Parks and Recreation Board Meeting

Cravath Lakefront room 2nd floor 312 West Whitewater Str, Whitewater, WI, 53190 *In Person and Virtual

Wednesday, April 16, 2025 - 5:30 PM

Citizens are welcome (and encouraged) to join our webinar via computer, smart phone, or telephone. Citizen participation is welcome during topic discussion periods.

Topic: Park and Recreation Board Meeting
Time: Apr 16, 2025 05:30 PM Central Time (US and Canada)
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Please note that although every effort will be made to provide for virtual participation, unforeseen technical difficulties may prevent this, in which case the meeting may still proceed as long as there is a quorum. Should you wish to make a comment in this situation, you are welcome to call this number: (262) 473-0108.

AGENDA

CALL TO ORDER

ROLL CALL

Members: Steve Ryan (Chair) Stephanie Hicks (Vice-Chair), Brienne Brown, Kathleen Fleming, Dan Fuller, Mike Kilar, Justin Crandall, Deb Weberparl, UWW Vacant, Alternate Vacant.

Staff: Kevin Boehm (Director), Michelle Dujardin (Assistant Director), Megan Groen (WAFC Manager), Jennifer Jackson (Adult Programs), Ethan Cesarz (Athletic/Youth Programs)

APPROVAL OF AGENDA
A committee member can choose to remove an item from the agenda or rearrange its order; however, introducing new items to the agenda is not allowed. Any proposed changes require a motion, a second, and approval from the Committee to be implemented. The agenda shall be approved at each meeting even if no changes are being made at that meeting.

HEARING OF CITIZEN COMMENTS
No formal Board action will be taken during this meeting although issues raised may become a part of a future agenda. Participants are allotted a three minute speaking period. Specific items listed on the

agenda may not be discussed at this time; however, citizens are invited to speak to those specific issues at the time the Board discusses that particular item.

To make a comment during this period, or during any agenda item: On a computer or handheld device, locate the controls on your computer to raise your hand. You may need to move your mouse to see these controls. On a traditional telephone, dial *6 to unmute your phone and dial *9 to raise your hand.

REPORTS

1. Directors Report

CONSIDERATIONS / DISCUSSIONS

2. Discussion and Possible Action to approve SEWRPC Aquatic Plant Management Plan for Cravath and Trippe Lakes.
3. Conversation Starter examples for creating a Mission and Vision Statement and Core Values.
4. Discussion on Park and Open Space Plan

FUTURE AGENDA ITEMS

ADJOURNMENT

A quorum of the Common Council may be present. This notice is given to inform the public that no formal action will be taken at this meeting.

Anyone requiring special arrangements is asked to call the Office of the City Manager / City Clerk (262-473-0102) at least 72 hours prior to the meeting.

SEWRPC Staff Memorandum Report Number 275

AQUATIC PLANT MANAGEMENT PLAN FOR
CRAVATH AND TRIPPE LAKES, WALWORTH COUNTY, WISCONSIN

Chapter 1

INTRODUCTION

The Southeastern Wisconsin Planning Commission ("Commission") completed this aquatic plant inventory and management study of Cravath and Trippe Lakes on behalf of the City of Whitewater ("City"). This memorandum report is the Commission's first aquatic plant management plan for Cravath and Trippe Lakes. The Wisconsin Department of Natural Resources ("WDNR") will use data and conclusions generated as part of the Commission's study to help evaluate the Lake's aquatic plant community and draft an updated Aquatic Plant Control permit.

1.1 PROJECT SETTING, BACKGROUND, SCOPE, AND INTENT

Cravath Lake is a 70-acre impounded drainage lake located in the City of Whitewater in Walworth County. It is fed by both Spring Brook and Trippe Lake, and outflows to the Whitewater Creek, to the Bark River, and then to the Rock River (see Map 1.1).[1] Attaining a maximum depth of 10 feet, the Lake can support aquatic plant growth throughout most of its surface area. A 2017 survey performed by Lake and Pond Solutions observed 12 aquatic plant species in the Lake which included several beneficial native species such as Sago pondweed (*Stuckenia pectinata*), Illinois pondweed (*Potamogeton illinoensis*), and American lotus (*Nelumbo lutea*). Invasive aquatic plant species, including Eurasian watermilfoil (*Myriophyllum spicatum*) and curly-leaf pondweed (*Potamogeton crispus*) were also observed during the survey.

Trippe Lake is a 212-acre lake drainage also located in the City of Whitewater. It is fed by Whitewater Creek, and outflows into Cravath Lake (see Map 1.1). It has a maximum depth of 8 feet and was previously surveyed by Lake and Pond Solutions in 2017. A total of 16 species were reported, with similar beneficial native species (*Stuckenia pectinata*) as well as non-native invasives (*Potamogeton crispus and Myriophyllum spicatum*). Cravath and Trippe lakes underwent a drawdown from 2019 to 2021, followed by dredging and controlled

[1] *https://www.wwparks.org/lakes*

burns in 2022 for management of aquatic plants. The aquatic plant survey conducted for this update was performed in July of 2024 where Commission staff utilized the recommended baseline monitoring protocol employed by the WDNR.[2]

The City of Whitewater manages aquatic plant growth on the Lake to enhance navigation and recreational opportunities. Aquatic plant management is regulated by the WDNR and requires a permit. The City is required to reevaluate the aquatic plant community, update the aquatic plant management plan, and renew the aquatic plant management permit every five years. The City retained the Commission to reevaluate the Lakes' aquatic plant community and update the aquatic plant management plan. This updated plan needs to consider the present status of the aquatic plant community, must identify plant community changes that may have occurred, must examine the potential success or lack of success of the current aquatic plant management strategies, must consider current trends and issues that pertain to aquatic plant management issues and techniques, and must describe the methods and procedures associated with the proposed continuation of aquatic plant management in the Lakes. These efforts are supported through a Wisconsin Department of Natural Resources NR 193 Surface Water Grant.

This updated APM plan summarizes information and recommendations needed to manage the aquatic plant community of the Lake. The plan covers four main topics:

- APM Goals and Objectives
- Aquatic Plant Community Changes and Quality
- Aquatic Plant Control Alternatives
- Recommended Aquatic Plant Management Plan

This memorandum focuses upon approaches to monitor and control actively growing nuisance populations of aquatic plants and presents a range of alternatives that could potentially be used to achieve desired APM goals and provides specific recommendations related to each alternative. These data and suggestions can be valuable resources when developing requisite APM permit applications and implementing future aquatic plant management efforts.

[2] *Hauxwell, J., S. Knight, K. Wagner, A. Mikulyuk, M. Nault, M. Porzky and S. Chase. 2010. Recommended baseline monitoring of aquatic plants in Wisconsin: sampling design, field and laboratory procedures, data entry and analysis, and applications. Wisconsin Department of Natural Resources Bureau of Science Services, PUB-SS-1068 2010. Madison, Wisconsin, USA*

SEWRPC Staff Memorandum Report Number 275

AQUATIC PLANT MANAGEMENT PLAN FOR
CRAVATH AND TRIPPE LAKES, WALWORTH COUNTY, WISCONSIN

Chapter 1 Maps

SEWRPC Staff Memorandum Report Number 275

AQUATIC PLANT MANAGEMENT PLAN FOR
CRAVATH AND TRIPPE LAKES, WALWORTH COUNTY, WISCONSIN

Chapter 2

INVENTORY FINDINGS AND RELEVANCE TO RESOURCE MANAGEMENT

2.1 AQUATIC PLANT MANAGEMENT GOALS AND OBJECTIVES

Aquatic plant management ("APM") programs are designed to further a variety of lake user and riparian landowner goals and desires. For example, most APM programs aim to improve lake navigability. However, APM programs must also be sensitive to other lake uses and must maintain or enhance a lake's ecological integrity. Consequently, APM program objectives are commonly developed in close consultation with many interested parties. The Cravath and Trippe Lakes ("Lakes") APM plan considered input from the City of Whitewater ("City"), Wisconsin Department of Natural Resources ("WDNR"), and the public. Objectives of the Cravath and Trippe Lakes APM program include the following.

- Effectively control the quantity and density of nuisance aquatic plant growth in well-targeted portions of Cravath and Trippe Lakes. This objective helps:
    - enhance water-based recreational opportunities,
    - improve community-perceived aesthetic values, and
    - maintain or enhance the Lakes' natural resource value.
- Manage the Lakes in an environmentally sensitive manner in conformance with *Wisconsin Administrative Code* standards and requirements under Chapters NR 103 *Water Quality Standards for Wetlands*, NR 107 *Aquatic Plant Management*, and NR 109 *Aquatic Plants: Introduction, Manual Removal & Mechanical Control Regulations*. Following these rules helps the City preserve and enhance the Lakes' water quality, biotic communities, habitat value, and essential structure and relative function in relation to adjacent areas.

- Protect and maintain public health and promote public comfort, convenience, and welfare while safeguarding the Lakes' ecological health through environmentally sound management of vegetation, wildlife, fish, and other aquatic/semi-aquatic organisms in and around the Lakes.
- Promote a high-quality water-based experience for residents and visitors to the Lakes consistent with the policies and practices of the WDNR, as described in the regional water quality management plan, as amended.[1]

To meet these objectives, the City of Whitewater executed an agreement with the Southeastern Wisconsin Regional Planning Commission ("Commission") to investigate the characteristics of the Lakes and to develop an aquatic plant management plan update. As part of this planning process, surveys of the aquatic plant community and comparison to the previous survey results were conducted. This chapter presents the results of each of these inventories.

2.2 AQUATIC PLANT COMMUNITY COMPOSITION, CHANGE, AND QUALITY

All healthy lakes have plants and native aquatic plants form a foundational part of a lake ecosystem. Aquatic plants form an integral part of the aquatic food web, converting sediments and inorganic nutrients present in the water into organic compounds that are directly available as food to other aquatic organisms. Through photosynthesis, plants utilize energy from sunlight and release the oxygen required by many other aquatic life forms into the water. Aquatic plants also serve several other valuable functions in a lake ecosystem, including:

- Improving water quality by filtering excess nutrients from the water
- Providing habitat for invertebrates, amphibians, reptiles, and fishes
- Stabilizing lake bottom substrates
- Supplying food for waterfowl and various lake-dwelling animals

Even though aquatic plants may hinder human use and/or access to a lake, aquatic plants should not necessarily be eliminated or even significantly reduced in abundance because they often support many other beneficial functions (see Table 2.1). For example, water lilies play a significant role in providing shade,

[1]*SEWRPC Planning Report No. 30, A Regional Water Quality Management Plan for Southeastern Wisconsin—2000, Volume One, Inventory Findings, September 1978, Volume Two, Alternative Plans, February 1979, Volume Three, Recommended Plan, June 1979, and SEWRPC Memorandum Report No. 93, A Regional Water Quality Management Plan for Southeastern Wisconsin: An Update and Status Report, March 1995.*

habitat, and food for fish and other important aquatic organisms. They also help prevent damage to the lakeshore by dampening the power of waves that could otherwise erode the shoreline. Additionally, the shade that these plants provide helps reduce the growth of undesirable plants because it limits the amount of sunlight reaching the lake bottom. Given these benefits, large-scale removal of native plants that may be perceived as a nuisance and should be avoided when developing plans for aquatic plant management.

Aquatic Plant Surveys

Aquatic plant inventories have been completed in Cravath and Trippe Lakes in the past to support aquatic plant management permit applications. WDNR surveyed the Lakes' aquatic plants in 2006, followed by Lake and Pond Solutions in 2017 to establish long-term management goals and permitted management of the Lakes. The City has decided to evaluate the Lakes' aquatic plant community and prepare an aquatic plant management plan for the Lakes. The 2017 and 2024 surveys used the same point-intercept grid and methodology (see Figures 2.1 and 2.2).[2,3,4] In this method, sampling sites are based on predetermined global positioning system (GPS) location points that are arranged in a grid pattern across the entire surface of a lake.

The grid patterns of Cravath and Trippe Lakes consist of 233 points and 305 points, respectively, (provided by WDNR) that allow the types and abundance of aquatic plants to be directly contrasted to prior point-intercept surveys. At each grid point sampling site, a single rake haul is taken and a qualitative assessment of the rake fullness, on a scale of zero to three, is made for each species identified. The same points were sampled using the same techniques in 2017 and 2024. This consistency enables more detailed evaluation of aquatic plant abundance and distribution change than has been possible in the past.

Commission staff conducted the 2024 survey on Cravath and Trippe Lake surveys on July 29th and July 15th-16th, respectively. Conditions during the surveys were adequate, with partly sunny skies and intermittent

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[2]Sampling methodology changed from transect-based methods in 2011 to a point-intercept method beginning with the 2017 survey.

[3]R. Jesson and R. Lound, Minnesota Department of Conservation Game Investigational Report No. 6, An Evaluation of a Survey Technique for Submerged Aquatic Plants, 1962; as refined in the Memo from S. Nichols to J. Bode, J. Leverence, S. Borman, S. Engel, and D. Helsel, entitled "analysis of Macrophyte Data for Ambient Lakes-Dutch Hollow and Redstone Lakes Example," Wisconsin Geological and Natural History Survey, University of Wisconsin-Extension, February 4, 1994.

[4]J. Hauxwell, S. Knight, K. Wagner, A. Mikulyuk, M. Nault, M. Porzky, and S. Chase, Recommended Baseline Monitoring of Aquatic Plants in Wisconsin: Sampling Design, Field and Laboratory Procedures, Data Entry and Analysis, and Applications, Wisconsin Department of Natural Resources, Bureau of Science Services, Publication No. PUB-SS-1068 201, March 2010.

rain, low wind speeds, and little to no boat traffic. The Lakes' water clarity was low, which may have hindered visual observations of aquatic plant species within six feet of the sampling location. In general, the aquatic plant specimens were mature, and several species were in flower (e.g., white water lily (*Nymphaea odorata*)). In addition to the aquatic plants, Commission staff observed waterfowl, fish, muskrats, and turtles during the survey.

While Commission staff strived to survey as much of the Lakes as feasible, certain areas were not surveyed in 2024 compared to the 2017 survey. These areas included the southern bays of both lakes, as well as large portions near the shorelines that were non-navigable for sampling purposes due to dense cattail growth.[5] Other points that were not surveyed were either due to points that were deemed to be on shore or near to the dam.

Aquatic Plant Survey Metrics

Each aquatic plant species has preferred habitat conditions in which that species thrives as well as conditions that limit or completely inhibit its growth. For example, water conditions (e.g., depth, clarity, source, alkalinity, and nutrient concentrations), substrate composition, the presence of or absence of water movement, and pressure from herbivory and/or competition all can influence the type of aquatic plants found in a water body. All other factors being equal, water bodies with a diverse array of habitat variables are more likely to host a diverse aquatic plant community. For similar reasons, some areas of a particular lake may contain plant communities with low diversity, while other areas of the same lake may exhibit higher diversity. Historically, human manipulation has often favored certain plants and reduced biological diversity (biodiversity). Thoughtful aquatic plant management can help maintain or even enhance aquatic plant biodiversity.

Several metrics are useful to describe aquatic plant community condition and to design management strategies. These metrics include total rake fullness, maximum depth of colonization, species richness, biodiversity, evaluation of sensitive species, and relative species abundance. Metrics derived from the 2017 and 2024 point-intercept surveys are described below.

[5] See Section 2.3 PAST AND PRESENT AQUATIC PLANT MANAGEMENT PRACTICES and section "Cattails in Trippe and Cravath Lakes for further descriptions of the Lakes' drawdown and subsequent cattail growth.

Cravath Lake

Total Rake Fullness

As described earlier in this section, Commission staff qualitatively rated the plant abundance at each survey point by how much of the sampling rake was covered by all aquatic plant species.[6] This rating, called total rake fullness, can be a useful metric evaluating general abundance of aquatic plants as part of the point-intercept survey. In the 2024 survey on Cravath Lake the average rake fullness was 1.32 (see Table 2.2 and Figure 2.3). This rake fullness is substantially lower than the average rake fullness of 2.36 recorded in the 2017 survey, indicating that the density of aquatic vegetation has decreased in that time.

Maximum Depth of Colonization

Maximum depth of colonization (MDC) can be a useful indicator of water quality, as turbid and/or eutrophic (nutrient-rich) lakes generally have shallower MDC than lakes with clear water.[7] It is important to note that for surveys using the point-intercept protocol, the protocol allows sampling to be discontinued at depths greater than the maximum depth of colonization for vascular plants. However, aquatic moss and macroalgae, such as musk grass and nitella, frequently colonize deeper than vascular plants and thus may be under-sampled in some lakes. For example, *Chara globularis* and *Nitella flexilis* have been found growing as deep as 37 and 35 feet, respectively, in Silver Lake, in Washington County. The MDC in 2024 in Cravath Lake was 7 feet, which was the deepest water depth recorded during the plant survey (see Table 2.2). Thus, the entire lake is shallow enough to support aquatic plant growth.

Species Richness

The number of distinct types of aquatic plants present in a lake is referred to as the species richness of the lake. Larger lakes with diverse lake basin morphology, less human disturbance, and/or healthier, more resilient lake ecosystems have greater species richness. Including visual sightings of aquatic plants, nine species were found in Cravath Lake during the 2024 survey (see Table 2.2). Commission staff saw between zero and five distinct aquatic plant species at individual sampling points on the Lake (see Figure 2.4).

Biodiversity and Species Distribution

[6]*This method follows the standard WDNR protocol.*
[7]*D.E. Canfield Jr, L. Langeland, and W.T. Haller, "relations Between Water Transparency and Maximum Depth of Macrophyte Colonization in Lakes," Journal of Aquatic Plant Management 23, 1985.*

Species richness is often incorrectly used as a synonym for biodiversity. The difference in meaning between these terms is both subtle and significant. Biodiversity is based on the number of species present in a habitat along with the abundance of each species. For the purposes of this study, abundance was determined as the percentage of observations of each species compared to the total number of observations made. Aquatic plant biodiversity can be measured with the Simpson Diversity Index (SDI).[8] Using this measure, a community dominated by one or two species would be considered less diverse than one in which several different species have similar abundance. In general, more diverse biological communities are better able to maintain ecological integrity in response to environmental stresses. Promoting biodiversity not only helps sustain an ecosystem but preserves the spectrum of options useful for future management decisions. In 2024, Cravath Lake's SDI score was 0.62 in contrast to the Lake's 2017 SDI of 0.82 (see Table 2.2). Commission staff found between zero and 5 species at points withing Cravath Lake. Only two points had a species richness of 5 and only 6 points had richness of 4 (see Figure 2.4). With an SDI of 0.62, Cravath Lake has relatively low biodiversity compared to other lakes in Southeastern Wisconsin, which range in SDI values from approximately 0.5 (very low biodiversity) to 0.95 (very high biodiversity).

Sensitive Species

Aquatic plant metrics, such as species richness and the floristic quality index (FQI), can be useful for evaluating lake health. In hard water lakes, such as those common in Southeastern Wisconsin, species richness generally increases with water clarity and decreases with nutrient enrichment.[9] The FQI is an assessment metric used to evaluate how closely a lake's aquatic plant community matches that of undisturbed, pre-settlement conditions.[10] To formulate this metric, Wisconsin aquatic plant species were assigned conservatism (C) values on a scale from zero to ten that reflect the likelihood that each species occurs in undisturbed habitat. These values were assigned based on the species substrate preference, tolerance of water turbidity, water drawdown tolerance, rooting strength, and primary reproductive means. Native "sensitive" species that are intolerant of ecological disturbance receive high C values, while natives that are disturbance tolerant receive low C values. Invasive species are assigned a C value of 0. A lake's FQI is calculated as the average C value of species identified in the lake, divided by the square root of species richness. In 2024 Cravath Lake had an FQI of 8.5 and an average C value of 3.8.

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[8]The SDI expresses values on a zero to one scale where 0 equates to no diversity and 1 equates to infinite diversity.

[9] Vestergaard, O. and Sand-Jensen, K. "Alkalinity and Trophic State Regulate Aquatic Plant Distribution in Danish Lakes," Aquatic Botany 67, 2000.

[10] S. Nichols, "Floristic Quality Assessment of Wisconsin Lake Plant Communities with Example Applications," Lake and Reservoir Management 15(2), 1999.

Aquatic plants metrics such as species richness and disturbance tolerance are often used as indicators of the ecological health of a lake due to aquatic plants' varying sensitivity to human activity. In hard water lakes, such as those common in Southeastern Wisconsin, species richness generally increases with water quality and decreases with nutrient enrichment.[11] Beginning with the 2024 impairment listing cycle, WDNR began utilizing a model developed to assess lake health by examining its aquatic plant community.[12] This model evaluates whether a lake has been disturbed by human activity using known species sensitivity to disturbance as well as the littoral frequency of occurrence of each species observed on the lake.[13] No sensitive aquatic plant species, as designated by this model, were found in Cravath Lake during the 2024 survey, but several species considered "tolerant" were observed, including EWM, coontail, duckweed, elodea, CLP, Illinois pondweed, Sago pondweed, and watermeal. The lack of sensitive species and the number of tolerant species in the Lake indicates that the water and subsequent plant community are not of high quality.

Relative Species Abundance

In the 2024 survey of Cravath Lake, the five most common aquatic plant species found were: 1) Duckweed (*Lemna* sp.), 2) Coontail (*Ceratophyllum demersum*), 3) Elodea (*Elodea canadensis*), 4) Watermeal (*Wolffia* sp.*),* and 5) Curly-leaf pondweed (*Potamogeton crispus*) (see Appendix A, A1 through A5). Duckweed was observed at 112 points across Cravath Lake and could be seen clumping together among the cattail (*Typha* sp.*)* stands within the Lake. Coontail was found at 81 points across the Lake. Elodea was found at only 13 points in Cravath Lake, primarily located in the southern half of the Lake. Watermeal was found at twelve points in 2024.

Invasive Species

Eurasian Watermilfoil ("EWM")

EWM is one of eight milfoil species found in Wisconsin and is the only exotic or nonnative milfoil species. EWM favors mesotrophic to moderately eutrophic waters, fine organic-rich lake-bottom sediment, warmer

[11] *Vestergaard, O. and Sand-Jensen, K. "Alkalinity and Trophic State Regulate Aquatic Plant Distribution in Danish Lakes,"* Aquatic Botany *67, 2000.*

[12] *Mikulyuk, Alison, Martha Barton, Jennifer Hauxwell, Catherine Hein, Ellen Kujawa, Kristi Minahan, Michelle E. Nault, Daniel L. Oele, and Kelly I. Wagner. "A macrophyte bioassessment approach linking taxon-specific tolerance and abundance in north temperate lakes."* Journal of environmental management *199 (2017): 172-180.*

[13] *Disturbance variables in the model included the lake's nutrient status, specific conductance (a proxy measurement for salt concentrations), and the amount of developed land use (e.g., agriculture, roads, urban lands) within the lake's watershed.*

water with moderate clarity and high alkalinity, and tolerates a wide range of pH and salinity.[14,15] In Southeastern Wisconsin, EWM can grow rapidly and has few natural enemies to inhibit its growth. Furthermore, it can grow explosively following major environmental disruptions, as small fragments of EWM can grow into entirely new plants.[16] For reasons such as these, EWM can grow to dominate an aquatic plant community in as little as two years.[17,18] In such cases, EWM can displace native plant species and interfere with the aesthetic and recreational use of waterbodies. However, established populations may rapidly decline after approximately ten to 15 years.[19]

Human-produced EWM fragments (e.g., created by boating through EWM), as well as fragments generated from natural processes (e.g., wind-induced turbulence, animal feeding/disturbance) readily colonize disturbed sites, contributing to EWM spread. EWM fragments can remain buoyant for two to three days in summer and two to six days in fall, with larger fragments remaining buoyant longer than smaller ones.[20] The fragments can also cling to boats, trailers, motors, and/or bait buckets where they can remain alive for weeks contributing to transfer of milfoil to other lakes. For these reasons, it is especially important to remove all vegetation from boats, trailers, and other equipment after removing them from the water and prior to launching in other waterbodies.

During the 2024 survey of Cravath Lake, Commission staff found EWM at 3 points across the Lake (see Appendix A, Figure A.6). All three points with EWM were located on the northern end of the lake, nearest to Cravath Lakefront Park and the outlet of the Lake. EWM was not found anywhere else in the lake. Two of the three points had a rake fullness of one and one point had a rake fullness of two.

Curly-Leaf Pondweed ("CLP")

Curly-leaf pondweed, like Eurasian watermilfoil, is identified in Chapter NR 109 of the Wisconsin Administrative Code as a nonnative invasive aquatic plant. Although survey data suggests it presently is

[14] *U.S. Forest Service, Pacific Islands Ecosystems at Risk (PIER), 2019.: hear/org/pier/species/myriophyllum_spicatum.htm*
[15] *S.A. Nichols and B. H. Shaw, "Ecological Life Histories of the Three Aquatic Nuisance Plants: Myriophyllum spicatum, Potamogeton crispus, and Elodea canadensis,"* Hydrobiologia *131(1), 1986.*
[16] *Ibid.*
[17] *S.R. Carpenter, "The Decline of Myriophyllum spicatum in Eutrophic Wisconsin (USA) Lake,"* Canadian Journal of Botany *58(5), 1980.*
[18] *Les, D. H., and L. J. Mehrhoff, "Introduction of Nonindigenous Vascular Plants in Southern New England: a Historical Perspective,"* Biological Invasions *1:284-300, 1999.*
[19] *S.R. Carpenter, 1980, op. cit.*
[20] *J.D. Wood and M. D. Netherland, "How Long Do Shoot Fragments of Hydrilla (*Hydrilla verticullata*) and Eurasian Watermilfoil (*Myriophyllum spicatum*) Remain Buoyant?',* Journal of Aquatic Plant Management *55: 76-82, 2017.*

only a relatively minor species in terms of dominance, and, as such, is less likely to interfere with recreational boating activities, the plant can grow dense strands that exclude other high value aquatic plants. For this reason, curly-leaf pondweed must continue to be monitored and managed as an invasive member of the aquatic community. Lastly, it must be remembered that curly-leaf pondweed senesces by midsummer and therefore may be underrepresented in the inventory data presented in this report.

During the 2024 survey of Cravath Lake, Commission staff did not find CLP on the rake at any points across the Lake (see Appendix A, Figure A.5). It was, however, seen as a visual observation at four points at the southern end of the Lake. CLP was not found anywhere else in the lake.

Apparent Changes in Cravath Lake's Observed Aquatic Plant Communities: 2017 versus 2024

The 2024 aquatic plant survey identified a total of nine different plant species including visual observations, half of the 18 species found in the 2017 aquatic plant survey. Thus, it is evident that Cravath Lake has lost some of the diversity of its aquatic plant community following the 2019 to 2021 drawdown.

In addition to the number of different aquatic plant species detected in the Lake, several other comparisons can be drawn between the 2017 and 2024 aquatic plant survey results, as examined below.

- The total littoral vegetated frequency of occurrence decreased by 17.5 percent from 2017 to 2024. It was 82.5 percent in 2024 compared to 100 percent in 2017 (see Table 2.2).
- The MDC in Cravath Lake during the 2024 survey was 7 feet, 1.5 feet deeper than the 2017 survey, where the MDC was 5.5 feet (see Table 2.2). However, this increase is likely due to the increase in the Lake's water depth as the lake was dredged during the 2019 to 2021 drawdown. In both the 2017 and 2024 surveys, the MDC equals the maximum water depth for the lake indicating that aquatic plants are able to grow across the entire waterbody.
- The composition and order of the five most common species changed from 2017 to 2024. Three of the 5 top most common species remained the same but the other two most common species changed. In 2024 the five were 1) duckweed, 2) coontail, 3) elodea, 4) watermeal, and 5) curly-leaf pondweed. In 2017 the five most common species were 1) duckweed, 2) coontail, 3) watermeal, 4) white water lily (*Nymphaea odorata*), and 5) Eurasian watermilfoil.
- Several native aquatic plant species have small populations within Cravath Lake including white water lily and sago pondweed (*Stuckenia pectinata*), both of which were found at less than 10 points across the Lake (see Table 2.4).

- EWM occurrence decreased greatly between 2017 and 2024. It was found at 98 points in 2017 and 3 sites in 2024 with an additional 21 visual sightings in 2017 and zero in 2024 (see Table 2.4 and Figure 2.5).
- CLP occurrence also decrease with it being found at zero points in 2024 compared to the 27 in 2017. There were 39 additional visual sightings in 2017 and only four sightings in 2024 (see Table 2.4 and Figure 2.6).

