



Pawtuckaway Lake Milfoil Status and Outlook

Nottingham BOS Presentation

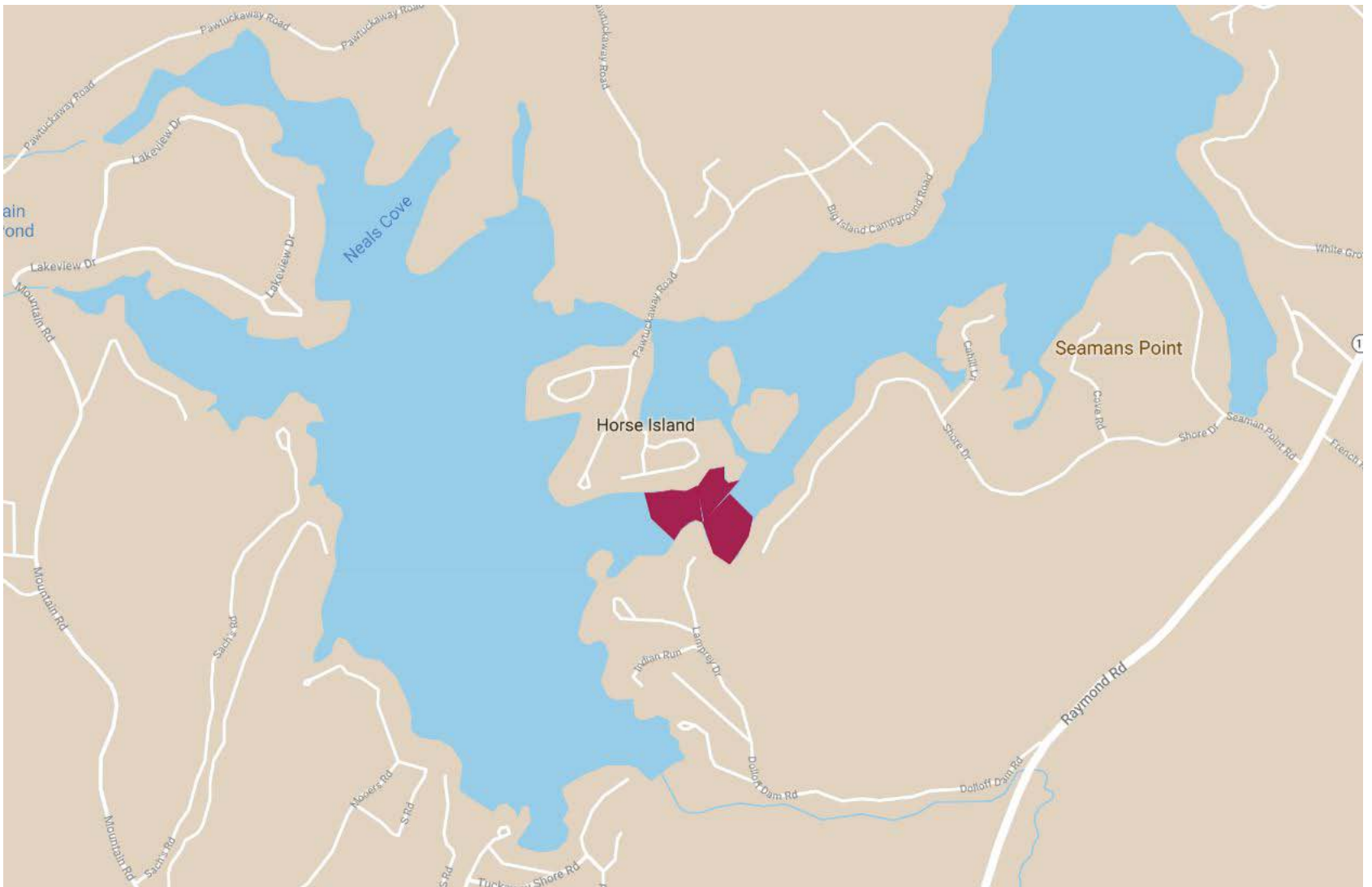
October 17, 2022

Milfoil History

- First discovered near Horse Island launch in 2015
 - Probably introduced by park visitor in 2013-2014
- Milfoil Team started in 2015-2016
- Milfoil now found in 16 areas, ranging from a few plants to thick patches

