
May 1st, 2024

# Peach Lake Brook Survey Report

## Little Bear Environmental Consulting, LLC

# Background

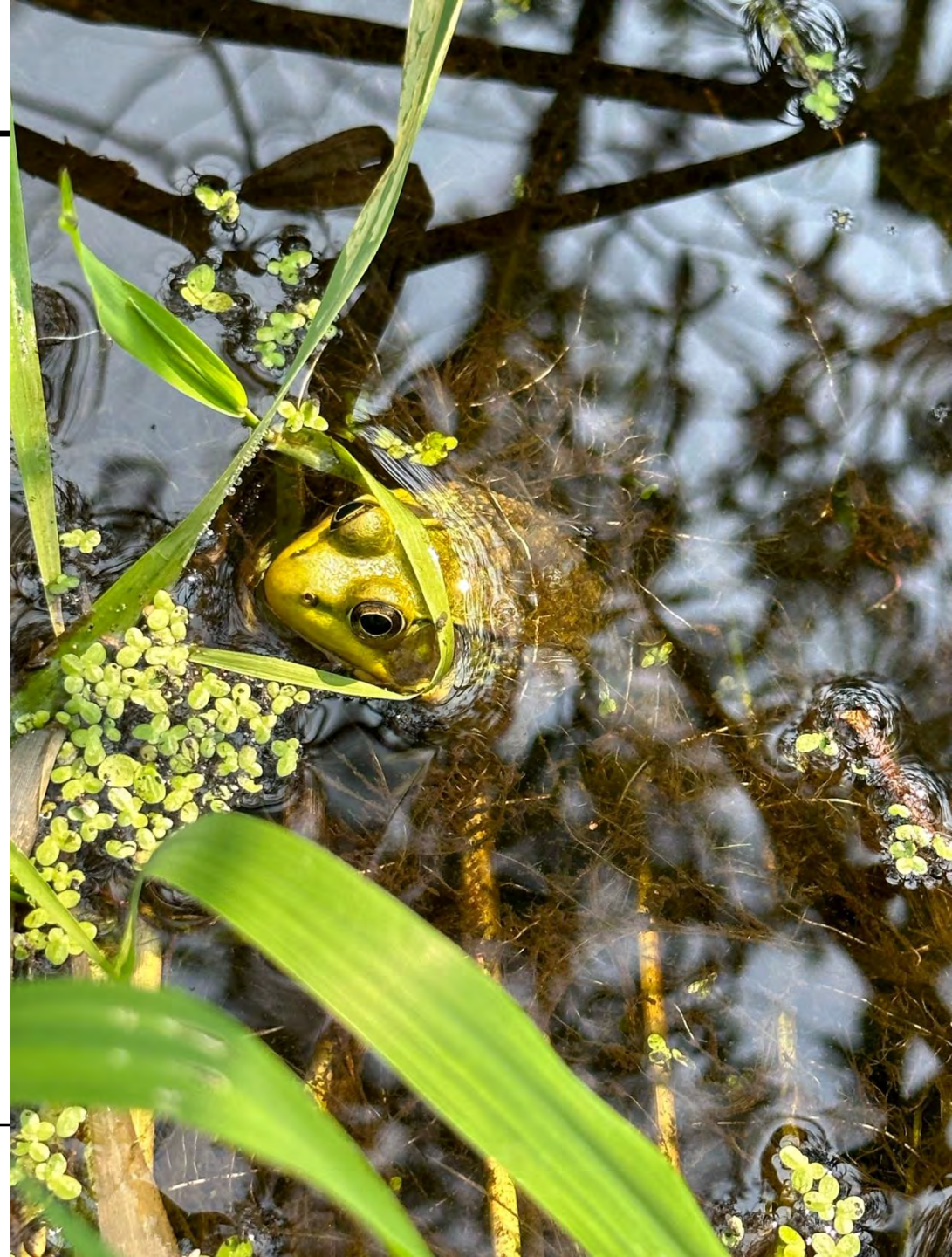
Aquatic vegetation was mechanically harvested from Peach Lake Brook to improve stream flows between Peach Lake and East Branch Reservoir.

Little Bear Environmental was contracted to complete a series of aquatic vegetation surveys to assess plant abundance within Peach Lake Brook:

Pre-harvesting : May 2023 & September 2023.

During & Post-harvesting: November 2023 & May 2024.

This report presents data collected during the May 1st 2024 survey following completion of the mechanical harvesting project in Peach Lake Brook and provides a year-over-year comparison May 2023 (pre-treatment) to May 2024 (post-treatment).

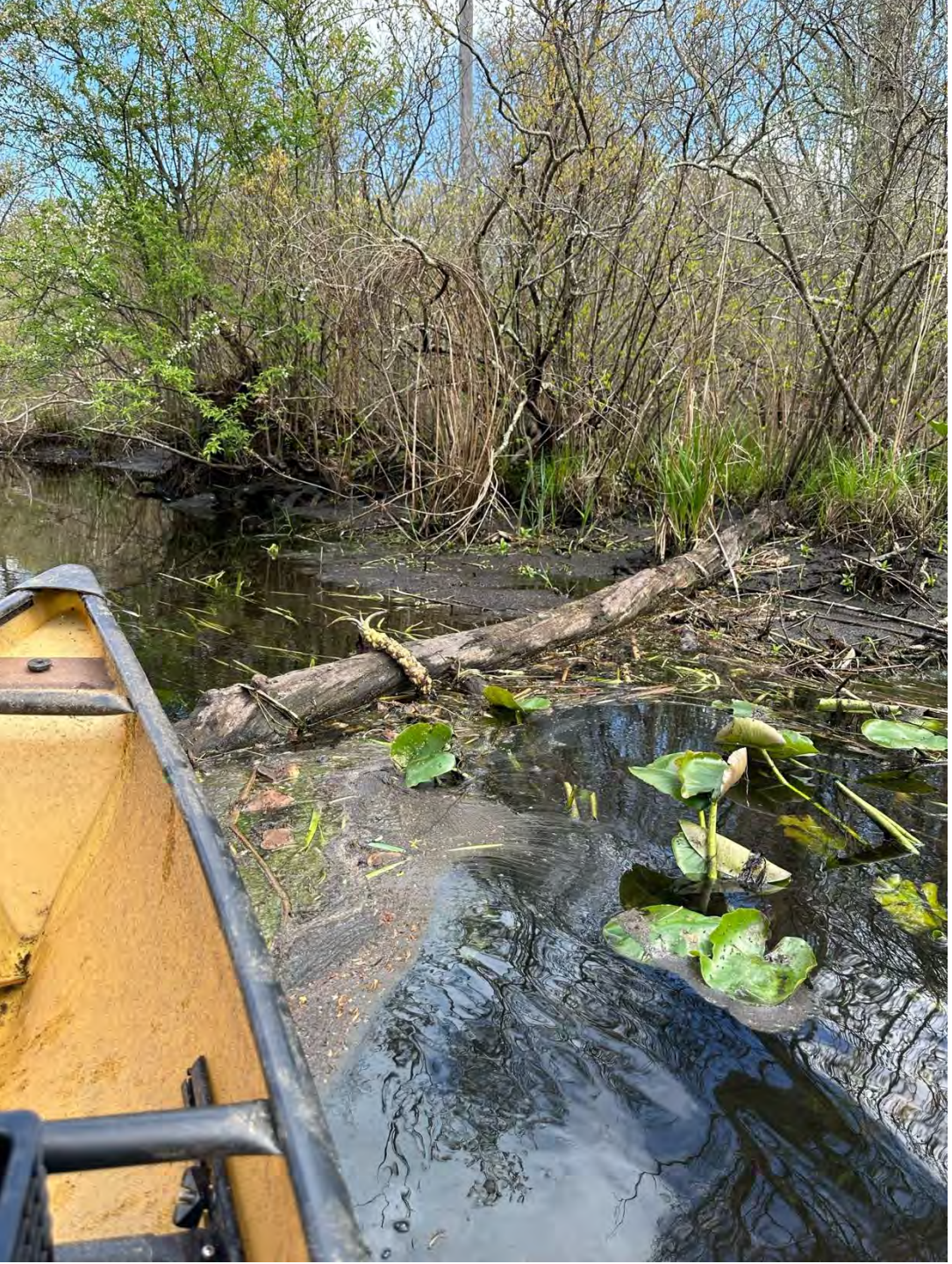


# Summary

- Mechanical harvesting and large woody debris removal within Peach Lake Brook was completed in April 2024.
- Where mechanical harvesting has occurred, there is a significant reduction in aquatic vegetation, root pack, detritus and large woody debris.
- Within the 10-foot swath there was a reduction from 19 species present in May 2023 to 9 species present in 2024.
- Aquatic vegetation outside of the ~10-foot swath remains intact, therefore likely limiting any impacts to integrity of surrounding habitats.
- No nuisance densities of any aquatic plant species remain within the 10-foot swath where harvesting occurred. Nuisance densities of aquatic vegetation do occur outside of the treated area, within Peach Lake itself including aquatic vegetation and algae.

# Summary Continued

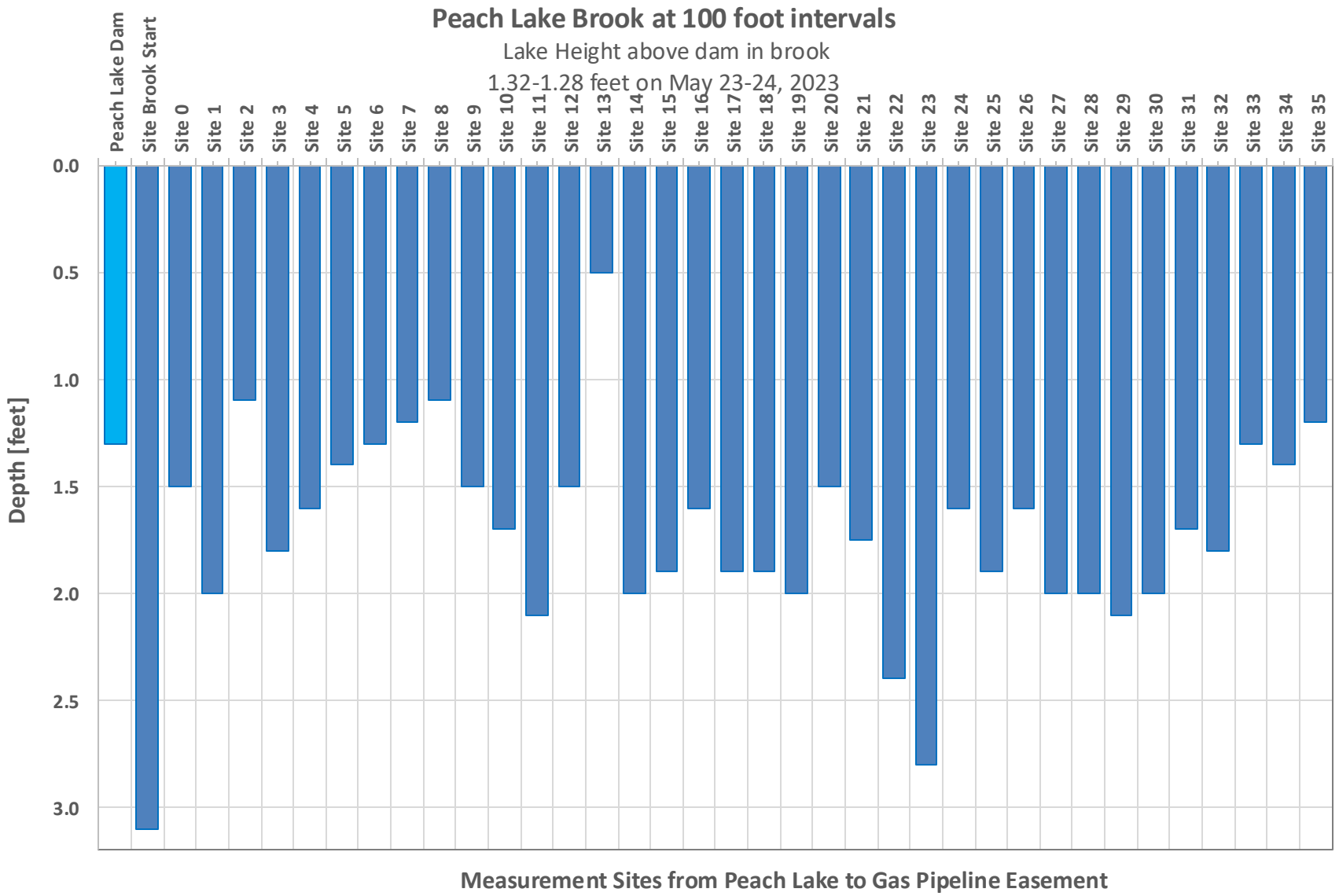
- Aquatic invasive plant fragments (including Eurasian Watermilfoil and Curly Leaf Pondweed) were found within the brook, being carried by flows from Peach Lake.
- Invasive plant fragments can reinfest available suitable habitat if they settle in the brook.
- Invasive Curly Leaf Pondweed was found remaining rooted at two locations in trace densities within the brook, compared with 18 locations pre-treatment.
- It appears mechanical harvesting effectively removed Curly Leaf Pondweed turions (reproductive structures) from the channel.
- Curly leaf pondweed was not immediately observed at the boat launch where the mechanical harvesting equipment unloaded, which is promising that the plant fragments and turions were not unintentionally spread to that area during harvesting operations.



# May 2023 versus May 2024

- Water levels in Peach Lake:
  May 23rd 2023– 1.315 ft
  May 24th 2023– 1.280 ft
  May 1st 2024– 0.33 ft
- No nuisance plant density remains following mechanical harvesting.
  May 2023 – 83% of sites were dense
  May 2024 – 0% of the sites were dense
- Areas previously housing trapped sediment and plant material have been remediated, and sediment depth has decreased overall throughout the brook as fine sediments, debris and root pack were removed or washed downstream.
- Most Large woody debris has been removed from ~10 foot swath allowing for boats and equipment to pass (see photo)
- New haphazard dam has been created blocking eastern channel near Peach Lake.