It should be noted that the City completed a multi-year drawdown to reduce aquatic invasive species on Cravath Lake.[21] Based on the minimal EWM and CLP found in Cravath Lake in 2024 compared to 2017, it can be concluded that the drawdown was successful in reducing invasive species populations in the Lake.

As was described earlier, sensitive aquatic plant species are the most vulnerable to human disturbance. Therefore, changes in sensitive species abundance can indicate the general magnitude of human disturbance derived stress on a waterbody's ecosystem. Overall, the sensitive species richness decreased between 2017 and 2024. The sensitive aquatic plant, variable pondweed (*Potamogeton gramineus*), was the only sensitive species found during the 2017 survey and was found at nine points on the Lake. No sensitive species were found in 2024. There are varying reasons that the loss of sensitive plant species can be attributed to including: lake drawdown, increased pollutants, competition by more tolerate plants species, or human disturbances.

Trippe Lake

Aquatic Plant Survey Metrics

In the 2024 survey on Trippe Lake the average rake fullness was 1.29 (see Table 2.5 and Figure 2.7). This rake fullness is slightly lower than Cravath and significantly lower than the 2017 survey of Trippe Lake, indicating that the aquatic plant density has declined following the drawdown. The MDC in 2024 in Trippe Lake was six feet (see Table 2.5). Considering that Trippe Lake reaches a maximum depth of eight feet in only one small portion of the lake, the MDC indicates that aquatic plants can colonize the vast majority of the lake bottom.

[21] See Section 2.3 Past and Present Aquatic Plant Management Practices for more information on the drawdown of Cravath and Trippe Lakes by the City of Whitewater.

During the 2024 survey of Trippe Lake, including visual observations, 12 species of aquatic plants were documented (see Table 2.5). Commission staff found between zero and six individual species at a single point on the Lake (see Figure 2.8) In 2024, Trippe Lake's SDI score was 0.80 (see Table 2.5), up from its 2017 SDI of 0.75, indicating relatively good biodiversity of aquatic plants in the Lake.

Sensitive Species

In 2024, Trippe Lake's FQI was 11.67, with a mean C value of 4.1 within the Lake. Although higher than Cravath Lake, these values are still lower than many lakes in southeastern Wisconsin as FQI within the Region ranges from 6.9 (poor) to 34 (excellent) while the mean C ranges from 4.0 (poor) to 7.5 (excellent). Many of the other low-scoring lakes within southeastern Wisconsin, such as Lake Comus and Honey Lake in Walworth County, are also stream impoundments.

Similar to Cravath Lake, no sensitive aquatic plant species as described in Mikulyuk et al.[22], were found in Trippe Lake during the 2024 survey. However, several of the same tolerant species were observed. Sensitive plants species are more susceptible to pollution and human disturbances in the lake. The lack of sensitive species in the Lake indicates that the water and subsequent plant community are not of high quality. This can also be an indicator of high human disturbance and/or pollution in the Lake.

Relative Species Abundance

In the 2024 survey of Trippe Lake, the five most common aquatic plant species found were: 1) Duckweed (*Lemna sp.*), 2) Curly-leaf pondweed (*Potamogeton crispus*), 3) Coontail (*Ceratophyllum demersum*), 4) Watermeal (*Wolffia sp.),* and 5) Sago pondweed (*Stuckenia pectinata*) (see Appendices B1 through B5). Duckweed was found consistently throughout the Lake and was seen from a distance in areas that were non-navigable due to cattail growth. Curly-leaf pondweed was found in highest abundance in the northwestern portion of the lake and was mainly found as a visual sighting or as a 1 rake fullness. Only one point have a rake fullness for CLP of 2. Coontail was found intermittently throughout the Lake, never having a rake fullness higher that a 2. Watermeal, while found sporadically throughout Trippe Lake, inhabited similar areas to duckweed. Sago pondweed was found at 21 points on Trippe lake with only one point having a sago pondweed rake fullness of 2.

[22] *Mikulyuk, A.M., et al., "A Macrophyte Bioassessment Approach Linking Taxon-Specific Tolerance and Abundance in North Temperate Lakes," Journal of Environmental Management 199: 172-180, 2017.*

Invasive Species

No EWM was found in the 2024 survey in Trippe Lake, though it has historically been found in the Lake, including at 27 points in 2017. As described later in the chapter, water level drawdowns can be an effective tool for managing EWM populations as is evident by the substantial decrease in the EWM populations of both lakes since 2017.

Curly-leaf pondweed, like Eurasian watermilfoil, is identified in Chapter NR 109 of the Wisconsin Administrative Code as a nonnative invasive aquatic plant and thus must be monitored. In 2024, 12 points had CLP on the rake in Trippe Lake with an additional 27 visual observations (see Appendix B2). CLP was spread throughout the open water portions of the Lake but seen with the highest rake fullness in the northwestern portion of the Lake near the outlet.

Apparent Changes in Observed Aquatic Plant Communities in Trippe Lake: 2017 versus 2024

The 2024 aquatic plant survey identified a total of 13 different plant species including visuals, compared to the 22 species found in the 2017 aquatic plant survey. Thus, it is evident that Trippe Lake has lost some of the diversity of its aquatic plant community.

In addition to the number of different aquatic plant species detected in the Lake, several other comparisons can be drawn between the 2017 and 2024 aquatic plant survey results, as examined below.

- The total littoral vegetated frequency of occurrence declined from 80.56 percent in 2017 to 33.62 in 2024, a decrease of 46.94 percent (see Table 2.5).
- The MDC in Trippe Lake during the 2024 survey was 6 feet, 1.5 feet shallower than the 2017 survey, where the MDC was 7.5 feet (see Table 2.5). In both surveys, aquatic plants were observed to the maximum water depth of the lake indicating that plants could cover the entirety of the lake bottom.
- The composition and order of the five most common species changed from 2017 to 2024. Two of the five most common species remained the same but the other three changed. In 2024, the five most common aquatic plant species found were: 1) duckweed, 2) curly-leaf pondweed, 3) coontail, 4) watermeal, and 5) sago pondweed (see Appendix B, B1 through B5). In 2017 the five most common species were 1) American lotus (*Nelumbo lutea*), 2) coontail, 3) white water lily, 4) Eurasian watermilfoil and 5) duckweed.

- Several native aquatic plant species have small populations within Trippe Lake including spatterdock (*Nuphar variegata*) and bur reed (*Sparganium* sp.), both of which were found at fewer than 10 points across the Lake (see Table 2.7).
- CLP occurrence increased from four points in 2017 to 12 points in 2024 (see Table 2.7 and Figure 2.9). However, CLP still constitutes a small part of the overall aquatic plant community.

It should be noted that the City completed a multi-year drawdown to reduce aquatic invasive species on Trippe Lake.[23] Based on the lack of EWM and minimal CLP found in Trippe Lake in 2024 compared to 2017, it can be concluded that the drawdown was successful in reducing invasive species populations in the Lake.

As was described earlier, sensitive aquatic plant species are the most vulnerable to human disturbance. Therefore, changes in sensitive species abundance can indicate the general magnitude of human disturbance derived stress on a waterbody's ecosystem. Overall, the sensitive species richness decreased between 2017 and 2024. Two sensitive species were observed in 2017: variable pondweed (*Potamogeton gramineus*) was found at one point while yellow pond lily (*Nuphar advena*, not to be confused with spatterdock, *Nuphar variegata*) was found at four points. No sensitive species were found in 2024. There are varying reasons that the loss of sensitive plant species can be attributed to including: lake drawdown, increased pollutants, competition by more tolerate plants species, or human disturbances.

Cattails in Trippe and Cravath Lakes

A major concern of the Lakes' residents is the dense cattail growth in the Lakes. Hybrid cattail (*Typha x glauca*) are a hybridization of native broad-leaved cattail species (*Typha latifolia*) and invasive narrow-leaved cattail species (*Typha angustifolia*). Hybrid cattail will invade and colonize freshwater marshes, wet meadows, fens, roadsides, ditches, shallow ponds, streams and lakeshores.[24] While cattails have been present in the shallow areas of the lakes for many years, the population increased greatly after water levels remained low post-drawdown of both lakes.

Commission staff were unable to sample large portions of the lake due to the dense growth of hybrid cattails (see Figure 2.10 and Figure 2.11). Much of the shoreline was unable to be seen or accessed from the Lakes' open water due to the dense growth (see Figure 2.12). Commission staff used aerial imagery to

[23] See Section 2.3 Past and Present Aquatic Plant Management Practices for more information on the drawdown of Cravath and Trippe Lakes by the City of Whitewater.
[24] *https://dnr.wisconsin.gov/topic/Invasives/fact/CattailHybrid*

estimate the increase of cattail growth in the Lakes from pre draw-down conditions in 2015 as well as recent cattail conditions in 2023 (see Figure 2.13)[25]. The cattail coverage on Trippe Lake in June 2015 was estimated to be 27 acres, or 22%. Comparatively, the cattail coverage in May 2023 was estimated to be 50 acres, or 41% or the lake acreage. Cravath Lake's cattail coverage in June 2015 was estimated to be 3 acres, or 5%. Comparatively, the cattail coverage in May 2023 was estimated to be 33 acres, or 47%.

2.3 PAST AND PRESENT AQUATIC PLANT MANAGEMENT PRACTICES

In July of 2019, to "freeze out" invasive species, restore navigation depths, and to improve the overall health of the Lakes, the City began draining both Cravath and Trippe Lakes.[26] The project was originally planned to have the Lakes drawn down for one year but was extended to a second year to ensure maximum lake-bed exposure for the dredging of the lakes. By August 2021, the Lakes were fully drawn down and were originally planned to be refilled in the spring of 2022.

While the Lakes were drawn down, the City received permits to dredge out lake-bottom material to improve future navigation of the Lakes. As of March 1, 2022, 68,800 cubic yards of sediment had been removed from the Lakes, 85 percent of the original 81,000 cubic yards anticipated to be removed. To prepare for the dredging in early 2022, the City contracted with Field & Stream Restorations to conduct a controlled burn in areas of the Lakes (see Figure 2.14). Controlled burns are often used to remove invasive species and reduce the amount of settling sediment in the Lakes from decaying vegetation material from aquatic plants.

In the fall of 2023, the City received permits to dredge Cravath and Trippe Lakes to manage the cattail populations. In total, an estimated 16,300 square feet of material was removed from the Lakes from the Cravath fishing pier, the Cravath west lakefront dock, the Cravath concrete bump-out and the Trippe Lake boat launch. Additionally, in the fall of 2024, the City received a second permit to dredge the Lakes, removing an estimated 37,020 square feet of material. Material was removed from five locations: Cravath amphitheater, Cravath west lakefront dock, the Cravath west fishing pier, the Cravath eastern shoreline, and the Trippe fishing pier at the Clay Street Nature Park.

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[25] Cattail coverage on the lake utilized Google Earth historical imagery. Coverage estimates are approximate and are not exact due to difficulty distinguishing between cattail coverage and floating leaf aquatic plant coverage.

[26] For more information on the drawn downs, dredging and controlled burns see: https://www.whitewater-wi.gov/520/Lakes-Drawdown-Updates

2.4 POTENTIAL AQUATIC PLANT MANAGEMENT METHODOLOGIES

Aquatic plant management techniques can be classified into six categories.

- *Physical measures* include lake bottom coverings.
- *Biological measures* include the use of organisms such as herbivorous insects.
- *Manual measures* involve physically removing plants by hand or using hand-held tools such as rakes.
- *Mechanical measures* rely on artificial power sources and remove aquatic plants with a machine known as a harvester or by suction harvesting.
- *Chemical measures* use aquatic herbicides to kill nuisance and nonnative plants *in-situ*.
- *Water level manipulation measures* utilize fluctuations in water levels to reduce aquatic plant abundance and promote growth of specific native species.

All aquatic plant control measures are stringently regulated and most require a State of Wisconsin permit. Chemical controls, for example, require a permit and are regulated under *Wisconsin Administrative Code* Chapter NR 107, "Aquatic Plant Management", while placing bottom covers (a physical measure) requires a WDNR permit under Chapter 30 of the *Wisconsin Statutes*. All other aquatic plant management practices are regulated under *Wisconsin Administrative Code* Chapter NR 109, "Aquatic Plants: Introduction, Manual Removal and Mechanical Control Regulations." Furthermore, the aquatic plant management measures described in this plan are consistent with the requirements of Chapter NR 7, "Recreational Boating Facilities Program," and with the public recreational boating access requirements relating to eligibility under the State cost-share grant programs set forth in *Wisconsin Administrative Code* Chapter NR 1, "Natural Resources Board Policies." Water level manipulations require a permit and are regulated under *Wisconsin Statutes* 30.18 and 31.02.[27,28] More details about each aquatic plant management category are discussed in the following sections, while recommendations are provided later in this document.

Non-compliance with aquatic plant management permit requirements is an enforceable violation of Wisconsin law and may lead to fines and/or complete permit revocation. The information and recommendations provided in this memorandum help to frame permit requirements. Permits can cover up to a five-year period.[29] At the end of that period, the aquatic plant management plan must be updated. The

[27] *https://docs.legis.wisconsin.gov/statutes/statutes/30/ii/18*
[28] *https://docs.legis.wisconsin.gov/statutes/statutes/31/02*
[29] *Five-year permits allow a consistent aquatic plant management plan to be implemented over a significant length of time. This process allows the selected aquatic plant management measures to be evaluated at the end of the permit cycle.*

updated plan must consider the results of a new aquatic plant survey and should evaluate the success, failure, and effects of earlier plant management activities that have occurred on the lake.[30] These plans and plan execution are reviewed and overseen by the WDNR regional lakes and aquatic invasive species coordinators.[31]

Physical Measures

Lake-bottom covers and light screens provide limited control of rooted plants by creating a physical barrier that reduces or eliminates plant-available sunlight. Various materials such as pea gravel or synthetics like polyethylene, polypropylene, fiberglass, and nylon can be used as covers. The longevity, effectiveness, and overall value of some physical measures is questionable. The WDNR does not permit these kinds of controls. Consequently, lake-bottom covers are not a viable aquatic plant control strategy for the lakes.

Biological Measures

Biological control offers an alternative to direct human intervention to manage nuisance or exotic plants. Biological control techniques traditionally use herbivorous insects that feed upon nuisance plants. This approach has been effective in some southeastern Wisconsin lakes.[32] For example, milfoil weevils (*Eurhychiopsis lecontei)* have been used to control EWM. Milfoil weevils do best in waterbodies with balanced panfish populations,[33] where dense EWM beds reach the surface close to shore, where natural shoreline areas include leaf litter that provides habitat for over-wintering weevils, and where there is comparatively little boat traffic. This technique is not presently commercially available, making the use of milfoil weevils non-viable for the Lakes.

Manual Measures

Manually removing specific types of vegetation is a highly selective means of controlling nuisance aquatic plant growth, including invasive species such as EWM. Two commonly employed methods include hand raking and hand pulling. Both physically remove target plants from a lake. Since most plant stems, leaves, roots, and seeds are actively removed from the lake, the reproductive potential and nutrients contained by

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[30]Aquatic plant harvesters must report harvesting activities as one of the permit requirements.
[31]Information on the current aquatic invasive species coordinator is found on the WDNR website.
[32]B. Moorman, "A Battle with Purple Loosestrife: A Beginner's Experience with Biological Control," LakeLine 17(3): 20-21, 34-37, September 1997; see also, C.B. Huffacker, D.L. Dahlsen, D.H. Janzen, and G.G. Kennedy, Insect Influences in the Regulation of Plant Population and Communities, pp. 659-696, 1984; and C.B. Huffacker and R.L. Rabb, editors, Ecological Entomology, John Wiley, New York, New York, USA.
[33]Panfish such as bluegill and pumpkinseed are predators of herbivorous insects. High populations of panfish lead to excess predation of milfoil weevils.

pulled/raked plants material is also removed. These plants, seeds, and nutrients would otherwise re-enter the lake's water column or be deposited on the lake bottom. Hence, this aquatic plant management technique helps incrementally maintain water depth, improves water quality, and can help decrease the spread of nuisance/exotic plants. Hand raking and hand pulling are readily allowed by WDNR and are practical methods to control riparian landowner scale problems.

Raking with specially designed hand tools is particularly useful in shallow nearshore areas. This method allows nonnative plants to be removed and provides a safe and convenient aquatic plant control method in deeper nearshore waters around piers and docks. Advantages of this method include:

- Tools are inexpensive ($100 to $150 each),
- The method is easy to learn and use,
- It may be employed by riparian landowners without a permit if certain conditions are met,
- Results are immediately apparent, and,
- Plant material is immediately removed from a lake (including seeds).[34]

The second manual control method, hand-pulling whole plants (stems, roots, leaves, seeds) where they occur in isolated stands, is a simple means to control nuisance and invasive plants in shallow nearshore areas that may not support large-scale initiatives. This method is particularly helpful when attempting to target nonnative plants (e.g., EWM, CLP) during the high growth season when native and nonnative species often mix. Hand pulling is more selective than raking, mechanical removal, and chemical treatments, and, if carefully applied, is less damaging to native plant communities. Recommendations regarding hand-pulling, hand-cutting, and raking are discussed later in this document.

Mechanical Measures

Two methods of mechanical harvesting are currently employed in Wisconsin - mechanical harvesting and suction harvesting. Both are regulated by WDNR and require a permit.[35]

[34] Most of the material is removed during raking, however fragmentation/local spread from raking can occur in addition to fragmentation/local spread from wave action/other mechanical disruption.
[35]Mechanical control permit conditions depend upon harvesting equipment type and specific equipment specifications.

Mechanical Harvesting

Aquatic plants can be mechanically gathered using specialized equipment commonly referred to as harvesters. Harvesters use an adjustable depth cutting apparatus that can cut and remove plants from the water surface to up to about five feet below the water surface. The harvester gathers cut plants with a conveyor, basket, or other device. Mechanical harvesting is often a very practical and efficient means to control nuisance plant growth and is widely employed in Southeastern Wisconsin.

In addition to controlling plant growth, gathering and removing plant material from a lake reduces in-lake nutrient recycling, sedimentation, and targets plant reproductive potential. In other words, harvesting removes plant biomass, which would otherwise decompose and release nutrients, sediment, and seeds or other reproductive structures (e.g., turions, bulbils, plant fragments) into a lake. Mechanical harvesting is particularly effective and popular for large-scale open-water projects. However, small harvesters are also produced that are particularly suited to working around obstacles such as piers and docks in shallow nearshore areas.

An advantage of mechanical harvesting is that the harvester, when properly operated, "mows" aquatic plants and, therefore, typically leaves enough living plant material in place to provide shelter for aquatic wildlife and stabilize lake-bottom sediment. Harvesting, when done properly, does not kill aquatic plants, it simply trims plants back. Aside from residual plant mass remaining because of imperfect treatment strategy execution, none of the other aquatic plant management methods purposely leave living plant material in place after treatment. Aquatic plant harvesting has been shown to allow light to penetrate to the lakebed and stimulate regrowth of suppressed native plants. This is particularly effective when controlling invasive plant species that commonly grow quickly early in the season (e.g., EWM, curly-leaf pondweed) when native plants have not yet emerged or appreciably grown.

A disadvantage of mechanical harvesting is that the harvesting process may fragment plants and thereby unintentionally propagate EWM and curly-leaf pondweed. EWM fragments are particularly successful in establishing themselves in areas where plant roots have been removed. This underscores the need to avoid harvesting or otherwise disrupting native plant roots. Harvesting may also agitate bottom sediments in shallow areas, thereby increasing turbidity and resulting in deleterious effects such as smothering fish breeding habitat and nesting sites. To this end, most WDNR-issued permits do not allow deep-cut

harvesting in water less than three feet deep,[36] which limits the utility of this alternative in many littoral and shoal areas. Nevertheless, if employed correctly and carefully under suitable conditions, harvesting can benefit navigation lane maintenance and can reduce regrowth of nuisance plants while maintaining, or even enhancing, native plant communities. Due to the depth of the Lakes and the desire for cattail control, traditional cutting mechanical harvesting is not a feasible method to be used on the Lakes.

Suction Harvesting, DASH, and Diver-Assisted Hand Pulling

Another mechanical plant harvesting method uses suction to remove aquatic plants from a lake. Suction harvesting removes sediment, aquatic plants, plant roots, and anything else from the lake bottom and disposes this material outside the lake. Since bottom material is removed from the lake, this technique also requires a dredging permit in addition to the aquatic plant management permit.

First permitted in 2014, DASH is a mechanical process where divers identify and pull select aquatic plants and roots from the lakebed and then insert the entire plant into a suction hose that transports the plant to the surface for collection and disposal. The process is a mechanically assisted method for hand-pulling aquatic plants. Such labor-intensive work by skilled professional divers is, at present, a costly undertaking and long-term monitoring will need to evaluate the efficacy of the technique. If the City or individual property owners choose to employ DASH, a NR 109 permit is required. Nevertheless, many apparent advantages are associated with this method including: 1) lower potential to release plant fragments when compared to mechanical harvesting, raking, and hand-pulling, thereby reducing spread and growth of invasive plants like EWM; 2) increased selectivity of plant removal when compared to mechanical harvesting which in turn reduces native plant loss; and 3) lower potential for disturbing fish habitat. This method will be discussed further in Chapter 3.

Water Level Manipulation Measures

Manipulating water levels can also be an effective method for controlling aquatic plant growth and restoring native aquatic plant species, particularly emergent species such as bulrush and wild rice.[37] While water level manipulation affects all aquatic plants within the drawdown zone, two studies from Price County, Wisconsin

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[36]Deep-cut harvesting is harvesting to within one foot of the lake bottom. This is not allowed in shallow water because it is challenging to ensure that the harvester avoids lake-bottom contact in such areas.

[37]For detailed literature reviews on water level manipulation as an aquatic plant control measure, see C. Blanke, A. Mikulyuk, M. Nault, et al., Strategic Analysis of Aquatic Plant Management in Wisconsin, Wisconsin Department of Natural Resources, pp. 167-171, 2019 as well as J.R. Carmignani and A.H. Roy, "Ecological Impacts of Winter Water Level Drawdowns on Lake Littoral Zones: A Review," Aquatic Sciences 79: 803-824, 2017.

show reduced abundance of invasive EWM and curly-leaf pondweed and increased abundance of native plant species following winter drawdowns.[38,39] Thus, drawdowns can be used to dramatically alter the composition of a lake's aquatic plant community. As described in Section 2.3, the City drew down both Cravath and Trippe Lakes and successfully reduced the populations of EWM and CLP.

While drawdowns are effective in reducing submerged invasive species populations, undesired emergent species, such as invasive cattails and phragmites, can also colonize exposed sediment, so measures should be taken to curtail their growth during a drawdown.[40] Both Cravath and Trippe Lakes have experienced this with 41% of Trippe and 47% of Cravath having dense hybrid cattail growth, to the extent of impeding navigation in the Lakes. Additionally, water level manipulation can also have unintended impacts on water chemistry and lake fauna.[41,42] Decreased water clarity and dissolved oxygen concentrations as well as increased nutrient concentrations and algal abundance have all been reported following lake drawdowns. It will be important to monitor the Lakes in the years to come following any potential drawdown.

Controlled Winter Burning

Prescribed burns, also known as controlled burns, are useful in managing emergent plants during drawdowns. While lakes are drawn down, existing organic material from aquatic plants are exposed and able to be burned off. This reduces the amount of plant material on the bottom of the lake, can reduce nonnative plant populations and can allow for new areas to become available for beneficial native plants to grow.

Controlled burns often require a burn plan.[43] A burn plan is a document that addresses all aspects of the burn to ensure a safe implementation of controlled burning activities. The plan should contain the following:

- Describe site conditions, including existing vegetation and desired future conditions
- Dictate specific weather conditions and ignition patterns needed for desired fire behavior
- Outline any issues relating to communities, roads, structure, adjacent lands, smoke management and/or traffic control
- Outline and smoke sensitive areas such as schools, airports or hospitals

[38] *Onterra, LLC, Lac Sault Dore, Price County, Wisconsin: Comprehensive Management Plan, 2013.*
[39] *Onterra, LLC, Musser Lake Drawdown Monitoring Report, Price County, Wisconsin, 2016.*
[40] *Blanke et al., 2019, op. cit.*
[41] *Ibid.*
[42] *Cooke, op. cit.*
[43] *For more information on controlled burns, see https://dnr.wisconsin.gov/topic/forestfire/prescribedfire.*

- Identify fire break parameters
- Identify personnel and equipment need to safely complete the burn
- Outline of a contingency plan for reacting to any emergencies surrounding the burn

Burns are recommended to be conducted during the winter for lakes. WDNR also recommends that a trained burn boss be consulted on the parameters of the prescribed fire and to be available during the burn. It is also encouraged to reach out to local authorities to ensure they are following local ordinances and regulations. Due to the ability of the lake to be drawn down during the winter months, a controlled burn on the lakes may be beneficial in assisting with aquatic plant management, particularly for encroachment of hybrid cattail.

