

# Charley Lake



Contour Survey 4/03/17

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

**Vadnais Lake Area Water Management Organization**

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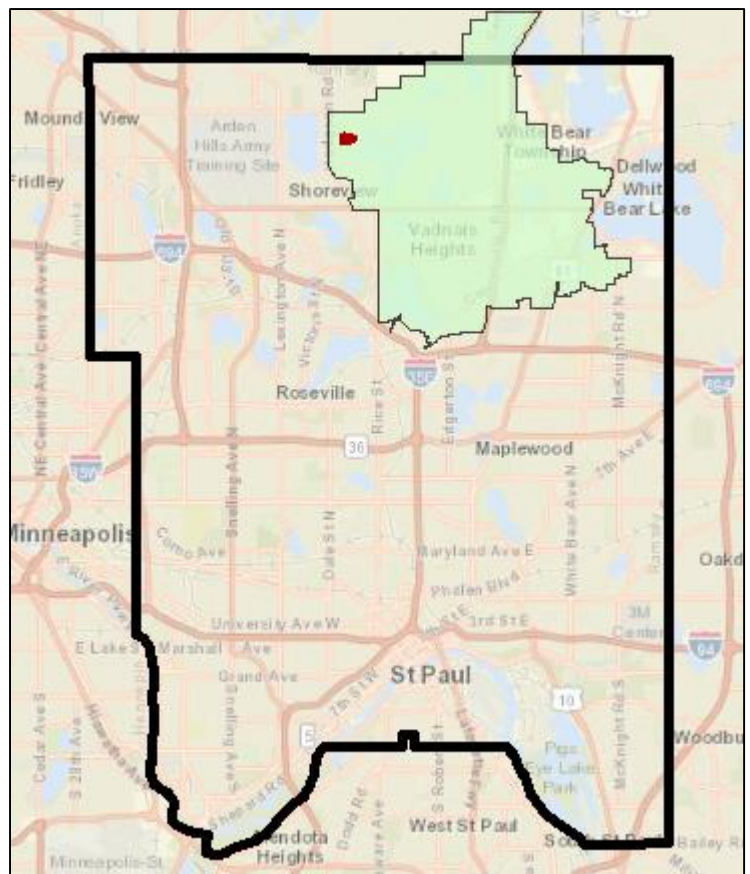


Figure 1. Location of Charley Lake (red) in Ramsey County within VLA WMO borders

# Charley Lake Depth Survey


April 3, 2017

## Methods:

A Lowrance HDS-5 Insight Global Positioning System (GPS)-enabled depth finder was used to collect bathymetry and other data on Charley Lake on April 3, 2017. The lake was transected at a maximum distance of 40 meters between transects at a speed of less than 3 miles per hour. A measuring rod was used to spot check depth accuracy. Sonar log data was processed using the Contour Innovations, LLC, BioBase system and adjusted by 1.25 feet to account for the depth of the transducer and field measurements.


## 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 three-foot intervals, a bottom composition map, and a biovolume map. 3-foot contour lines will be sent with this report as a shapefile. The deepest point of this lake was recorded at 17.8 feet. While that point was not measured with the rod, one area was confirmed at 15.5 ft depth with the measuring rod. The survey showed a water volume of 257.74 acre-feet.

 BIOBASEVEGETATION ANALYSIS REPORT

**Charley Lake, Ramsey County Minnesota**Generated: 4/3/2017 8:53:12 PM (UTC)

Waterbody Size: 15.77 ha (39.00 acres)[report link](#)



<b>Data Collector</b>	Andrea Prichard
<b>Data Collection Date</b>	4/3/2017 2:12:05 PM (UTC)
<b>Average Water Temperature</b>	8.73° C (47.71° F)
<b>Location</b>	Start: 45.0996933, -93.11634827 End: 45.10039139, -93.11618042
<b>Survey Size</b>	Area: 15.48 ha (38.24 acres) Percent: 98.11% of waterbody Volume: 317,911.90 cu. m (257.74 acre ft)
<b>Est. Waterbody Volume ?</b>	324,047.40 cu. m (262.71 acre ft)
<b>Settings</b>	Track Buffer: 25 m Grid Cell Size: 5 m Min. BV Detect: 5% Min. Veg Depth Detect: 0.73152 m
<b>Offset</b>	0.381 m Average difference between Transducer reading and a (higher) measuring stick reading.
<b>Quality Control</b>	Reviewer: Cooper, Laura Comments: We have reviewed this trip. Please use the "ASK THE EXPERTS" button for this trip if you have any questions.

