

Dutch Hollow Lake – Aquatic Plant Summary 2023

Summary of full report (19 pages) “Aquatic Plant & Hybrid Watermilfoil Surveys for Dutch Hollow Lake”

EXECUTIVE SUMMARY

- ✓ Herbicide treatment in Woodland Bay was effective. There were 25 samples points with Hybrid watermilfoil (HWM) in 2022 and only 9 sample points with HWM in 2023.
- ✓ The HWM bed acreage decreased in 2023 to 20.18 acres from 38.45 acres in 2022.
- ✓ Diver Assisted Suction Harvesting (DASH) was effective as small-scale control of HWM in localized areas.
- ✓ The native plant community in the lake is considered to be “High Quality”.

Aquatic Plant Management Tasks Completed Before Surveys

- Herbicide treatment using ProcettaCOR at 10 acres in Woodland Bay June 5 (Fig. 3).
- DASH used to remove HWM from various locations for 8 days between July 10 and 20 (Fig.1).
- Manual removal used to remove HWM for 4 days in July.

Surveys to Track Effectiveness of Management Tasks

- Whole-lake Point-Intercept (PI) Aug. 11-12 (gauges the entire plant community).
- Hybrid Watermilfoil (HWM) Bed Sept. 13 (estimates acreage of HWM and bed density).
- Pre-treatment Sub Point-Intercept (subPI) Sept. 13 (measures HWM within beds before treatment).

Native Plant Community Results

- Maximum depth of plants was 28 feet.
- 24 species of native plants documented.
- The aquatic plant community (including native and non-native species) is considered “high quality”.
- Most common native species were flat-stem pondweed and forked duckweed.
- For the first time, whitewater crowfoot (a native plant) was detected. It may have always been present but not detectable due to low occurrence. Whitewater crowfoot is susceptible to 2,4-D and ProcettaCOR.
- **Chi-square 2011vs2023→ statistically significant (SS) increase in 4 native species** (wild celery, forked duckweed, flat-stem pondweed [pw], & long-leaf pw) and **decrease in 6 native species** (common waterweed, muskgrass, water star-grass, slender naiad, small pw, & Fries’ pw).
- **Chi-square 2022vs2023→ statistically significant (SS) increase in 1 native species** (common waterweed) and a **decrease in 0 native species**.

Non-Native Plant Community Results

- HWM was the most common plant species in 2023.
- HWM frequency was 64%, which is the second highest frequency since surveys began in 2011 .
- HWM was found at sample points ranging from 2ft deep to 25 feet deep.
- The depth range with the highest HWM occurrence was 15.5-20 feet (many sites with HWM were deeper than 15 feet and not causing navigation impairment).
- 1.12 ac. of high density HWM in 2023 (compare to 30 ac. of high density HWM in 2022, Tab 1).
- **Chi-square 2011vs2023→ statistically significant (SS) increase in HWM (Fig 2).**
- **Chi-square 2022vs2023→ no statistically significant change in HWM (Fig 2).**

Figure 1 – HWM Chi-square Graph

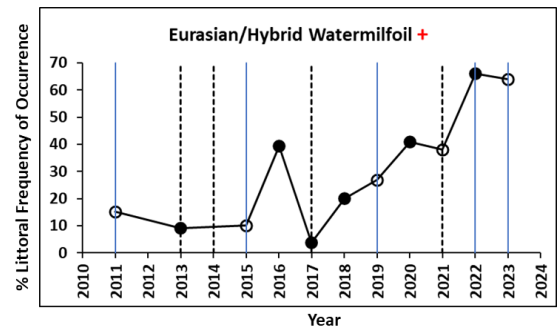


Table 1 – HWM Bed Acreages 2018-2023

	2018	2019	2020	2021	2022	2023
EWM herbicide acres (June)	0.00	9.96	0.00	166.00	1.77	9.90
EWM DASH days (July)	0	10	5	0	7	8
EWM bed acres (August)	18.25	20.05	25.55	5.62	38.45	20.18

