

IN THE BEGINNING



MAN CREATED OUR LAKE





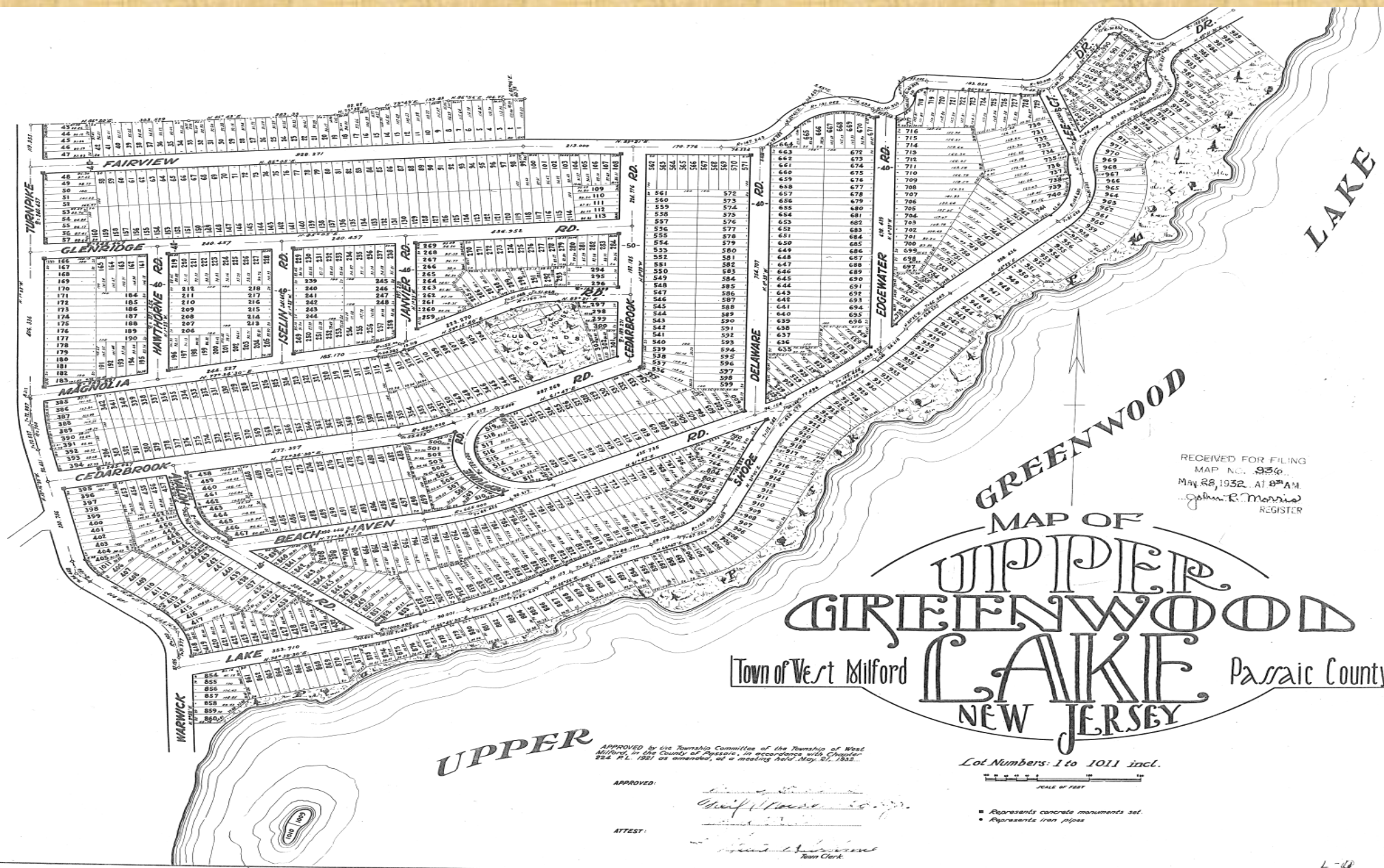


WELCOME TO

UPPER GREENWOOD LAKE

EST. 1932

• A PRIVATE LAKE COMMUNITY •



LAKE

GREENWOOD

MAP OF
UPPER
GREENWOOD
LAKE
NEW JERSEY

Town of West Milford

Passaic County

RECEIVED FOR FILING
MAP NO. 936
MAY 28 1932 AT 8³⁰ AM
John R. Morris
REGISTER

UPPER

APPROVED by the Township Committee of the Township of West Milford in the County of Passaic, in accordance with Chapter 224, P.L. 1931 at a meeting held May 27, 1932.

APPROVED: *[Signature]*
ATTEST: *[Signature]*
Town Clerk

Lot Numbers: 1 to 1011 incl.