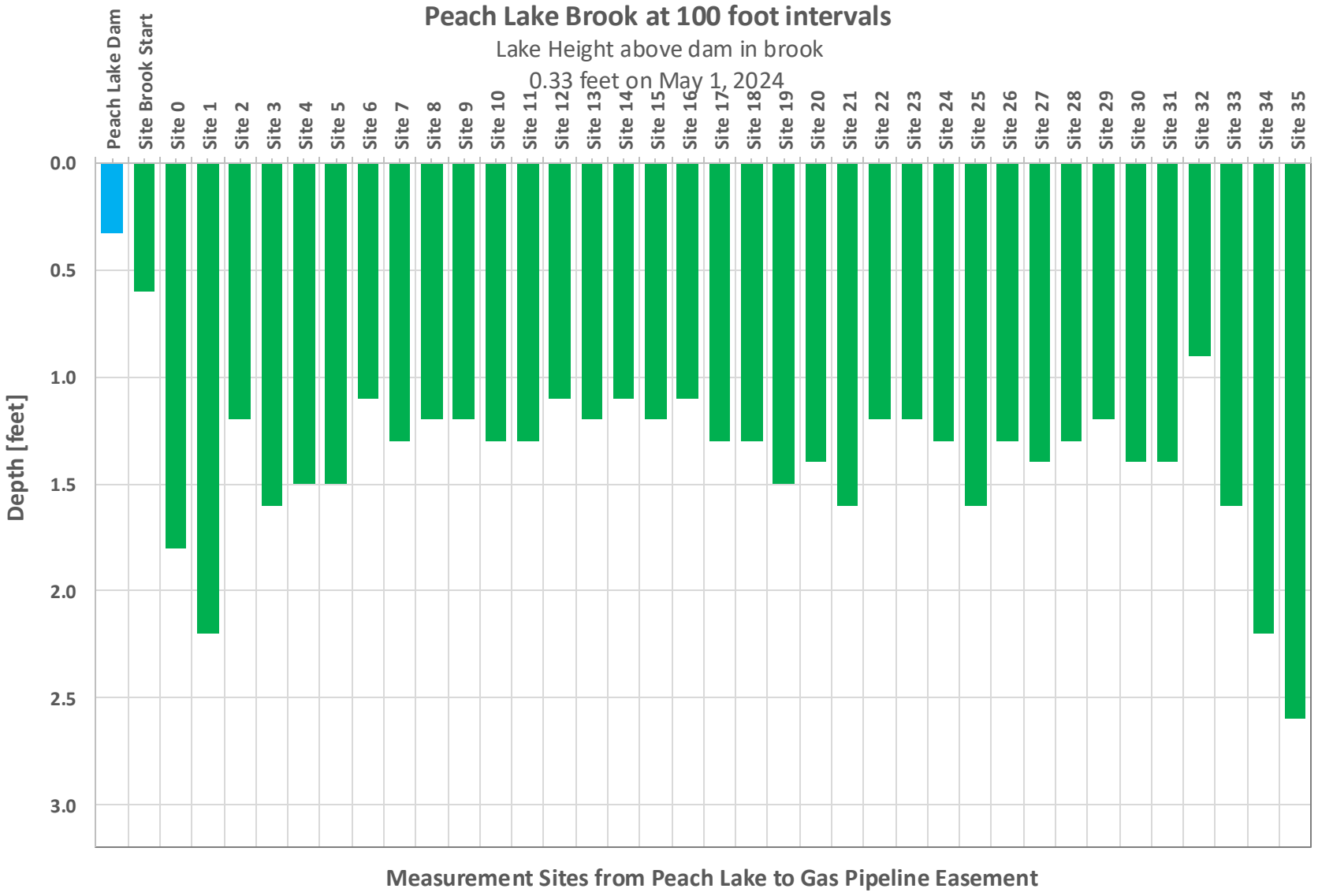
# Water Depth
# May 2023




Graph: Bradley Schwartz

# Water Depth May 2024

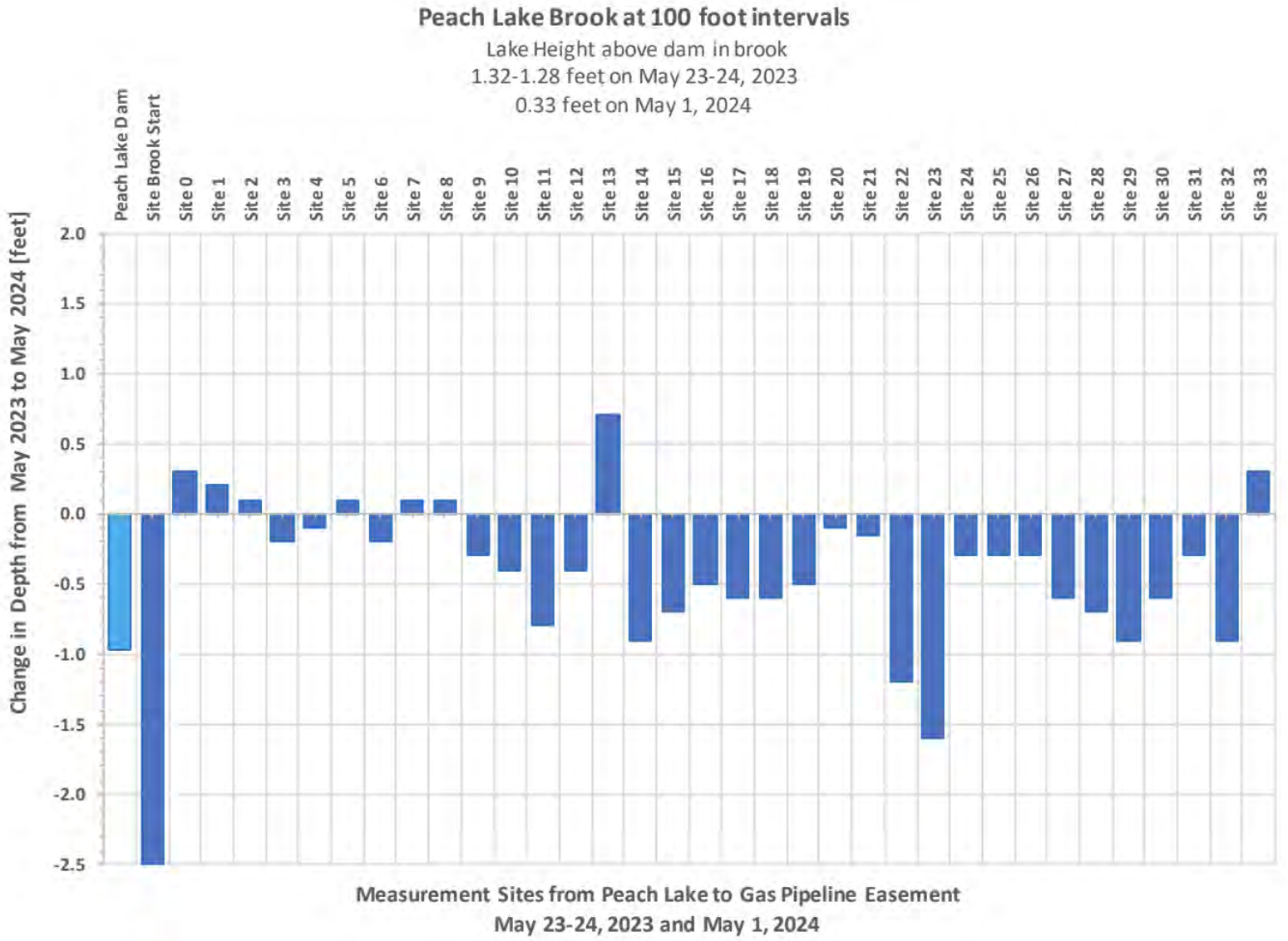
- Lake depth and brook depth were both significantly lower than 2023.




Graph: Bradley Schwartz

# Water Depth Comparison

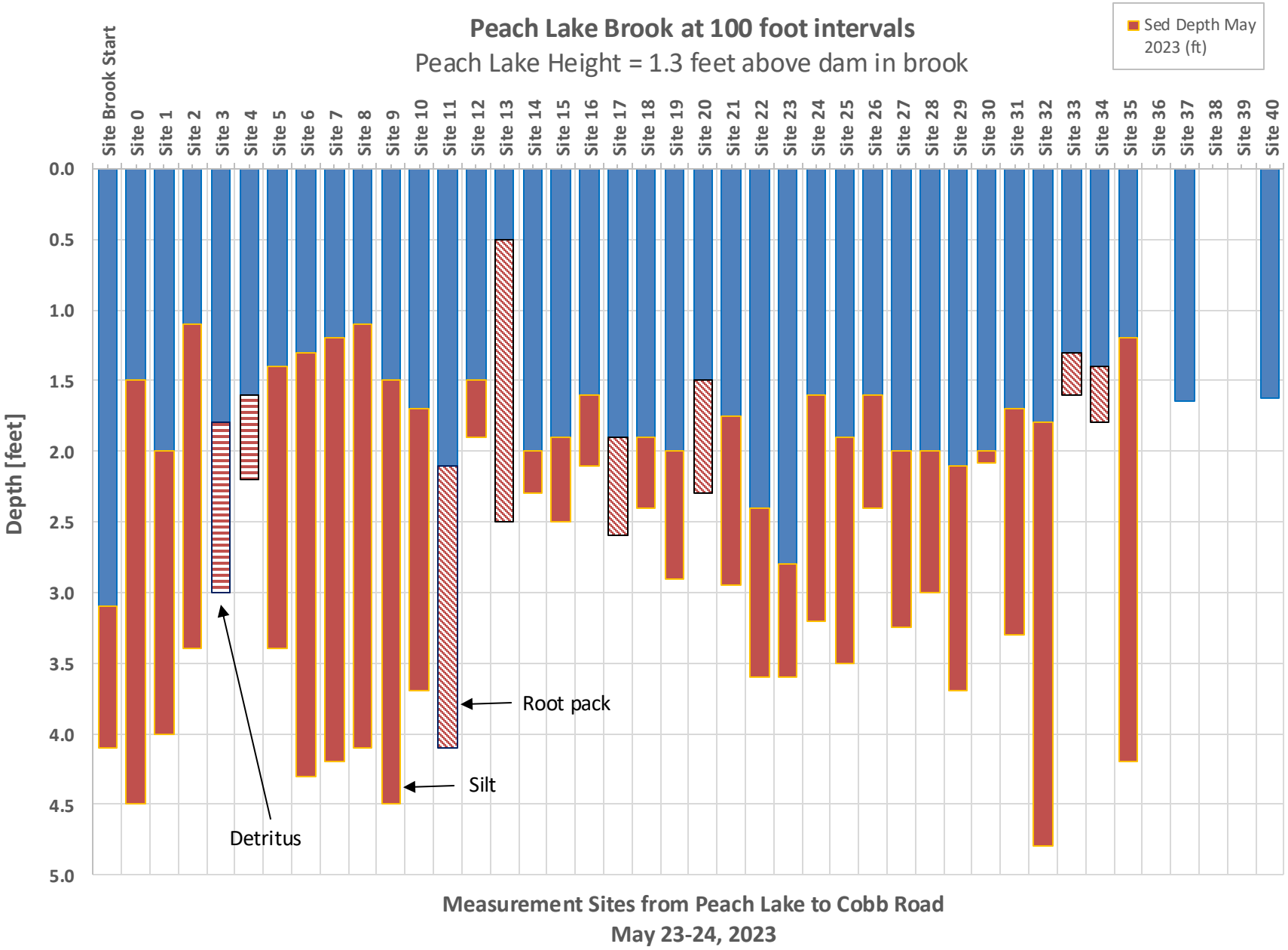
- Brook and lake depths were lower than 2023.
- Vegetation, large woody debris, and root pack have been removed, improving flows.
- Chart displays change in depth from May 2023 to May 2024.




Graph: Bradley Schwartz

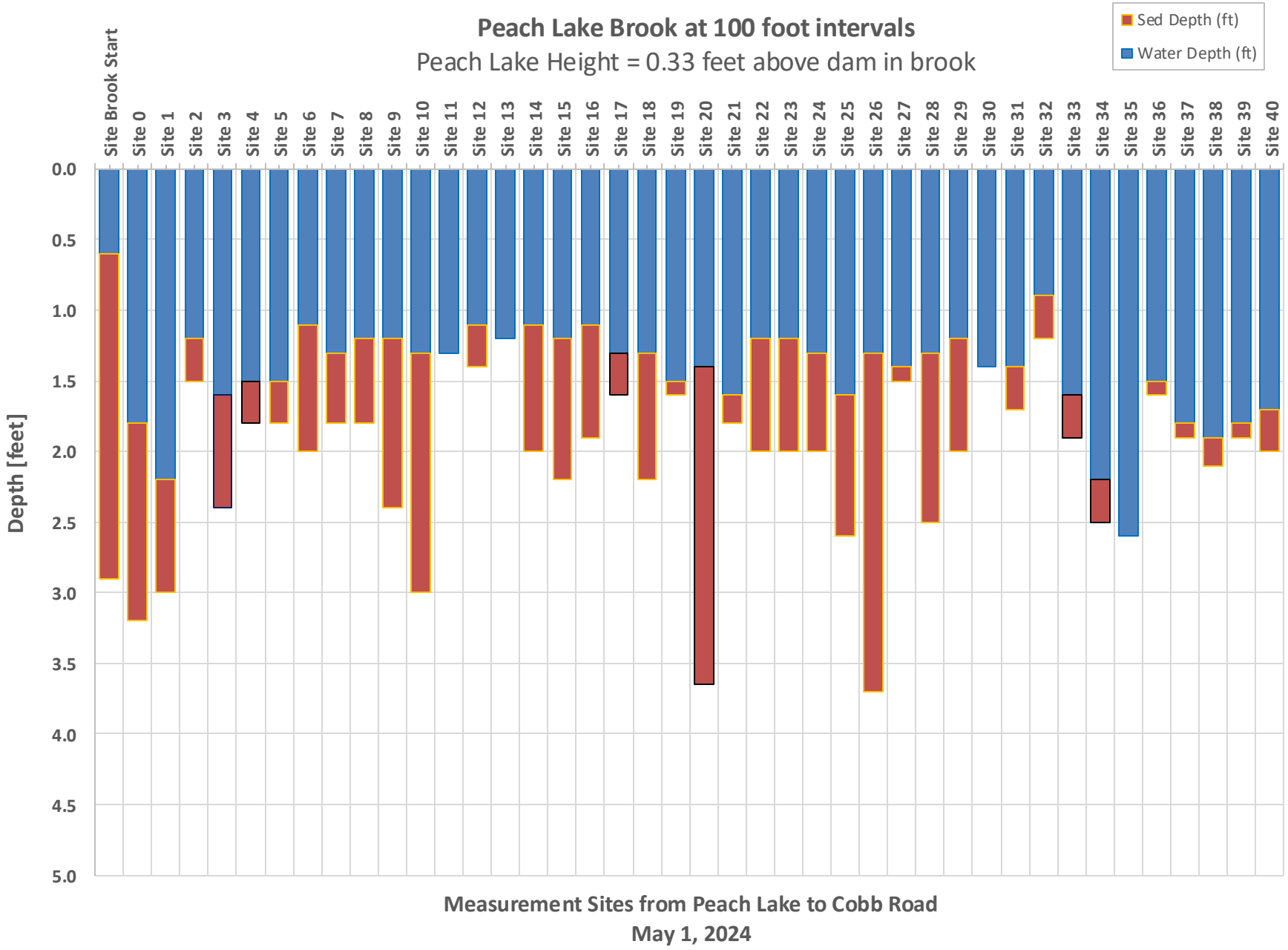
# Water & Sediment Depth May 2023

- Significant accumulation of deep soft sediments, detritus, and root pack were present within the brook.