Milfoil Team

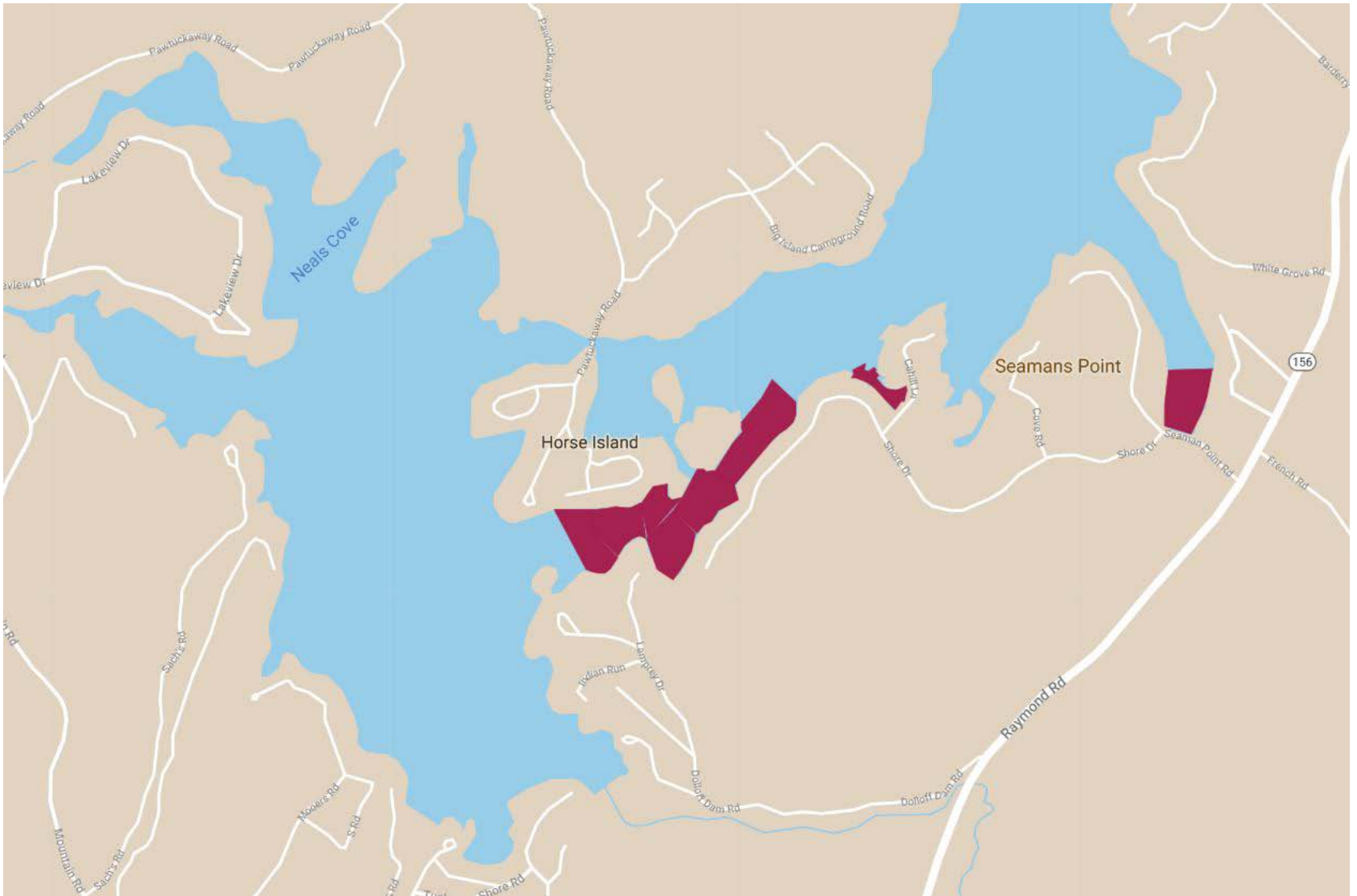
- Milfoil Team
 - 7 Search Divers (SSA and SCUBA)
 - 16 Support Kayakers
 - Only 2-3 Searchers per dive this year
 - Only 4 Certified Weed Control Divers vs 6 last year
 - Only 2 active WCDs
 - 28 search dives YTD and 29 extractions YTD
 - All Volunteers until 2022
 - 2020 – 688 Hours
 - 2021 – 921 Hours
 - 2022 YTD – 832 Hours
 - Does not include Lake Hosts or Weed Watcher volunteer time