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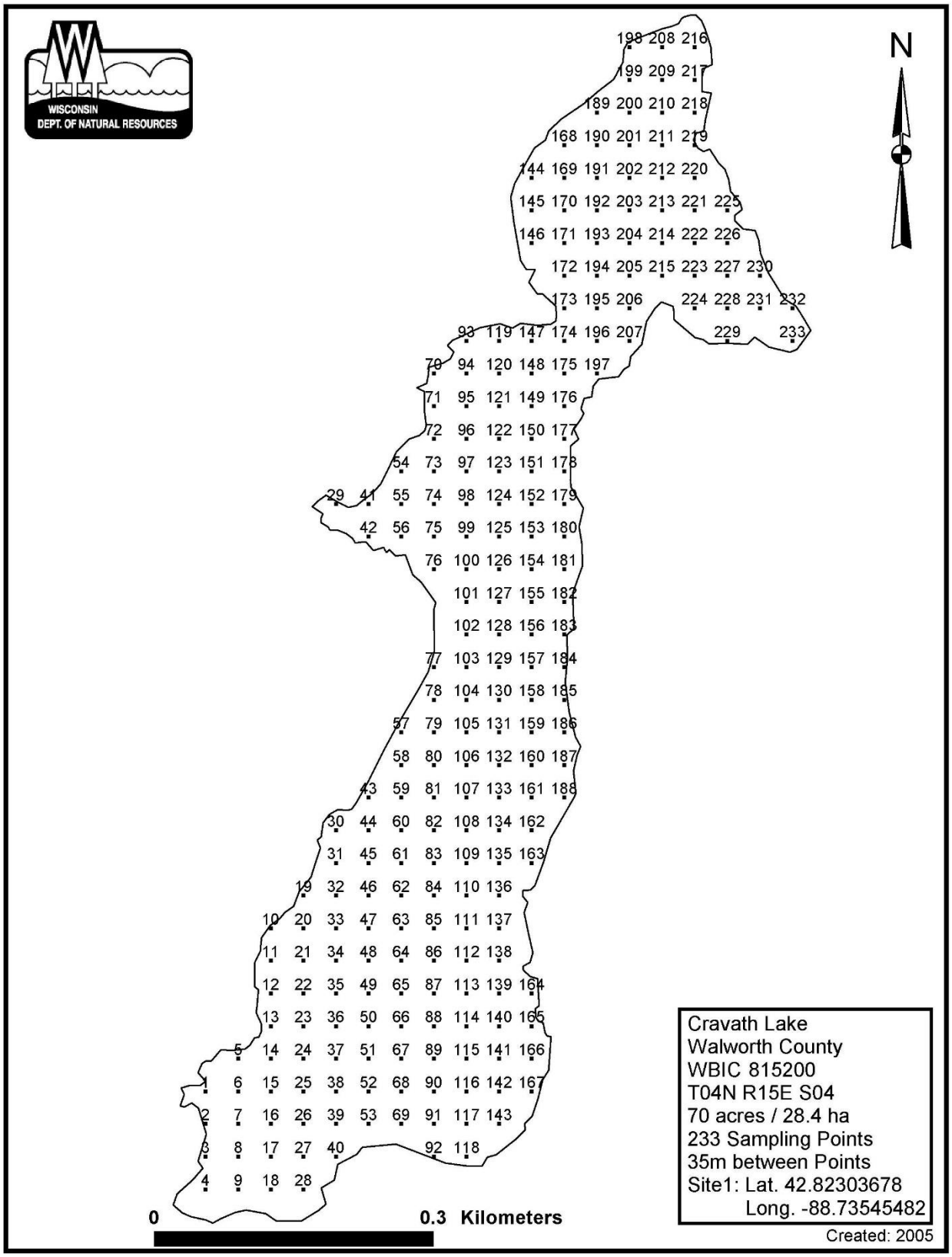
AQUATIC PLANT MANAGEMENT PLAN FOR
CRAVATH AND TRIPPE LAKES, WALWORTH COUNTY, WISCONSIN

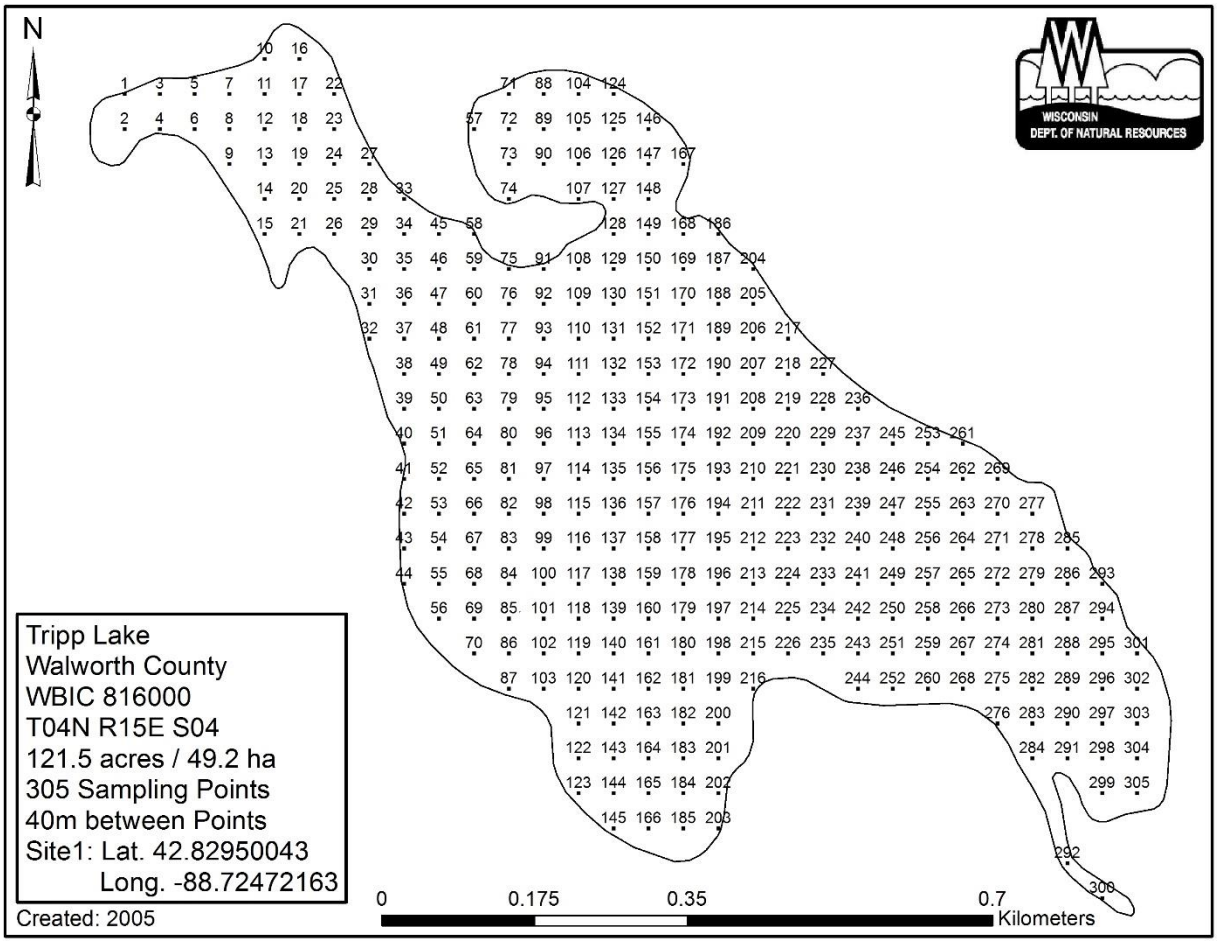
Chapter 2 Figures

Figure 2.1
Aquatic Plant Sampling Grid for Cravath Lake



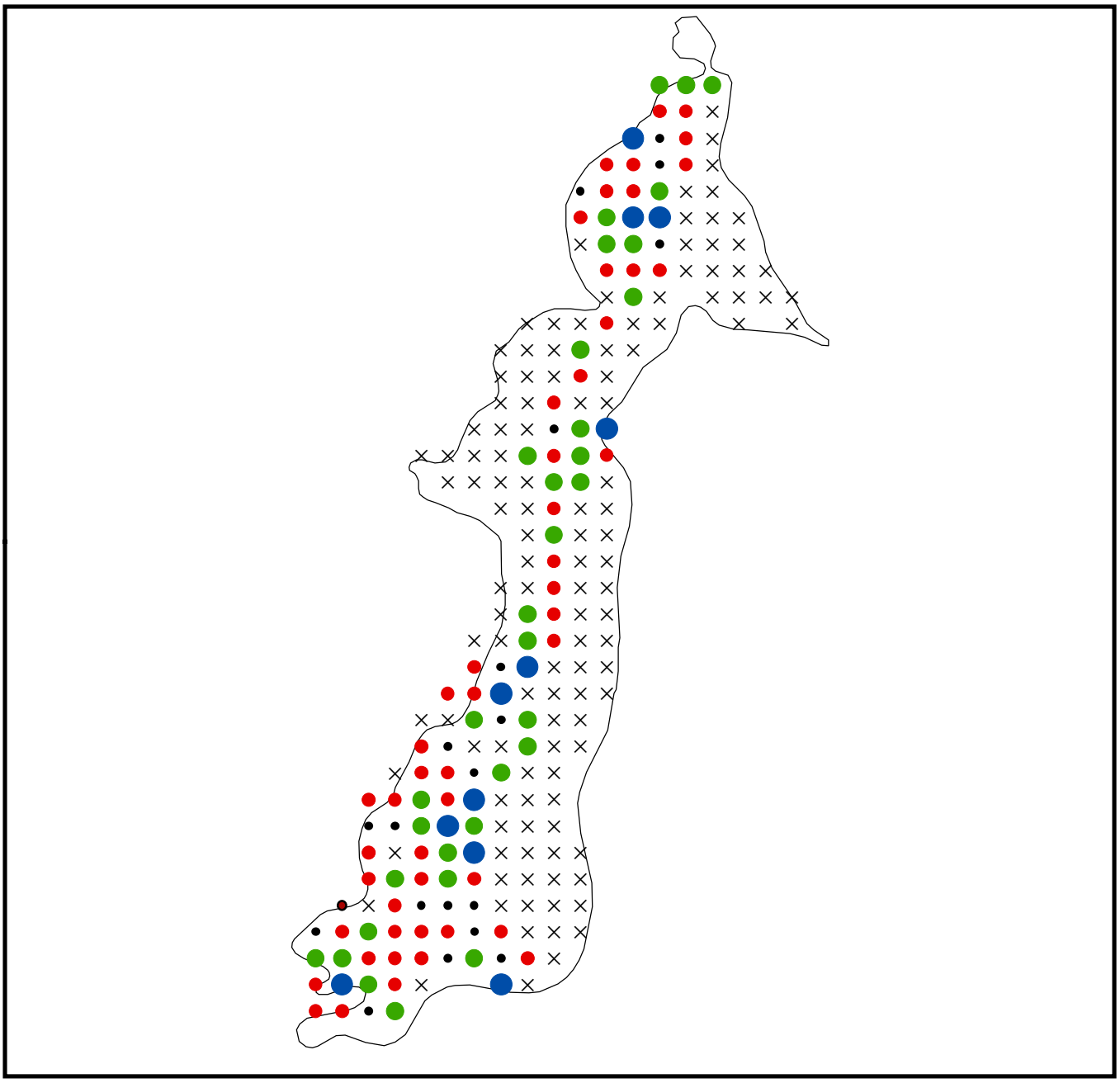
Source: WDNR

Figure 2.2
Aquatic Plant Sampling Grid for Trippe Lake

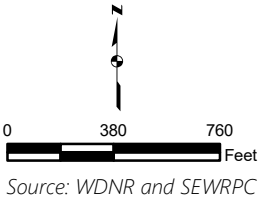


Source: WDNR

Figure 2.3
Total Rake Fullness in Cravath Lake: July 2024

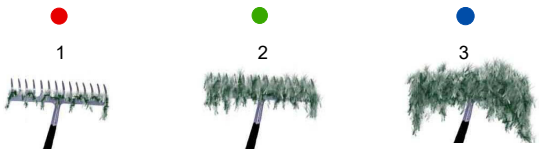


NOTE: Survey was conducted on Cravath Lake on July 29th, 2024.



Source: WDNR and SEWRPC

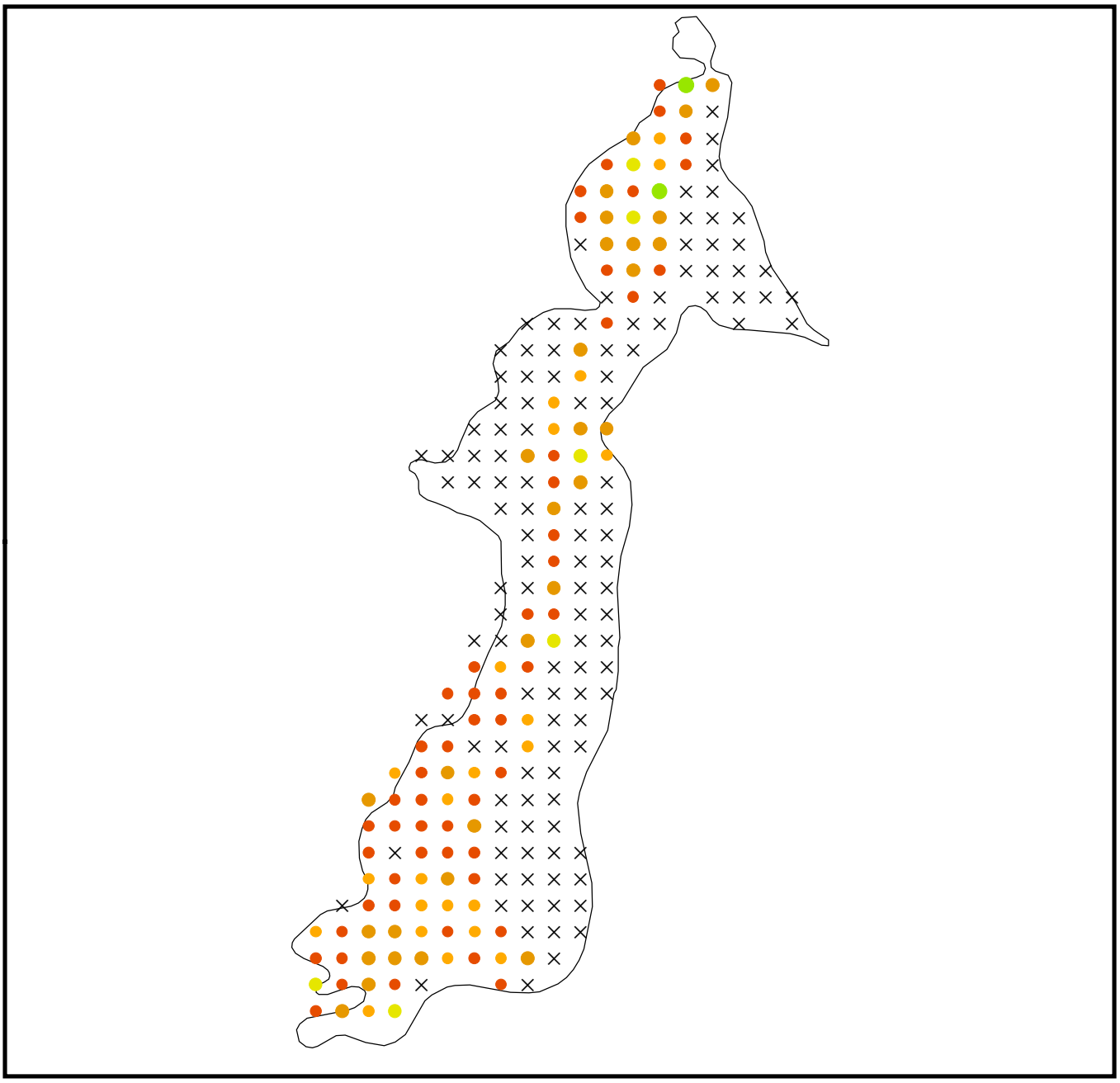
RAKE FULLNESS RATING



VISIBLE NEARBY

• NO AQUATIC PLANTS FOUND × NOT SAMPLED

Figure 2.4
Species Richness in Cravath Lake: July 2024



NOTE: Survey was conducted on Cravath Lake from July 29th, 2024.

SPECIES RICHNESS

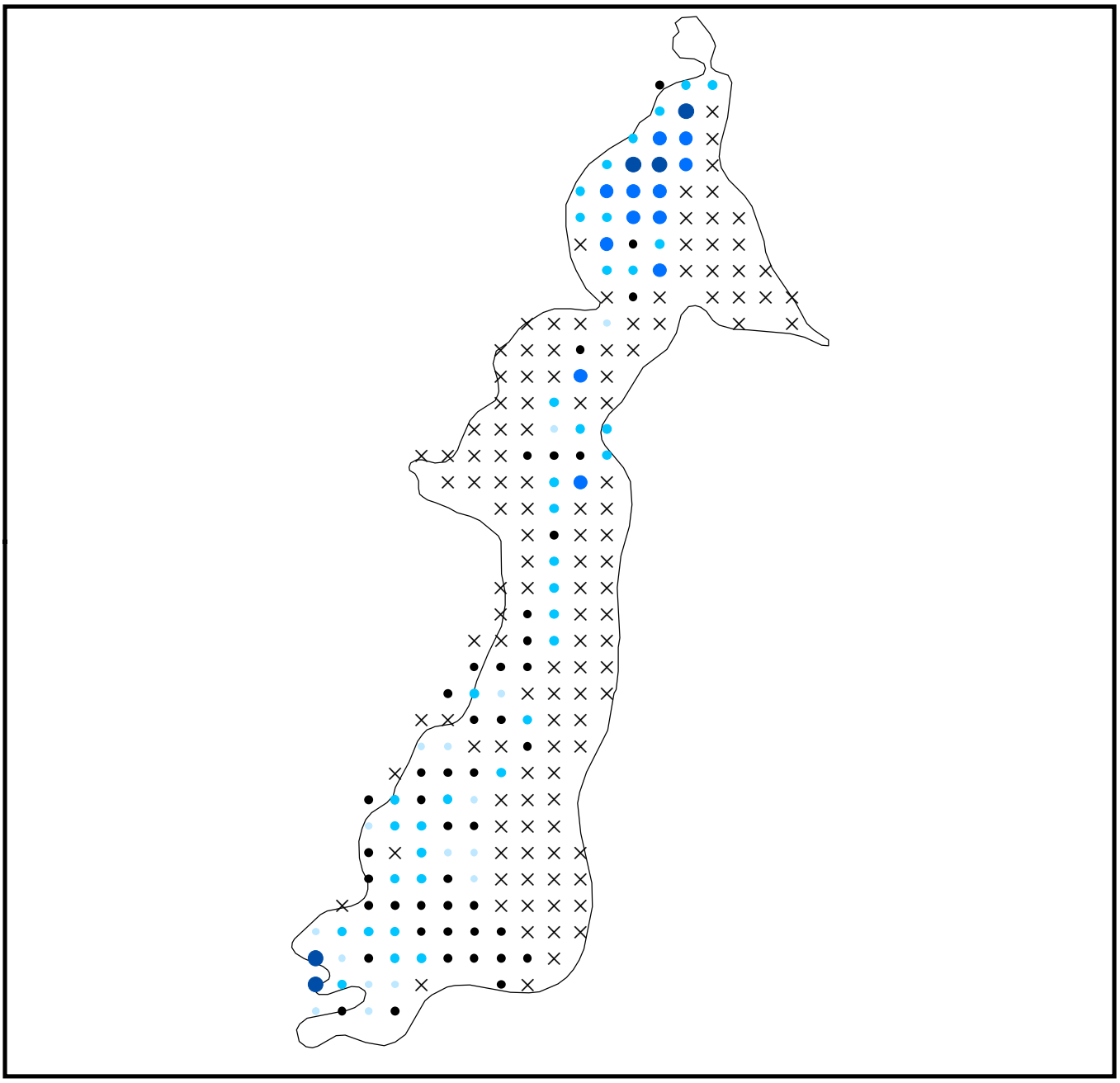
- 1
- 2
- 3
- 4
- 5
- × NOT SAMPLED
- • NO AQUATIC PLANTS FOUND

N

0 380 760 Feet

Source: WDNR and SEWRPC

Figure 2.5
Change in Eurasian Watermilfoil Total Rake Fullness in Cravath Lake: 2017-2024



NOTE: Survey was conducted on Cravath Lake from July 29th, 2024.

CHANGE IN RAKE FULLNESS RATING

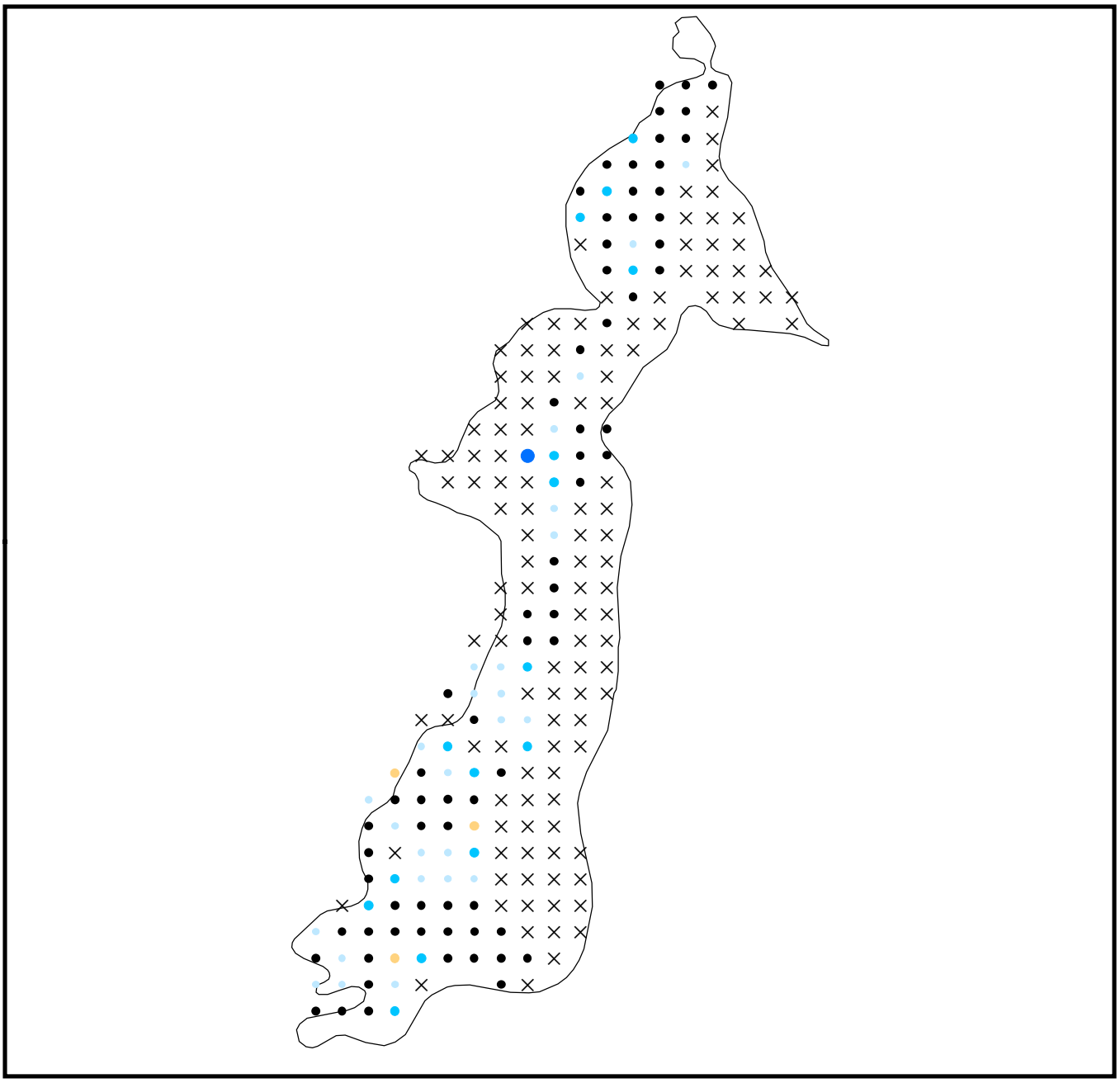
-0.5	0.5	NO EWM OBSERVED EITHER YEAR
-1	1	EWM PRESENT, NO CHANGE IN FULLNESS
-1.5	1.5	NOT SAMPLED BOTH YEARS
-2	2	
-3		

N

0 380 760
Feet

Source: WDNR and SEWRPC

Figure 2.6
Change in Curly-Leaf Pondweed Total Rake Fullness in Cravath Lake: 2017-2024



NOTE: Survey was conducted on Cravath Lake from July 29th, 2024.

CHANGE IN RAKE FULLNESS RATING

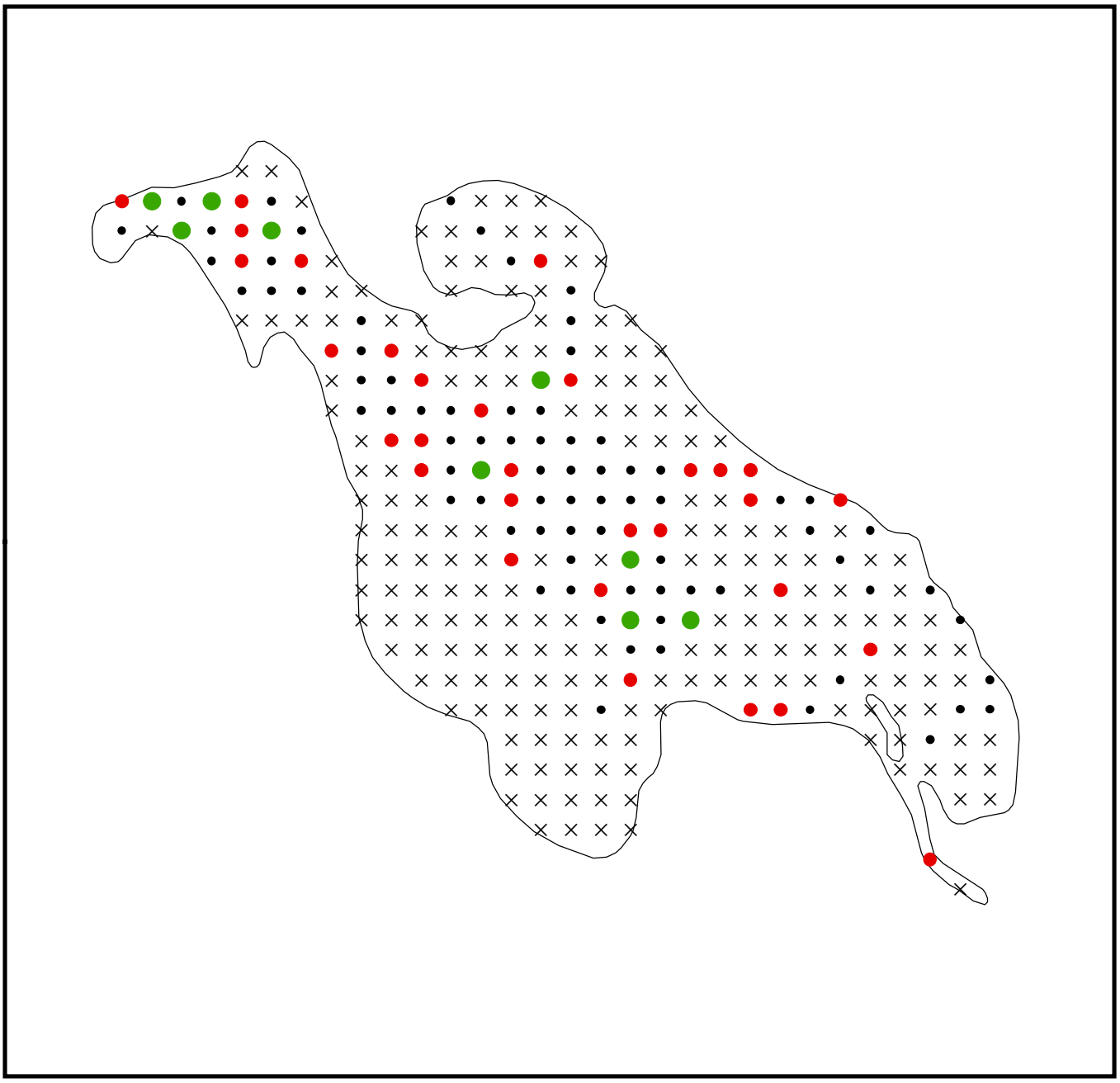
●	-0.5	●	0.5	●	NO CLP OBSERVED EITHER YEAR
●	-1	●	1	■	CLP PRESENT, NO CHANGE IN FULLNESS
●	-1.5	●	1.5	×	NOT SAMPLED BOTH YEARS
●	-2	●	2		
●	-3				

N

0 380 760 Feet

Source: WDNR and SEWRPC

Figure 2.7
Total Rake Fullness on Trippe Lake: July 2024



NOTE: Survey was conducted on Trippe Lake on July 15th-July16th, 2024.

RAKE FULLNESS RATING

1 2 3

VISIBLE NEARBY

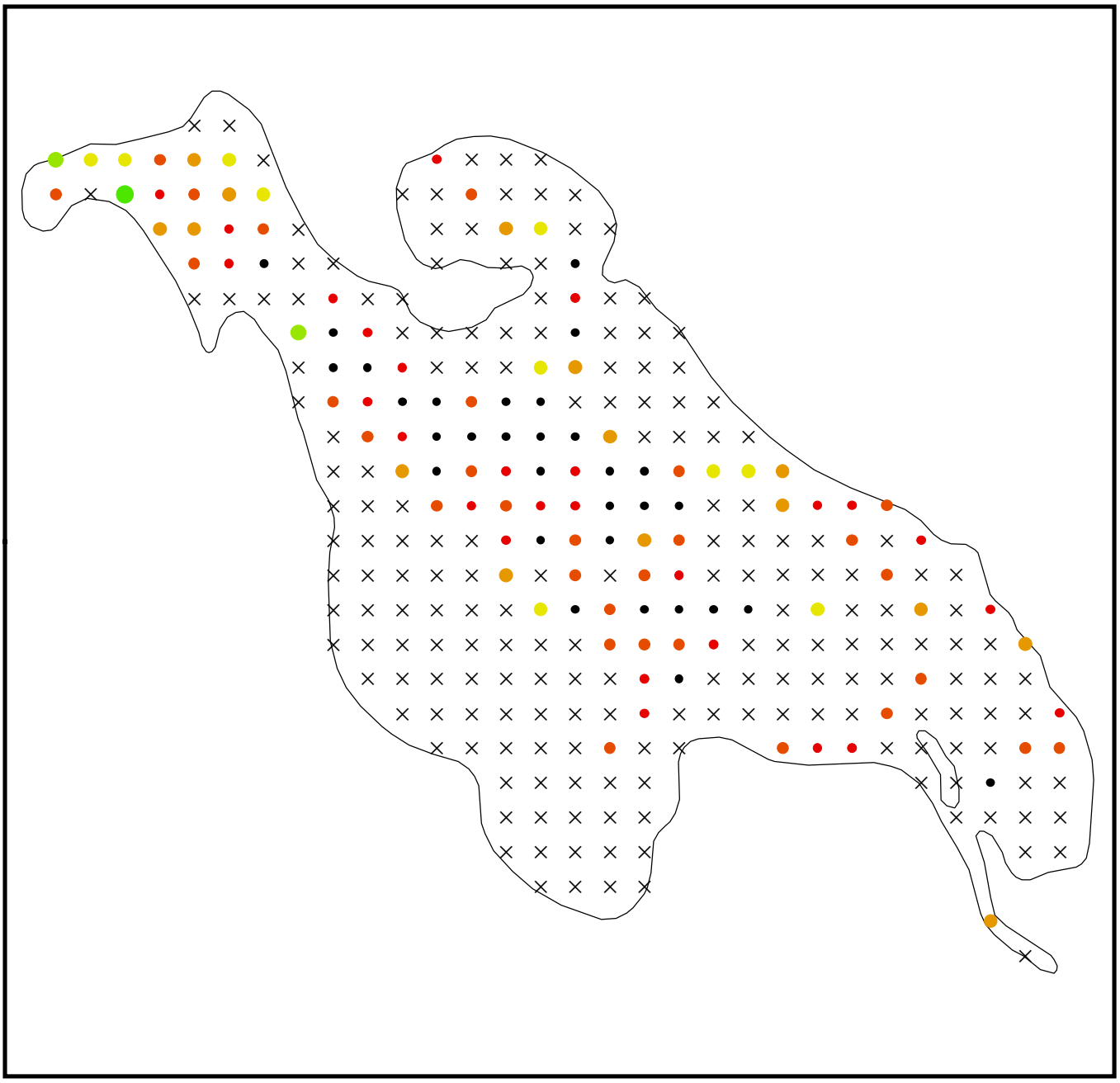
• NO AQUATIC PLANTS FOUND × NOT SAMPLED

N

0 380 760 Feet

Source: WDNR and SEWRPC

Figure 2.8
Species Richness in Trippe Lake: July 2024



NOTE: Survey was conducted on Trippe Lake on July 15th -16th, 2024.