# Water & Sediment Depth May 2024

- Detritus and root pack were removed during vegetation removal and soft sediments were able to be swept downstream with resulting increased flows.
- There was a significant reduction in fine sediment layer within the brook following the project.



# Plant Density Comparison (May to May)

Following Harvesting:

- 9 fewer species observed within channel (May 2023 – May 2024)
- 3 fewer invasive species observed within channel
- No Dense abundance within channel
- 6 sites unvegetated within channel

| | spatterdock | commonn waterweed - elodea | white water lily | milfoil | water smartweed | duckweed | yellow flag iris | giant reed - phragmites | marsh seedbox - ludwigia | reed canary grass | curly leaf pondweed | coontail | water starwort | slender arrowhead | water celery | cattail | watercress | bottle brush sedge | sago pondweed | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| START | M | T | M | | T | | | | | | | | | | | | | | | D |
| Site 0 | | | T | M | | T | | | | | | | | | | | | | | M |
| Site 1 | | S | T | D | S | T | M | M | | | | | | | | | | | | D |
| Site 2 | | S | T | D | M | T | M | M | | | | | | | | | | | | D |
| Site 3 | | | T | M | T | T | T | M | | | M | | | | | | | | | D |
| Site 4 | | | T | D | T | T | T | M | | | M | | | | | | | | | D |
| Site 5 | | | T | D | S | T | S | M | | M | T | | | | | | | | | D |
| Site 6 | | | T | M | M | T | T | M | | D | S | | | | | | | | | D |
| Site 7 | | T | T | M | M | T | T | M | S | M | S | | | | | | | | | D |
| Site 8 | | | | D | T | | | | | D | D | S | | | | | | | | D |
| Site 9 | | | | D | T | T | | T | | D | D | | | | | | | | | D |
| Site 10 | M | T | | D | S | | | | | | | | | | | | | | | D |
| Site 11 | | S | | M | T | T | D | | S | D | D | | S | | | | | | | D |
| Site 12 | D | M | | D | D | S | S | | | D | D | | T | S | T | | | | | D |
| Site 13 | | | | | T | S | | | | D | D | | T | | T | D | | | | D |
| Site 14 | M | | M | S | S | | | | | | M | | T | | T | D | | | | D |
| Site 15 | | | | | M | S | | | | D | | | S | M | T | | | | | D |
| Site 16 | | | | | | | S | | | D | D | | S | | | | M | | | D |
| Site 17 | | | | | S | S | | | | | D | | | S | | | D | | | D |
| Site 18 | | | | | M | | | | M | D | D | | T | M | | | D | T | | D |
| Site 19 | M | | | | M | T | | | | | M | | S | | | | D | | | D |
| Site 20 | D | | | | M | S | | | | D | S | | S | | | | D | | | D |
| Site 21 | M | | | | D | M | | | | M | D | S | S | | | | | S | | D |
| Site 22 | | S | | | | S | | | | | | | S | | M | | | | | M |
| Site 23 | D | | | | S | S | M | | | | | T | T | | | | | | | D |
| Site 24 | | | | | D | M | | | | | | | D | | | | | | | D |
| Site 25 | | | | | M | S | S | | | | | | M | | | | | | | D |
| Site 26 | D | | | | D | S | | | | | | | D | | | | | | | D |
| Site 27 | M | | | | S | | D | | | | | | S | | | D | | | | D |
| Site 28 | D | | | | | S | | | | | | | S | | | T | | D | | D |
| Site 29 | M | | | | S | S | | | | | | | S | | S | | M | S | | M |
| Site 30 | D | | | | S | T | | | | | | | | | T | | M | D | | D |
| Site 31 | D | | | | D | D | | | | | T | | M | | S | | M | M | D | D |
| Site 32 | D | | | | | S | | | | | | | M | | | | | T | T | D |
| Site 33 | D | | | | | M | | | | | | | | S | | | | D | | D |
| Site 34 | | | | | | D | | D | | | | | S | | | | | T | | D |
| Site 35 | | | | | | S | | T | S | | | | S | | | | | | | M |
| Site 36 | | | | | | | | | | | | | | | | | | | | 0 |
| Site 37 | | | | | | | | | | | | | T | | | | | | | T |
| Site 38 | | | | | | | | S | T | | | | T | | | | | | | S |
| Site 39 | | | | | | | | | T | | | | T | | | | | | | T |
| Site 40 | | | | | | | | | T | | | | T | | | | | | | T |

KEY : Blank = No Plants, T = Trace, S = Sparse, M = Moderate, D = Den

| | spatterdock | white water lily | milfoil | duckweed | arrowhead | marsh seedbox - ludwigia | reed canary grass | curly leaf pondweed | water starwort (Callitriche) | water stargrass | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| START | S | M | S | | | | | | | | M |
| Site 0 | T | S | | | | | | | | | S |
| Site 1 | | T | | | | | | | | | T |
| Site 2 | | T | M | | S | | | | | | M |
| Site 3 | | T | T | | | | | | | S | S |
| Site 4 | | | S | | | | | | | | S |
| Site 5 | | | M | | | | S | T | | | S |
| Site 6 | | | T | | | | T | | | T | T |
| Site 7 | | | T | | | | | | | T | T |
| Site 8 | | | T | | | | | | | | T |
| Site 9 | | T | S | | | | T | | | | S |
| Site 10 | | | S | | | | | | | | S |
| Site 11 | | | | | | | T | | | T | T |
| Site 12 | | | | | | | T | T | | T | T |
| Site 13 | | | M | | | | S | | | | M |
| Site 14 | | | | | | | | | | | |
| Site 15 | | | M | | | | | | | | M |
| Site 16 | | | T | | | | S | | | | S |
| Site 17 | | | T | | | | T | | | | T |
| Site 18 | | | M | | | | S | | | S | M |
| Site 19 | | | T | | | | T | | | T | T |
| Site 20 | | | T | | | | | | | S | S |
| Site 21 | | | S | | | | | | | | S |
| Site 22 | | | | | | | | | | | |
| Site 23 | M | | M | | | | | | | | M |
| Site 24 | | | | | | | | | | | |
| Site 25 | M | | M | | | T | | | | | M |
| Site 26 | | | S | | | | | | | T | S |
| Site 27 | | | M | | | M | | | | S | M |
| Site 28 | M | | S | T | | M | | | | M | M |
| Site 29 | | | T | | | M | | | T | T | M |
| Site 30 | | | | | | | | | T | M | M |
| Site 31 | S | | | | | T | | T | T | | S |
| Site 32 | | | | | | | | | T | S | S |
| Site 33 | T | | | | | T | | | | T | T |
| Site 34 | | | | | | | T | | T | T | T |
| Site 35 | T | | | | | | T | | | S | S |
| Site 36 | | | | | | T | | | T | T | T |
| Site 37 | | | | | | | | | T | | T |
| Site 38 | | | | | | | | | | | |
| Site 39 | | | | | | | | | | | |
| Site 40 | | | | | | | | | | | |

KEY : Blank = No Plants, T = Trace, S = Sparse, M

# Key to Site Photos

**Red arrows depict landmarks**

May 2023
Pre-removal

**Text boxes list dates photos were taken**

**Yellow arrows depict remaining hazards**


**Site numbers may be listed on photos**

- Bulleted details refer to observations from May 1st 2024.
- Photo Credits: Little Bear Environmental unless otherwise noted.

# SITE 1

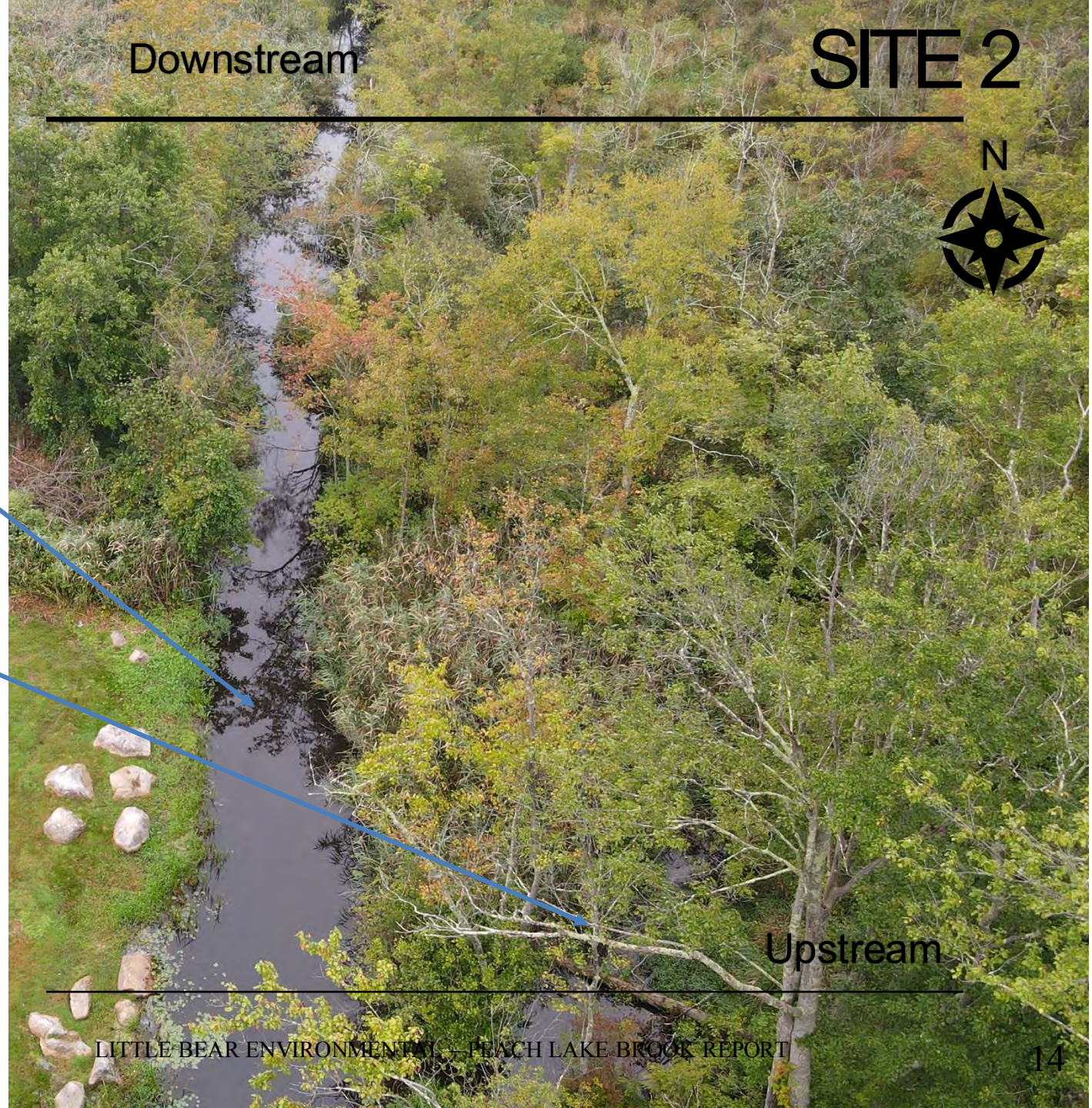
May 2023
Pre-removal

May 2024
Post-removal

- Mouth of Lake Outlet
- No Nuisance densities

Sept 2023
Pre-removal

- At site 2 the channel of Peach Lake Brook splits into two and then rejoins, with an island formed in the middle.
- The western channel is the original path of the brook.
- An eastern channel was dug in 2016 to reduce the height of the lake, although proved ineffective due to the vegetation and debris stalling flows throughout the brook.
- Drone Photo: Little Bear Environmental (pre-removal)



