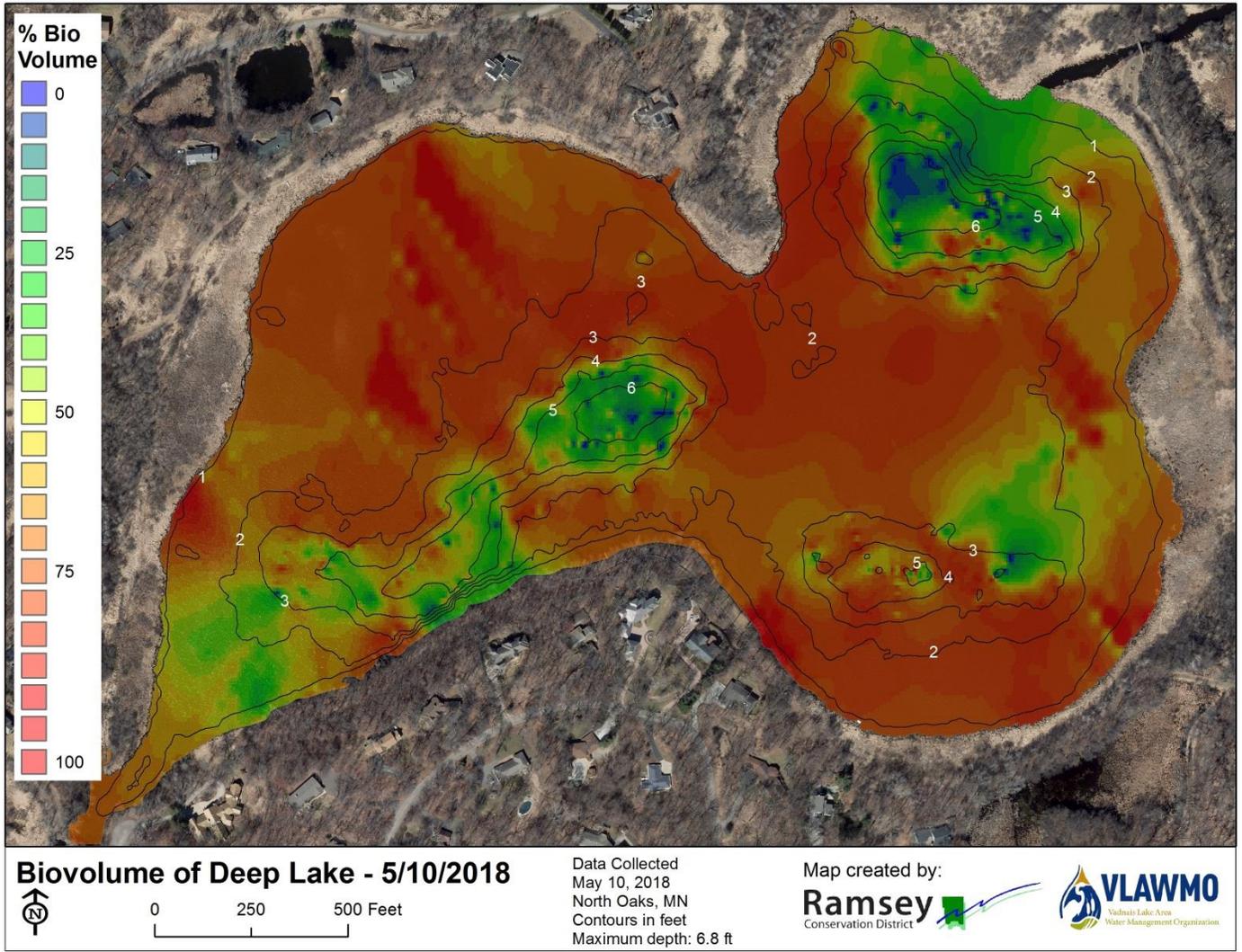


Figure 4. Biovolume of Deep Lake with 1-ft contours