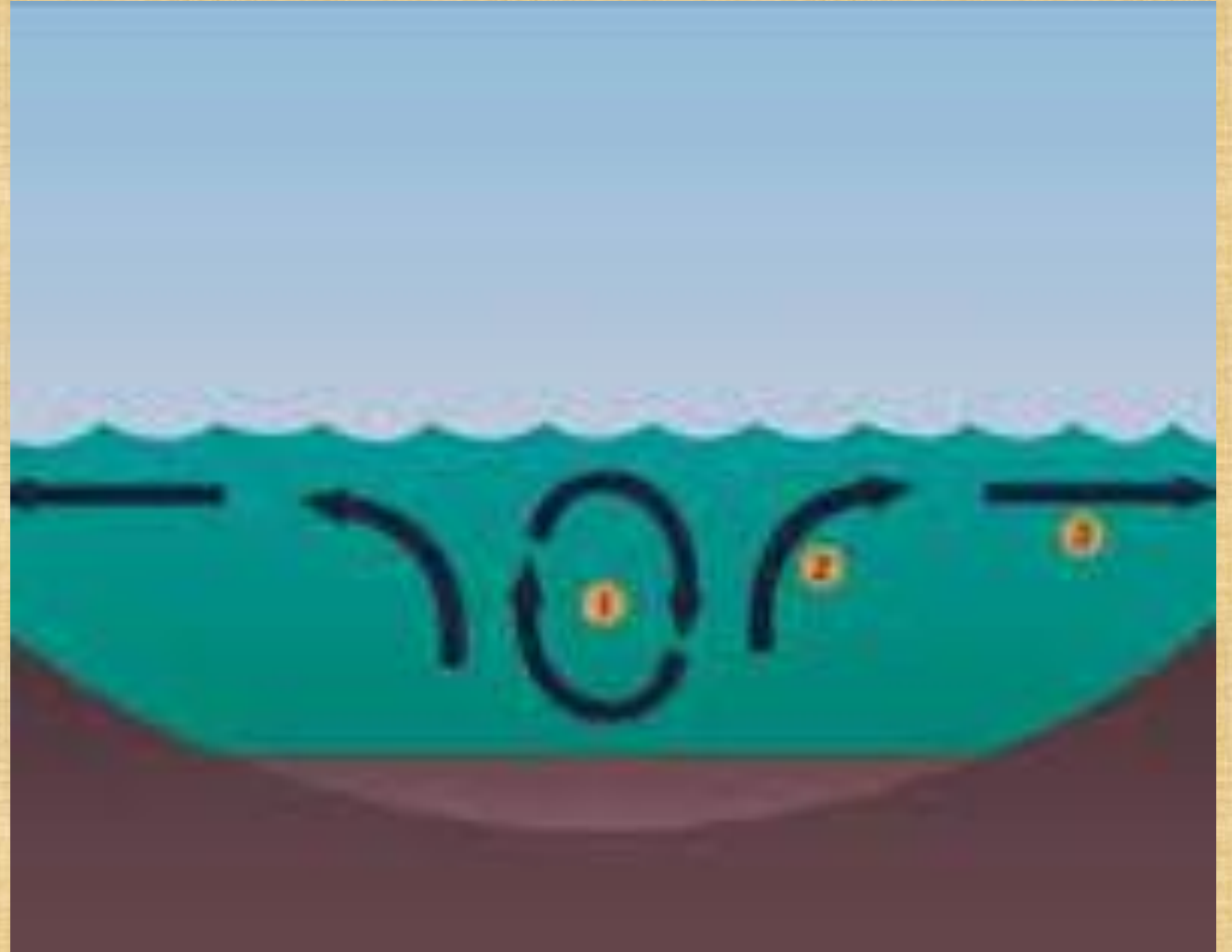
- Represents concrete monuments set.
- Represents iron pipes.

BUT OUR LAKE IS UNDER ATTACK.