SPECIES RICHNESS

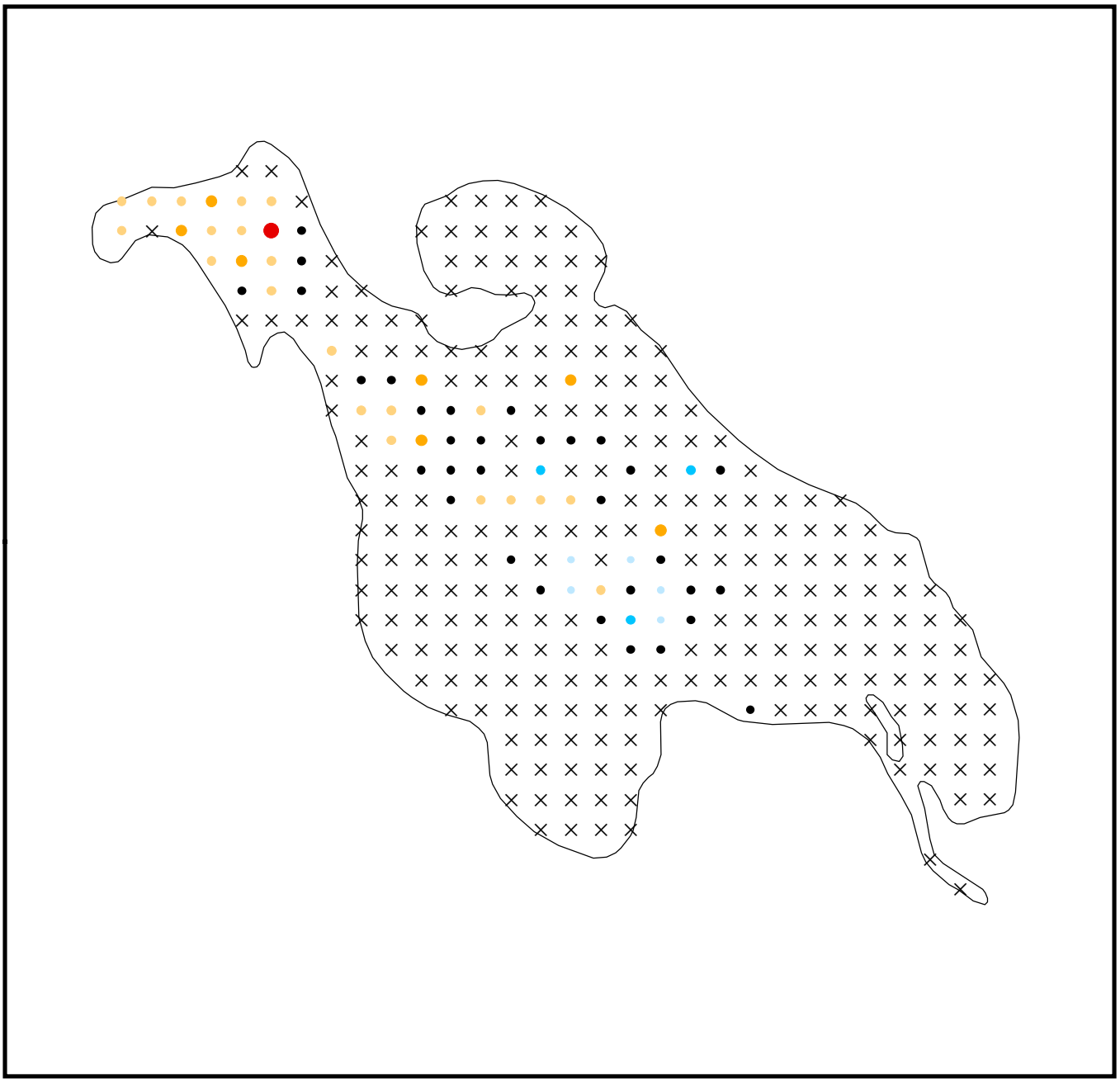
- 1
- 2
- 3
- 4
- 5
- 6
- NO AQUATIC PLANTS FOUND
- NOT SAMPLED

N

0 330 660 Feet

Source: WDNR and SEWRPC

Figure 2.9
Change in Curly Leaf Pondweed in Trippe Lake: 2017-2024



NOTE: Survey was conducted on Trippe Lake on July 15th-July16th, 2024.

CHANGE IN RAKE FULLNESS RATING

- -0.5
- -1
- 0.5
- 1
- 1.5
- 2

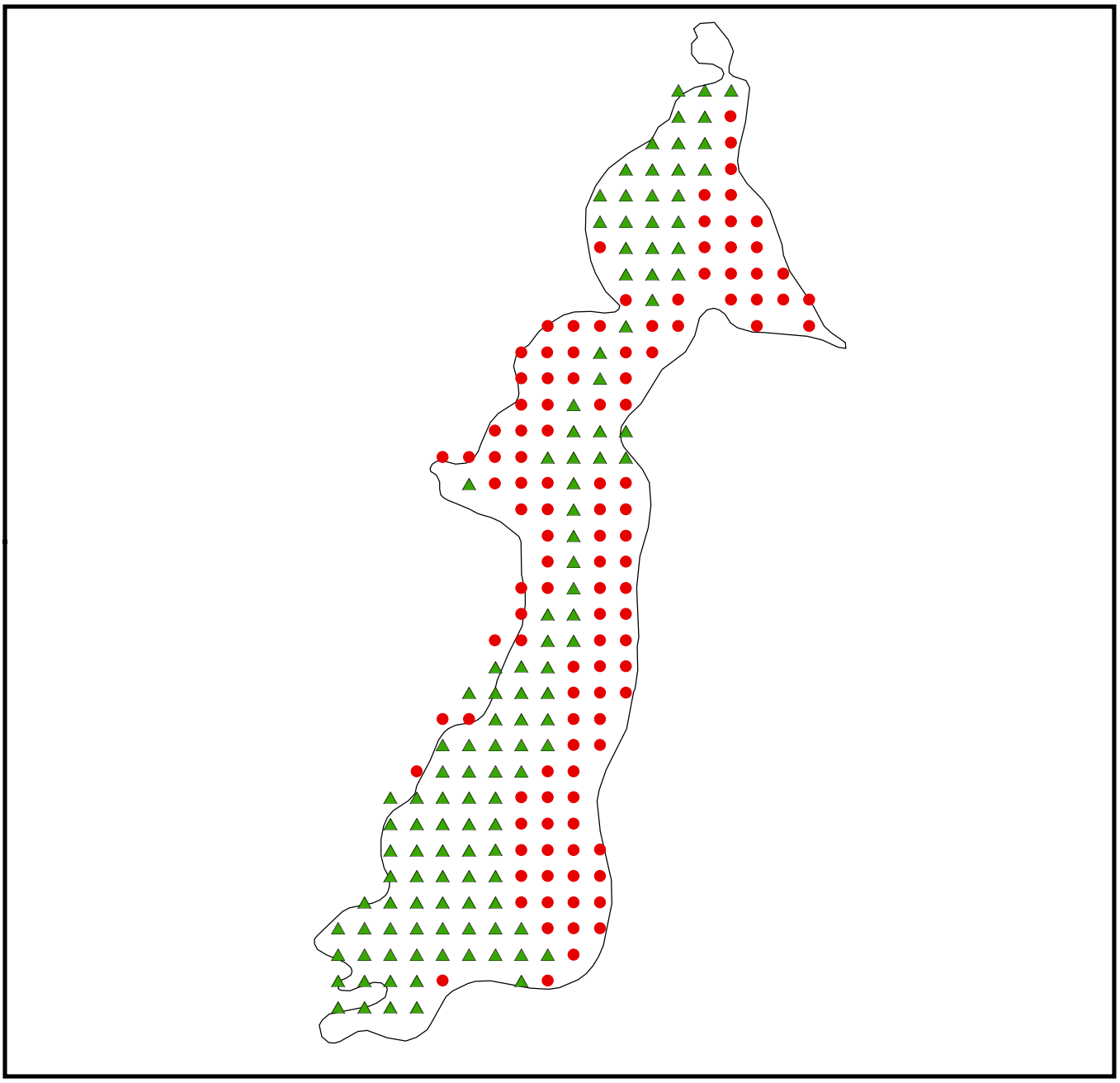
- NO CLP OBSERVED EITHER YEAR
- CLP PRESENT, NO CHANGE IN FULLNESS
- × NOT SAMPLED BOTH YEARS

N

0 380 760 Feet

Source: WDNR and SEWRPC

Figure 2.10
Cattail Extent on Cravath Lake: July 2024



NOTE: Survey was conducted on Cravath Lake on July 29th, 2024.

LAKE BOUNDARY

SAMPLED

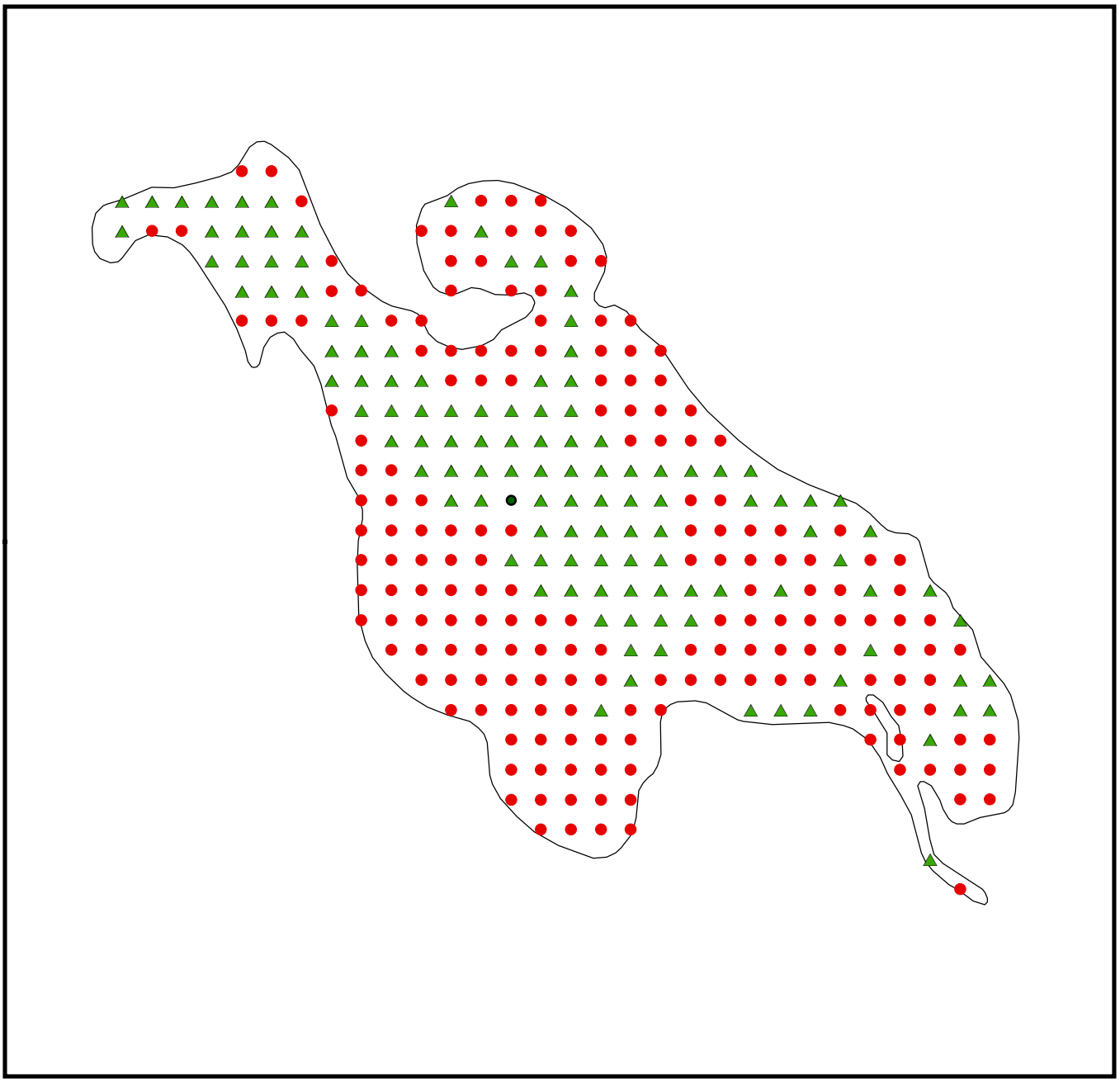
NONNAVIGABLE DUE TO CATTAIL GROWTH

N

0 380 760 Feet

Source: WDNR and SEWRPC

Figure 2.11
Cattail Extent on Trippe Lake: July 2024



NOTE: Survey was conducted on Cravath Lake on July 29th, 2024.

LAKE BOUNDARY

SAMPLED

NONNAVIGABLE DUE TO CATTAIL GROWTH

N

0 380 760
Feet

Source: WDNR and SEWRPC

Figure 2.12
Hybrid Cattails in Cravath and Trippe Lakes: July 2024

Trippe Lake Cattails

Cravath Lake Cattails

Source: SEWRPC

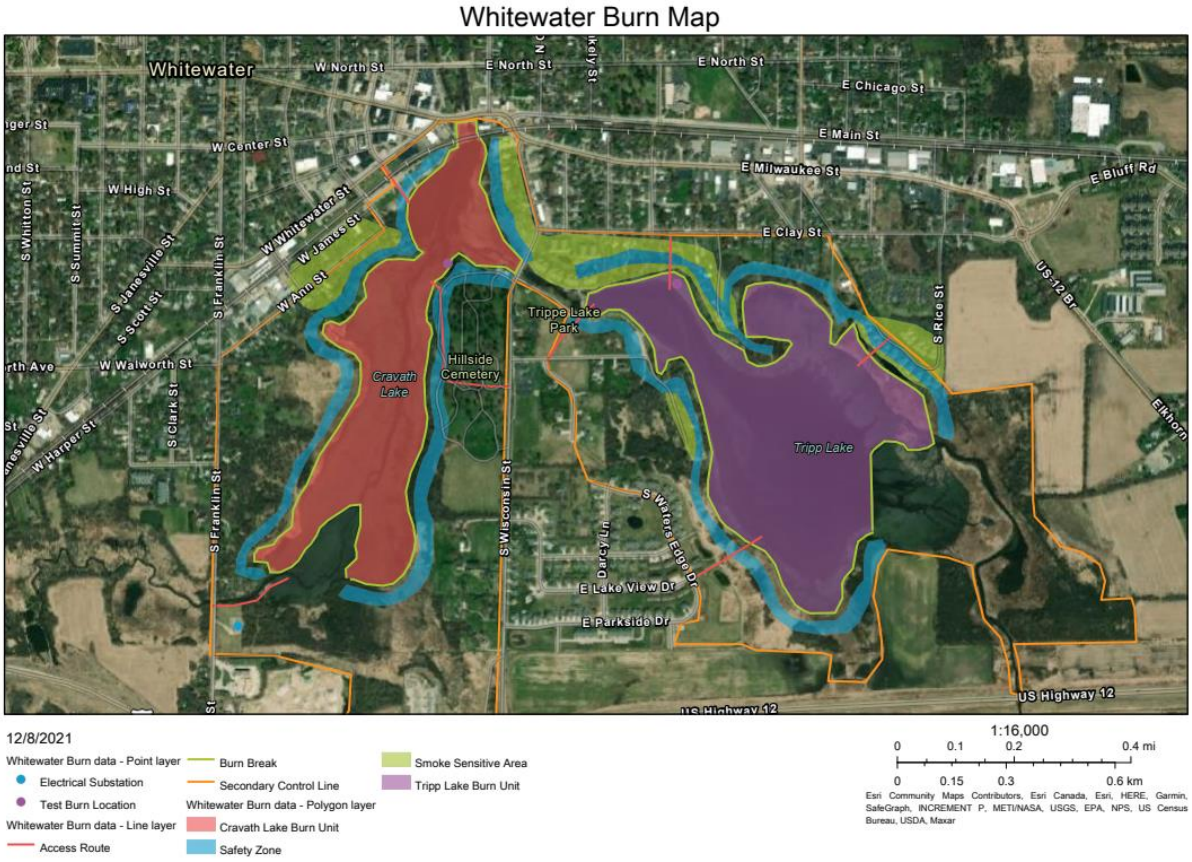
Figure 2.13
Hybrid Cattail Extent in Cravath and Trippe Lakes

June 2015 Cattails

May 2023 Cattails

Source: Google Earth Pro Imagery

Figure 2.14
Controlled Burn Map for Cravath and Trippe Lakes: December 2021



Source: City of Whitewater, Field & Stream Restorations

SEWRPC Staff Memorandum Report Number 275

AQUATIC PLANT MANAGEMENT PLAN FOR
CRAVATH AND TRIPPE LAKES, WALWORTH COUNTY, WISCONSIN

Chapter 2 Tables

Table 2.1
Examples of Positive Ecological Qualities Associated with a Subset of the Aquatic Plant Species Present or Historically Present in Cravath and Trippe Lakes

Aquatic Plant Species Present	Ecological Significance
Ceratophyllum demersum (coontail)	Provides good shelter for young fish; supports insects valuable as food for fish and ducklings; native
Elodea canadensis (common waterweed)	Provides shelter and support for insects which are valuable as fish food; native
Lemna spp. (duckweeds)	Very nutritious food source for waterfowl; mats can prevent extensive mosquito breeding; native
Myriophyllum spicatum (Eurasian watermilfoil)	None known. Invasive nonnative. Hinders navigation, outcompetes desirable aquatic plants, reduces water circulation, depresses oxygen levels, and reduces fish/invertebrate populations
Nelumbo lutea (American lotus)	Extensive stand provide habitat for wildlife, rhizomes consumed by muskrat and beaver; native
Potamogeton crispus (curly-leaf pondweed)	Adapted to cold water; mid-summer die-off can impair water quality; invasive nonnative
Potamogeton gramineus (variable pondweed)	The fruit is an important food source for many waterfowl; also provides food for muskrat, deer, and beaver; native
Potamogeton natans (floating-leaf pondweed)	The late-forming fruit provides important food source for ducks; provides good fish habitat due to its shade and foraging opportunities; native
Stuckenia pectinata (Sago pondweed)	This plant is the most important pondweed for ducks, in addition to providing food and shelter for young fish; native

Note: Information obtained from A Manual of Aquatic Plants by Norman C. Fassett, University of Wisconsin Press; Guide to Wisconsin Aquatic Plants, Wisconsin Department of Natural Resources; and, Through the Looking Glass: A Field Guide to Aquatic Plants, Wisconsin Lakes Partnership, University of Wisconsin-Extension.

Source: SEWRPC

Table 2.2
Cravath Lake Aquatic Plant Summary Statistics: PI Survey 2024

Total number of sites visited	114
Total number of sites with vegetation	94
Total number of sites shallower than maximum depth of plants	114
Frequency of occurrence at sites shallower than maximum depth of plants	82.46
Simpson Diversity Index	0.62
Maximum depth of plants (feet)	7.00
Number of sites sampled using rake on Rope (R)	15
Number of sites sampled using rake on Pole (P)	99
Average number of all species per site (shallower than max depth)	1.49
Average number of all species per site (veg. sites only)	1.81
Average number of native species per site (shallower than max depth)	1.46
Average number of native species per site (veg. sites only)	1.78
Species Richness	7
Species Richness (including visuals)	9

Source: SEWRPC

Table 2.3
Aquatic Plant Species Observed in Cravath Lake: 2006 – 2024

Aquatic Plant Species	Native or Invasive	2006	2017	2024
Ceratophyllum demersum	Native	X	X	X
Elodea canadensis	Native	X	X	X
Lemna minor	Native	X	X	X
Myriophyllum spicatum	Invasive	X	X	X
Nelumbo lutea	Native	--	X	--
Nuphar advena	Native	--	X	--
Nuphar variegata	Native	X	--	--
Nymphaea odorata	Native	X	X	X
Potamogeton crispus	Invasive	X	X	X
Potamogeton gramineus	Native	--	X	--
Potamogeton illinoensis	Native	--	X	--
Potamogeton natans	Native	--	X	--
Potamogeton zosteriformis	Native	X	X	--
Sagittaria sp.	Native	--	X	--
Sparganium sp.	Native	X	--	--
Spirodela polyrhiza	Native	X	--	--
Stuckenia pectinata	Native	X	X	X
Typha sp.	Hybrid	--	X	X
Wolffia sp.	Native	--	X	X
Species Total		11	16	9

Note: Red text indicates nonnative and/or invasive species.

Source: SEWRPC

Table 2.4
Cravath Lake Aquatic Plant Survey Summary: July 2017 Versus July 2024

Aquatic Plant Species	Native or Invasive	Number of Sites Found[a] (2017/2024)	Frequency of Occurrence Within Vegetated Areas[b] (2017/2024)	Average Rake Fullness[c] (2017/2024)	Relative Frequency of Occurrence[d] (2017/2024)	Visual Sightings[e] (2017/2024)
Ceratophyllum demersum (coontail)	Native	200/67	95.69/71.28	2.20/1.57	23.6/39.4	1/14
Elodea canadensis (waterweed)	Native	74/12	35.41/12.77	1.27/1.17	8.7/7.1	14/1
Lemna minor (duckweed)	Native	193/79	92.34/84.04	1.71/1.42	22.8/46.5	12/33
Myriophyllum spicatum (Eurasian watermilfoil)	Invasive	98/3	46.89/3.19	1.35/1.33	11.6/1.8	21/0
Nelumbo lutea (American lotus)	Native	3/--	1.44/--	1.67/--	0.4/--	3/--
Nuphar advena (Yellow pond-lily)[f]	Native	0/--	0/--	0/--	0/--	26/--
Nymphaea odorata (white water lily)	Native	53/1	25.36/1.06	1.43/1.00	6.3/0.6	88/5
Potamogeton crispus (curly-leaf pondweed)	Invasive	27/0	12.92/0	1.04/0	3.2/0	39/4
Potamogeton gramineus (variable pondweed)	Native	2/--	0.96/--	1.00/--	0.2/--	7/--
*Potamogeton illinoensis (*Illinois pondweed)[g]	Native	0/--	0/--	0/--	0/--	1/--
*Potamogeton natans (*floating-leaf pondweed*)*	Native	0/--	0/--	0/--	0/--	4/--
Potamogeton zosteriformis (flat-stem pondweed)	Native	5/--	2.39/--	1.00/--	0.6/--	4/--
Sagittaria sp. (arrowhead)	Native	1/--	0.48/--	1.00/--	0.1/--	5/--
Stuckenia pectinata (Sago pondweed)[g]	Native	14/1	6.70/1.06	1.00/1.00	1.7/0.6	36/8
Typha sp. (cattail)	Native	0/0	0/0	0/0	0/0	33/14
Wolffia sp. (watermeal)	Native	178/7	85.17/7.45	1.63/1.14	21.0/4.1	10/5

Note: Sampling occurred at 114 sampling sites on July 29th, 2024. 94 of the 114 surveyed sites had vegetation. Red text indicates non-native and/or invasive species.

[a] *Number of Sites refers to the number of sites at which the species was retrieved and identified on the rake during sampling.*

[b] *Frequency of Occurrence, expressed as a percent, is the percentage of times a particular species occurred when there was aquatic vegetation present at the sampling site.*

[c] *Average rake fullness is the average amount, on a scale of 0 to 3, of a particular species at each site where that species was retrieved by the rake.*

[d] *Relative Frequency of Occurrence, expressed as a percent, is the frequency of that particular species compared to the frequencies of all species present.*

[e] *Visual Sightings is the number of sites where that particular species was visually observed within six feet of the actual rake haul location but was not actually retrieved on the rake and was not, therefore, assigned a rake fullness measurement for that site. At sites where this occurred, the species was simply marked as "present" at that site. Recording the number of visual sightings helps give a better picture of species distribution throughout the lake.*

[f] *Designated as a Species of Special Concern by the WDNR Natural Heritage Inventory.*

[g] *Considered a high-value aquatic plant species known to offer important values in specific aquatic ecosystems under Section NR 107.08 (4) of the* Wisconsin Administrative Code.

Source: Wisconsin Department of Natural Resources and SEWRPC

Table 2.5
Trippe Lake Aquatic Plant Summary Statistics: PI Survey 2024

Total number of sites visited	116
Total number of sites with vegetation	39
Total number of sites shallower than maximum depth of plants	116
Frequency of occurrence at sites shallower than maximum depth of plants	33.62
Simpson Diversity Index	0.80
Maximum depth of plants (feet)	6.00
Number of sites sampled using rake on Rope (R)	25
Number of sites sampled using rake on Pole (P)	91
Average number of all species per site (shallower than max depth)	0.49
Average number of all species per site (veg. sites only)	1.46
Average number of native species per site (shallower than max depth)	0.39
Average number of native species per site (veg. sites only)	1.29
Species Richness	9
Species Richness (including visuals)	13

Source: SEWRPC

Table 2.6
Aquatic Plant Species Observed in Trippe Lake: 2006 – 2024

Aquatic Plant Species	Native or Invasive	2017	2024
Ceratophyllum demersum	Native	X	X
Elodea canadensis	Native	X	X
Lemna minor	Native	X	X
Myriophyllum spicatum	Invasive	X	--
Nelumbo lutea	Native	X	X
Nuphar advena	Native	X	--
Nuphar variegata	Native	--	X
Nymphaea odorata	Native	X	X
Potamogeton crispus	Invasive	X	X
Potamogeton foliosis	Native	X	--
Potamogeton gramineus	Native	X	--
Potamogeton illinoensis	Native	X	--
Potamogeton natans	Native	X	--
Potamogeton nodosus	Native	X	--
Potamogeton zosteriformis	Native	X	--
Sagittaria sp.	Native	X	--
Sparganium sp.	Native	--	X
Schoenoplectus sp.	Native	--	X
Spirodela polyrhiza	Native	X	--
Stuckenia pectinata	Native	X	X
Typha sp.	Hybrid	X	X
Vallisneria americana	Native	X	--
Wolffia ap.	Native	X	X
Zizania sp.	Native	X	--
Species Total		21	12

Note: Red text indicates nonnative and/or invasive species.