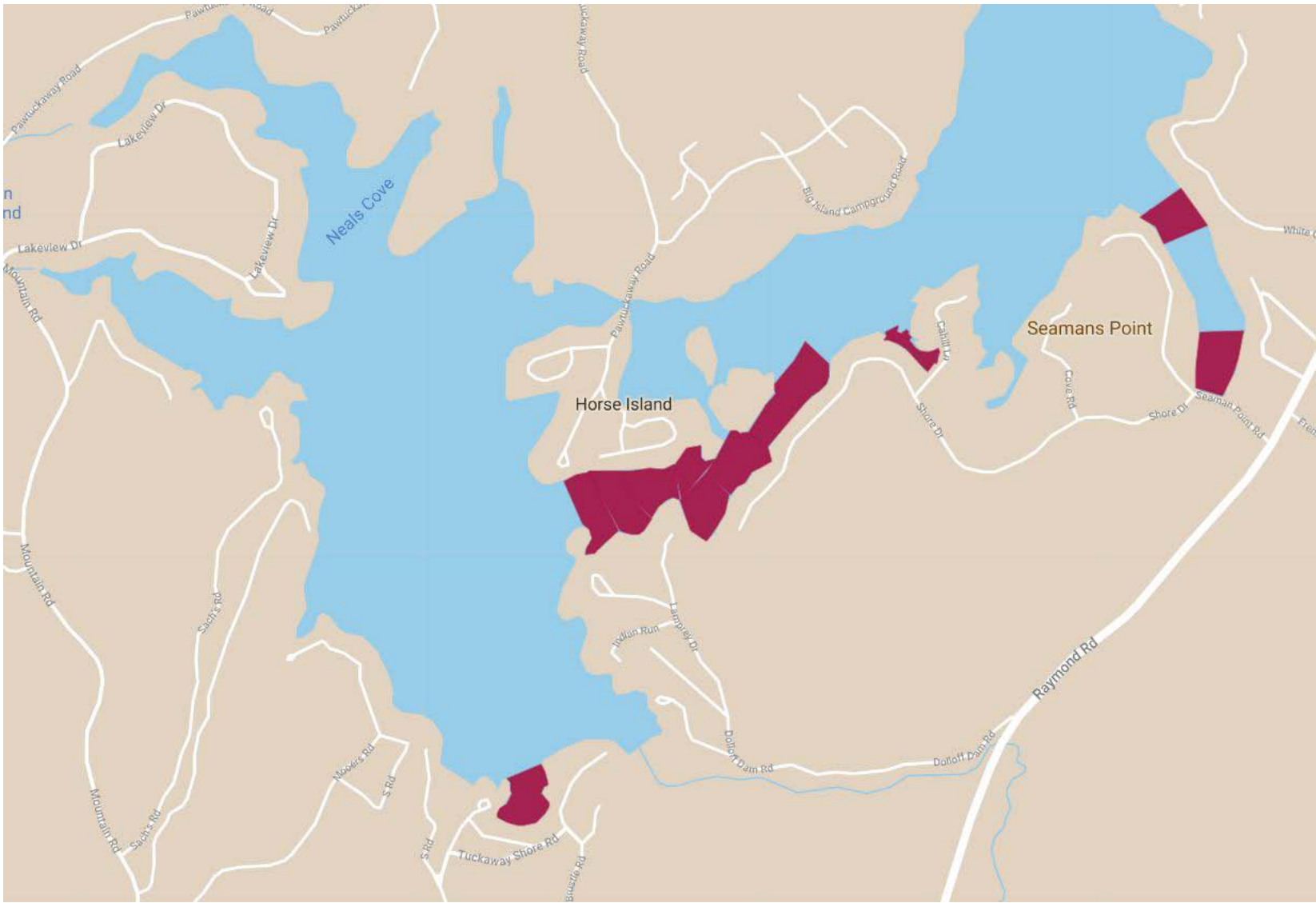
Milfoil 2017



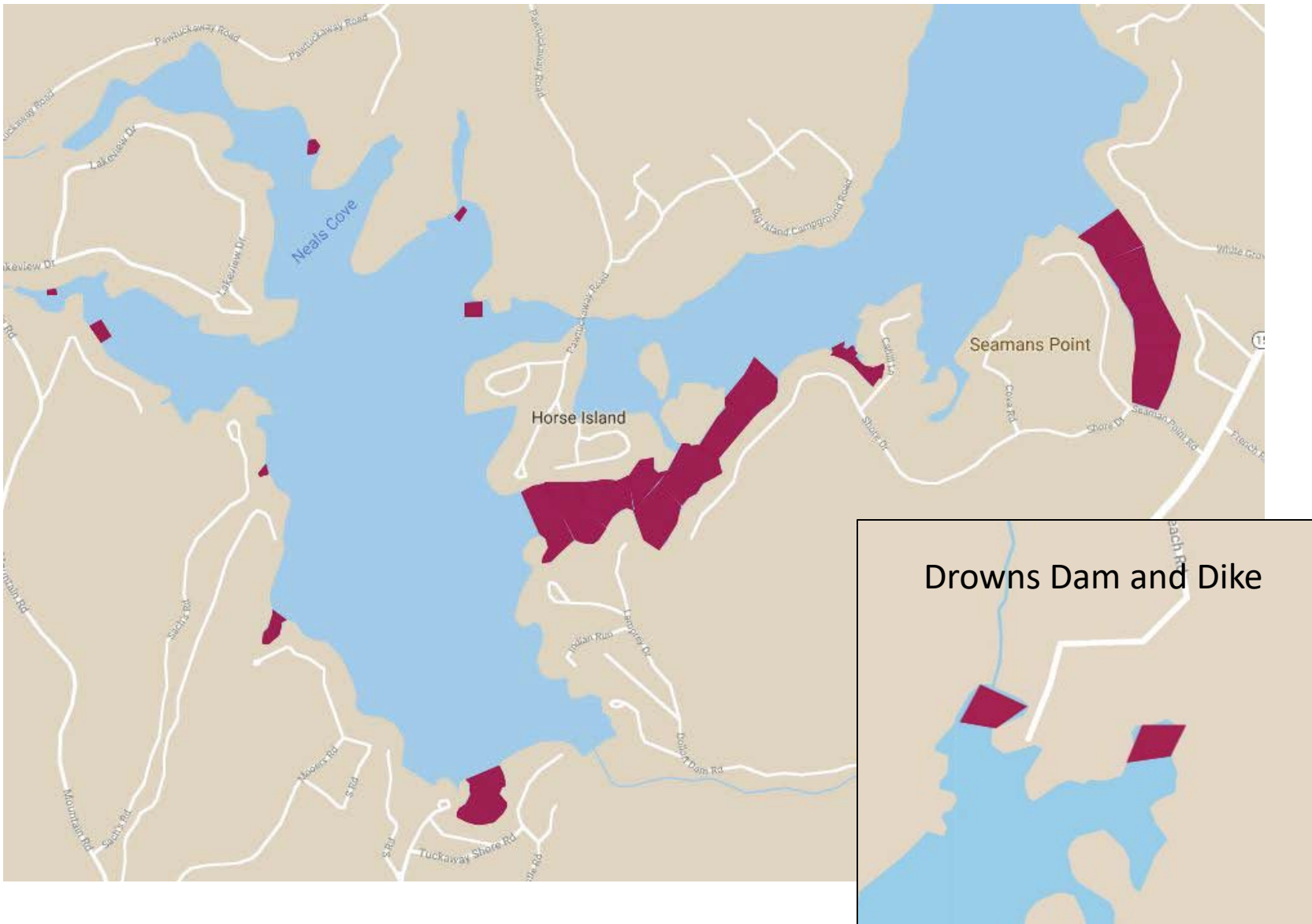
Milfoil 2018



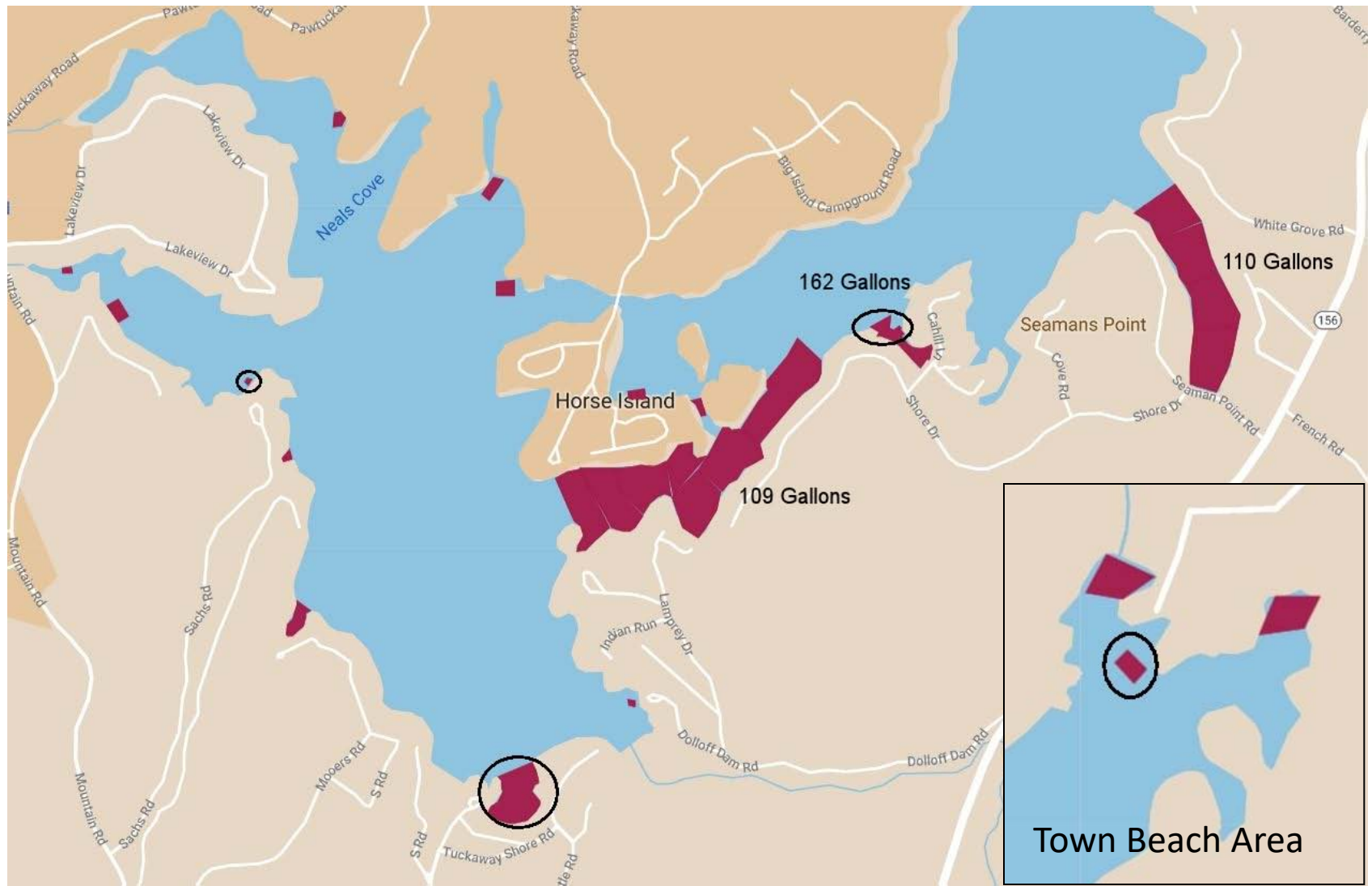
Milfoil 2019



Milfoil 2020



Milfoil 2021



Milfoil 2022

Circled Areas are new this year