FROM
RAIN



FROM
RAIN
WIND



FROM
RAIN
WIND
ICE

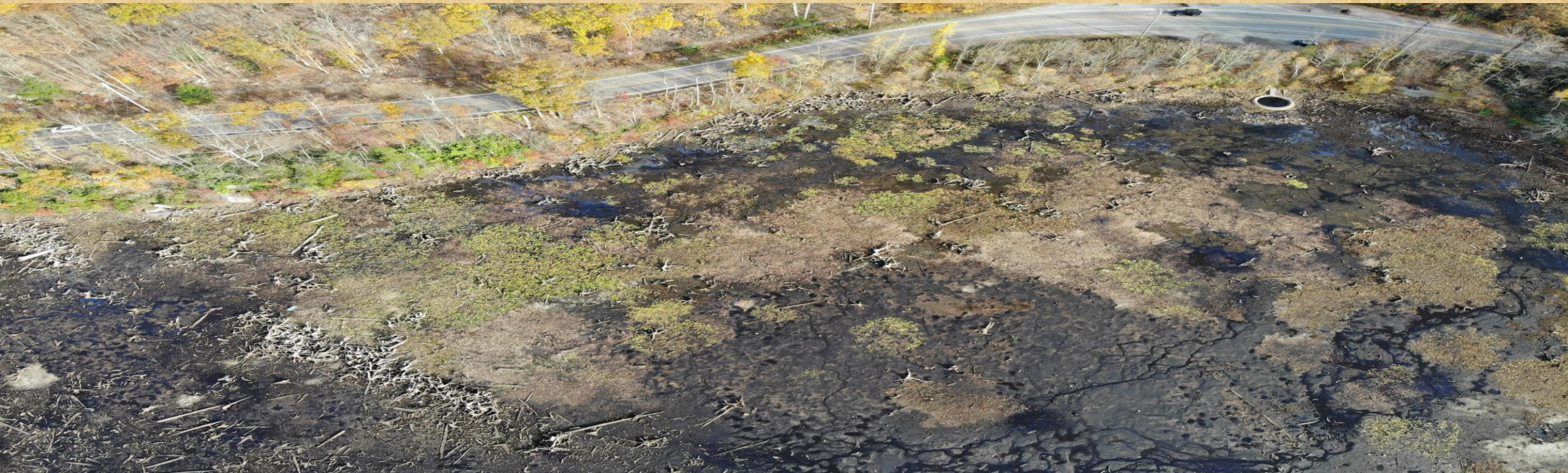


FROM
RAIN
WIND
ICE
WAVE ACTION

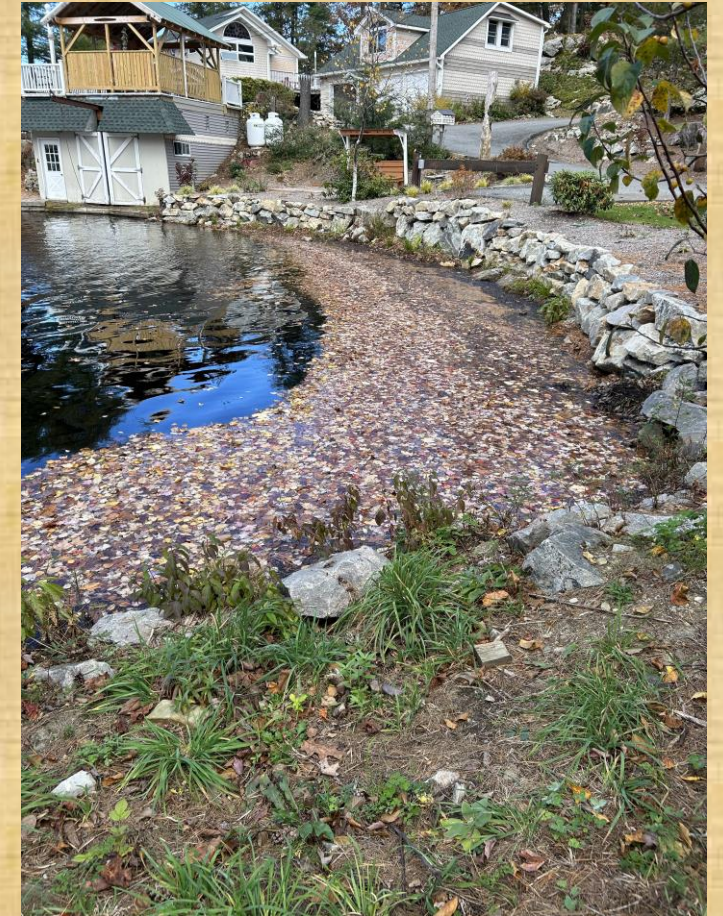


**OUR SHORELINES ARE DISAPPEARING AND SOIL IS
BEING WASHED INTO THE LAKE.**

**THIS RAISES THE LEVEL OF SEDIMENT ON THE
BOTTOM OF THE LAKE.**



LEAVES ADD TO THE PROBLEM





**BATHYMETRIC SURVEY OF
UPPER GREENWOOD LAKE**
WEST MILFORD TOWNSHIP, PASSAIC COUNTY, NEW JERSEY

APRIL 2022

PREPARED FOR:

UPPER GREENWOOD LAKE
PROPERTY OWNERS ASSOCIATION
ATTN: KAREN SARNOWSKI
435 LAKESHORE DRIVE
HEWITT, NJ, 07421

PREPARED BY:

PRINCETON HYDRO, LLC
1200 LIBERTY PLACE
SICKLERVILLE, NJ, 08081
908.237.5660
J.P. BELL, SENIOR SCIENTIST



Size of Survey Area	411.7 Acres
Water Surface Elevation (WSEL)	1097.6 NAVD88
Minimum Elevation	1084.7 NAVD88 (12.9 Feet Deep)
Mean Elevation	1091.5 NAVD88 (6.1 Feet Deep)
Estimated Volume of Water	2,518 Acre-Feet
Estimated Volume of Sediment	845,200 Cubic Yards
Mean Sediment Thickness	1.3 Feet Thick

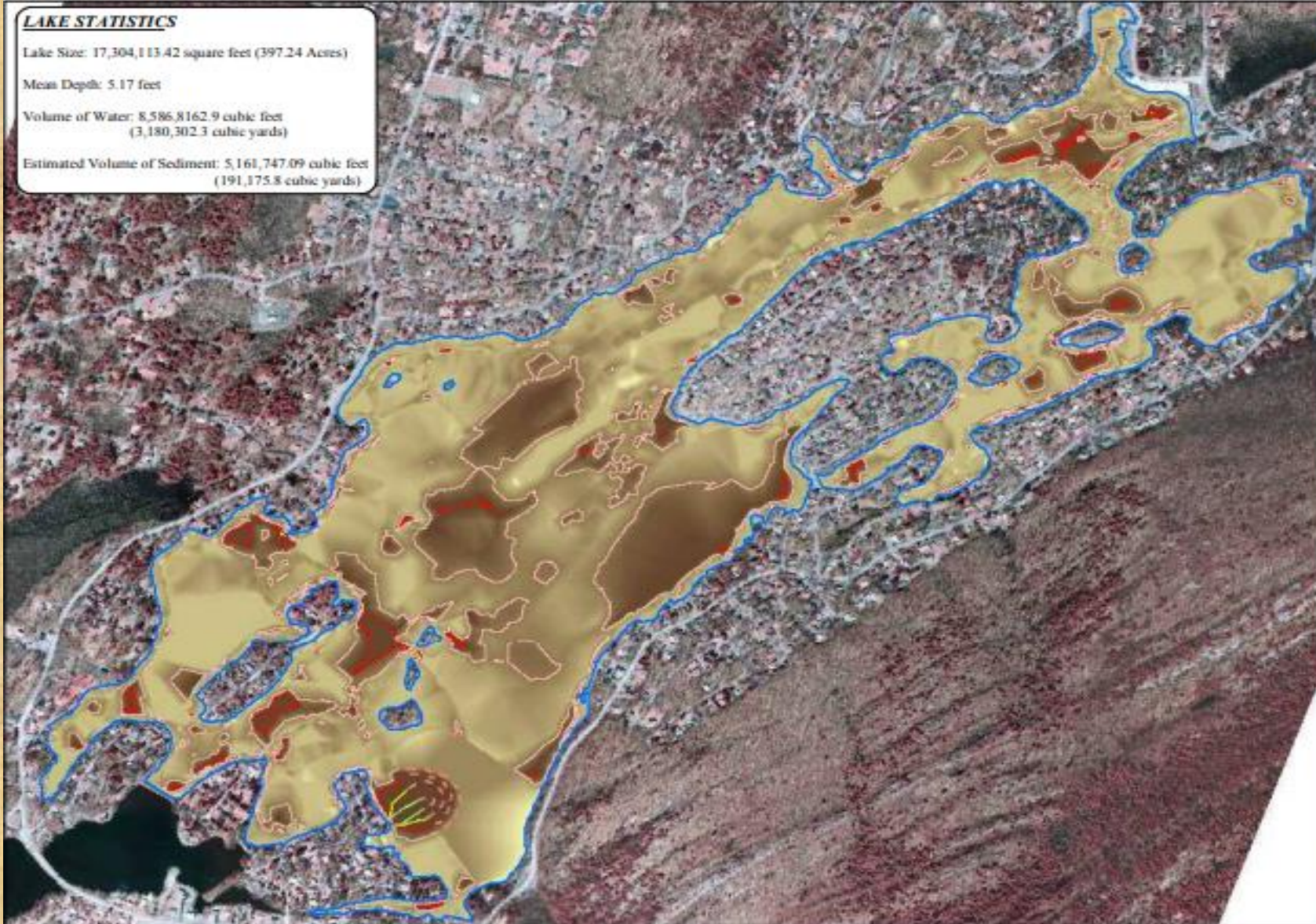
LAKE STATISTICS

Lake Size: 17,304,113.42 square feet (397.24 Acres)