Sept 2024
Post-removal

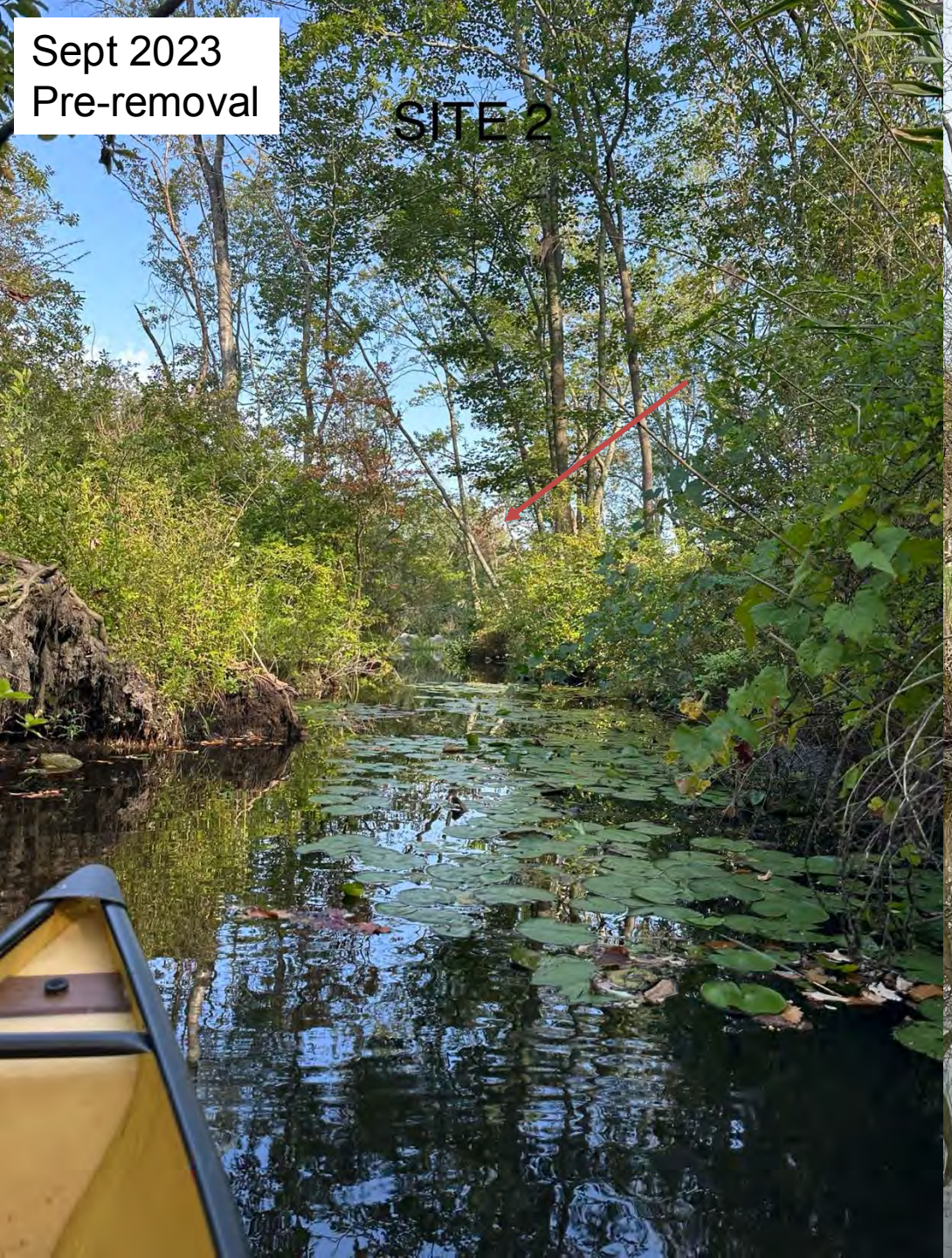
# SITE 2

- The western channel is the original path of the brook.
- The dam pictured was built in the late 1890's to set the height of Peach Lake at its historical level*.
- The Top of the dam was typically 1-2 feet below the waters surface before the brook was cleaned out.
- The top surface of the dam is the zero reference for the lake height gauge shown in Slide 1.

*southeast-ny.gov/DocumentCenter/View/4737/09-07-21-Town-NS-to-Town-SE---Cobb-Road---Peach-Lake

May 2024
Post-removal

- Photo showing the eastern channel with the unauthorized makeshift dam (left) and the original channel with the historic dam (right).





# SITE 2

- A haphazard dam was constructed using rocks, debris and bags of crushed stone, following the conclusion of the project work on April 28, 2024.
- Not part of nor authorized by the project. Constructed by an unknown person.

- A makeshift dam has been constructed along the eastern branch of the channel using bags of rock, blocking water flow
- This inhibits movement of fish through the channel
- This may obstruct organic debris from passing through the channel during storm events
- Filamentous algae mats have already begun to accumulate in the stagnant water
- The existing permits do not allow the construction or removal of structures
- Boats may not pass over this and will be forced to portage here or on the historic dam side to enter the brook
- Water depth on May 1st would not allow passage of boats of any kind without portage over the dam