Source: SEWRPC

Table 2.7
Trippe Lake Aquatic Plant Survey Summary: July 2017 Versus July 2024

Aquatic Plant Species	Native or Invasive	Number of Sites Found[a] (2017/2024)	Frequency of Occurrence Within Vegetated Areas[b] (2017/2024)	Average Rake Fullness[c] (2016/2024)	Relative Frequency of Occurrence[d] (2016/2024)	Visual Sightings[e] (2016/2024)
Ceratophyllum demersum (coontail)	Native	106/19	91.38/48.72	1.93/1.26	46.3/33.3	37/4
Elodea canadensis (waterweed)	Native	19/3	16.38/7.69	1.11/1.00	8.3/5.3	11/1
Lemna minor (duckweed)	Native	3/7	2.59/17.95	1.00/1.00	1.3/12.3	60/37
Myriophyllum spicatum (Eurasian watermilfoil)	Invasive	27/--	23.28/--	1.15/--	11.8/--	39/--
Nelumbo lutea (American lotus)	Native	19/1	16.38/2.56	1.84/1.00	8.3/1.8	208/3
Nuphar advena (Yellow pond-lily)[f]	Native	0/--	0/--	0/--	0/--	4/--
Nuphar variegata (white-water lily)	Native	--/1	--/2.56	--/1.00	--/1.8	--/0
Nymphaea odorata (white water lily)	Native	15/0	12.93/0	1.53/0	6.6/0	80/8
Potamogeton crispus (curly-leaf pondweed)	Invasive	4/12	3.45/30.77	1.00/1.08	1.7/21.1	21/27
Potamogeton foliosus (leafy pondweed)	Native	3/--	2.59/--	1.00/--	1.3/--	8/--
Potamogeton gramineus (variable pondweed)	Native	1/--	0.86/--	1.00/--	0.4/--	0/--
Potamogeton illinoensis (Illinois pondweed)[g]	Native	4/--	3.45/--	1.25/--	1.7/--	5/--
Potamogeton natans (floating-leaf pondweed)	Native	12/--	10.34/--	1.75/--	5.2/--	14/--
Potamogeton nodosus (long-leafed pondweed)	Native	3/--	2.59/--	1.00/--	1.3/--	7/--
Potamogeton zosteriformis (flat-stem pondweed)	Native	1/--	0.86/--	1.00/--	0.4/--	2/--
Sagittaria sp. (arrowhead)	Native	0/--	0/--	0/--	0/--	3/--
Sparganium sp. (bur-reed)	Native	--/0	--/0	--/0	--/0	--/1
Spirodela polyrhiza (large duckweed)	Native	1/--	0.86	1.00/--	0.4/--	2/--
Stuckenia pectinata (Sago pondweed)[g]	Native	6/9	5.17/23.08	1.00/1.11	2.6/15.8	48/12
Typha sp. (cattail)	Native	0/1	0/2.56	0/1.00	0/1.8	45/17
Vallisneria americana (eel-grass/wild celery)[g]	Native	5/--	4.31/--	1.20/--	2.2/--	5/--
Wolffia columbiana (common watermeal)	Native	0/4	0/10.26	0/1.00	0/7.0	25/17
Zizania sp. (wild rice)	Native	0/--	0/--	0/--	0/--	5/--

Note: Sampling occurred at 116 sampling sites on July 15th-16th, 2024. 39 of the 116 surveyed sites had vegetation. Red text indicates non-native and/or invasive species.

[a] *Number of Sites refers to the number of sites at which the species was retrieved and identified on the rake during sampling.*

[b] *Frequency of Occurrence, expressed as a percent, is the percentage of times a particular species occurred when there was aquatic vegetation present at the sampling site.*

[c] *Average rake fullness is the average amount, on a scale of 0 to 3, of a particular species at each site where that species was retrieved by the rake.*

[d] *Relative Frequency of Occurrence, expressed as a percent, is the frequency of that particular species compared to the frequencies of all species present.*

[e] *Visual Sightings is the number of sites where that particular species was visually observed within six feet of the actual rake haul location but was not actually retrieved on the rake and was not, therefore, assigned a rake fullness measurement for that site. At sites where this occurred, the species was simply marked as "present" at that site. Recording the number of visual sightings helps give a better picture of species distribution throughout the lake.*

[f] *Designated a Species of Special Concern by the WDNR Natural Heritage Inventory.*

[g] *Considered a high-value aquatic plant species known to offer important values in specific aquatic ecosystems under Section NR 107.08 (4) of the* Wisconsin Administrative Code.

Source: Wisconsin Department of Natural Resources and SEWRPC

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CRAVATH AND TRIPPE LAKES, WALWORTH COUNTY, WISCONSIN

Chapter 3

MANAGEMENT RECCOMMENDATIONS AND PLAN IMPLEMENTATION

This chapter summarizes the information and recommendations needed to manage aquatic plants in Cravath and Trippe Lakes, particularly the nonnative species of hybrid cattail, Eurasian watermilfoil ("EWM") and curly-leaf pondweed ("CLP"). Accordingly, it presents a range of alternatives that could potentially be used, and provides specific recommendations related to each alternative. The measures discussed focus on those that can be implemented by the City of Whitewater ("City") in collaboration with the Wisconsin Department of Natural Resources ("WDNR") and residents on the Lakes. The aquatic plant management recommendations contained in this chapter are limited to approaches that monitor and control nuisance level aquatic plant growth in the Lakes after the growth has already occurred.

The individual recommendations presented below, and which collectively constitute the recommended aquatic plant management plan, balance three major goals:

- Improving navigational access within the Lakes
- Protecting the native aquatic plant community
- Controlling CLP, EWM, and hybrid cattail populations

Plan provisions also ensure that current recreational uses of the Lakes (e.g., swimming, boating, fishing) are maintained or promoted. The plan recommendations described below consider common, State-approved, aquatic plant management alternatives including manual, chemical, and mechanical measures.

3.1 RECOMMENDED AQUATIC PLANT MANAGEMENT PLAN

The most effective plans to manage nuisance and invasive aquatic plant growth rely on a combination of methods and techniques as well as consideration of when and where these techniques should be applied. The recommended aquatic plant management plan techniques are briefly summarized in the following paragraphs. These management techniques were discussed with both the City and the WDNR.

Aquatic Plant Management Recommendations

The most effective plans to manage nuisance and invasive aquatic plant growth rely on a *combination* of methods and techniques. A "silver bullet" single-minded strategy rarely produces the most efficient, most reliable, or best overall result. This plan recommends three primary aquatic plant management techniques: harvesting, chemical treatment, and prescribed burning. Each of these techniques have custom adaptations for the conditions present in the Lakes. These methods are combined to form the recommended Cravath and Trippe Lakes' aquatic plant management program. The elements of this program are listed below.

1. **Prescribed/controlled burning of cattail material** should be considered to manage the cattail populations that have densely colonized large portions of the Lakes.[1] Controlled burns should be done during the winter months during a lake-drawdown when the lakebeds are exposed and easily accessed. The City should consult with WDNR and the County to ensure they are following local and state regulations regarding prescribed/controlled burns. Due to the ability to draw down both lakes, this management technique should be considered a high priority.
2. **Chemical treatment of hybrid cattail populations.** The spraying of chemicals has long been used as a method to control non-native plant populations. In the case of Cravath and Trippe Lakes, helicopter spraying of Imazapyr or Glyphosate to control hybrid cattails should be considered a high priority.[2] Imazapyr is most effective when used during spring, when cattails are still actively growing. Glyphosate is most effective when sprayed in the autumn as cattails begin to die back for the winter. In addition to helicopter spraying, hand-wicking and regular spraying from boats, on foot, or from amphibious vehicles should also be considered for smaller cattail stands or in areas

[1] *Should prescribed burns be utilized as a management strategy a Burn Plan should be made to ensure the best outcomes of the burn(s).*
[2] *Should chemical spraying be utilized as a management strategy, maps of the location of the spray events should be created and approved by WDNR.*

where helicopter spraying is not feasible or desired due to proximity to residences or sensitive species (e.g., near stands of yellow water lily (*Nuphar advena*), a Species of Special Concern).

3. **Invasive species plant control**. While the 2024 aquatic plant survey did not reveal a need to actively control EWM or CLP, these plants should still be monitored. As aquatic plant community species change, the need for management changes. This is particularly true in heavily used shallow areas. It should be noted that should winter drawdowns be utilized for controlled burns, they will also assist in keeping invasive species such as EWM and CLP under control. This recommendation should be considered a high priority.
4. **Manual removal of nuisance plant growth in near-shore areas** should be considered in areas too shallow, inaccessible, or otherwise unsuitable for other plant control methods**. "**Manual removal" is defined as control of aquatic plants by hand or using hand-held non-powered tools. Cattails can often be drowned out using manual removal techniques such as below-water cutting of the stalks in early spring and late fall. Given what is known of plant distribution, this option is given medium priority. Riparian landowners need not obtain a permit for manually removing aquatic plants if they confine this activity to a 30-foot width of shoreline (including the recreational use area such as a pier) that does not extend more than 100 feet into the Lakes and they remove all resulting plant materials from the Lakes.[3] A permit *is* required if the property owner lives adjacent to a sensitive area or if the City or other group actively engages in such work.[4] Prior to the "raking/hand-pulling" season, an educational campaign should be actively conducted to help assure that shoreline residents appreciate the value of native plants, understand the relationship between algae and plants (i.e., more algae will grow if fewer plants remain), know the basics of plant identification, and the specifics about the actions they are allowed to legally take to "clean up" their shorelines.[5]
5. **Diver-Assisted Suction Harvesting or Hand-pulling.** Diver-assisted harvesting or hand-pulling is beneficial when conducting aquatic plant management in an area that a full-sized harvester may not be able to reach. Additionally, it is useful when targeting specific invasive species while keeping

[3] *The manual removal area limitation for nearshore aquatic plants applies to shorelines where native plants are present. The removal area limitation does not apply to areas populated solely with nonnative and invasive plants.*

[4] *If a lake district or other group wants to remove invasive species along the shoreline, a permit is necessary under Chapter NR 109, "Aquatic Plants: Introduction, Manual Removal and Mechanical Control Regulations," of the* Wisconsin Administrative Code, *as the removal of aquatic plants is not being completed by an individual property owner along his or her property.*

[5] *SEWRPC and WDNR staff could help review documents developed for this purpose.*

native species intact. This tactic may be useful when targeting smaller specific or shallower areas of the Lakes. This recommendation should be considered a low priority.

6. **Stocking of native aquatic plant species.** Once hybrid cattail and other non-native aquatic plant populations have been lowered, opportunities for native aquatic plant colonization will be increased. Stocking of native aquatic plans will promote biodiversity of the plant community in the Lakes as well as assist in preventing the rebound on nonnative and nuisance species of plants. It is recommended that native plants which have been previously documented in the Lakes (e.g., *Potamogeton natans, P. gramineus, P. zosteriformis, P. illinoensis, P. nodosus, Valisneria americana*) be stocked. This recommendation should be considered a medium priority.
7. **Begin participating in the Clean Boats Clean Waters program to monitor the public launches.** Participation in this program proactively encourages lake users to clean boats and equipment before launching and after using them in Cravath and Trippe Lakes. The WDNR has a grant program that can help fund monitoring efforts (see "Future Funding" later in this chapter).
8. **Stay abreast of best management practices to address invasive species.** The City should regularly communicate with Walworth County and WDNR staff about the most effective treatment options for invasive species as novel techniques and/or chemical products that may more effectively target these species become available.

Future Funding

The City should utilize WDNR Surface Water Grants to further their efforts in monitoring and managing the Lakes, inspecting watercraft at boat launches, and targeting areas for management. Key grant programs to fund these efforts are as follows:

- **Clean Boats, Clean Waters** – this grant program covers up to 75 percent of up to $24,000 to conduct watercraft inspections, collect data, educate boaters about invasive species, and reporting invasive species to the WDNR.
- **Aquatic Invasive Species Prevention** – this grant program covers up to 75 percent of $4,000 for projects that help prevent the spread of AIS species. Eligible costs include the acquisition of decontamination equipment at public boat launches as well as targeted management at boat launches or other access points. All lakes are eligible for at least $4,000 in funding. The City must participate in the Clean Boats, Clean Waters program to maintain eligibility for this grant program.

- **Aquatic Invasive Species Control** – this grant program covers up to 75 percent of up to $50,000 for small-scale projects and $150,000 for large-scale projects that suppress or reduce an AIS population within a lake. Given the current limited spread of EWM and CLP within the lakes, the small-scale project is more appropriate at this time. The large-scale projects should be considered if the populations of these species increase or a novel invasive species, such as starry stonewort, is observed within the lake. Aquatic Invasive Species Control grants fund projects that utilize integrated pest management and are designed to cause multi-season suppression of the target species. An approved aquatic plant management plan is a requirement to participate in this program and only approved recommendations from the plan are eligible projects for funding through this program.
- **Recreational Boating Facilities Grant Program**[6] – this grant program covers up to 50% of $250,00 for a recreational boating facility project. These projects can include aquatic plant harvesting equipment, rehabilitation of facilities, trash skimming equipment, improvement or repair of locks, construction projects such as ramps or dredging for safe water depths. The City has received grants from this program in the past to assist with the funding of projects.

The City should consider applying for these grant programs whenever feasible to support the monitoring, communication, watercraft inspection, and targeted management recommended in this aquatic plant management plan.

3.2 SUMMARY AND CONCLUSIONS

As requested by the City, the Commission worked with the City to develop a scope of work to provide information needed to allow the City to apply for aquatic plant management permits. This report, which documents the findings and recommendations of the study, examines existing and anticipated conditions, potential aquatic plant management problems, and lake use. Conformant with the study's intent, the plan includes recommended actions and management measures as well as options for future funding.

Successfully implementing this plan will require cooperative engagement from the City, State and regional agencies, Walworth County, municipalities, and residents/users of the Lakes. The recommended measures help foster conditions sustaining and enhancing the natural beauty and ambience of Cravath and Trippe

[6] *https://dnr.wisconsin.gov/aid/RBF.html*

Lakes while promoting a wide array of water-based recreational activities suitable for the Lakes' intrinsic characteristics.

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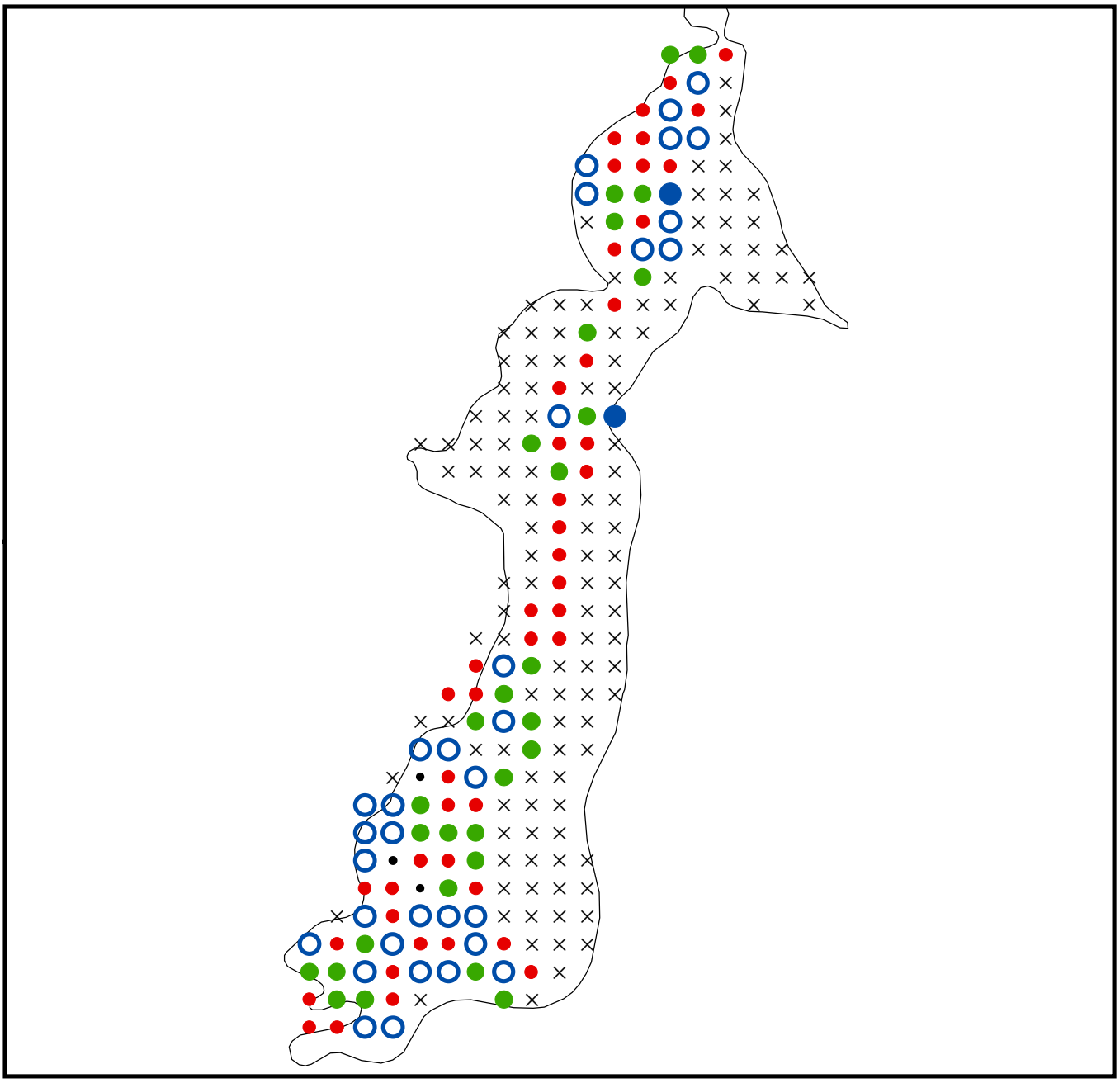
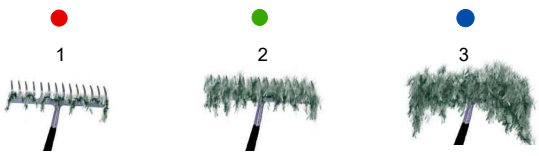
Appendix A

Figure A.1
Duckweed Rake Fullness in Cravath Lake: July 2024



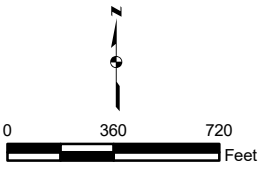
NOTE: Survey was conducted on Cravath Lake on July 29th, 2024.

RAKE FULLNESS RATING



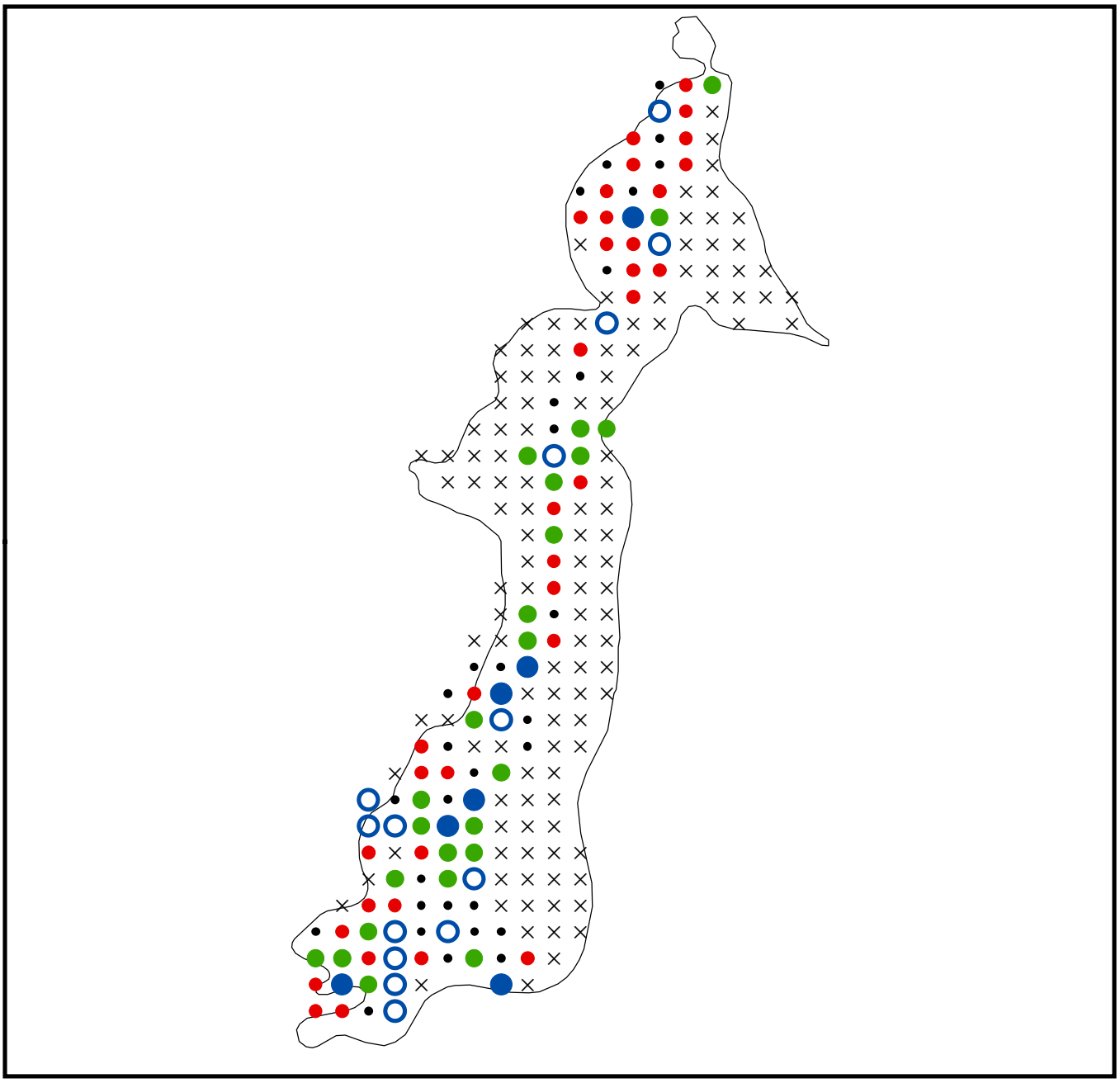
VISIBLE NEARBY

• NO AQUATIC PLANTS FOUND × NOT SAMPLED



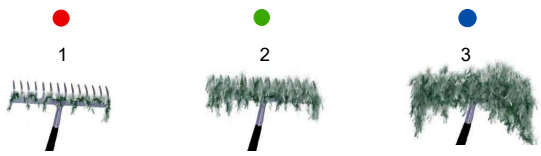
Source: WDNR and SEWRPC

Figure A.2
Coontail Total Rake Fullness in Cravath Lake: July 2024



NOTE: Survey was conducted on Cravath Lake on July 29th, 2024.

RAKE FULLNESS RATING



VISIBLE NEARBY

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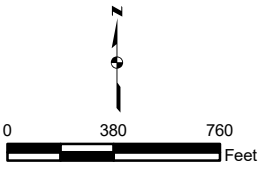
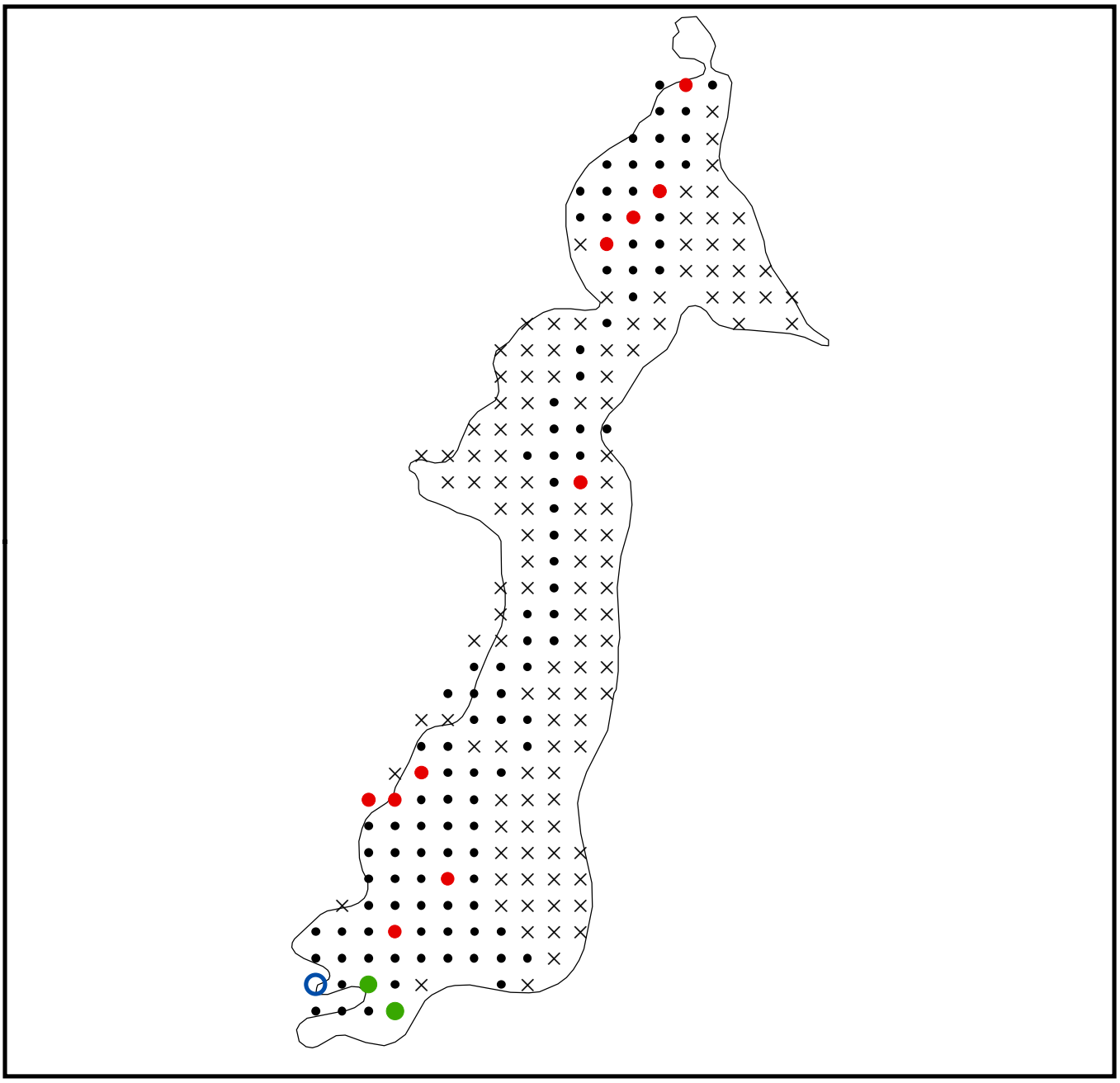
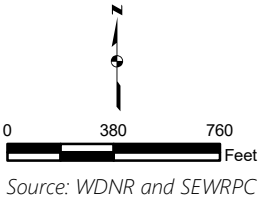


Source: WDNR and SEWRPC

Figure A.3
Elodea Total Rake Fullness in Cravath Lake: July 2024

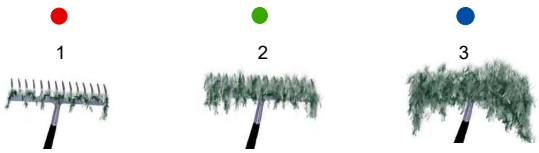


NOTE: Survey was conducted on Cravath Lake on July 29th, 2024.