Mean Depth: 5.17 feet

Volume of Water: 8,586,8162.9 cubic feet
(3,180,302.3 cubic yards)

Estimated Volume of Sediment: 5,161,747.09 cubic feet
(191,175.8 cubic yards)



NEW JERSEY COUNTY MAP



PRINCETON HYDRO, LLC.
1108 OLD YORK ROAD
P.O. BOX 720
RINGOES, NJ 08551



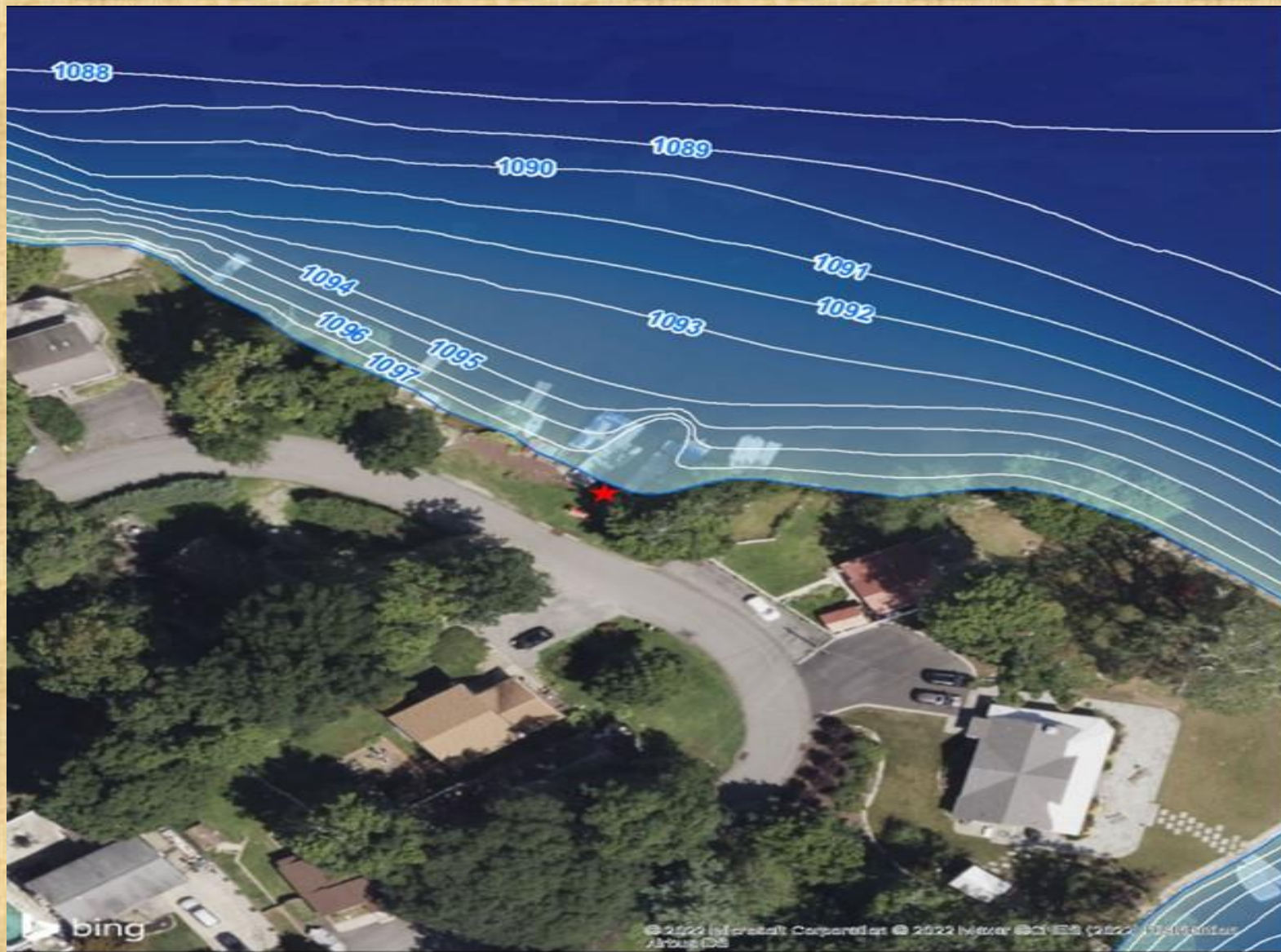
- SOURCES
- 2002 Aerial Photograph obtained from the New Jersey Image Warehouse website
 - Bathymetric Survey by Princeton Hydro, LLC, performed on August 8 and 13, 2007. Survey conducted with a Hobson/Chickadee in concert with a Trimble 5600i GPS unit.
 - Bathymetric data post-processing completed in Hyacinth Max software
 - All 3-D modeling and contouring completed with AutoCAD 2007
 - Interpolated contour lines were not surveyed due to an excessive amount of emergent tree bulging

FIGURE 4:
SEDIMENT THICKNESS CONTOURS
UPPER GREENWOOD LAKE
PROPERTY OWNERS ASSOCIATION
UPPER GREENWOOD LAKE
MANAGEMENT AND RESTORATION
BATHYMETRIC SURVEY

Legend

- Lake Boundary
- Interpolated Contours
- Sediment Thickness Contours
 - 0.5
 - 1
 - 1.5
 - 2

PH
Princeton Hydro



NOTES:
 Survey conducted by Princeton Hydro on October 20
 and 21, 2021
 Water Surface Elevation (WSEL) at time of survey: 1097.6
 IAVD88
 Map Projection: NAD 1983 StatePlane New Jersey FIPS 2900 Feet