Sept 2023
Pre-removal
SITE 3


May 2024
Post-removal



# SITE 4



# SITE 5



# SITE 6

Sept 2023
Pre-removal

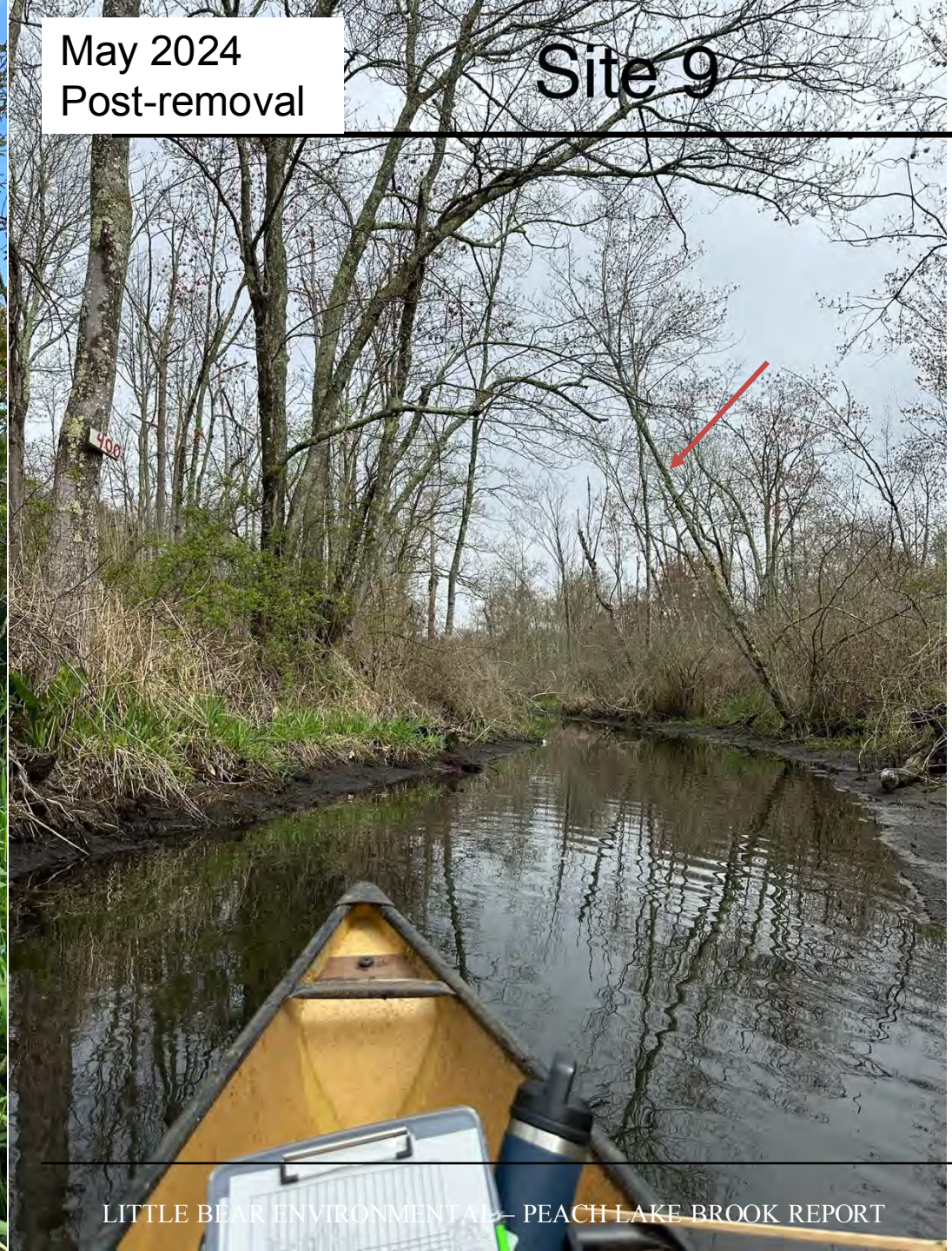
SITE 7

May 2024
Post-removal

# SITE 7

# SITE 8





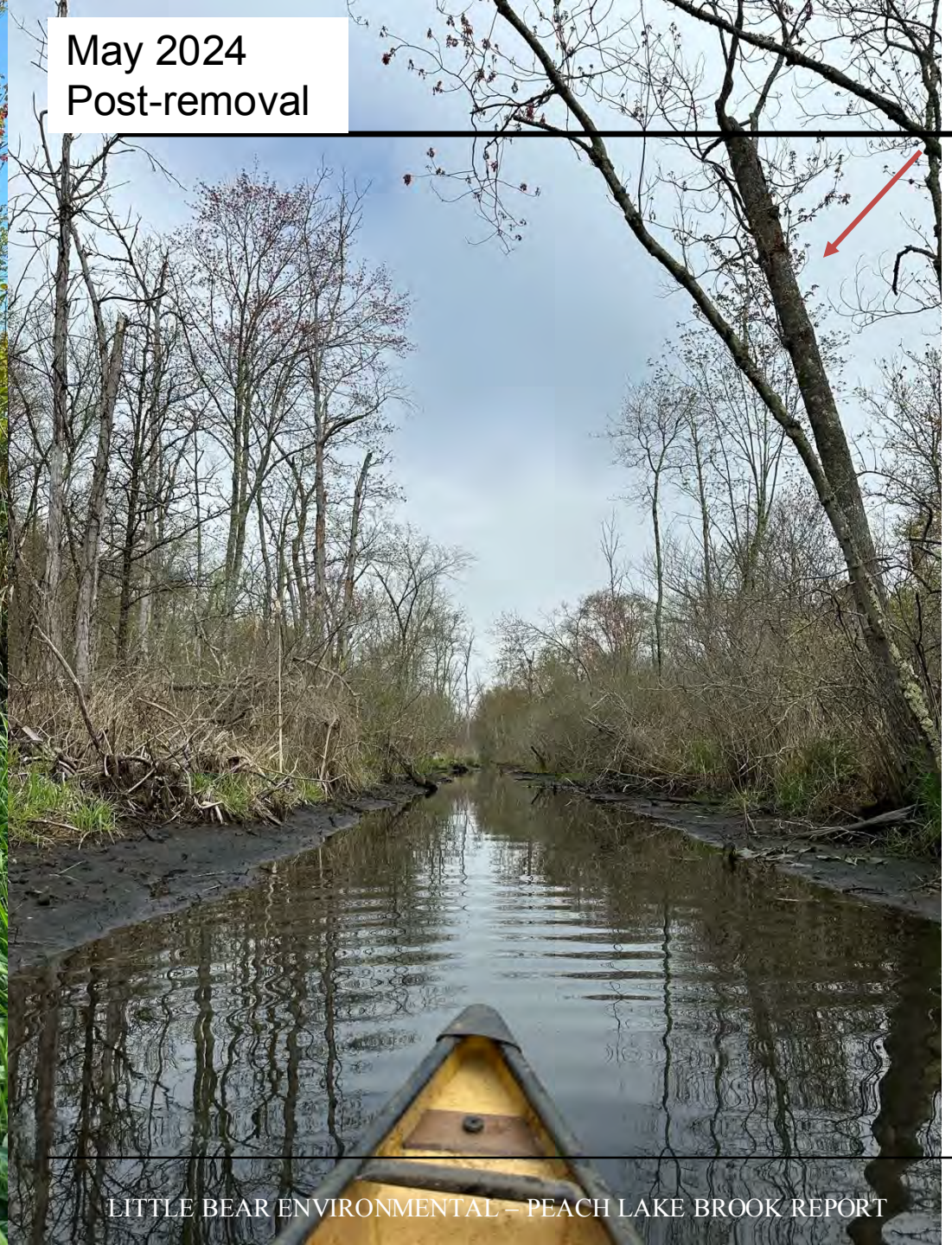

# SITE 9

Sept 2023
Pre-removal

SITE 10

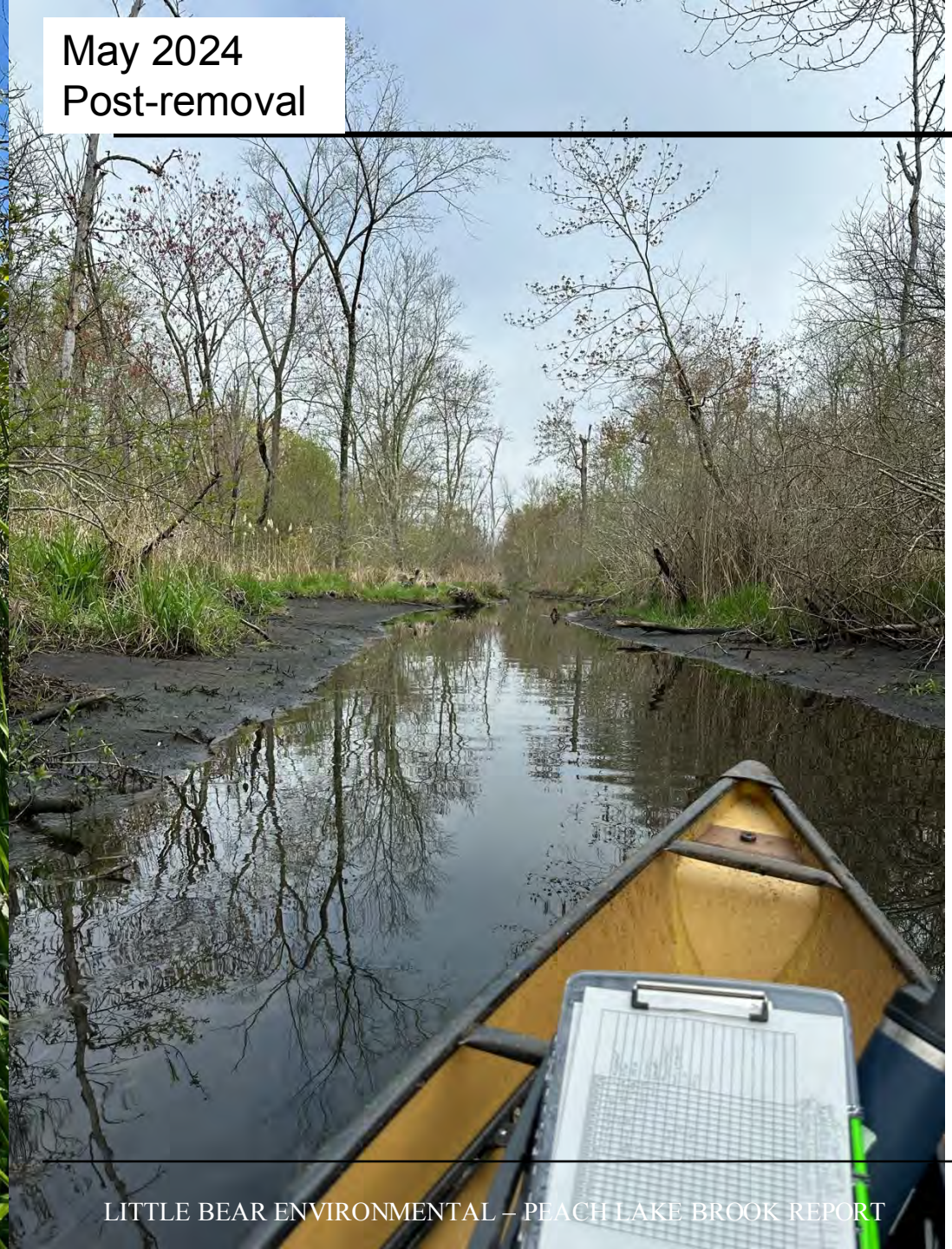
May 2024
Post-removal

# SITE 10

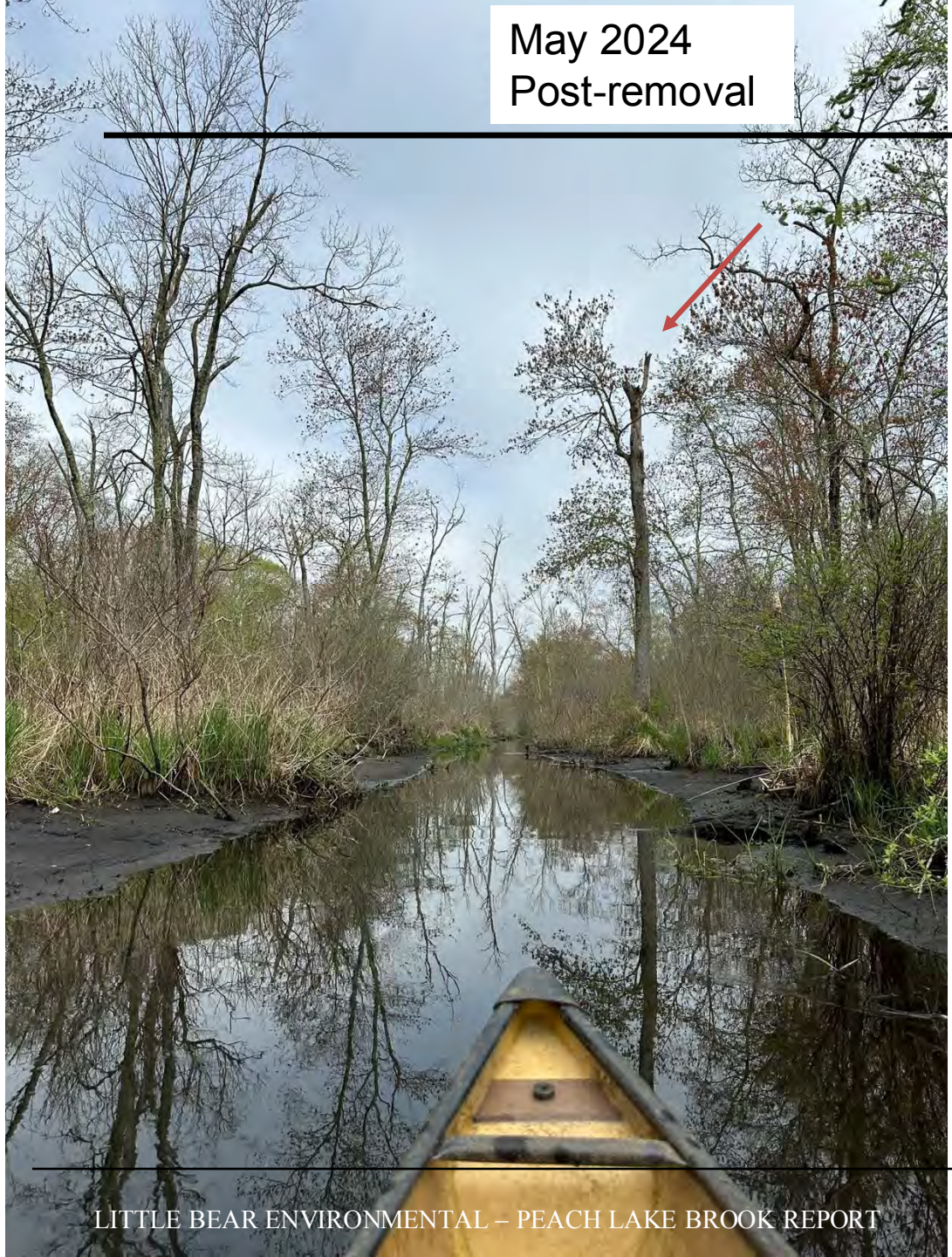




# SITE 11


Sept 2023
Pre-removal
SITE 12


May 2024
Post-removal


Sept 2023
Pre-removal


May 2024
Post-removal

# SITE 14

May 2023
Pre-removal


- No Nuisance densities

Nov 2023
Post-removal