More robust interactive map data, including sonar log trip replays, can be viewed on the ciBioBase website: [www.cibiobase.com](http://www.cibiobase.com).

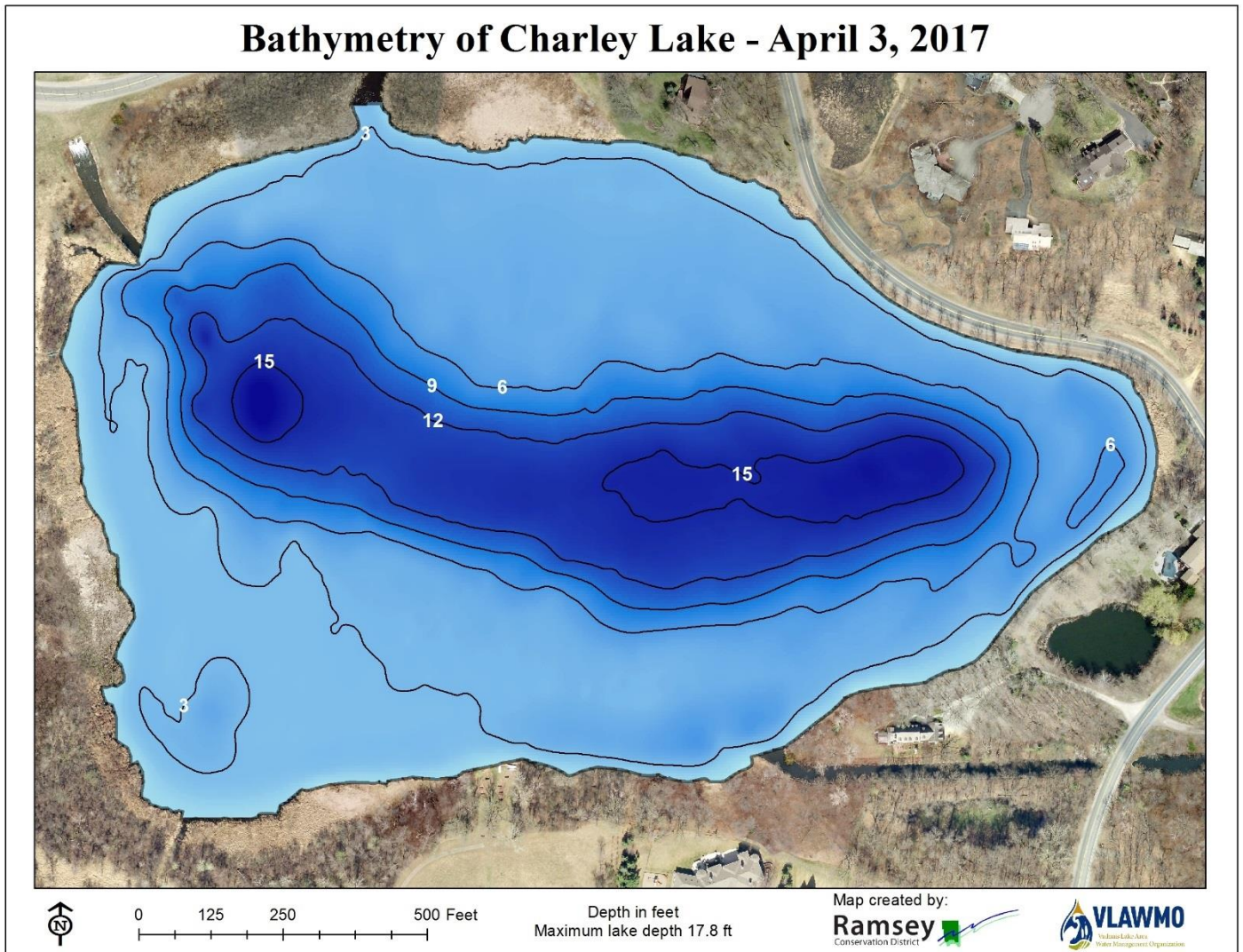