 YTD amounts shown for significant areas

Search Techniques

Diver Searches

- Primarily dependent on underwater searches for known milfoil areas
- Divers can search 1 acre per hour per diver
- Currently searching about 70 acres 1-3 times per summer
- Limited visibility (3'-5') and other factors allow only 50-75% coverage of a given area
- Still spending more time searching than extraction
 - 2022 YTD 213 hours searching vs 165 hours extracting
- Use Weed Watchers (surface observation) to monitor areas without known milfoil

Search Techniques

Aerial Drones

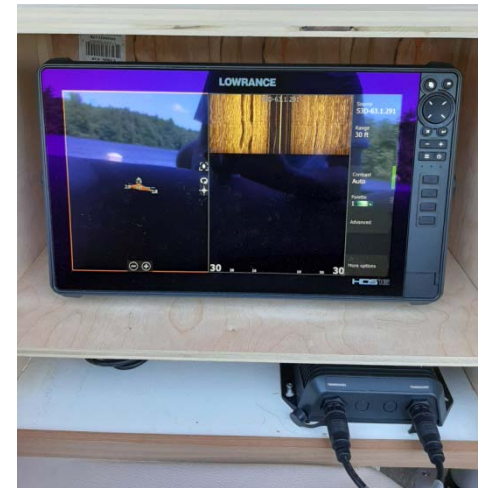
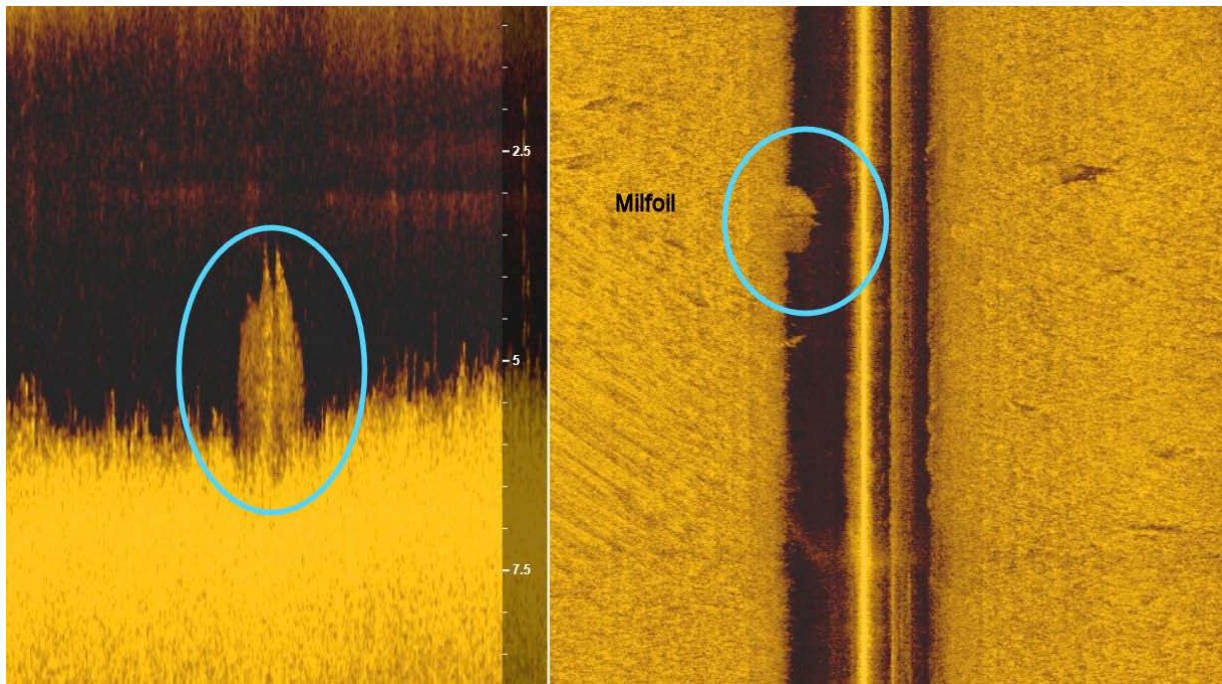
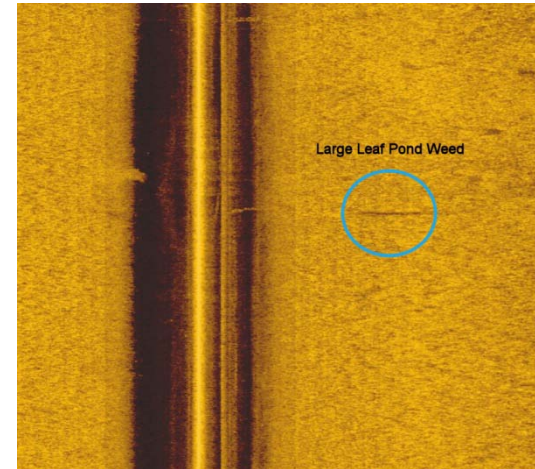
Useful for locating large plants for a few weeks after ice-out while lake is drawn down