OUTFALL 2 - TOP OF SEDIMENT CONTOURS

UPPER GREENWOOD LAKE
 BATHYMETRIC SURVEY
 WEST MILFORD
 PASSIAC COUNTY, NEW JERSEY

PH PRINCETON HYDRO
 SCIENCE DESIGN ENGINEERING
www.PrincetonHydro.com

**THE EFFECTS ARE ESPECIALLY BAD WHERE
THERE IS NO BULKHEAD**



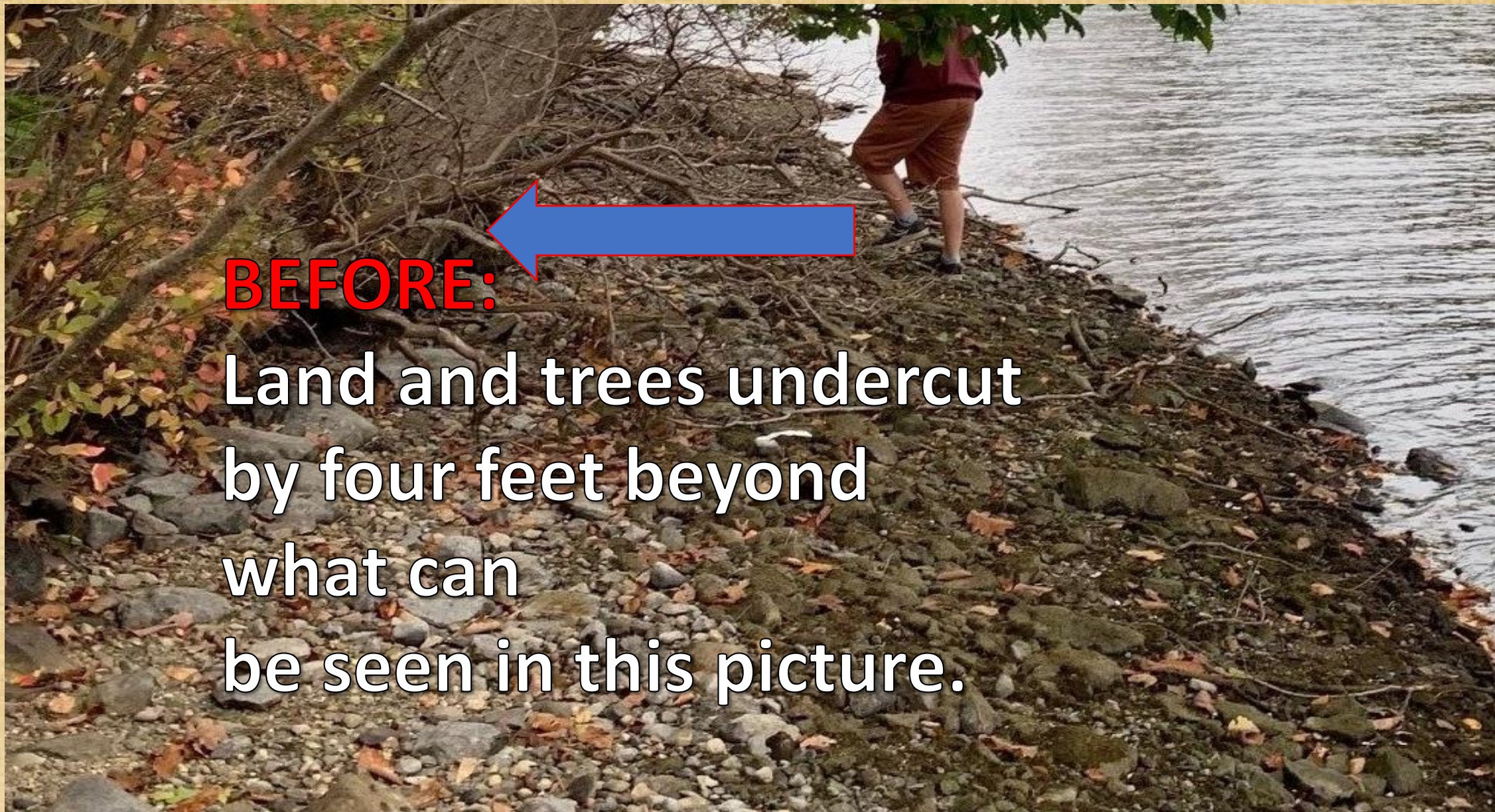












BEFORE:

Land and trees undercut
by four feet beyond
what can
be seen in this picture.

AFTER



WITHOUT BULKHEADS TREE ROOTS ARE EXPOSED AND DAMAGED



SOIL, SEDIMENT, GARBAGE,
AND GRITS ALL ENTER THE LAKE.

RUNOFF ADDS PHOSPHORUS
AND NITROGEN
THAT FUEL WEEDS, AND ALGAE
THAT CAN GROW TO
DANGEROUS AND HARMFUL
LEVELS.





Taxonomic group	Genus
Cyanobacteria	<i>Aphanizomenon</i>
Cyanobacteria	<i>Aphanocapsa</i>
Cyanobacteria	<i>Aphanothece</i>
Cyanobacteria	<i>Chroococcus</i>
Cyanobacteria	<i>Cuspidothrix</i>
Cyanobacteria	<i>Cyanodictyon</i>
Cyanobacteria	<i>Cyanodictyon/Aphanocapsa</i>
Cyanobacteria	<i>Dolichospermum</i>
Cyanobacteria	<i>Gomphosphaeria</i>
Cyanobacteria	<i>Jaaginema</i>
Cyanobacteria	<i>Leptolyngbya</i>
Cyanobacteria	<i>Limnoraphis</i>
Cyanobacteria	<i>Merismopedia</i>
Cyanobacteria	<i>Microcystis</i>
Cyanobacteria	<i>Oscillatoria</i>
Cyanobacteria	<i>Phormidium</i>
Cyanobacteria	<i>Planktolyngbya</i>
Cyanobacteria	<i>Planktothrix</i>
Cyanobacteria	<i>Pseudanabaena</i>
Cyanobacteria	<i>Raphidiopsis</i>
Cyanobacteria	<i>Snowella</i>
Cyanobacteria	<i>Synechococcus</i>
Cyanobacteria	Unknown Cyanophyceae
Cyanobacteria	<i>Woronichinia</i>