Figure 2. Depth of Charley Lake with 3-ft contours

# Charley Lake Bottom Composition - April 3, 2017

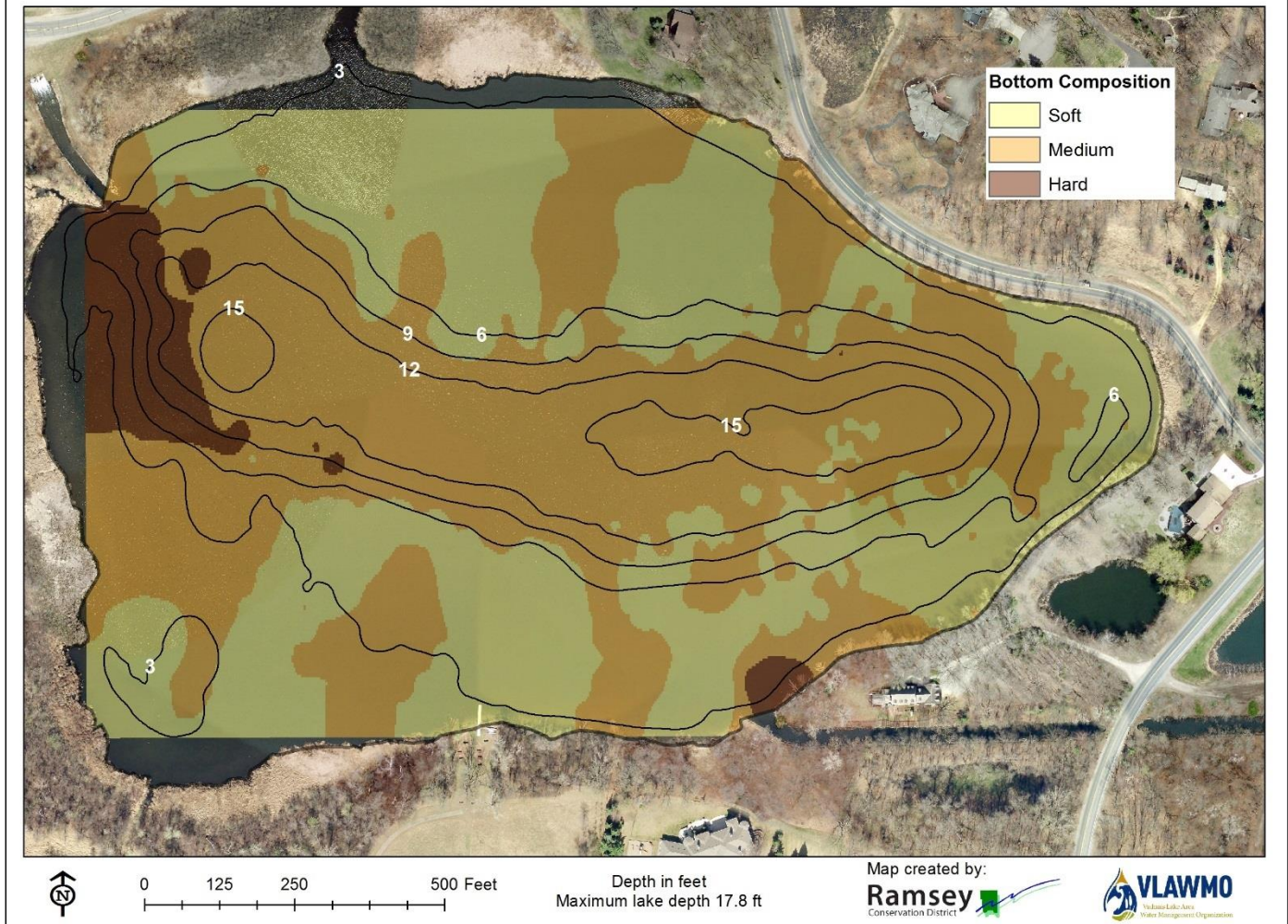