Source: WDNR and SEWRPC

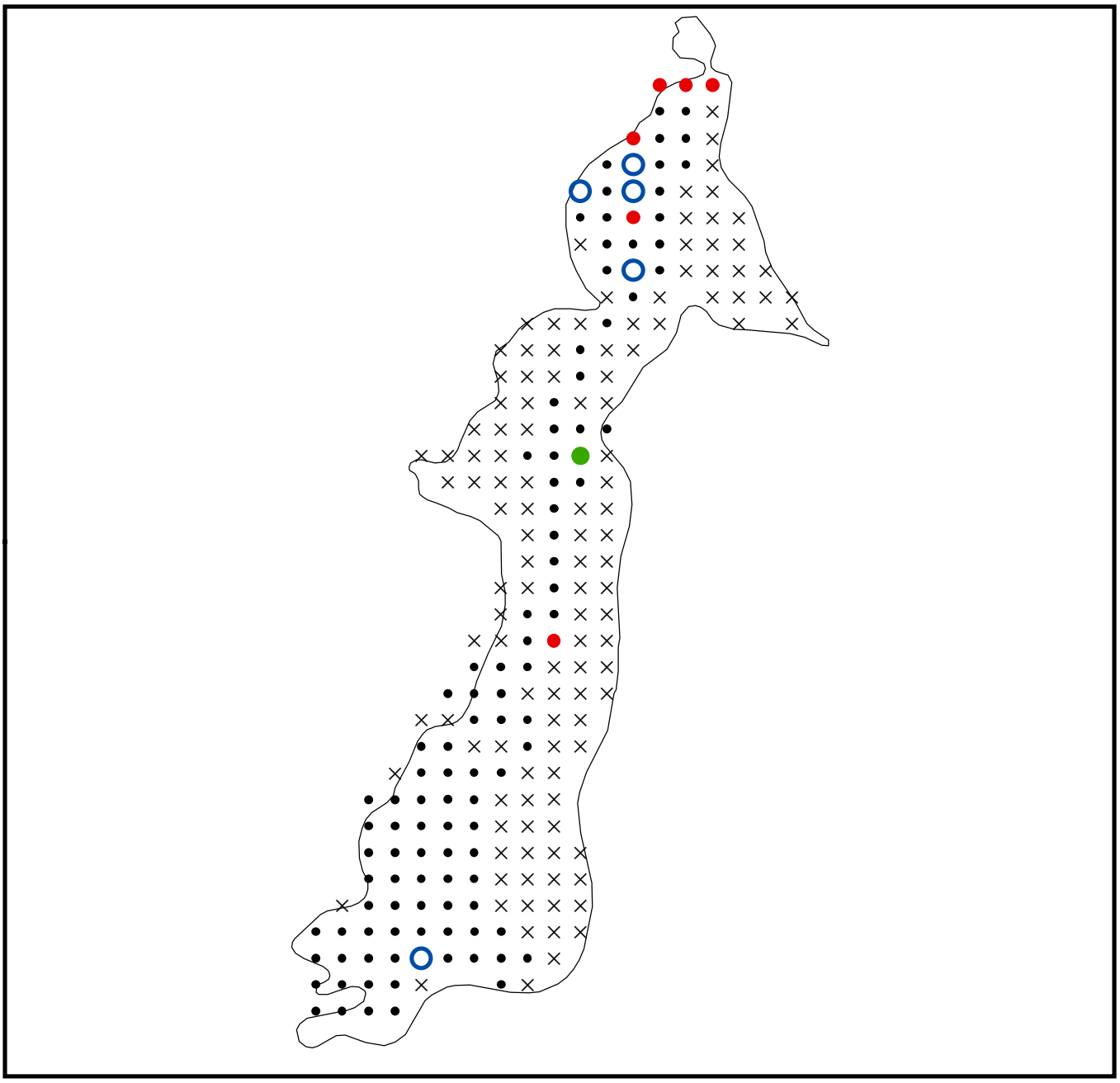
RAKE FULLNESS RATING



VISIBLE NEARBY

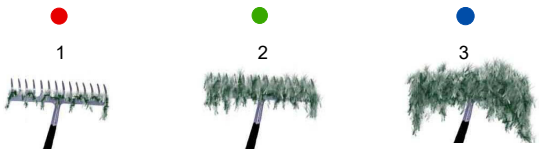
• NO AQUATIC PLANTS FOUND × NOT SAMPLED

Figure A.4
Watermeal Total Rake Fullness in Cravath Lake: July 2024



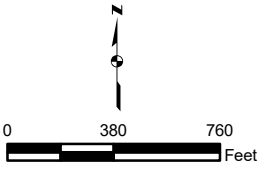
NOTE: Survey was conducted on Cravath Lake on July 29th, 2024.

RAKE FULLNESS RATING



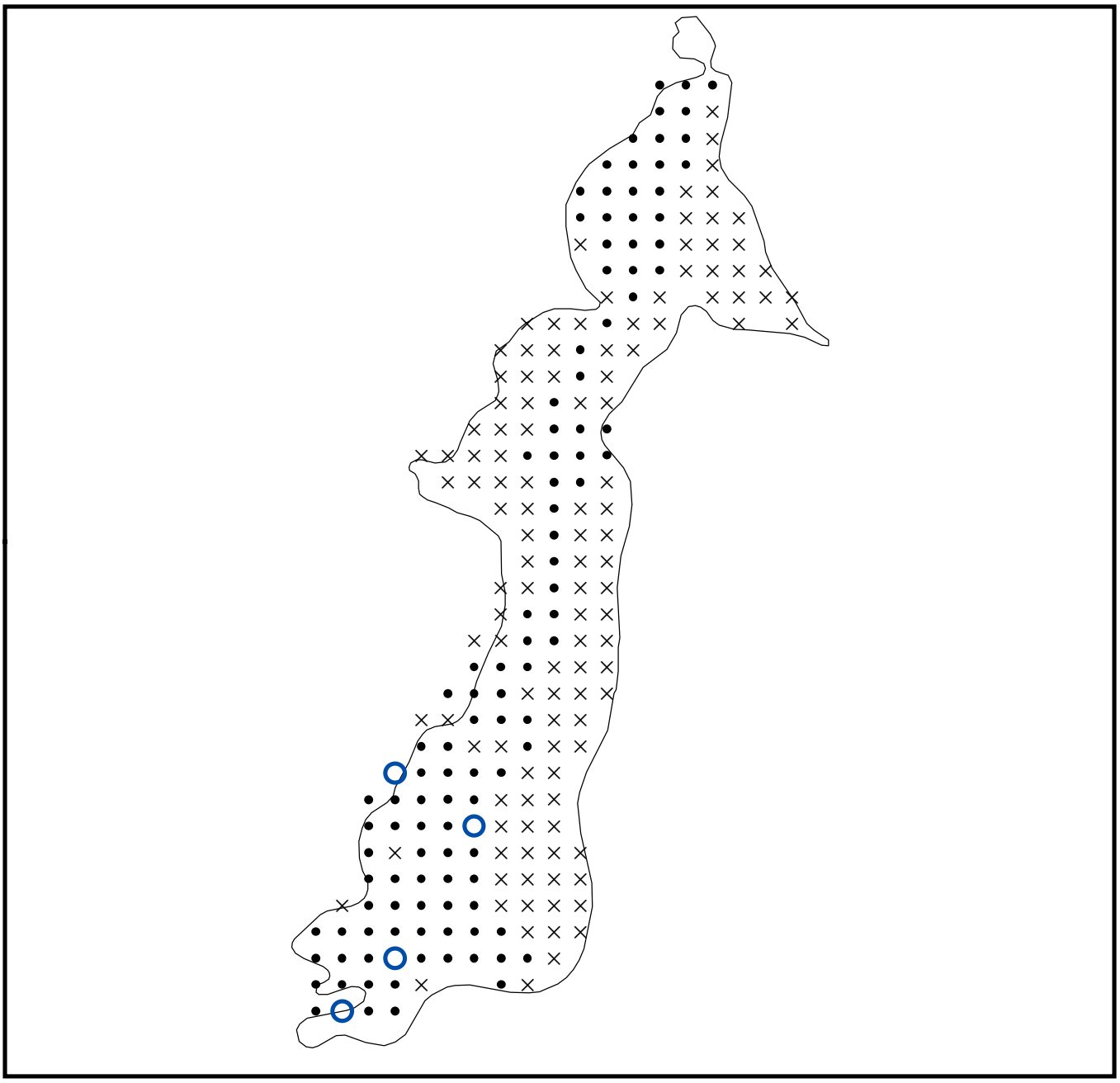
VISIBLE NEARBY

• NO AQUATIC PLANTS FOUND × NOT SAMPLED

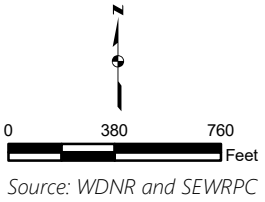


Source: WDNR and SEWRPC

Figure A.5
Curly-leaf Pondweed Total Rake Fullness in Cravath Lake: July 2024

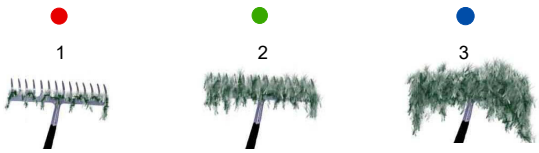


NOTE: Survey was conducted on Cravath Lake on July 29th, 2024.



Source: WDNR and SEWRPC

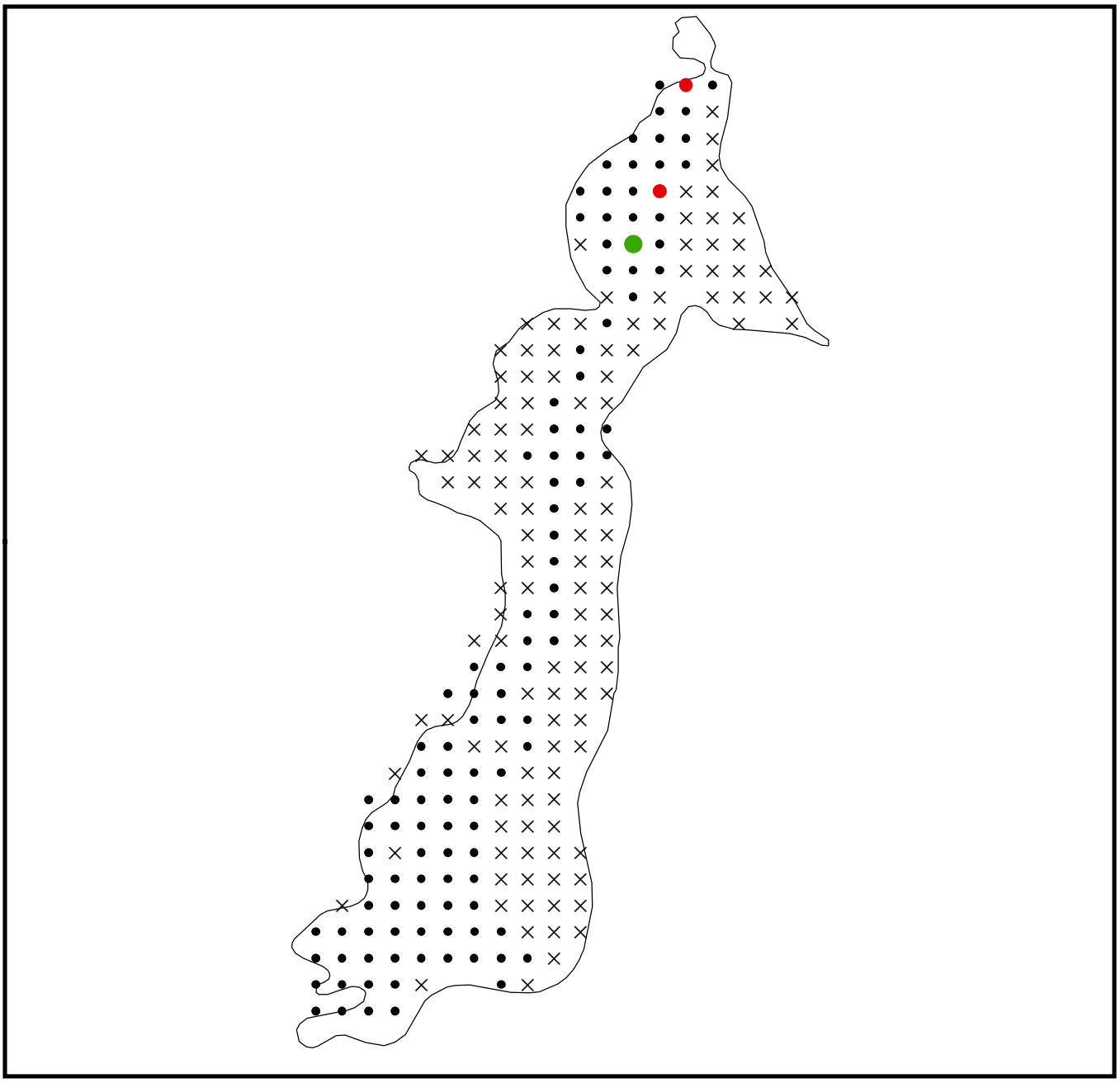
RAKE FULLNESS RATING



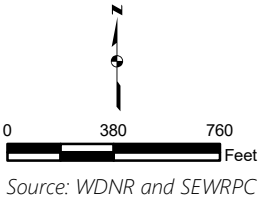
VISIBLE NEARBY

• NO AQUATIC PLANTS FOUND × NOT SAMPLED

Figure A.6
Eurasian Watermilfoil Total Rake Fullness in Cravath Lake: July 2024

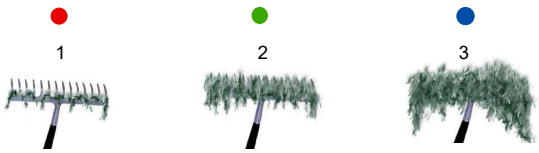


NOTE: Survey was conducted on Cravath Lake on July 29th, 2024.



Source: WDNR and SEWRPC

RAKE FULLNESS RATING



VISIBLE NEARBY

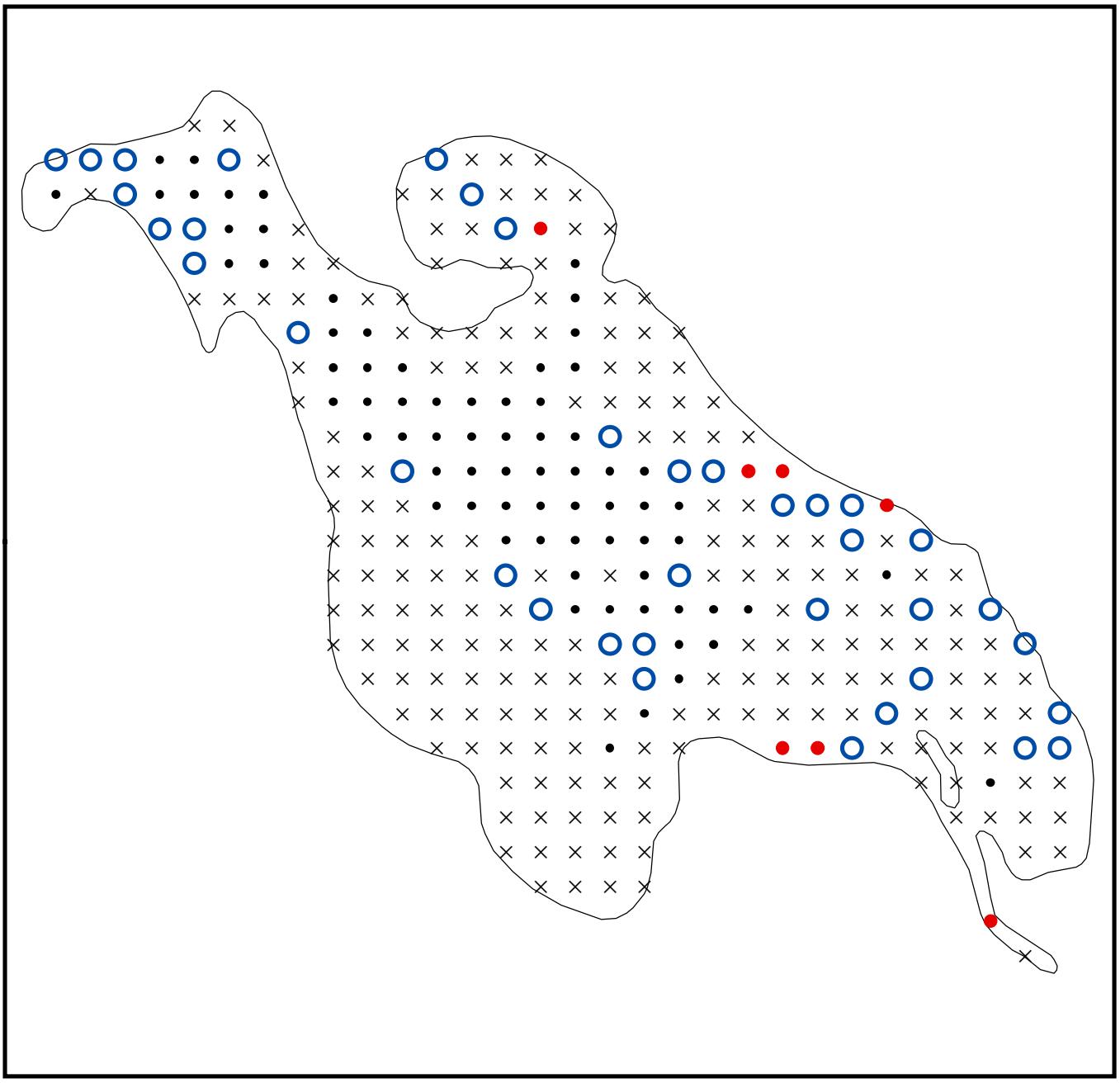
• NO AQUATIC PLANTS FOUND × NOT SAMPLED

SEWRPC Staff Memorandum Report Number 275

AQUATIC PLANT MANAGEMENT PLAN FOR
CRAVATH AND TRIPPE LAKES, WALWORTH COUNTY, WISCONSIN

Appendix B

Figure B.1
Duckweed Rake Fullness in Trippe Lake: July 2024



NOTE: Survey was conducted on Trippe Lake on July 15th-16th, 2024.

RAKE FULLNESS RATING

1 2 3

VISIBLE NEARBY

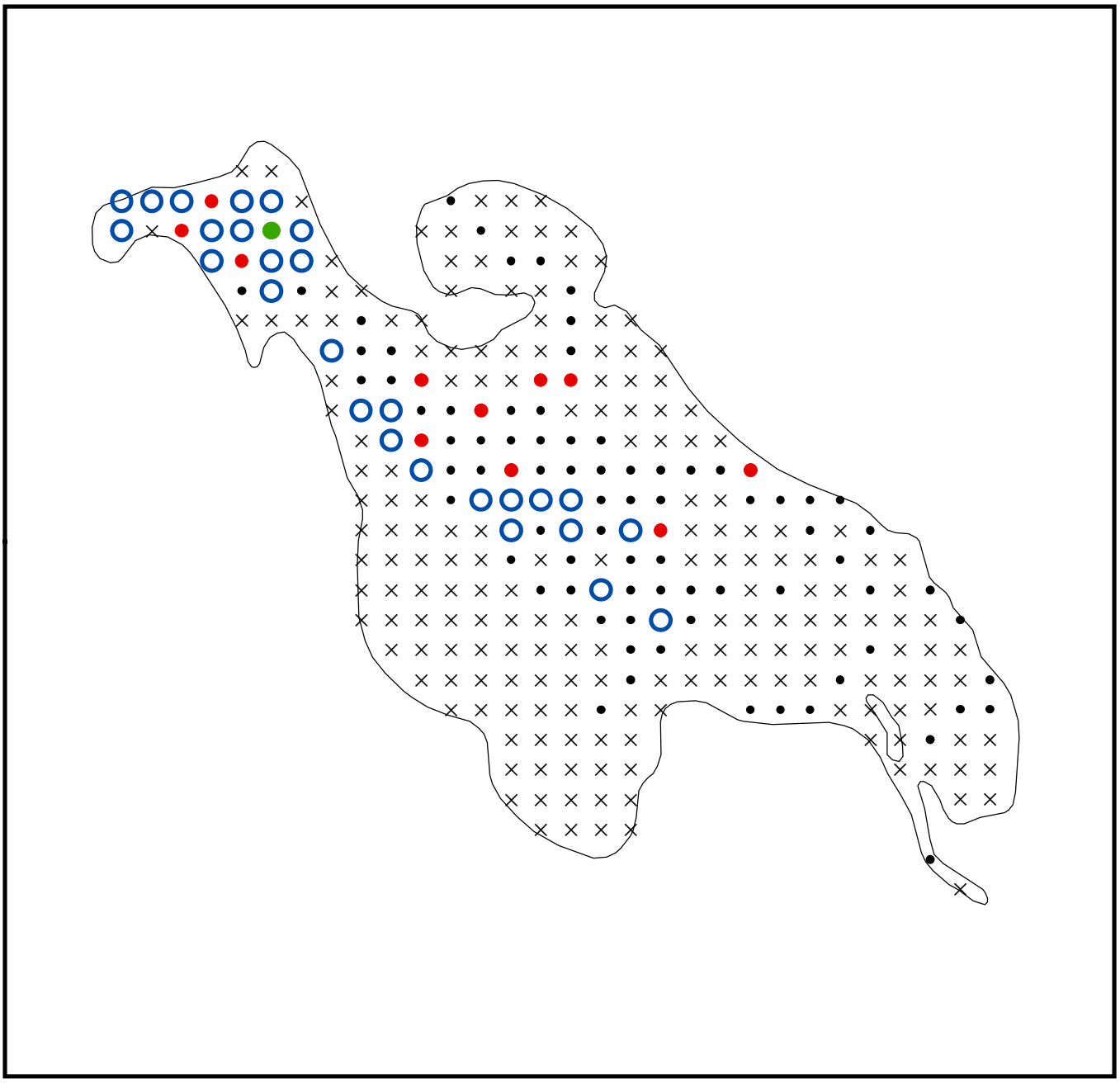
• NO AQUATIC PLANTS FOUND × NOT SAMPLED

N

0 330 660 Feet

Source: WDNR and SEWRPC

Figure B.2
Curly Leaf Pondweed Rake Fullness on Trippe Lake: July 2024



NOTE: Survey was conducted on Trippe Lake on July 15th-July16th, 2024.

RAKE FULLNESS RATING

1 2 3

VISIBLE NEARBY

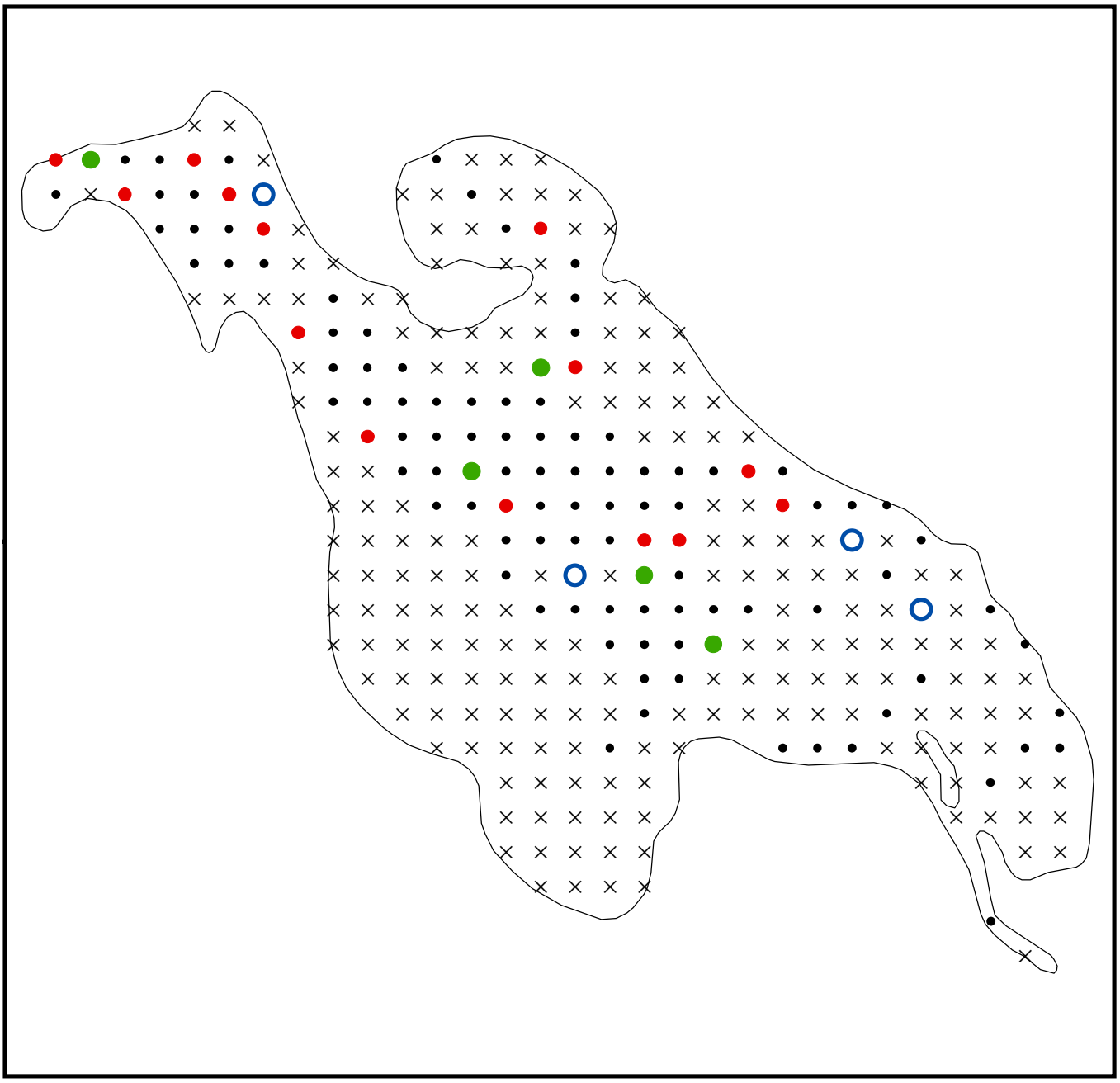
• NO AQUATIC PLANTS FOUND × NOT SAMPLED

N

0 380 760 Feet

Source: WDNR and SEWRPC

Figure B.3
Coontail Rake Fullness in Trippe Lake: July 2024



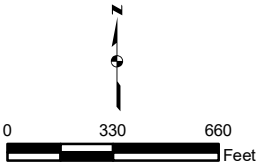
NOTE: Survey was conducted on Trippe Lake on July 15th-16th, 2024.

RAKE FULLNESS RATING

1 2 3

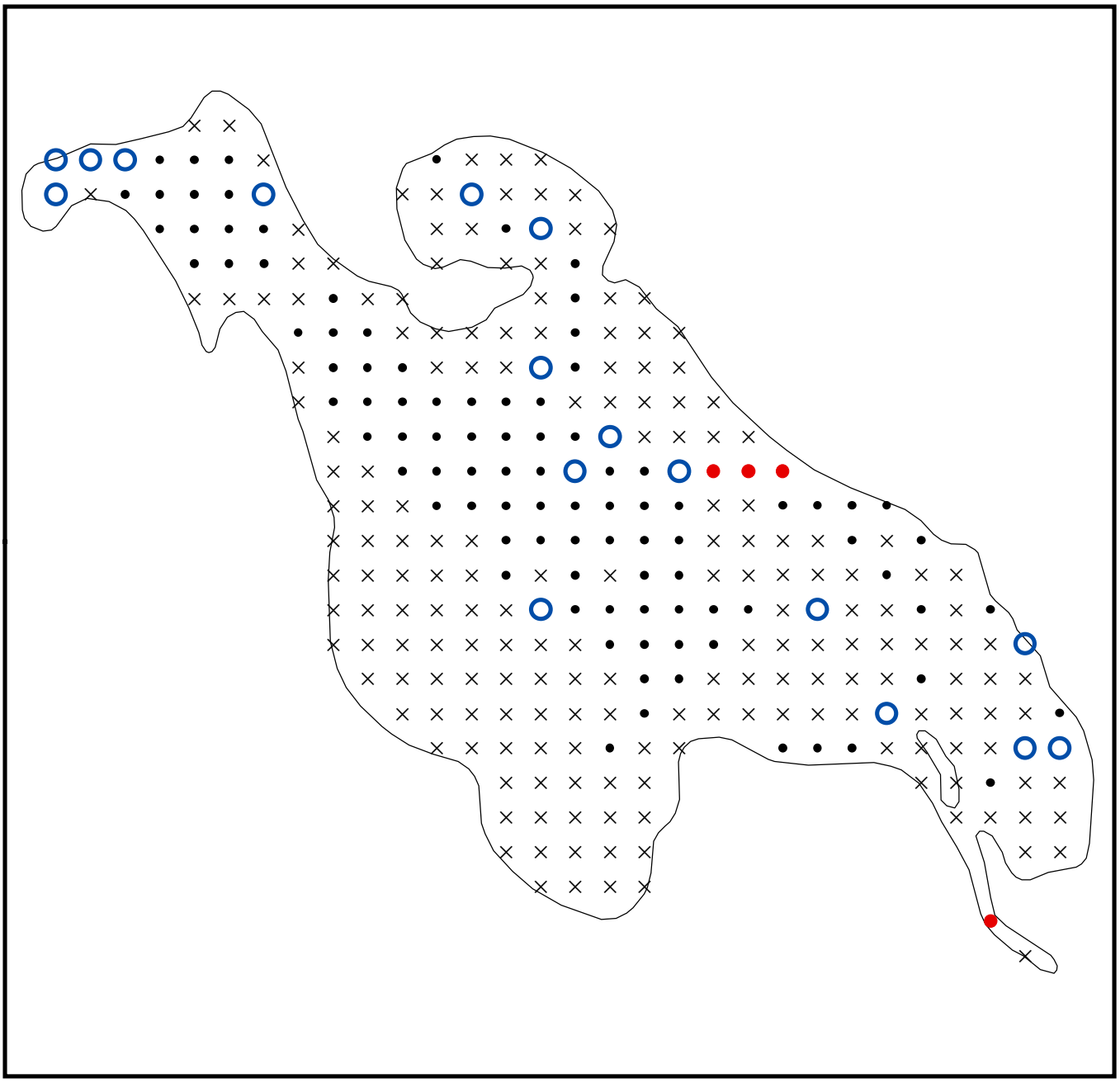
VISIBLE NEARBY

• NO AQUATIC PLANTS FOUND × NOT SAMPLED



Source: WDNR and SEWRPC

Figure B.4
Watermeal Rake Fullness in Trippe Lake: July 2024



NOTE: Survey was conducted on Trippe Lake on July 15th-16th, 2024.