A HARMFUL ALGAE BLOOM (HAB) COULD CLOSE OUR LAKE FOR A WHOLE SEASON

HAB Not Present	HAB reported and investigated. No HAB present.	None
<p>WATCH <i>Suspected or confirmed HAB with potential for allergenic and irritative health effects</i></p>	<p>Suspected HAB based on field survey OR Confirmed cell counts ≥20k - ≤80k cells/mL AND No known toxins above public health thresholds</p>	<p>Public Bathing Beaches Open Waterbody Accessible: Use caution during primary contact (e.g. swimming) and secondary (e.g. non-contact boating) activities Do not ingest water (people/pets/livestock) Do not consume fish An <i>Alert</i> is initiated at beaches if cell counts are 40K to < 80K. An <i>Alert</i> begins actions to monitor the beach more frequently due to increasing potential for toxin production and to ensure the HAB has not elevated to a higher risk Tier.</p>
<p>ADVISORY <i>Confirmed HAB with moderate risk of adverse health effects and increased potential for toxins above public health thresholds</i></p>	<p>Lab testing for toxins Microcystins: ≥2 µg/L Cylindrospermopsin: ≥5 µg/L Anatoxin-a ≥15 µg/L Saxitoxin-a ≥0.6 µg/L OR Confirmed cell counts ≥80k ug/L</p>	<p>Public Bathing Beaches Closed Waterbody Remains Accessible: Avoid primary contact recreation Use caution for secondary contact recreation Do not ingest water (people/pets/livestock) Do not consume fish</p>
<p>WARNING <i>Confirmed HAB with high risk of adverse health effects due to high toxin levels</i></p>	<p>Toxin (microcystin) ≥20 - ≤2000 µg/L</p>	<p>Public Bathing Beaches Closed Cautions as above May recommend against secondary contact recreation</p>
<p>DANGER <i>Confirmed HAB with very high risk of adverse health effects due to very high toxin levels</i></p>	<p>Toxin (microcystin) ≥2000 µg/L</p>	<p>Public Bathing Beaches Closed Cautions as above. Possible closure of all or portions of waterbody and possible restrictions of access to the shoreline.</p>

Watch

Advisory

Warning

Danger

Beach Closed

A lot of
residents like
to swim in
the Lake.



Ways to prevent SILT BUILDUP.

Take the stuff out= DREDGING
=\$\$\$\$\$\$



Stop the stuff entering=
BULKHEAD=\$



ALL WE NEED : MATERIALS AND MANPOWER TO BUILD BULKHEADS

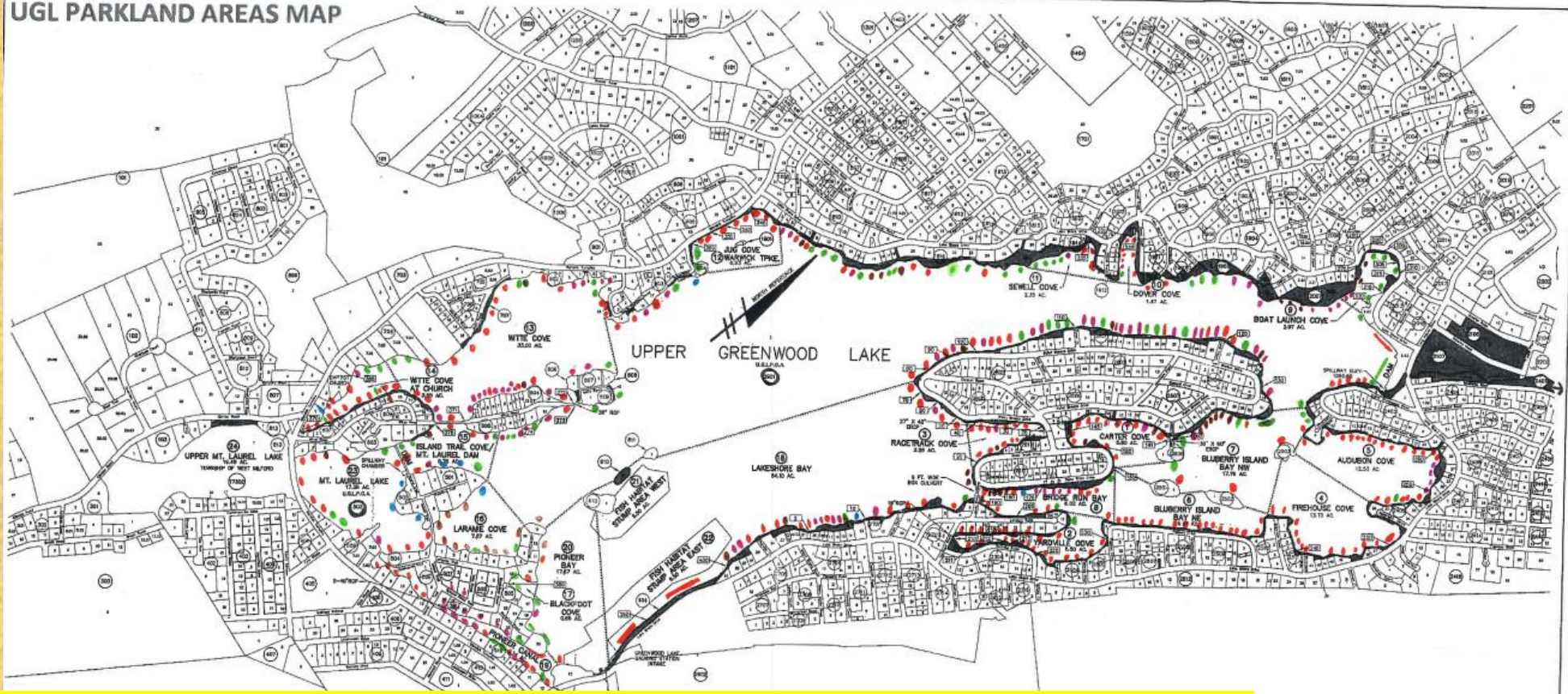




THE VAST MAJORITY OF POA PROPERTY HAS
NO BULKHEAD, OR ONE OF INSUFFICIENT.
QUALITY.