# SITE 15

May 2023
Pre-removal

May 2024
Post-removal

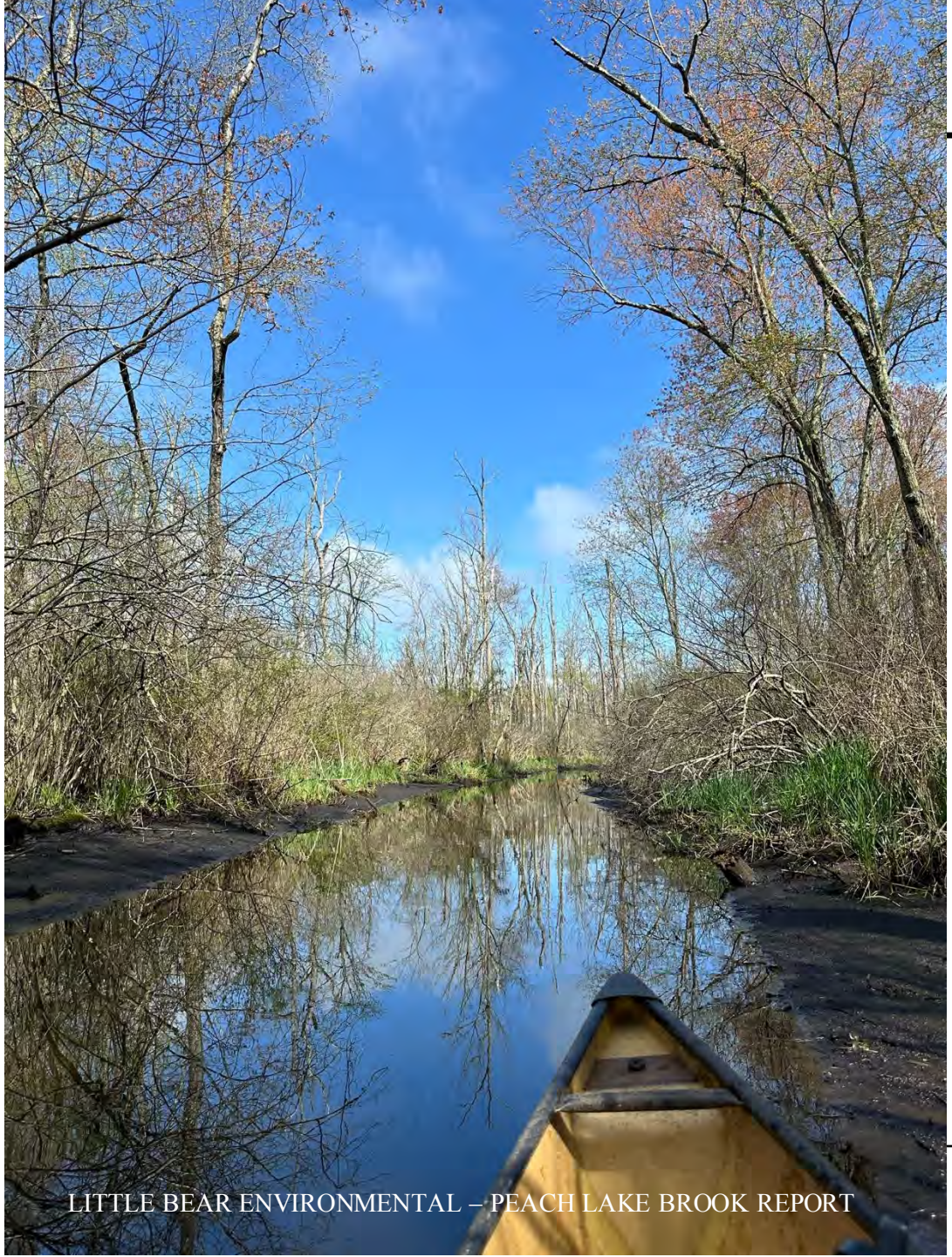
# SITE 16



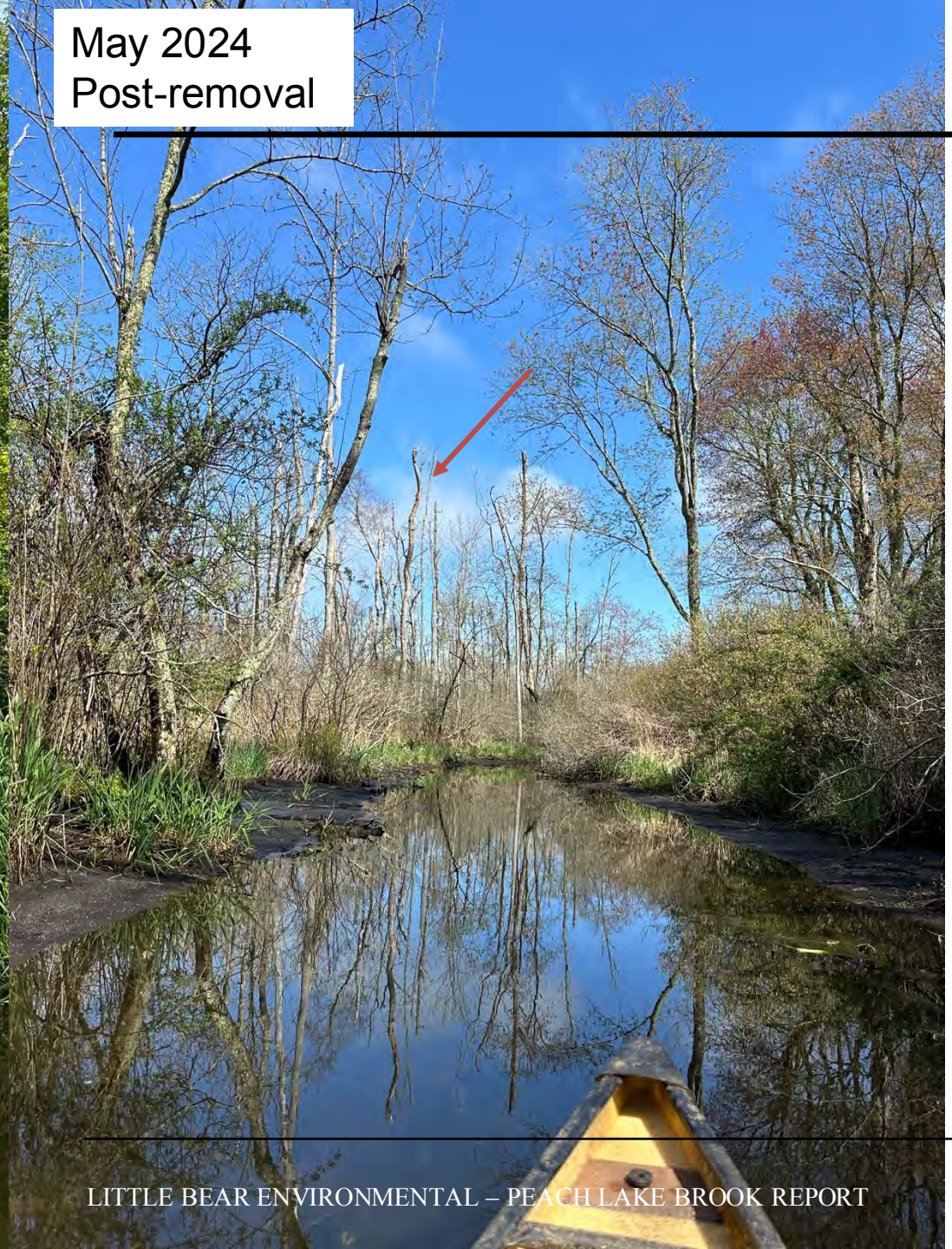
# SITE 17



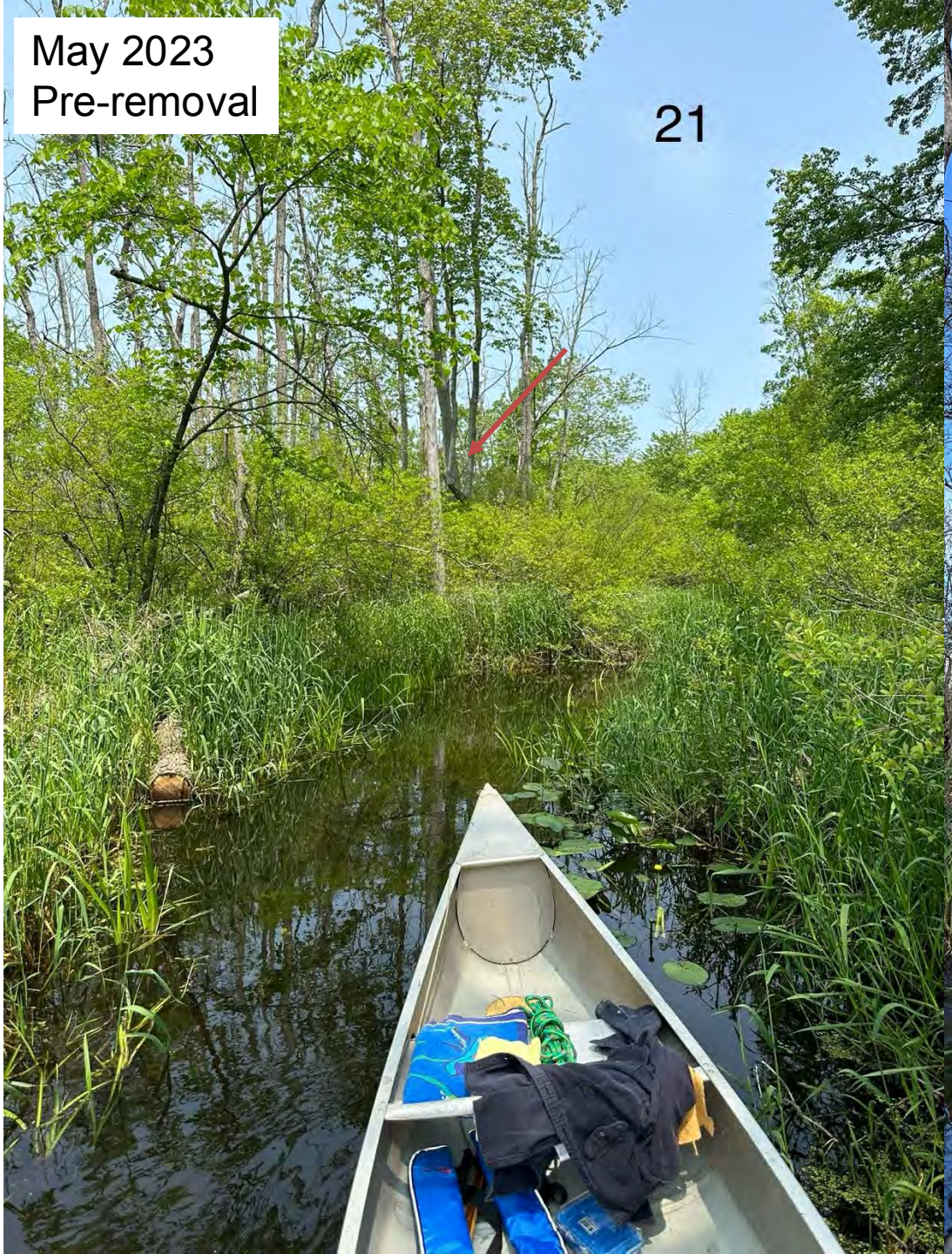
# SITE 18

# SITE 19


# SITE 20

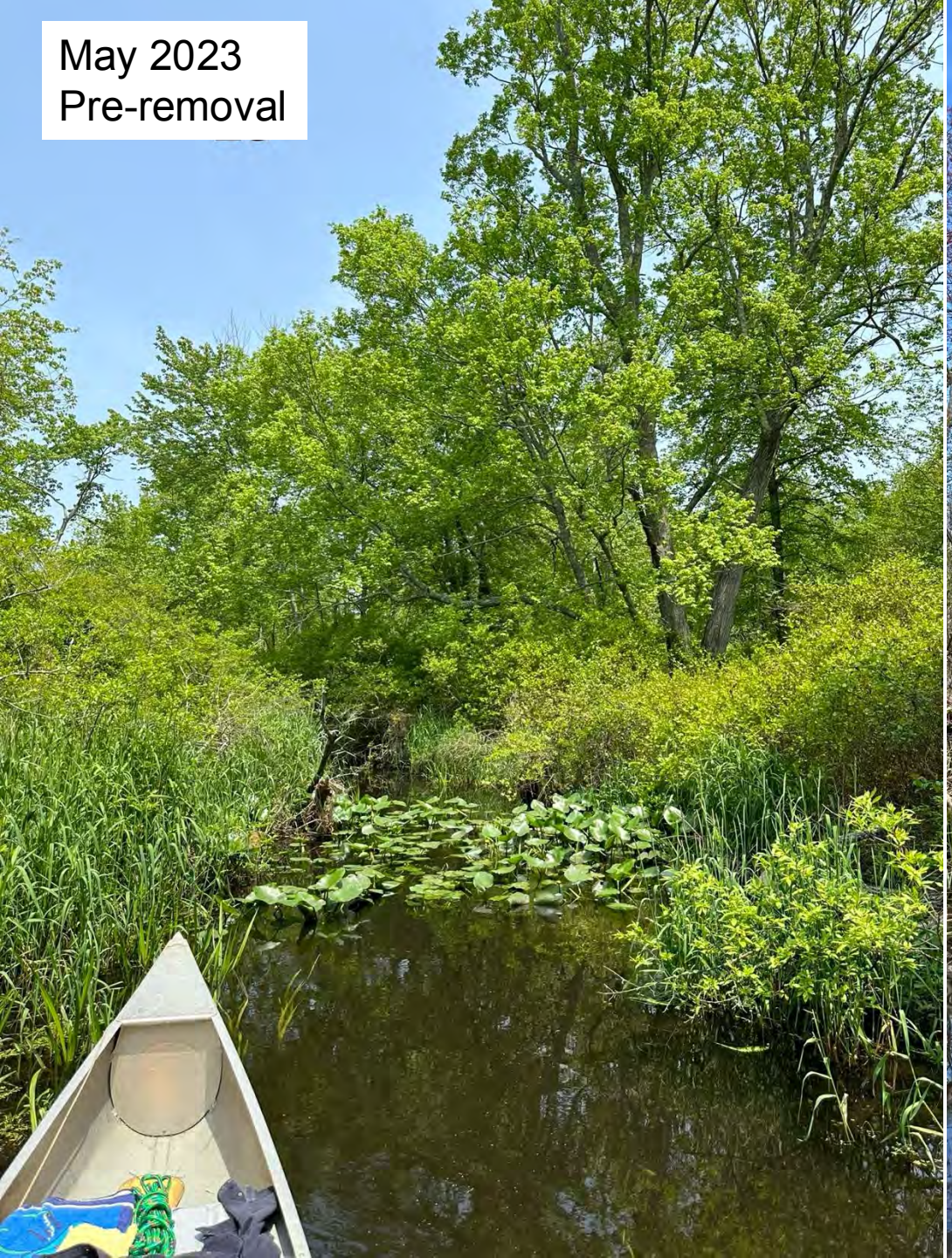




# SITE 21

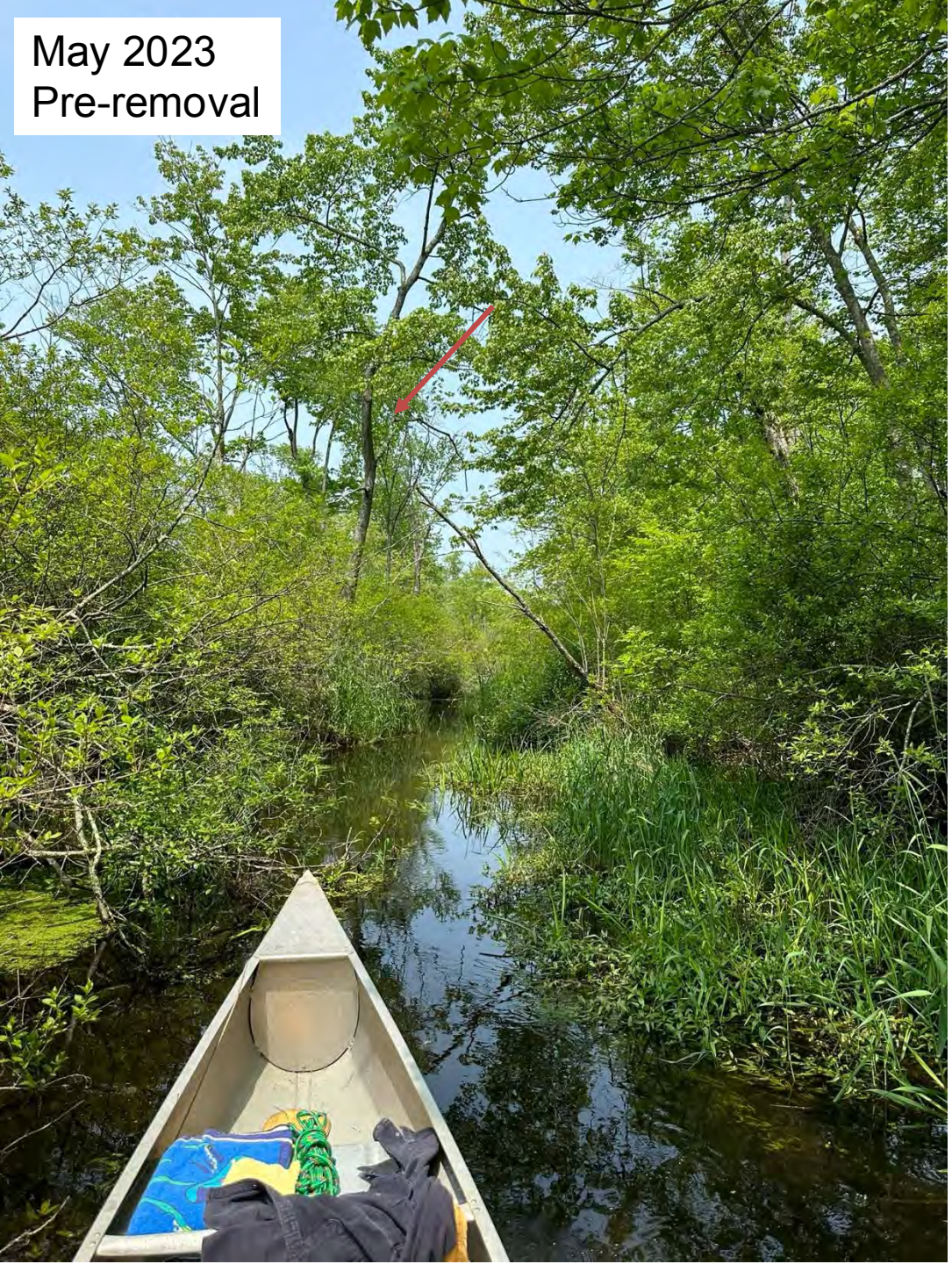


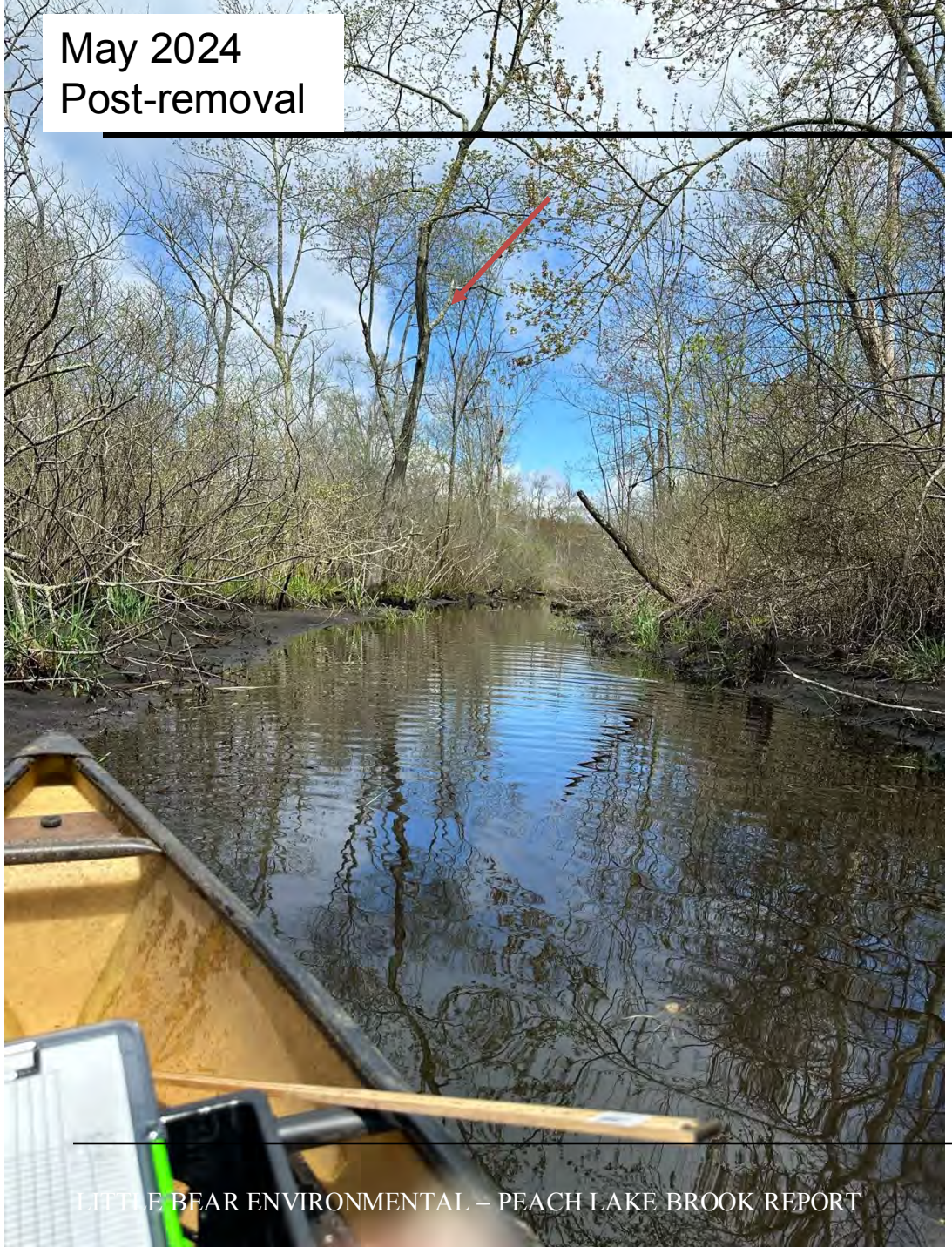
# SITE 22





# SITE 23




# SITE 24



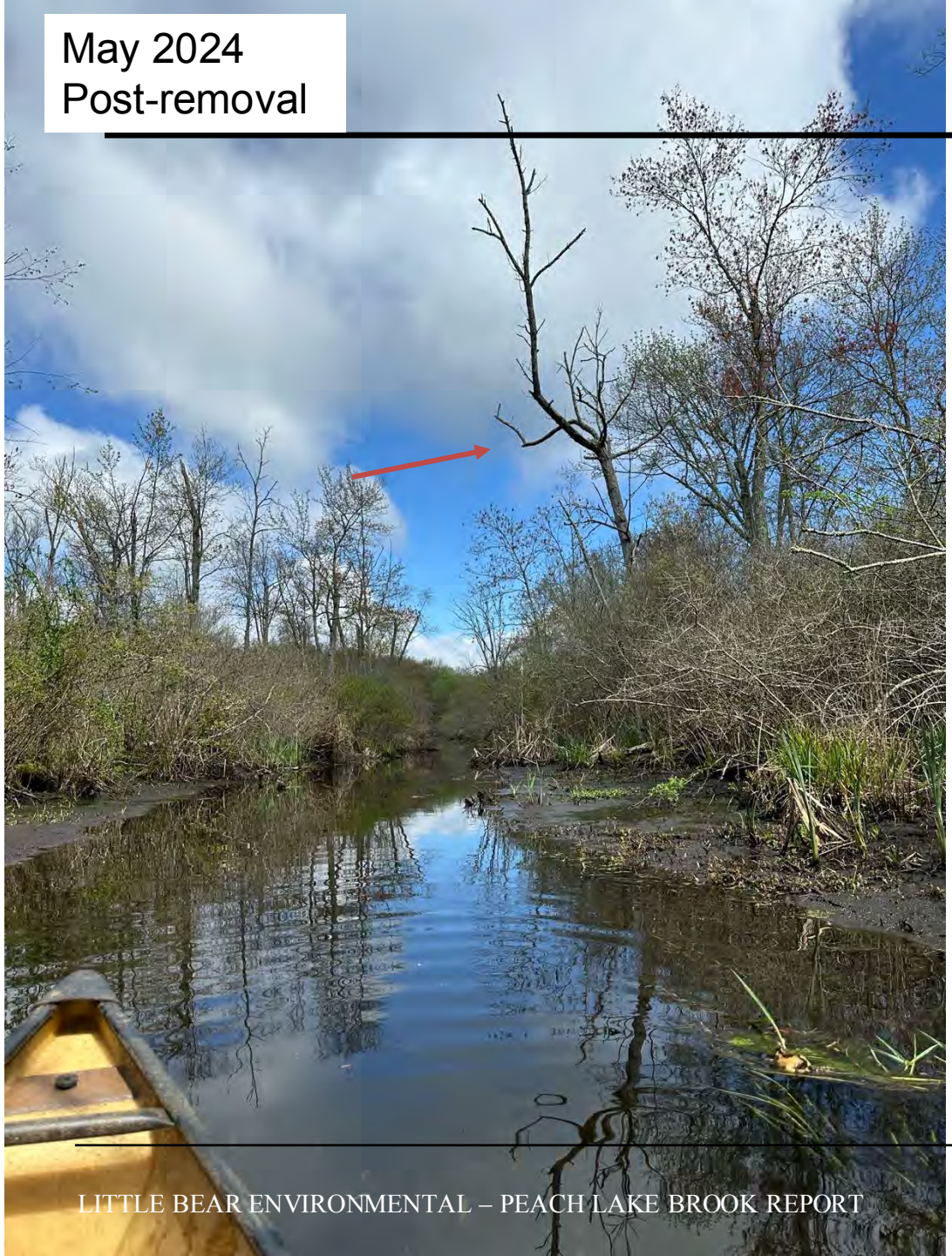
# SITE 25

May 2023
Pre-removal

26

May 2024
Post-removal

Site 26


# SITE 27

# SITE 28



Sept 2023
Pre-removal
29


May 2024
Post-removal