RAKE FULLNESS RATING

1 2 3

VISIBLE NEARBY

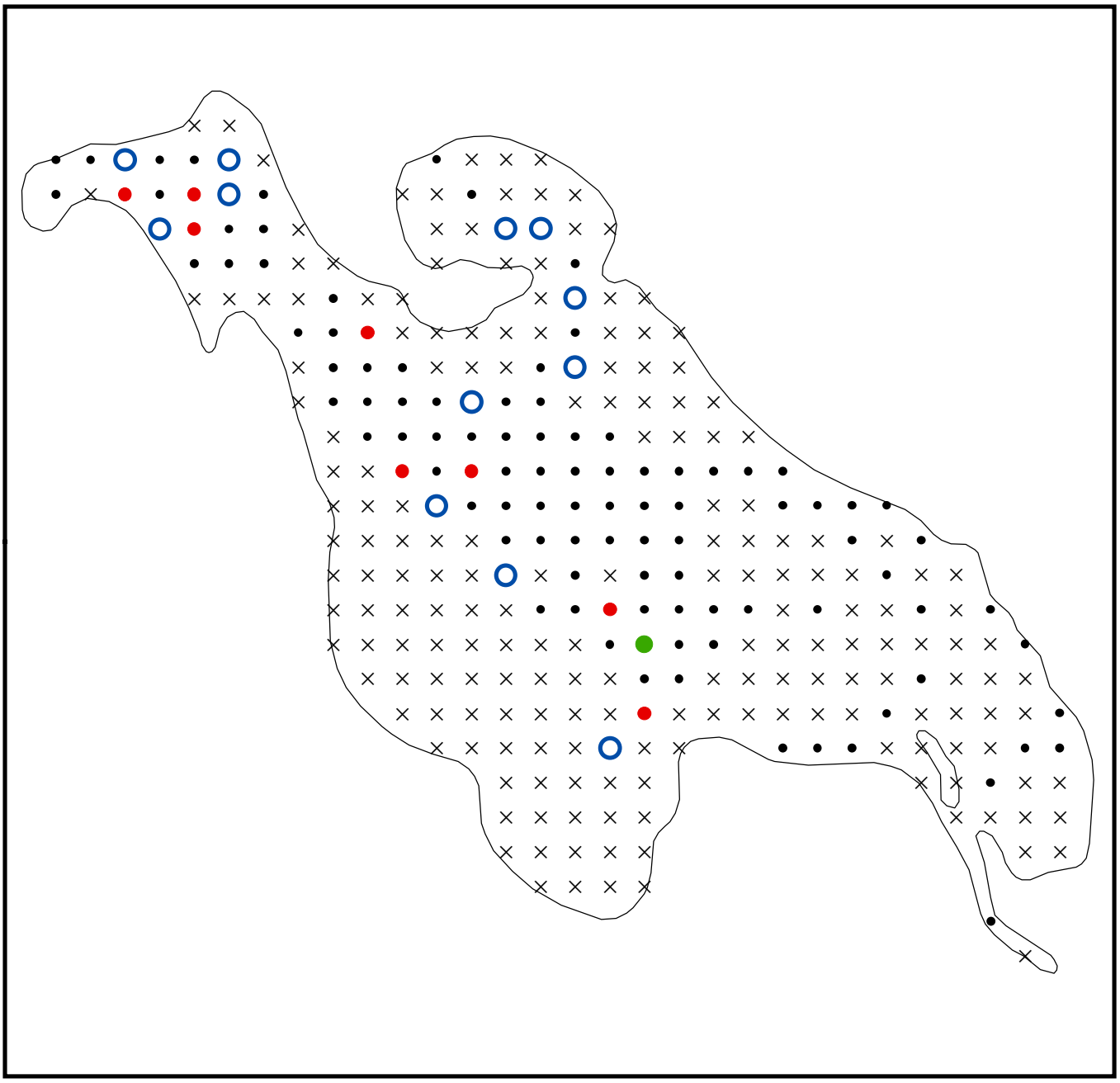
• NO AQUATIC PLANTS FOUND × NOT SAMPLED

N

0 330 660 Feet

Source: WDNR and SEWRPC

Figure B.5
Sago Pondweed Rake Fullness in Trippe Lake: July 2024



NOTE: Survey was conducted on Trippe Lake on July 15th-16th, 2024.

RAKE FULLNESS RATING

1 2 3

VISIBLE NEARBY

• NO AQUATIC PLANTS FOUND × NOT SAMPLED

N

0 330 660 Feet

Source: WDNR and SEWRPC

2000 Mission: The mission of the City of Whitewater Parks/Recreation/Forestry Department is to enhance the quality of life for people of all ages in the City of Whitewater. The department plans and advocates for the acquisition, development and maintenance of public parks, recreation facilities, equipment, programs and activities that meet the community needs for recreation and aesthetics. We strive to protect and enhance the natural environment surrounding the community. This mission is accomplished through planning, organizing and working cooperatively with other leisure-based public and private agencies.

2008 Mission: The mission of the City of Whitewater Parks and Recreation Department is to provide exceptional park and recreation services that enhance the livability of our community.

AI Suggestions based on responses from survey.

Set 1: Community-First & Inclusive

Mission:
To enrich the lives of all who live in and visit Whitewater by providing inclusive, accessible, and engaging parks and recreational opportunities that support health, connection, and lifelong enjoyment.

Vision:
By 2035, Whitewater's park system will be a model of inclusivity, vibrancy, and innovation—where every resident and visitor can find welcoming spaces, dynamic programs, and a strong sense of community pride.

Core Values:

- **Community Engagement** – We listen, respond, and adapt to the needs of our community.
- **Inclusivity & Accessibility** – We ensure everyone feels welcome, regardless of age, ability, or background.
- **Health & Wellness** – We promote physical, mental, and social well-being.

- **Stewardship** – We care for our parks with responsibility and respect for future generations.
- **Excellence** – We strive to provide high-quality programs and well-maintained spaces.

Set 2: Practical & Service-Oriented

Mission:
To provide well-maintained parks and meaningful recreational opportunities that meet the evolving needs of the Whitewater community, support active lifestyles, and foster civic pride.

Vision:
By 2035, our parks will be known for thoughtful design, responsible growth, and year-round use by residents of all ages. We will serve as a regional example of what responsive, community-based recreation looks like.

Core Values:

- **Responsiveness** – We remain attuned to community feedback and act with transparency.
- **Safety & Functionality** – We prioritize the design, location, and upkeep of all spaces.
- **Fiscal Responsibility** – We use public resources wisely and sustainably.
- **Partnership** – We collaborate with residents, schools, and local organizations.
- **Consistency** – We aim for quality service in every program and facility we provide.

Set 3: Visionary & Aspirational

Mission:
To inspire joy, connection, and stewardship by offering innovative parks and recreation experiences that elevate the quality of life for all who live, work, and play in Whitewater.

Vision:
In 2035, Whitewater will be home to a nationally respected park system that fuels creativity, supports environmental resilience, and builds lasting community bonds.

Core Values:

- **Innovation** – We embrace new ideas and continuously improve.
- **Equity & Access** – We design programs and spaces that serve the full community.
- **Environmental Sustainability** – We protect natural areas and promote eco-conscious living.
- **Inspiration** – We create experiences that spark imagination and wonder.

- **Legacy** – We honor our role in shaping the future of Whitewater through every decision we make.

Set 4: Tradition & Growth

Mission:
To honor Whitewater's history of community connection while growing a parks and recreation system that supports today's needs and tomorrow's dreams.

Vision:
By 2035, Whitewater's park system will reflect both tradition and innovation—where long-time residents and new families alike find belonging, adventure, and beauty in every corner of our parks.

Core Values:

- **Respect** – We treat all people, places, and ideas with dignity.
- **Growth** – We embrace change that improves our services and strengthens community.
- **Collaboration** – We build strong partnerships across sectors and generations.
- **Heritage** – We preserve the best of our past while planning for the future.
- **Joy** – We never forget the power of play and celebration.

Set 5: Environment & Wellness-Focused

Mission:
To promote wellness, connection, and environmental stewardship through equitable access to parks, trails, and recreation programs for all members of the Whitewater community.

Vision:
By 2035, Whitewater will be a city where nature, recreation, and well-being are deeply woven into daily life—making our parks essential destinations for renewal, exploration, and gathering.

Core Values:

- **Wellness** – We support healthy, active living at every age and stage.
- **Sustainability** – We make decisions that protect our environment and resources.
- **Accessibility** – We reduce barriers and ensure all voices are heard.
- **Design with Purpose** – We plan and build with safety, usability, and longevity in mind.
- **Connection** – We strengthen social ties through shared spaces and shared experiences.

Whitewater Parks and Recreation Open Space Plan 2025

1. Introduction

Parks, open spaces, and recreation facilities are vital elements of a thriving, livable community. They support physical and mental well-being, provide opportunities for social connection, protect environmental resources, and contribute to community identity and character. Parks also help shape development patterns and serve as public assets that enhance the quality of life for all residents and visitors.

As the City of Whitewater continues to grow and evolve, thoughtful, proactive planning is essential to ensure that future generations have access to safe, inclusive, and high-quality recreational spaces. New development and shifting demographics present both opportunities and challenges that require strategic planning aligned with community values.

The **Whitewater Parks and Recreation Open Space Plan 2025** serves as a comprehensive and forward-looking guide for the preservation, enhancement, and expansion of parks, trails, natural areas, and recreational amenities. It outlines both immediate priorities and long-term goals to meet the current and future needs of Whitewater's diverse population. While the plan identifies strategies through 2035, it is designed to guide investment and development over the next five years (2025–2030).

This plan includes conceptual recommendations for various types of parks, natural areas, and recreational facilities, with a focus on equitable access, operational sustainability, and environmental stewardship. It also supports broader community goals related to public health, inclusion, climate resilience, and the creation of a connected and walkable public realm. In many cases, further detailed design, public engagement, engineering, and budgeting will be required prior to implementation.

The plan has been prepared in accordance with guidelines from the **Wisconsin Department of Natural Resources (DNR)** to maintain eligibility for grant programs such as the **Federal Land and Water Conservation Fund (LWCF)** and the **Wisconsin Stewardship Program**. Maintaining DNR certification requires updating this plan at least every five years to reflect changing community needs.

In addition, this Parks and Open Space Plan functions as an adopted element of the City's overall Master Plan, as authorized under **Wisconsin Statutes §62.23**. It builds on the findings of previous Parks and Open Space Plans and integrates with related documents, including the City's Comprehensive Bikeway Plan and various Neighborhood Development Plans. **This plan establishes the citywide vision, guiding principles, and framework for parks and recreation. A separate Strategic Plan will complement this document by identifying specific needs, priorities, and improvement recommendations for each individual park and facility.** Where inconsistencies occur, the recommendations of the **2025 Parks and Open Space Plan** shall take precedence.

2. The Vital Role of Parks and Recreation in the Community

As financial and land resources become increasingly limited, it is important to recognize the critical value that parks, open spaces, and recreation services bring to the community. In Whitewater, these assets are essential components of our public infrastructure—equally vital to our long-term well-being as roads, utilities, and housing.

Parks and recreation play a foundational role in addressing major public health challenges. With rising rates of obesity, diabetes, and sedentary lifestyles across the country, the availability of safe, accessible spaces for physical activity is more important than ever. By offering places to play, walk, bike, gather, and participate in positive recreation experiences, Whitewater's park system helps instill habits of health and wellness that can last a lifetime—especially for children and families.

In addition to their health benefits, parks and recreation facilities are among the most visible and valued services a community provides. A well-maintained and vibrant park system reflects a strong sense of civic pride and quality of life. Parks are places where neighbors connect, celebrations are held, and community bonds are strengthened.

Parks also serve as an important economic driver. High-quality public spaces help attract and retain new families, students, and businesses. They enhance property values, support tourism and events, and contribute to the city's appeal as a place to live, learn, work, and play.

Equally important is the environmental role of parks. An interconnected system of active and passive recreation areas, greenways, and open spaces helps preserve biodiversity, protect sensitive ecosystems, and support stormwater and flood management. As climate-related pressures increase, these "green infrastructure" elements will play a vital role in enhancing Whitewater's resilience and environmental sustainability.

Ultimately, the park system is a reflection of the community's values—supporting health, equity, sustainability, and quality of life for all. As we invest in and improve these spaces, we ensure that current and future generations can continue to benefit from the vital role parks and recreation play in the heart of Whitewater.

3. Background Information

The City of Whitewater is located in southeastern Wisconsin, straddling the border of Jefferson and Walworth Counties. As of [insert latest available year], the estimated population of the City is approximately [insert updated population]. Whitewater covers roughly nine square miles and is bordered by the Town of Cold Spring to the north (Jefferson County) and by the Town of Whitewater to the south, east, and west (Walworth County).

The Whitewater Unified School District (WUSD) encompasses the entire city and extends into surrounding lands within Jefferson, Rock, and Walworth Counties. This regional connection reinforces the City's role as a central hub for education and community life in the area.

Since 1980, Whitewater has experienced modest but steady population growth, averaging approximately 0.8% per year. While growth rates have varied—typically lower than the state average and Walworth County but comparable to Jefferson County—Whitewater remains a dynamic community shaped by both permanent residents and a large student population.

The presence of the University of Wisconsin–Whitewater significantly influences the character of the community. Although many of the recreational needs of university students are served by on-campus facilities, the City recognizes the importance of ensuring off-campus parks and programs are welcoming, accessible, and inclusive of students. Continued collaboration between the City and the University is essential to meeting the recreational needs of all residents—long-term and temporary alike.

Effective park and open space planning requires thoughtful consideration of population trends. Estimating future population growth is challenging due to numerous variables, including regional economic development, housing trends, and broader urban expansion from nearby metropolitan areas such as Milwaukee, Madison, and Chicago. However, based on existing projections, the City of Whitewater is expected to reach a population of approximately [insert projected population] by the year 2025.

Given these projections—and the possibility of accelerated growth tied to regional development pressures—it is recommended that the City plan according to the higher end of park and open space standards. This proactive approach will help ensure that Whitewater remains well-equipped to serve a growing, changing, and increasingly diverse population.

---

4. Planning Process

To be developed

Note: A separate Strategic Plan will be developed in conjunction with or immediately following the adoption of this Parks and Open Space Plan. The Strategic Plan will provide detailed, park-by-park assessments and identify specific needs, design concepts, priority improvements, and potential funding opportunities tailored to each facility in the system.

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5. Mission, Vision, and Values

To be developed

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6. Park and Recreation System Overview

Park Classification and Standards

To ensure that the City of Whitewater's parks and recreational system continues to meet the diverse and evolving needs of the community, a clear and consistent classification of park types is essential. This plan uses the National Recreation and Park Association (NRPA) classification system, adapted to local context and planning goals.

Two key planning standards are used:

1. Gross Acreage Standard
This standard identifies the recommended number of usable acres of park and recreation land per 1,000 residents. The NRPA generally recommends 6.25 to 10.5 acres of developed recreational land per 1,000 people. This figure excludes environmentally sensitive lands acquired for conservation purposes, which are measured separately.

2. Service Area Standard
Each park classification is assigned a recommended service radius, ensuring that residents have access to appropriate facilities within walking or biking distance. This helps identify geographic gaps and ensures equitable park distribution across the city.

Park Classifications

Whitewater's park system includes 15 distinct parks, classified into the following categories. Each classification includes a description, typical size, population served, and intended recreational intensity.

Mini Park
Small parks designed for concentrated or specific populations such as preschoolers, seniors, or apartment-dwelling families.

- Size: 2 acres or less
- Service Radius: < ¼ mile
- Acreage Standard: 0.25–0.5 acres per 1,000 residents
- Typical Features: Tot lots, seating, garden plots, shade structures

Neighborhood Park
The foundational unit of the park system, designed for a mix of active and passive uses and accessible by foot or bike.

- Size: 3–7 acres
- Service Radius: ¼ to ½ mile
- Acreage Standard: 1–2 acres per 1,000 residents

- Typical Features: Playgrounds, sports courts, picnic shelters, open lawns, trails

Community Park
Larger parks that serve multiple neighborhoods and accommodate a wide variety of uses, both active and passive.

- Size: 15–40 acres
- Service Radius: 1.5 miles
- Acreage Standard: 5–8 acres per 1,000 residents
- Typical Features: Ball fields, aquatic centers, event space, natural areas, trails, ample parking

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Recreation Area Classifications

To better understand the functional use of spaces within parks, this plan also categorizes areas by recreational intensity:

Active Recreation Areas
Designed for structured and high-use activities, including: athletic fields, playgrounds, sport courts, skateparks, splash pads, dog parks, and community gardens.

Passive Recreation Areas
Characterized by open space or light improvements for informal use: natural areas, walking trails, picnic areas, scenic overlooks, native plantings.

Special Use Areas
Uniquely programmed or historic spaces with specialized facilities: memorial parks, amphitheaters, historical sites, cultural plazas.

Conservancy Areas
Permanently protected lands of environmental or ecological significance: floodplains, wetlands, shorelines, stormwater basins, environmental corridors, and wildlife habitat areas. These areas may offer trail access or environmental education, but are not counted toward developed park acreage.

Note: The Whitewater Effigy Mounds Preserve is classified as a Special Use Area due to its sacred cultural significance, interpretive and educational value, and its preservation function. The site may also be considered a Conservancy Area due to its sensitive landscape and emphasis on

protection over programmed recreational use. It is managed with care and respect in collaboration with Native American communities, and is not included in the developed park acreage total to preserve its integrity and honor its historical context.

7. Needs Assessment

To be developed

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8. Goals and Objectives

To be developed

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9. Recommendations and Strategies

To be developed

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10. Implementation Plan

To be developed

Note: This section will include system-wide strategies and capital improvement priorities. Park-specific implementation actions, cost estimates, and phasing details will be outlined in the forthcoming Strategic Plan, which is intended to guide detailed park-level improvements aligned with the vision established in this Open Space Plan.

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11. Plan Adoption and Certification

To be developed

Appendices

To be added as needed

City of Whitewater

Park and Open Space Plan Update 2008 -2013

Document completed by:

City of Whitewater **Park** and Recreation Board
City of Whitewater Plan and Architectural Review Commission
City of Whitewater **Parks** and Recreation Department
City of Whitewater Planning Department

RESOLUTION ADOPTING THE PARK & OPEN SPACE PLAN UPDATE 2008-2013 AS A COMPONENT OF THE CITY OF WHITEWATER MASTER PLAN

WHEREAS, the City of Whitewater Plan Commission has adopted a Master Plan for the purpose of aiding the Plan Commission and the Common Council of the City of Whitewater in the performance of their duties, and

WHEREAS, a component of the Master Plan is a Parle and Open Space Plan, and

WHEREAS, pursuant to Wisconsin Statute 62.23 the Plan Commission has the power to amend, extend, add to, or extend into greater detail the Master Plan, or any component of said Master Plan, and

WHEREAS, by the passage of this resolution the Plan Commission intends to address, pursuant to Wisconsin Statute 66.1001(2)(e) objectives, policies, goals, maps and programs for the effective management of parks and open spaces in the City of Whitewater, and

WHEREAS, it is in the City of Whitewater and the general public's best interest to amend, extend, add to, and extend into greater detail the Parle and Open Space component of the City of Whitewater Master Plan, and

WHEREAS, adoption of the Park and Open Space Plan Update 2008 - 2013 pursuant to Wisconsin Statute 62.23(3) will promote the general purpose of guiding and accomplishing a coordinated, adjusted, and harmonious development of the City of Whitewater, which will, in accordance with future needs, best promote public health, safety, morals, order, convenience, prosperity, and general welfare, as well as efficiency and economy in the development of the City of Whitewater and surrounding areas.

Now, therefore, BE IT RESOLVED, that the Plan Commission of the City of Whitewater hereby approves and adopts the attached Parle and Open Space Plan Update 2008-2013.

Upon adoption by the Plan Commission, the Park and Open Space Plan Update 2008 - 2013 shall be certified to the Common Council.

Resolution introduced by Plan Commission member --'K=a=l=u:...:...va=---------- -- who moved its adoption. Seconded by Plan Commission member _St_o_n_e_____

AYES: Kaluva, Stone, Coburn Zaballos, Gilpatrick.

NOES: Miller, Kienbaum.

(Alternate

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2-25-DB

ABSENT: Wiedenhoeft.

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tfane Wegner, Secretary

ADOPTED: February 25, 2008

Acknowledgements

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Introduction

Parks, open spaces, and recreation facilities are vital elements of a thriving, livable community. They support physical and mental well-being, provide opportunities for social interaction, protect environmental resources, and contribute to the community's identity and character. Parks also help shape development patterns and serve as public assets that enhance the quality of life for all residents and visitors.

As the City of Whitewater continues to grow and evolve, thoughtful, proactive planning is essential to ensure that future generations have access to safe, inclusive, and high-quality recreational spaces. New development and shifting demographics present both opportunities and challenges that require strategic planning aligned with community values.

The 2025 Whitewater Parks and Open Space Plan, serves as a comprehensive and forward-looking guide for the preservation, enhancement, and expansion of parks, trails, natural areas, and recreational amenities. It outlines both immediate priorities and long-term goals to meet the current and future needs of Whitewater's diverse population. While the plan identifies strategies through 2035, it is designed to guide investment and development over the next five years (2025-2030).

This plan includes conceptual recommendations for various types of parks, natural areas, and recreational facilities, with a focus on equitable access, operational sustainability, and environmental stewardship. It also supports broader community goals related to public health, inclusion, climate resilience, and the creation of a connected and walkable public realm. In many cases, further detailed design, public engagement, engineering, and budgeting will be required prior to implementation.

The plan has been prepared in accordance with guidelines from the Wisconsin Department of Natural Resources(DNR) to maintain eligibility for grant funds through the Federal Land and Water Conservation Fund (LWCF) and the Wisconsin Stewardship Program. Maintaining DNR certification requires updating this plan at least every five years to reflect changing community needs.

In addition, this Open Space Plan functions as an adopted of the City's master plan, as authorized under Wisconsin Statutes §62.23. It builds on the findings of previous Park and Open Space Plans and integrates with related documents, including the City's Comprehensive Bikeway Plan, and various Neighborhood Development Plans–A separate Strategic Plan will complement this document by identifying specific needs, priorities, and improvement recommendations for each individual park and facility. Where inconsistencies occur, the recommendations of the 2025 Park and Open Space Plan shall take precedence.

The Vital Role of Parks and Recreation in the Community

As financial and land resources become increasingly limited, it is important to recognize the critical value that parks, open spaces, and recreation services bring to the community. In Whitewater, these assets are essential components of our public infrastructure – equally vital to our long-term well-being as roads, utilities, and housing.

In addition to their health benefits, parks and recreation facilities are among the most visible and valued services a community provides. A well-maintained and vibrant park system reflects a strong sense of civic pride and quality of life. Parks are places where neighbors connect, celebrations are held, and community bonds are strengthened.

Parks also serve as an important economic driver. High-Quality public spaces help attract and retain new families, students, and businesses. They enhance property values, support tourism and events, and contribute to the city's appeal as a place to live, learn, work, and play.

Equally important is the environmental role of parks. An interconnected system of active and passive recreation areas, greenways and open spaces helps preserve biodiversity, protect sensitive ecosystems, and support stormwater and flood management. As climate-related pressures increase, these "green infrastructure" elements will play a vital role in enhancing Whitewater's resilience and environmental sustainability.

Ultimately, the park system is a reflection of the community's values—supporting health, equity, sustainability, and quality of life for all. As we invest in and improve these spaces, we ensure that current and future generations can continue to benefit from the vital role parks and recreation play in the heart of Whitewater.

Background Information

The City of Whitewater is located in southeastern Wisconsin, straddling the border of Jefferson and Walworth Counties. As of ( ), the estimated population was 13,967. Whitewater covers roughly nine square miles and is bordered by the Town of Cold Spring to the north (Jefferson County) and by the Town of Whitewater to the south, east, and west (Walworth County).

Table 1: Population Trends

Year	City of Whitewater	University Residence Halls	City (less Residence Halls)	Jefferson County	Walworth County	B
2007 (est.I	13,967	3,700	10,267	80,411	100,672	5,647,000
2000	13,512	3,450	10,062	75,767	92,013	5;363,715
1990	12,636	-	-	67,783	75,000	4,891,769
1980	11,520	-	-	66,152	7-1,507	4,705,642
2010 Projected)	13,891	3,750	10,141	82,161	100,634	5,751.470
2015 Proiectedl	14,312	3,850	10,462	85,178	106,588	5,931,386
2025 Projected)	14;668	3,850	10,818	91,464	113,506	6,274,876

Sources: Wisconsin Department of Administration, Final Population Estimates (2007) and Official Population Projections for State (2005); UW-Whitewater- Residence Hall occupancy and projections

¶The Whitewater Unified School District (WWUSD) encompasses the entire city and extends into surrounding lands in Jefferson, Rock, and Walworth Counties. This regional connection reinforces the City's role as a central hub for education and community life in the area.

Since 1980, Whitewater has experienced modest but steady population growth, averaging approximately 0.8% per year. While growth rates have varied – typically lower than the state average and Walworth County but comparable to Jefferson County – Whitewater remains a dynamic community shaped by both permanent residents and a large student population. See Table 1 on the previous page for population data for the City of Whitewater.

The presence of the University of Wisconsin-Whitewater significantly influences the character of the community. Although many of the recreational needs of university students are served by on-campus facilities the City recognizes the importance of ensuring off-campus parks and programs are welcoming, accessible, and inclusive of students. Continued collaboration between the City and the University is essential to meeting the recreation needs of all residents – long term and temporary alike.

Effective park and open space planning requires thoughtful consideration of population trends. Estimating future population growth is challenging due to numerous variables, including regional economic development, housing trends, and broader urban expansion from nearby metropolitan areas such as Milwaukee, Madison, and Chicago. However based on existing projections, the City of Whitewater is expected to reach a population of 14,668 in the year2025. These projections do not necessarily account for broader demographic factors, particularly the expansion of urbanized greater 1-Iilwaukee, Madison, and Chicago, which could produce more development and population growth in the City. With this in mind, the City should use this plan to focus on the "high" end of standards for park and open space planning.

Goals, Objectives, and Policies

An early step in the park and open space planning process is to establish goals, objectives, and policies that serve as the base for all subsequent planning efforts. The terms goals, objectives, and policies are frequently used interchangeably even though each has its own distinct definition. For the City of \'(:'hitewater Park and Open Space Plan, 2008- 2013, considerable attention was given to identifying the community's priorities with respect to planning for future Park and Open Space needs. These priorities point out the critical themes that the goals, objectives, policies, programs, and recommendations of this plan should be based upon. The "highest" priorities identified in the public participation process

are summarized in the following section.

Improved interconnectivity and visibility of City parks and open spaces throughout the community

- Parks connected by trail system
- J\{ulti-use trail uninterrupted within and throughout the city
- "Safe Routes" to school as a grant program to enhance trail development
- I'viaintain/improve access and use for disabled
- 1-Iaintain/ enhance access and use for Senior population
- Improved signage

- Improved and/or updated park maintenance
- Continue to build on publicity (mapping, brochures, outreach, etc.)

Focus on new "Comfort Spots" - beautification with natural enhancements as well as limited physical improvements to encourage passive use

- Incorporate into new residential and commercial developments
- Establish as more well-defined components of larger neighborhood and community parks

Greater diversity of sports facilities

- Youth soccer fields
- Adult outdoor sports (e.g., softball)
- 'X'inter sports

Lakes and water-centered activities and uses

- Improved water-quality
- Potential for outdoor s,v-irnming opportunities - address potential health risks

Park and Open Space Goal: Ensure provision and stewardship of sufficient parks, recreation facilities, and natural areas to satisfy the health, safety, and welfare needs of citizens and visitors - including special groups such as the elderly, the disabled, and pre-school age children - and to enrich the aesthetic and scenic quality of the City's neighborhoods, gathering spots, and entry points.

Park and Open Space Objectives and Policies:

Objective 1. Preserve natural features and amenities and conserve natural resources for the benefit of the community and society as a ,\·hole, realizing that these resources are finite and, for the most part, irreplaceable.

1.1 Encourage public awareness of the City's environmental and cultural resources by promoting appropriate educational programs.