Search Techniques

Sonar

Good in early summer to survey lake areas not known to contain milfoil to check for possible new infestations



Search Techniques

Light Bar

- New for 2022
- Light lowered into water at night to locate milfoil
- Search known and potential new milfoil areas more quickly than diving



Removal

- Extraction performed by Certified Weed Control Divers
 - 6 volunteer WCDS last year
 - 4 volunteer WCDs this year but only 2 doing 90% of the removals
 - Due to lack of volunteer WCDs, had to pay divers for emergency situations
 - 26 paid hours YTD vs 139 volunteer hours for extractions
- No need (yet) for more involved measures
 - DASH
 - Herbicides

Milfoil Removed

- 2015 – 35 gallons
- 2016 – 25 gallons
- 2017 – 15 gallons
- 2018 – 11 gallons
- 2019 – 132 gallons
- 2020 – 65 gallons
- 2021 – 316 gallons
- 2022 YTD – 417 gallons

PLIA Cost History Overview

- 2016
 - Milfoil Team Formed
- 2018
 - First hookah purchased - ~\$1500
 - Cost offset by Lake Hero Award Grant
- 2020
 - Side scan sonar purchase - \$5500
 - Cost offset by LRAC Grant
 - Spare SCUBA Tanks - ~\$400
- 2021
 - Second hookah purchased - \$1300
- 2022
 - Light Bar - ~\$200
 - Contract Divers - \$1300 YTD
- Annual Expenses
 - Diver Insurance
 - Misc equipment
 - Dive Flags, Collection Bags, Tank Fills, WCD Training
- Non Cash Donations/Assistance
 - Hookah Batteries – Lake Resident
 - Tank Fills – Nottingham Fire Dept
 - Diver Equipment- Paid by volunteers, \$200-\$1500 per diver

Communications

- Lake “Stakeholders”
 - Lake Residents
 - PLIA
 - Town of Nottingham
 - NH DES
 - NH Fish and Game
 - NH State Parks
- Try to keep all parties informed of current lake situation

Plans

- Continue using divers to search and remove milfoil
 - Search and removal season is May-October
- Continue using sonar, drones, and light bar for searching
- Continue to try to recruit new team members
- Applied for NH DES grant for 2023
- NH DES survey next year to determine any additional mitigation actions
 - Contract divers
 - DASH
 - Herbicides

Summary

- Milfoil Spreading to more locations
- Removal Amounts Increasing
 - Up 32%, 2022 vs 2021
- Few dense areas of Milfoil
 - Two areas in 2021 and two in 2022
 - Possible candidates for DASH or herbicides
- Demands slowly outstripping our volunteer capabilities
- Weed Watchers critical in monitoring overall lake for new areas of invasives
- Lake Hosts critical to keeping additional invasives out of the lake