Figure 3. Hardness of Charley Lake bottom with 3-ft contours

# Charley Lake Biovolume - April 3, 2017

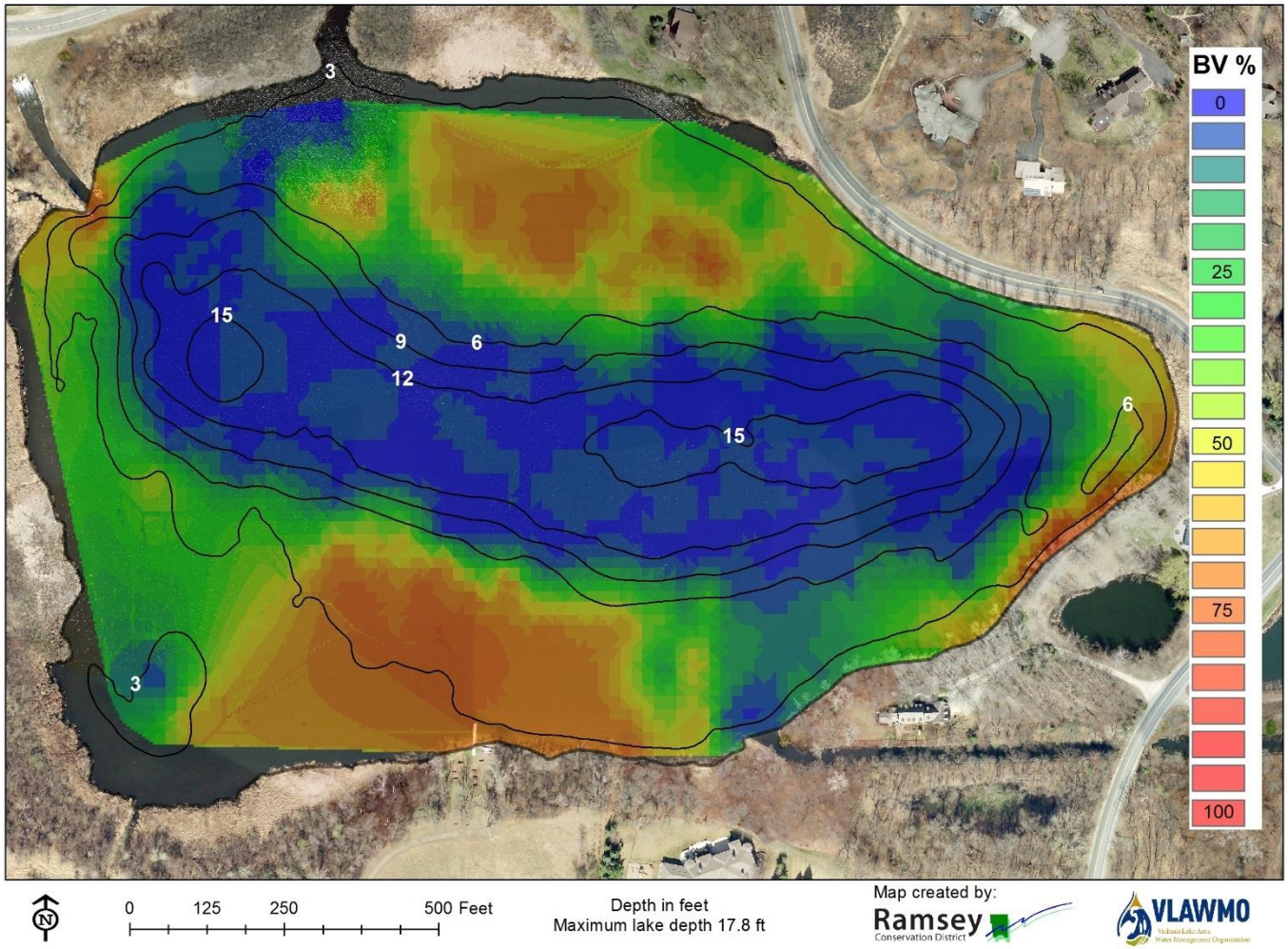


Figure 4. Biovolume of Charley Lake with 3-ft contours