UGL PARKLAND AREAS MAP



THE ENVIRONMENTAL COMMITTEE SURVEYED EVERY LAKEFRONT BLOCK AND LOT TO ASSESS THE QUALITY OF EACH SECTION OF BULKHEAD

TO RIVERSIDE DRIVE ON THE STREAM (AND FURTHER) ARE ALSO PARKLANDS. D IN TIME.

GRAPHIC SCALE REVISION: 1/20/10 COVE NUMBERS			
COVE IDENTIFICATION PLAN FOR STUMP REMOVAL & RESTORATION			
FOR UPPER GREENWOOD LAKE TOWNSHIP OF WEST MILFORD PASSAIC COUNTY NEW JERSEY			
EID ASSOCIATES, INC. CERTIFICATE OF AUTHORIZATION NO. 24542034900 895 SEVILLE BLVD ROSELAND, N.J. 07068 (201) 682-2800 PROFESSIONAL ENGINEERS AND LAND SURVEYORS			
<i>Stephen P. Eid</i> STEPHEN P. EID PROFESSIONAL ENGINEER & LAND SURVEYOR N.J. P.E. & L.S. LIC. No. 30081			
DRAWN SFC	DESIGNED SFC	CHECKED SFC	DATE 12-25-09
SHEET NO. 1 OF 1		PROJECT NO. 09-88-038	

Steven Quirk
July 2023





**A PROPOSED WEST MILFORD TOWNSHIP
WATERSHED MANAGEMENT PROGRAM**
WEST MILFORD TOWNSHIP, PASSAIC COUNTY, NEW JERSEY

JANUARY 2020; REVISED MARCH 2020

PREPARED FOR:
WEST MILFORD TOWNSHIP
LAKES COMMITTEE
ATTN: LYNN MANDON, SECRETARY
1480 UNION VALLEY ROAD
WEST MILFORD, NJ 07480

PREPARED BY:
PRINCETON HYDRO, LLC
1108 OLD YORK ROAD, SUITE 1
PO BOX 720
RINGOES, NJ 08551
908-237-5660



PROPOSALS IN STUDY :

1. Dover Cove

2. Island Trail Bridge

UGLPOA added Passaic Drive
and parts of Lakeshore Drive
South

Erosion damage has reached a point where steps are needed to prevent further damage.

Examples of this damage can be found all around the lake.

Some are obvious but, at many locations the water has undercut the remaining land and trees

by up to 4 feet,

causing hazardous conditions and trees to fall down.

Shallow Water

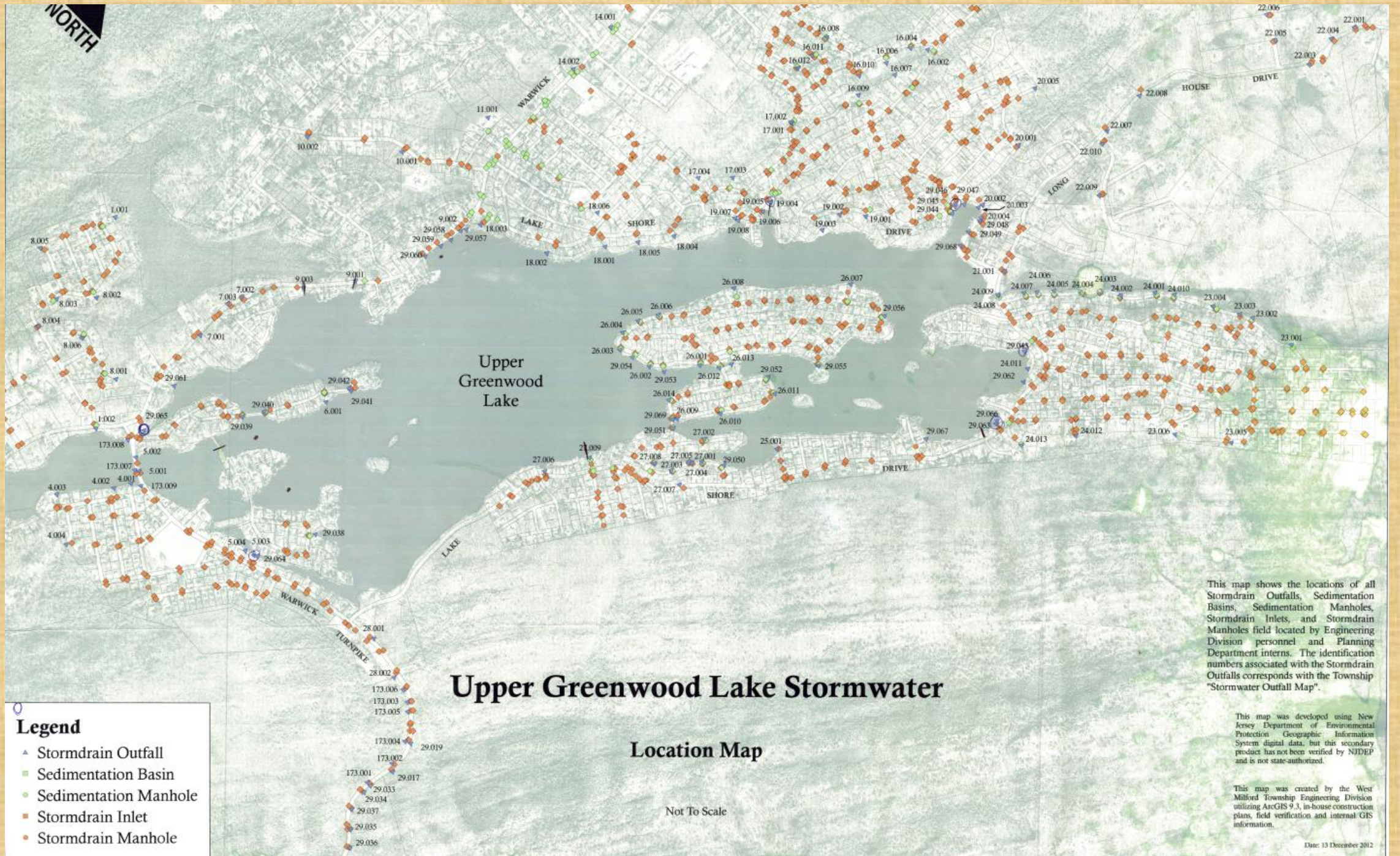


Boat
Navigating in
an area of the
Lake that has
filled in.