Site 29

May 2023
Pre-removal

30

May 2024
Post-removal

Site 30

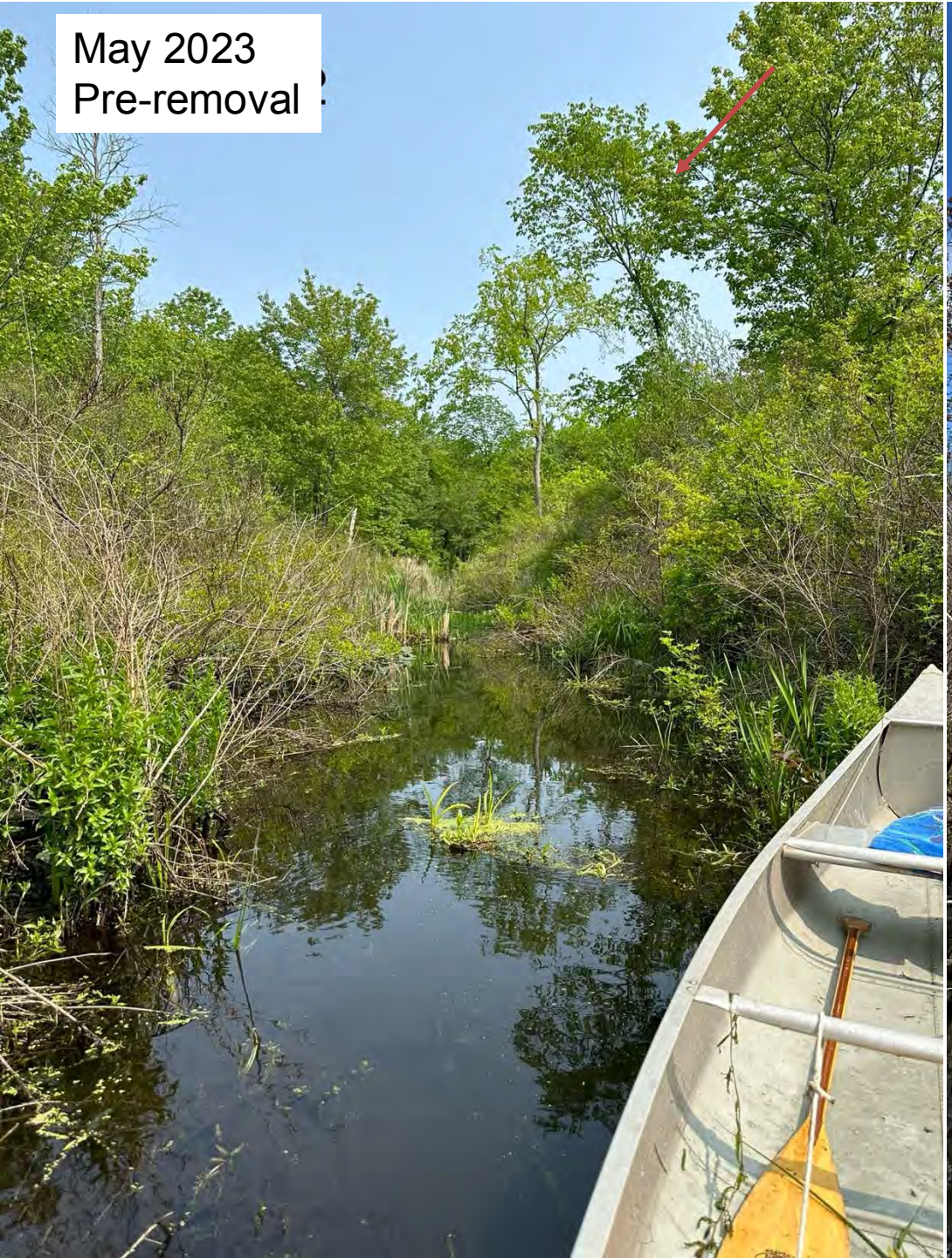
- Significant emergent vegetation removed, trace vegetation still present within channel

May 2023
Pre-removal


May 2024
Post-removal

# SITE 31

- Significant emergent vegetation removed, sparse to moderate vegetation still present within channel
- Large woody debris present





# SITE 32



# SITE 33

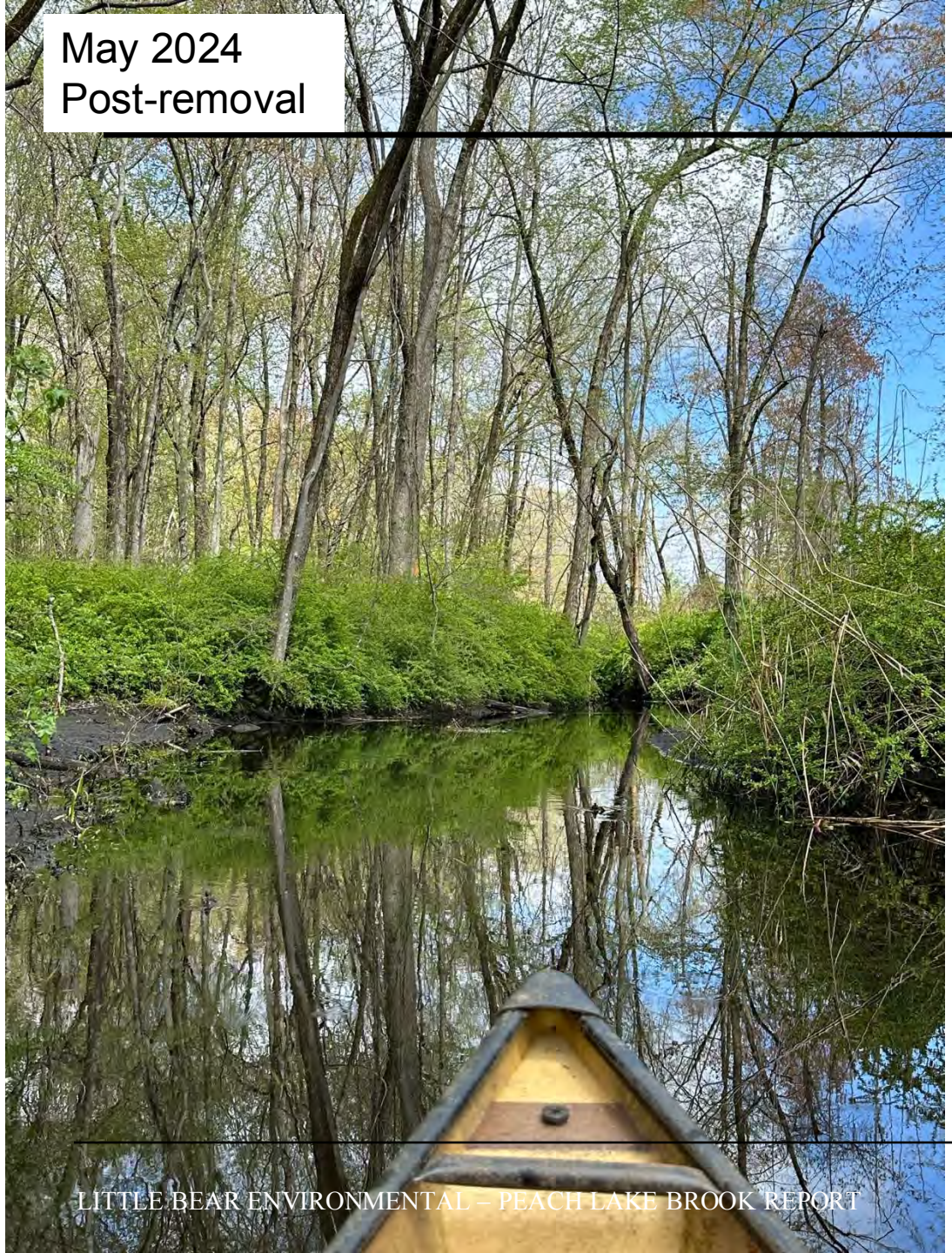


# SITE 34

- No Nuisance densities
- Large woody debris removed from channel
- Water no longer stagnant
- No floating plants accumulating