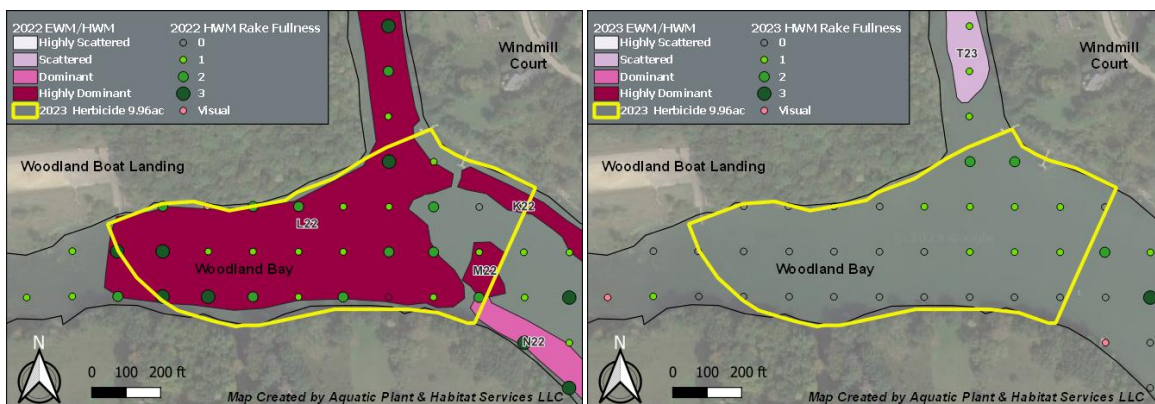
2018-2021 dominant or highly dominant acreage mapped (doesn't include acreage of scattered or highly scattered HWM)

2022-2023 includes all HWM densities (highly scattered, scattered, dominant, and highly dominant).
 Dominant or highly dominant HWM in 2022 was 30.39 acres.
 Dominant HWM in 2023 was only 1.12 acres and there were no beds of highly dominant HWM.

Woodland Bay Herbicide Treatment Results 2023

- There were 25 sample points with HWM in 2022 and 9 sample points with HWM in 2023. This is a statistically significant reduction.
- Highly dominant beds of HWM in 2022 were gone from the treatment area in 2023 (Fig. 3).
- **Herbicide treatment considered effective the same year of treatment** and likely resulted in reduced HWM on a lake wide scale as is observable when comparing HWM in 2022 to 2023 (Fig 4.)
- Sago pondweed (native) was observed growing near the surface in many locations in Woodland Bay (but not causing navigation impairment). Herbicide treatment is not an option for controlling native plant species.

Figure 2 – Maps Comparing Woodland Bay HWM 2022-2023



DASH Results 2023

8 days of DASH was effective as small-scale control of HWM in localized areas. Photos of two locations before (July 10th) and after (Sept 13th) DASH occurred illustrate its effectiveness. Other areas were successful as well, but photos did not capture due to glare or the lake surface was not calm enough for successfully documenting

Figure 3 – DASH Locations & Photos of Successful EWM Reduction



2024 Management To-Do List

Tasks that were included in the WDNR Surface Water Grant Application in November 2023 are noted with an asterisk (*).

- Implement Clean Boats Clean Waters watercraft inspection program at both boat landings, summer 2024*
- ProcellaCOR treatment in Remington Bay up to 4 acres, May or June 2024*
- Herbicide monitoring at 1 location 3, 6, 9 and 24 hours after treatment* (PCOR wasn't detectable or very low 24 HAT), May or June 2024*
- Manual removal of HWM from Woodland Bay, June or July 2024*
- DASH of HWM from high-use locations to reduce beneficial use impairment, July 2024
- Whole-lake aquatic plant point-intercept survey, August 2024*
- Track occurrence of white water crowfoot while conducting PI survey, August 2024*
- Post-treatment sub point-intercept survey of Remington Bay if treated in spring, September 2024*
- HWM bed survey, September 2024*
- HWM pre-treatment survey of locations to be treated in 2025, September 2024*
- Final Report from 2024 findings, January 2025*
- the HWM levels below surface.

Figure 4 – HWM Maps 2022 vs 2023