We have over
90 Storm drains
that empty into
the Lake.





Upper Greenwood Lake Stormwater

Location Map

Not To Scale

Legend

- ▲ Stormdrain Outfall
- Sedimentation Basin
- Sedimentation Manhole
- Stormdrain Inlet
- Stormdrain Manhole

This map shows the locations of all Stormdrain Outfalls, Sedimentation Basins, Sedimentation Manholes, Stormdrain Inlets, and Stormdrain Manholes field located by Engineering Division personnel and Planning Division interns. The identification numbers associated with the Stormdrain Outfalls corresponds with the Township "Stormwater Outfall Map".

This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not state-authorized.

This map was created by the West Milford Township Engineering Division utilizing ArcGIS 9.3, in-house construction plans, field verification and internal GIS information.



DELTA

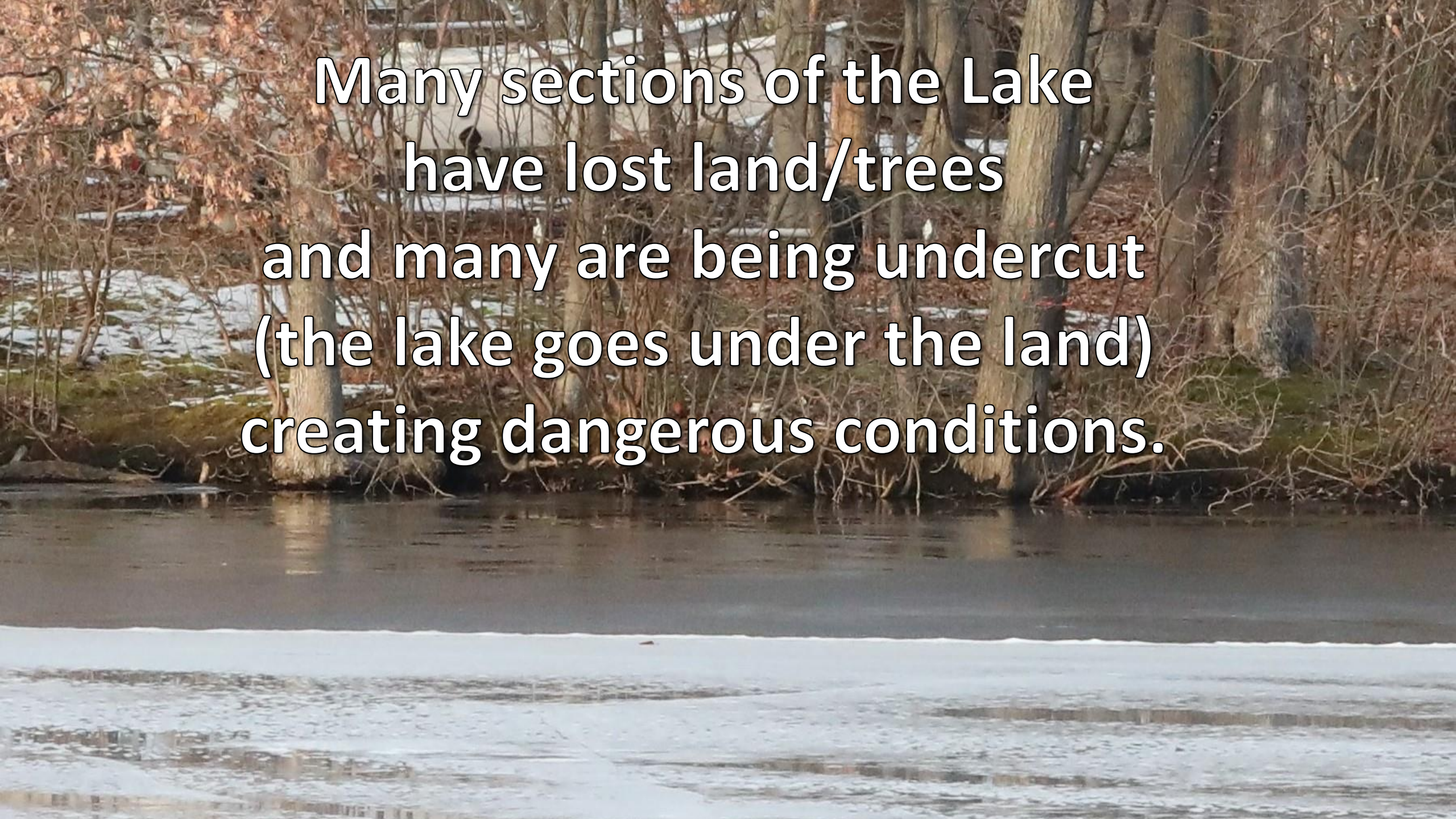
The grits have formed deltas up to 3 feet high.



Erosion damage
getting close to
Lakeshore
losing trees and
vegetation
protection





A photograph of a lake with a snow-covered shoreline and trees in the background. The text is overlaid on the image.

Many sections of the Lake
have lost land/trees
and many are being undercut
(the lake goes under the land)
creating dangerous conditions.

Examples of Damage.









**If we care for our
Lake,
Then we can enjoy
and use it for many
years to come.**