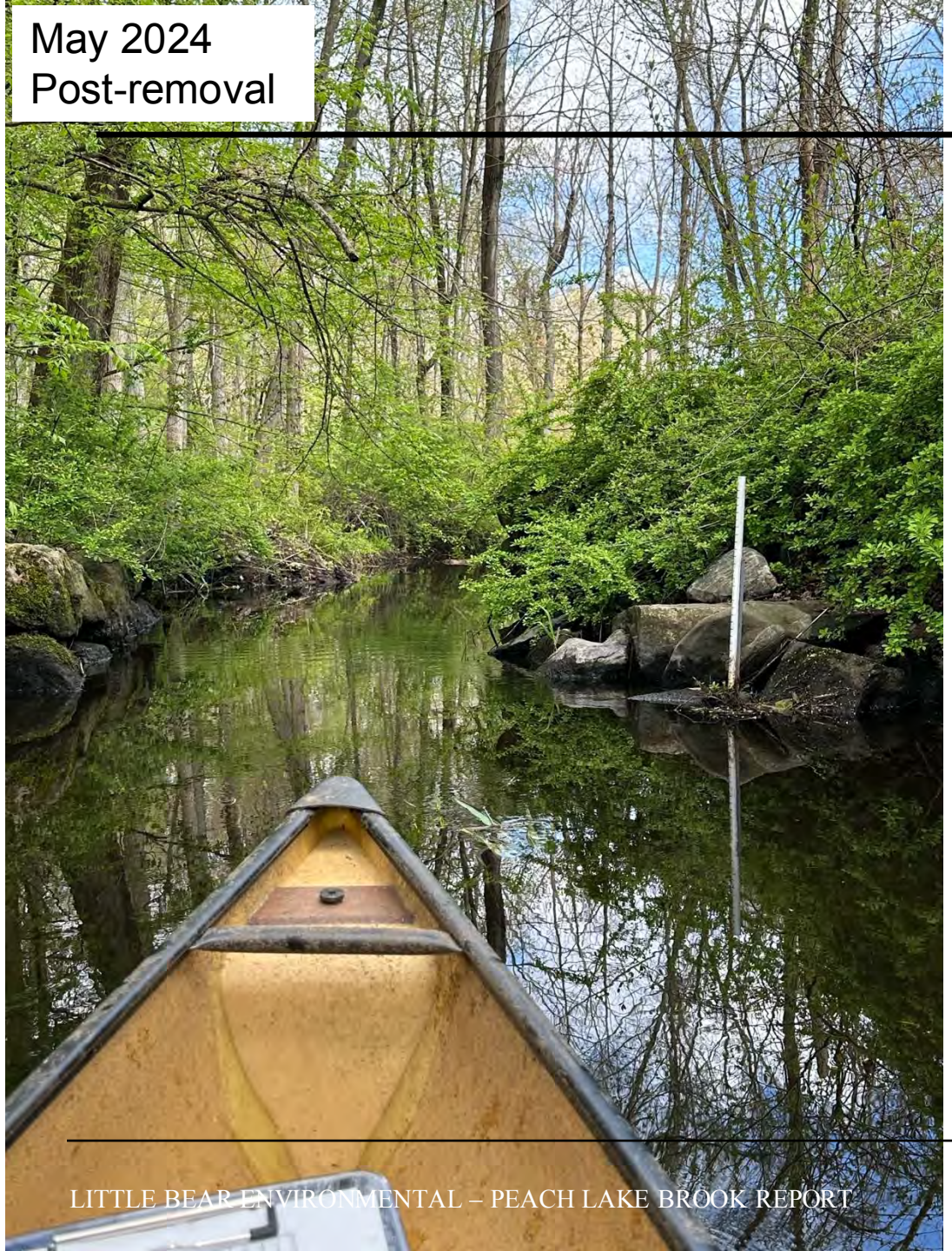
# SITE 35

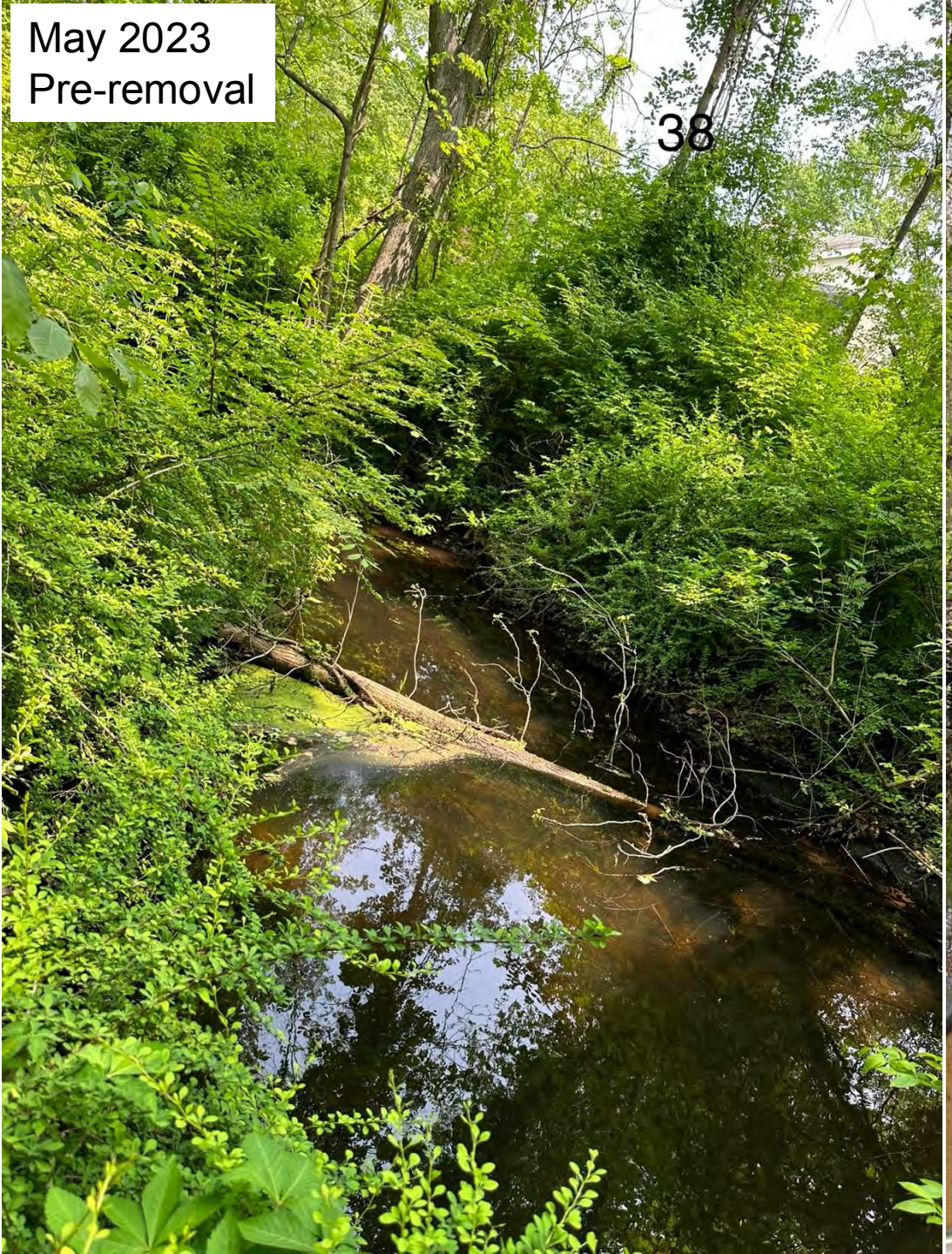

# SITE 36

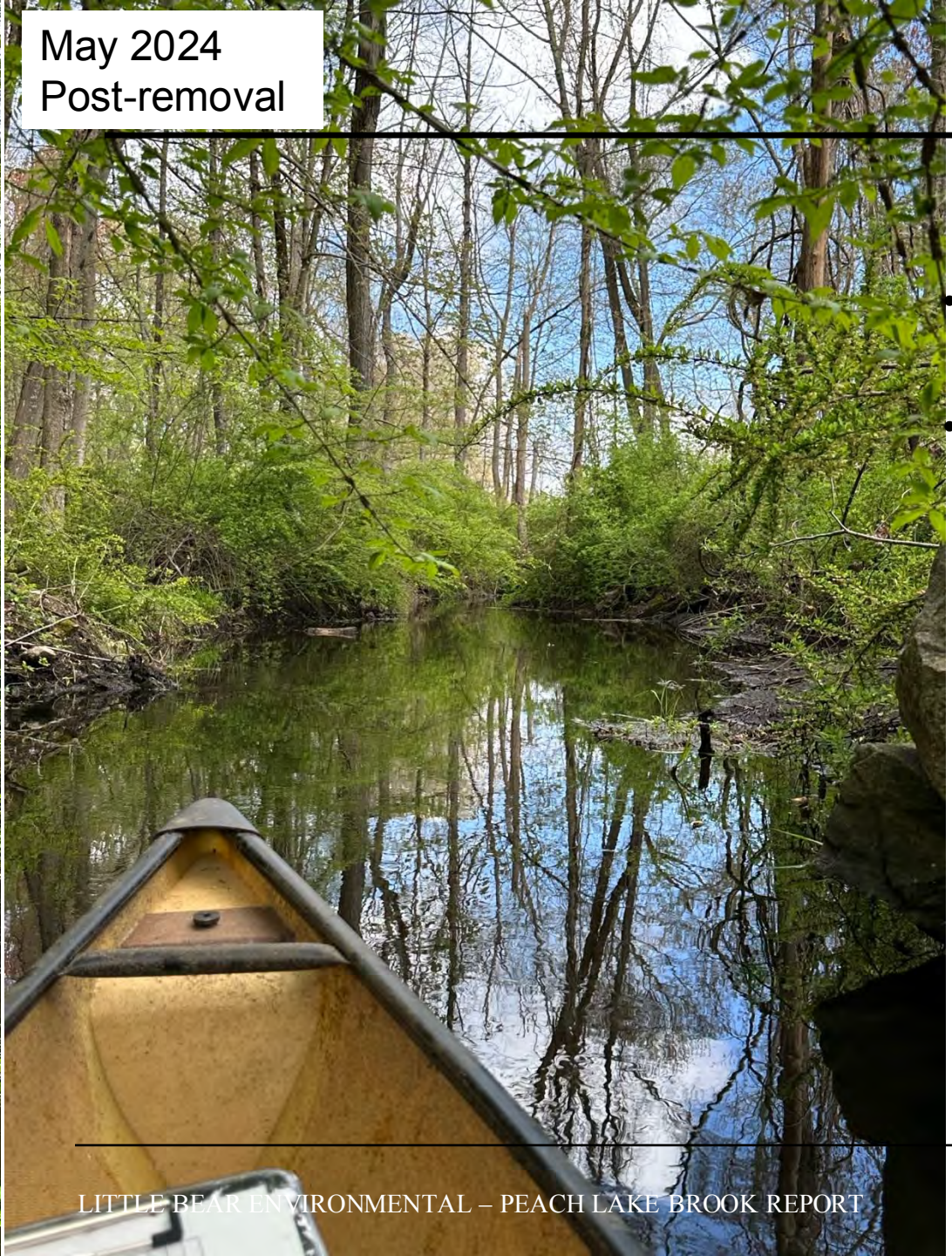
- No Nuisance densities
- Large woody debris removed from channel

# SITE 37

- Downstream water depth within Brook is comparable to pre-management depths



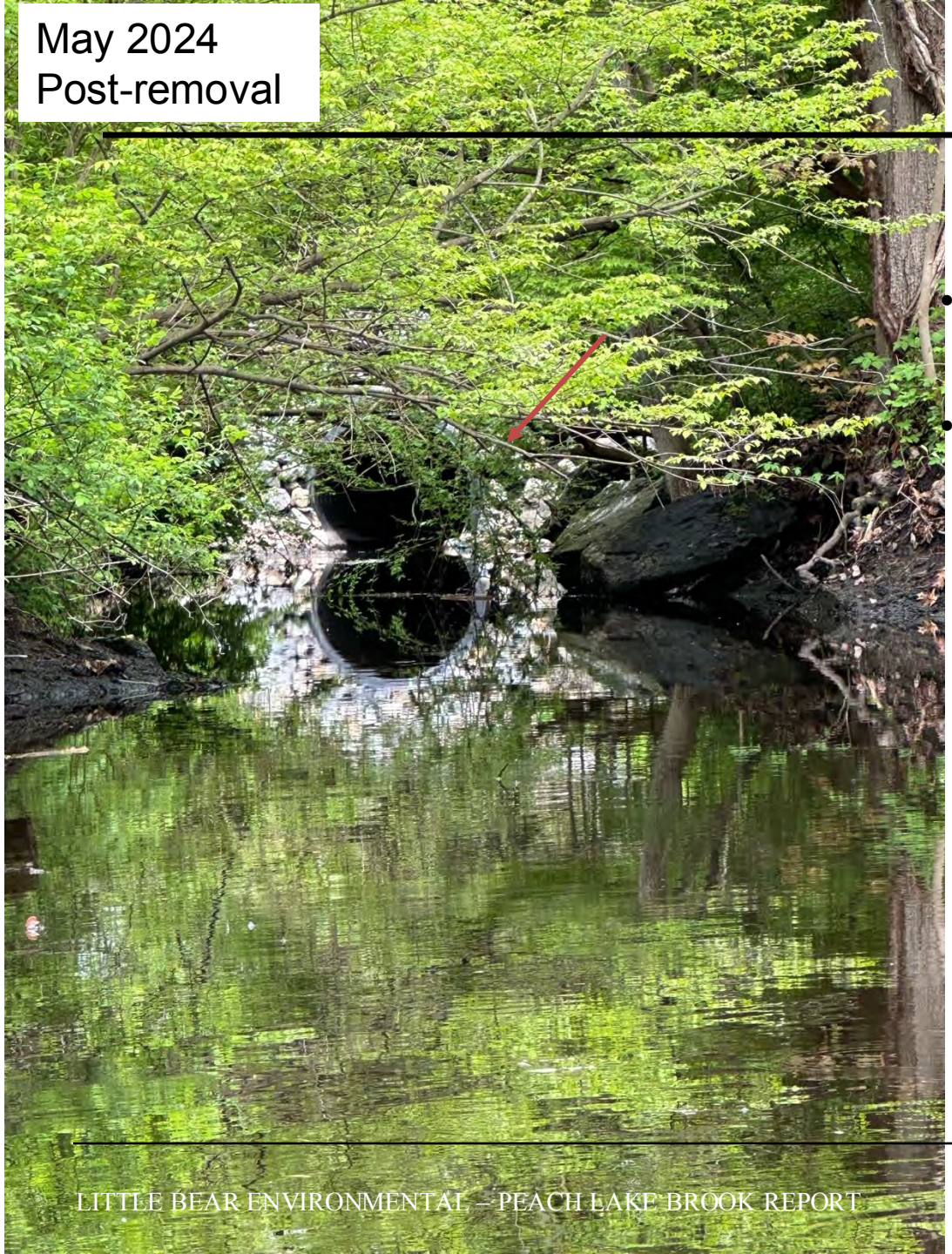

# SITE 38

- No Nuisance densities
- Large woody debris removed from channel

# SITE 39

May 2023
Pre-removal


May 2024
Post-removal


# SITE 40

- No Nuisance densities
- Culvert has been upgraded since 2023 survey and now has two pipes.

# SITE 40

Photo taken April 28th, 2024, courtesy of Bradley Schwartz, showing completed upgrade to culvert with two pipes.

# NEXT STEPS

1.) Continue to monitor known brook sites for presence of curly leaf pondweed and Eurasian watermilfoil to prevent nuisance densities from returning.
2.) Boat launch has served as transfer site for vegetation removal. Continue to monitor shoreline for Curly leaf pondweed germination in May 2025
3.) Evaluate potential impacts to environment and recreation from new sandbag dam that was created within the Brook.
4.) Evaluate whether control of invasive Eurasian watermilfoil is feasible and whether control would benefit users of Peach Lake.

# Contact Information

Nicole White, Certified Lake Manager
Owner, Little Bear Environmental Consulting, LLC
Nicole@littlebearenvironmental.com
Phone (518)944-4021
www.littlebearenvironmental.com

Little Bear Environmental