1.2 'X'ork to preserve conservancy lands that can be adequately and appropriately protected ,vithout public expenditure. Direct public funds to acquire conservancy lands that cannot be protected through other means, or where public access is a priority.

1.3 Pay special attention to preserving pristine lowlands, waterways, marshes, and adjacent contributing uplands in their natural state to ensure their maintenance as wildlife and fish habitats, as natural drainage areas, areas for passive recreation, and reservoirs for stormwater.

Objective 2. Provide quality recreation and open space lands and facilities for each neighborhood.

2.1 Site and design neighborhood parks to enhance neighborhood cohesion and provide common neighborhood gathering places. All residents should be within a 10 minute walk (1/2 mile) of a neighborhood park or community park with active recreational facilities.

2.2 Working with the School District, provide community parks for more intensive and specialized recreational needs. All new residents should be within 1 ½ miles of a community park.

2.3 Provide or require smaller parks and recreational facilities i.thin intensive development areas, such as in or near multi-family residential developments.

Objective 3. Coordinate public park and open space lands with private developments and other uses ofland.

3.1 \'(;'ork with the development community, property owners, and environmental interests to site and design parks and other open spaces to meet multiple objectives.

3.2 Site and design parks and associated facilities to avoid nuisance situations between neighbors and park users.

3.3 Combine parks and recreational facilities \vith school facilities where appropriate and feasible. Continue to coordinate recreation service pro\i.sion with the \'</hitewater Unified School District and the University.

3.4 Whenever possible, require that residential developments dedicate parkland, provide recreational facilities, and dedicate or otherwise preserve conservancy areas like wetlands and floodplains. In such special cases that this is not possible, the City \Vill require that residential developments pwvide fees-in-lieu of parkland dedication and fees-in-lieu of park development.

Objective 4. Provide a diversity of recreational opportunities so that residents of all ages and abilities ha,-e an equimble opportunity to enjoy parks and open spaces.

4.1 Provide supervised and coordinated recreational acti,i.ties for all City residents on a year round basis. This may include offering recreational programming for youth after school and in the hours and days that school is not 1n session.

4.2 Encourage acti.-e citizen participation in developing recreational programs and parks. This may include setting up a youth sen-ices committee of students from 6tl' to 12th grades to explore recreational programming opportunities for that age group, and implementing appropriate recommendations.

4.3 Encourage educational opportunities in park and recreation activities and work with county extension, 4-H, and the School District to assist with developing and operating programs such as community gardens, nature center(s), arboreta, botanical gardens, and lake and stream testing.

4.4 Maintain all parks to ensure the safety of users and replace worn or damaged equipment.

4.5 Provide special use areas and unique recreational facilities where necessary to protect an exceptional resource or supply a community demand.

4.6 Maintain all facilities in compliance with Consumer Product Safety Commission (CPSC) and Americans with Disabilities Act (ADA) guidelines. Operate all services, programs, and activities so they are accessible to persons '\Ni.th disabilities in accordance with ADA guidelines.

Objective 5. Provide good pedestrian, bicycle, and vehicular access to parks and recreation facilities.

S.1 Provide multiple access points of sufficient width from surrounding neighborhoods.

S.2 Follow the recommendations of the *Comprehensive Bikewqy Plan* and the updated bike and pedestrian facility map in this *Park and Open Space Plan* when reviewing private development proposals, completing road projects, and planning for bike paths.

5.3 Require sidewalks in new developments per the City's Land Division and Subdivision regulations, and follow the recommendations of the Citywide Sidewalk Plan map (within the *Central Area Plan)* when making sidewalk decisions on existing streets.

Objective 6. Acquire and develop new recreational facilities where City growth creates a need for additional facilities and where existing residents are underserved by City parks.

6.1 Direct new park and open space facilities to current and future population needs.

6.2 Acquire park and open space lands in coordination with development to provide for reasonable acquisition costs and facilitate coordinated neighborhood and park development.

6.3 Coordinate land acquisition, planning, and transportation programs of all federal, state, county and local agencies concerned \'i,·ith parks and conservation.

6.4 Cooperate with other governmental bodies, including the Whitewater Unified School District and the lTniversity to provide joint recreation service wherever possible.

6.5 Review and update the City's *Park and Open Space Plan* every five years.

6. Park and Recreation System Overview

Park Classification and Standards

To ensure that the City of Whitewater's parks and recreational system continues to meet the diverse and evolving needs of the community, a clear and consistent classification of park types is essential. This plan uses the National Recreation and Park Association (NRPA), classification system, adapted to local context and planning goals.. Two key planning f standards are used:

1. Gross Acreage Standard: This standard identifies the recommended number of usable acres of park and recreation land per 1,000 residents. The NRPA generally recommends 6.25 to 10.5 acres of developed recreational land per 1,000 people. This figure excludes environmentally

sensitive lands acquired for conservation purposes, which are measured separately.

2. **Service Area Standard**:

Each park classification is assigned a service radius, ensuring that residents have access to appropriate facilities within walking or biking distance. This helps identify geographic gaps and ensures equitable park distribution across the city.

Park Classifications

Whitewater's park system includes 15 distinct parks, classified into the following categories. Each classification includes a description, typical size, population served, and intended recreational intensity.

A. Mini Park:

Small parks designed for concentrated or specific populations such as preschoolers, seniors, or apartment-dwelling families.

- **Size:** 2 acres or less
- **Service Radius:** < ¼ mile
- **Acreage Standard:** 0.25–0.5 acres per 1,000 residents
- **Typical Features:** Tot lots, seating, garden plots, shade structures

1. ### B. Neighborhood Park

Small parks designed for concentrated or specific populations such as preschoolers, seniors, or apartment-dwelling families.

- **Size:** 2 acres or less
- **Service Radius:** < ¼ mile
- **Acreage Standard:** 0.25–0.5 acres per 1,000 residents
- **Typical Features:** Tot lots, seating, garden plots, shade structures

C. Community Park

Larger parks that serve multiple neighborhoods and accommodate a wide variety of uses, both active and passive.

- **Size:** 15–40 acres
- **Service Radius:** 1.5 miles

- **Acreage Standard:** 5–8 acres per 1,000 residents
- **Typical Features:** Ball fields, aquatic centers, event space, natural areas, trails, ample parking

Recreation Area Classifications

To better understand the functional use of spaces within parks, this plan also categorizes areas by recreational intensity:

1. Active Recreation Areas

Designed for structured and high-use activities, including:

- Athletic fields, playgrounds, sport courts, skateparks, splash pads, dog parks, and community gardens

2. Passive Recreation Areas

Characterized by open space or light improvements for informal use:

- Natural areas, walking trails, picnic areas, scenic overlooks, native plantings

3. Special Use Areas

Uniquely programmed or historic spaces with specialized facilities:

- Memorial parks, amphitheaters, historical sites, cultural plazas

4. Conservancy Areas

Permanently protected lands of environmental or ecological significance:

- Floodplains, wetlands, shorelines, stormwater basins, environmental corridors, and wildlife habitat areas
- May offer secondary trail access or environmental education opportunities, but are not counted toward developed acreage standards.

Note: The Whitewater Effigy Mounds Preserve is classified as a Special Use Area due to its sacred cultural significance, interpretive and educational value, and its preservation function. The site may also be considered a Conservancy Area due to its sensitive landscape and emphasis on protection over programmed recreational use. It is managed with care and respect in collaboration with Native American communities, and is not included in the developed park acreage total to preserve its integrity and honor its historical context.

Existing Park and Open Space System

The Whitewater park and open space system consists of 188 total acres of park and open space land. This system includes a range of facilities including community parks, neighborhood parks, and mini-parks; each of these facilities are characterized by a mix of active and passive recreational uses, special uses areas, and conservancy areas. An additional 235 acres of recreation and open space is found at the City's public schools and the {_,'\'(;"_ Whitewater Campus. In prior planning efforts, these totals were calculated along \v-ith the city-owned park space to determine future need. For this *plan,* however, all calculations are based solely on the 188 acres in city ownership.

The existing facilities serve most of the community's needs well at this time; however, additional neighborhood parks, community parks, and conservancy areas \\<-ill be needed as areas throughout the Citr continue to develop. There are also a few gaps in developed areas, particularly with respect to ease of access to parks. Finally, some older parks are in need of rehabilitation. This section of this *Plan* is divided into two parts. The first includes descriptions of existing parks and recreational facilities in the City. Appendices B and C are comprehensive lists of the amenities and sizes of each park and open space area. The second part is an analysis of the existing facilities' ability to satisfy the current needs of the City's residents and a facility needs assessment for future park land.

Description of Existing Public Park and School Recreation Facilities

Map 1: Existing Public Park and School Facilities shows the locations of public parks and school recreation facilities in the City. Parks and schools are labeled on the map by the corresponding number/letter listed below.

A. Archaeological Park

1. Indian Mounds Park: This 21.5 acre nature study area is located in the far southwest portion of the City. It features an intact collection of Native .American mounds and hiking trails. Around 5 acres were added to the park in 2006, and the possibility for further expansion exists with future development to the west and north.

B. Community Parks

2. Starin Park: This 34.2 acre park is located in the north central portion of the City adjacent to the University. It includes a variety of recreational areas including areas for basketball, baseball, horseshoes, softball, sledding, and hiking/ cross-country ski trails. This park also includes play equipment, a picnic area, two open shelters, the Starin Community building (available for rental), restroom facilities, a Veteran's Memorial, and a historic water tower. Recent changes to the park - which were recommended through the Starin Park Master Plan in the mid 1990s - include new landscaping, improved circulation patterns, sidewalks, and more parking.

3. Trippe Lake Park: This 24.2 acre park is located in the southeast quadrant of the City along the shore of Tripp Lake. Activities available include volleyball, ice skating, boating, fishing, cross country skiing, and swimming. This park also includes an open shelter, a bath house, a picnic area, a small orchard, play equipment, and restroom facilities.

4. Cravath Lake Waterfront Park: This 6.1 acre urban park is located along the north side of Cravath Lake and the south side of the commercial center of Downtown \'{bitewater. This park includes the Lakefront Center community building, restrooms, picnic shelter, open performance stage, boat launch, fire pit, lakefront promenade with rail underpass to Main Street, gazebo, extensive landscaping, and a 50+ stall parking lot. Additionally, the facilities are available for rent, and a summertime paddleboat rental program has become increasingly popular.

5. Moraine View Park: This 45 acre park is located within the Wbitewater Business Park, in the northeast quadrant of the City. Currently, the park includes a pet exercise area, mostly passive recreational features, and prairie and wetland restoration conservancy areas.

6. \'{.hitewater Creek Nature Area: This 59.8 acre nature area is located between Fremont Street and \X/hitewater Creek on the far north side of the City. This park has a picnic area, hiking/ cross-country ski trails, fishing, and a wildflower/ prairie planting area.

C. Nei _hborhood Parks

7. Brewery Hill Park/ Armory: This 7.3 acre indoor and outdoor recreation area is located along the \"Xbitewater Creek on North Street. Brewery Hill Park contains a skate park, a segment of the \'{'hitewater Creek Path, and provides green space for leisure and nature viewing. The adjacent Armory building houses a gym for basketball and volleyball, a dance studio, a ceramics workshop, and community meeting rooms. It is programmed to assist community "self-help" programs and non-profit groups, and the facilities are available for rent as well.

8. Meadowsweet Park: This 4+ acre neighborhood park with an additional stormwater detention area is associated with new residential development on the far northwest corner of the City. There are not any recreational facilities within this park at the present time.

9. Park Crest Park: This 3.3 acre park is located on the City's far northwest side ,vithin the Park Crest subdivision. It includes playground equipment, open space, and environmental corridor areas.

D. Mini Parks

10. Clay Street Nature Park: This 0.6 acre park with canoe launch is located on the north shore of Tripp Lake, with public access from Clay Street.

11. Main Street Shoppes Courtyard: This approximate 0.1 acre downtown site is located adjacent to a municipal parking lot and behind retail and professional buildings.

12. Birge Fountain Park: This 0.7 acre triangular park is located at the intersection of Main Street and North Street. It contains Birge Fountain (circa 1900) and a \'<Tar Memorial.

13. Big Brick Park: This 1.1 acre park is located in the central portion of the City on Center Street. This park has an enclosed shelter with restrooms, as well as ice skating, a playfield, a basketball court, playground equipment, and a picnic area.

14.]\.[ill Race Park: This 0.6 acre park is located in downtown on the north side of Main Street along \'<;n.itewater Creek. This park serves primarily as an observation area.

15. Optimist Turtle Mound Park: This 1 acre park is located in the southwest quadrant of the City in the Mound Park Acres Sub&v-ision. It contains a playfield, play equipment, and a picnic area.

E. Public School Facilities

A. \'vnitewater High School/Steward Park: This school site is located in the southwest quadrant of the City and includes 69.3 acres, of which 66 acres are used for active and passive recreation, including lighted ball fields. The High School grounds also contain the \-X:n.itewater Aquatic Center indoor pool and water recreation area.

B. \'<; tewater]\.,fiddle School: This 25.1 acre middle school site is located in the southwest quadrant of the City and includes recreational facilities geared to students.

C. Lincoln Elememary School: This 10.3 acre elementary school site is located adjacent to the middle school and contains recreational facilities geared to young children.

D. \'<;'ashington Elementary School: This elementary school is located on the City's east side along East Main Street. The 8.2 acre site contains recreational facilities geared to young children.

E. University of Wisconsin-\'<;n.itewater L--\\'<;'CON Fields: The University's athletic facilities and conservancy areas are located on the University campus in the northwest portion of the City. These facilities are available to the general public on a limited basis. The fields contain approximately 122 acres.

Analysis of Existing Facilities

The adequacy of a community's park and recreational system is evaluated by:

1. Comparing the number of people that parks should serve with the City's standards,
2. .-\nalyzing the geographic distribution and accessibility of recreational space, and
3. Identifying the location and extent of environmentally sensitive areas.

The first part of the analysis is done by assigning a minimum acreage standard to each type of park available for recreational purposes and to the system as a whole. Table 2 (below) shows the total acreage of land devoted to each type of park in the City (.-\.ppendix C pwvides additional detail). The table also breaks down the aggregate acreage into four categories of open space. This breakdown more clearly indicates how much public open space in \'{'hitewater is de,·oted to both active and accessible passive recreational activity (included in minimum acreage standards) and how much serve specialized recreation purposes or provide environmental or aesthetic benefits (not included in minimum acreage standards). Of critical interest are the 99.2 acres of acti,-e and accessible passive public park facilities currently provided by the City (highlighted in the lighter shaded area). The 88.8 acre balance of the City's 188 total acres is comprised of other open space areas that do not satisfy recreational demands according to the standards.

Table 2: Total Developed Acreage of Parkland by Type or Recreational Use Per Specific Type of Park

Type of Park	Active Recreation Area	Passive Recreation Area	Special Facilities Area	Conservancy Area	Total
City Parks and Open Spaces					
Community Parks	**39.1**	**54.2**	**0.3**	**75.7**	**169.3**
Neiahborhood Parks	**0.6**	**2.5**	**0**	**11.5**	**14.6**
Mini-parks	**2.1**	**0.7**	**1.3**	0	**4.1**
Total Public Parks	**41.8**	**57.4**	**1.6**	**87.2**	**188**
School Parks and Open Spaces					
Public School Facilities	9a.1 I	11.aj	2.21	1 I	**113.1**
University Facilities	221	92.41	I	7.61	**122**
Total School Facilities	120.1 I	104.21	2.21	8.61	235.1
Grand Total	**161.9!**	161.61	**3.8f**	**95.8 j**	**423.1**

LActi, e R crcarion .\re:i: playg-rnunds, r1thll!tic fidds, ere.
2Pasi::i•:e Rc.:creatinn .-\rea: \1,,-alking te1ils, picnic grn,..es, etc.
3Speci:tl F:icilities Art:a: nrbureta, scenic views. cemdecies, etc,
Consc:C"\.'ancy .-\rea: generally non-acce!-siblt are:1s fur conserY:itinn; wetl:i.nds, re

Table 3 includes the NRPA recommended acreage standards for each type of park per 1,000 persons and the existing active and accessible passive acreages per park category in \'{nitewater. The information in this table indicates that the City of Whitewater is currently satisfying the recreational needs of its residents in terms of the ratio of ***total*** acreage of active and accessible passive recreation parkland to persons.

Specifically, Table 3 indicates that \'Outewater meets the NRPA total park acreage standards with an aggregate 99.2 useable City acres for recreational activity, which breaks down to 7.1 acres per 1,000 persons. In terms of the provisions of specific park types, the City is currently meeting the NRPA suggested standards only for community parks at 6.68 acres per 1,000 persons. The City is lacking, however, in acres of neighborhood parks per 1,000 persons according to the NRPA Standard- only 0.22 acres per 1,000 persons are currently accessible for recreation in the City's neighborhood parks. \'{'ith only 2.3 total acres devoted to recreational uses in neighborhood parks currently in the City, 10 or more additional acres of such facilities would be needed to meet the standard. Additionally, there are only 0.2 acres per 1,000 persons currently accessible in the City's mini-parks. Again, this falls below the NRPA standard. An additional V2 acre to one acre of accessible recreation space in mini-parks is all that would be necessary to meet the standard.

\'{'hen the community's school recreational facilities are included in the calculation, the community has a total of 209 acres of park and open space land in active and accessible passive use. This breaks down to 13.0 acres per 1,000 persons. Howe,-er, these school facilities serve a larger geographic area and population than just the City-proper and are not under the jurisdiction of the City. Of course, including school recreational facilities in the analysis provides a more complete depiction of areas that are most and least well-connected to the City's park, recreation, and open space sysrem and therefore allm,vs more informed planning decisions to be made.

Table 3: Active and Passive Recreation Acres in City and School Facilities[1]

Type of Park or Open Space Facility	NRPA Standard	Provided in City Park Facilities		Provided in School Facilities		Total City and School
	Rec Acres per 1,000 persons	Total Rec Acres	Acres per 1,000 persons	Total Rec Acres	Acres per 1,000 persons	Acres per 1,000 persons
Mini-park	0.25 - 0.5	2.8	0.2	0.0	0.0	0.2
Neighborhood park	1-2	3.1	0.2	18.5	1.3	1.5
Community park	5-8	93.3	6.7	91.4	6.5	13.2
Total	6.25 to 10.5	99.2	7.1	109.9	7.9	15.0

[1] Based on 2007 estimated total population of the City of\'\bitewater (see table 1)

Existing Recreation Programs

Overview

An examination of current recreation programming offerings shows that social and instructional programs account for over half of all programming. Recent efforts to partner and work with local youth sports groups indicate that the department will be more responsible for offering both instructional and league style programs for youth sports. The \'Chitewater Parks and Recreation Department provides a variety of leisure programs as shown on Table 4. The programs can be classified into five program types:

1. Instruction - Programs designed to offer instructional information to enhance skills.

2. League - Play that occurs for registered players or teams during scheduled season or time to enhance levels of fitness, instruction, and social involvement. League play typically includes a spectator element to the program for families and/or friends of participants.

3. Social- An event designed to create socialization for the participants. This event can be family-based or designed towards a group with similar interests. It also can include reservation of a facility for private recreational use.

4. Special E,-enc - Csually a one-day event or drop-in activity to provide entertainment.

:,. Tournament - Usually an event or comest used to determine a winner.

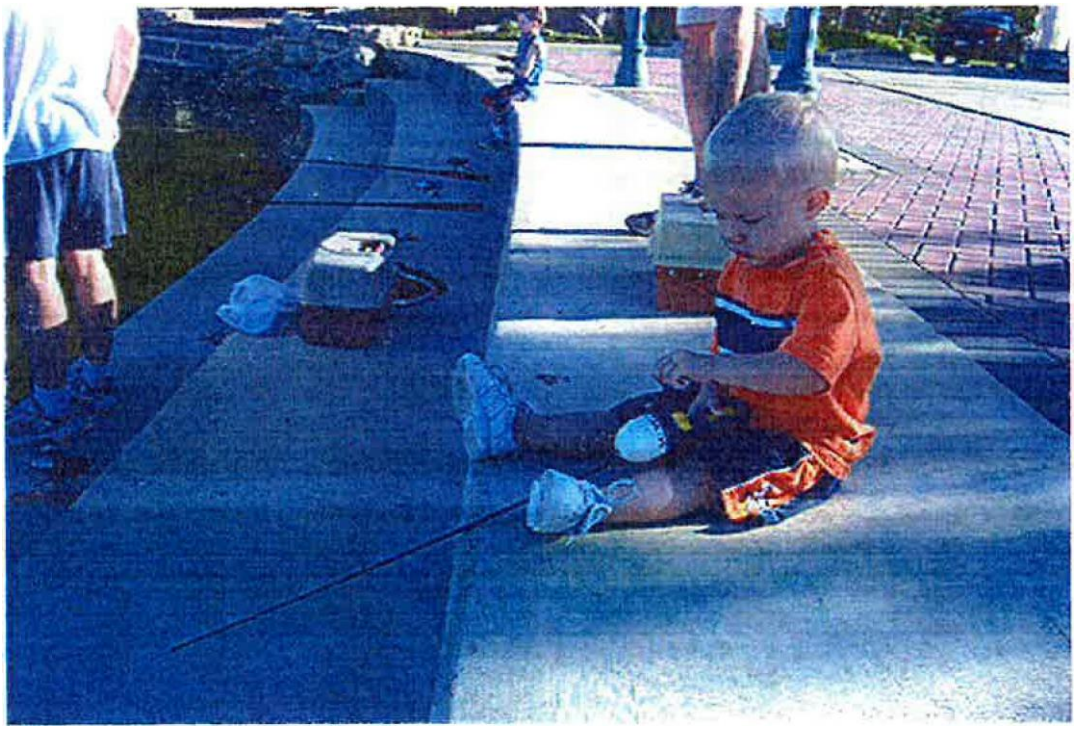

Table 4: Existing Recreation Programs (2008)

KEV	PROGRAM	Number of Registrations	Hours/ Use	Times Met	Hours Used	Time of Vear	Program Type
y	American Girl Mystery Party	3	2	1	6	Summer	Social
y	American Girl Tea Party	7	2	1	**14**	Summer	Social
C	ARC Babysitting Course	13	7	1	91	Summer	Instructional
A	Baking Class	2	2	4	16	Summer	Instructional
A	Ballroom Dancing	16	2	2	64	Summer	Instructional
A	Beginning Watercolor	3	2	12	72	Summer	Instructional
A	Belly Dancing	19	1	5	95	Fall/Spring	Instructional
p	Big Rig Gig	25	2	1	50	Summer	Special Event
p	Bilingual Storytime	13	1	3	39	All	Instructional
A	Gardie Blast	108	2	8	1728	All	Instructional
A	Conversational Spanish	4	2	8	64	Spring	Instructional
B	Disc Golf	2	1	1	2	Summer	Instructional
y	Drama Classes	15	2	5	150	**All**	Instructional
y	Youth Dance	197	17	8	26792	All	Instructional
A	Dance -adult Tap & Ballet	91	2	5	910	All	Instructional
B	Explore the Kettle Moraine	13	3	1	39	Summer	Special Event
y	Funky Kitchen	2	3	2	12	Summer	Instructional
A	Garden Gathering Basket	1	8	1	8	Summer	Instructional
p	Gymnastics Tots	77	1	4	308	All	Instructional
y	Gymnastics 1/2	117	1	8	936	All	Instructional
y	Gymnastics 4/5	63	3	8	1512	All	Instructional
y	Gymnatics 2/3	99	2	8	1584	All	Instructional
y	Horse Camps	28	6	4	672	Summer	Instructional
y	Horse Riding Lessons	25	1	4	100	Summer	Instructional
A	Kickball Teams - adult	5	1	8	40	Fall/Summer	League
y	Kids Escape	24	3	45	3240	Summer	Social
y	Kids in the Kitchen	**14**		2	28	Summer	Instructional
y	Little Dribblers	57	1	5	285	Fall	Instructional
B	Mallard's Game	15	5	1	75	Summer	Special Event
y	Messy Fest	19	2	1	38	Summer	Special Event
p	Musik on the Move	13	1	3	39	Summer	Instructional
A	Paint and Water Do Mix	8	3	5	120	Summer	Instructional
A	Pilates	113	1	5	565	All	Instructional
A	Restorative Yoga	68	1	5	340	All	Instructional
y	Rockclimbing- youth	127	4	4	2032	All	Instructional
A	Rockclimbing -adult	20	2	5	200	All	Instructional
y	Shooting Stars Bball	38	1	5	190	Spring	Instructional
A	Softball Teams- adult	24	18	10	4320	Summer	League
A	Tai Chi	7	1	4	28	Spring	Instructional
A	Total Body Fitness	93	3	8	**2232**	**All**	Instructional
p	Totally Terrific Toddler Time	3	1	**8**	24	Spring	Social
p	Tots on the Run	6	1	10	60	Summer	Social
p	Tots/Tunes/Tumbling	**44**	1	8	352	**All**	Instructional
A	Volleyball teams -adult	30	3	10	900	Fall/Spring	League
B	Welcome to Whitewater Tour	1	1	1	1	Summer	Special Event
y	Windy Day	1	2	3	6	Summer	Special Event
y	Youthball - Girls fastpitch	37	1	14	518	Summer	League
y	Youthball - Girls softball	**22**	1	14	308	Summer	League
y	Youthball - Rookie boys	**48**	1	14	672	Summer	League
y	Youthball - T-ball boys & girls	46	1	14	644	Summer	Instructional

KEV
A-Adult
B - Both Youth and Adult
C - Certification
P - Preschool
Y- Youth

Current National Parks and Recreation Trends Being Considered and Implemented in Whitewater

Parks and recreation departments across the country are under constant pressure to meet the ever-changing recreational desires of community residents. Nationally, several common challenges are being faced by parks and recreation departments including:

- Deteriorating park and recreation infrastructure.
- Declining park and recreation budgets relative to costs.
- Increasing competition for shrinking federal, state and local tax resources.
- Greater cultural diversity.
- Greater difficulty in prmriding equal opportunity for leisure to all people.

l\Iany of \'v'hitewater's parks and recreation facilities are already in step with current trends. Facilities such as the Bark Park in Moraine View Park, the Skate Park at Brewery Hill Park and the on-going expansion of \'vnitewater's multi-use trails are all examples of facilities reflected in national trends that the city is already providing its citizens.

Following is a summary of current recreational trends. As many of the trends have overlapping user groups or are similar in nature, they have been grouped into several themes.

Passive Recreational Fadlitiei

Passive recreational activities such as **Walking Facilities** and **Multi-Use Pathways** are increasingly popular. These facilities prmride varied loops of paved and unpaved linked systems that provide linear recreation for a variety of users including runners, bicyclists, in-line skaters and pet owners. Creating interconnected systems both within the community and regionally is a key goal of most communities. Wayfinding and user amenities are provided such as trail heads \.vith parking, restrooms, benches, maps and linkages to user origins and destinations. These facilities also provide vital links to residential areas, commercial zones and workplaces to encourage walkable community initiatives and safe alternatives to automobile commuting.

Environmental Education and Ecological Preservation

Parks and recreation facilities that highlight environmental or ecological processes and have a focus on education are being developed throughout the nation. **Natural Areas and Preservation Parks** include passive use areas intended for natural resource preservation and minimal access. **Environmental Education Centers** are often tied to parks that include significant natural resources and these parks seek to provide education on the ecosystems of the area through hands-on learning.

Arboretums and Public Gardens can foster harmony with nature by developing an understanding of the rich and varied assortment of plants which are grown in \'v.isconsin. These types of facilities can identify a variety of trees and shrubs, develop gardens to offer a changing pattern of natural beauty throughout the year, provide an aesthetically pleasing setting for community education and enjoyment, and setYe as a resource center to learn about horticulture, the em·ironment, and our ecological responsibilities.

The use of **Storm Water Management as an Amenity** is being pursued by several communities as a means of securing funding for demonstration projects and as a means to educate the public about water quality and conservation issues.

Active street tree and urban forest programs

Trees and urban forests are major capital assets in America's cities and towns. Just as streets, sidewalks, sewers, public buildings and recreational facilities are a part of a community's infrastructure, so are publicly owned trees. Trees and the urban forest are important assets that require care and maintenance, the same as other public property.

Trees can:

- .-\dd natural character to our city
- Screen harsh scenery
- Soften the outline of masonry, metal and glass
- Can be used architecturally to provide space definition and landscape continuity
- Create feelings of relaxation and well-being
- Provide privacy and a sense of solitude and security
- Shorten post-operative hospital stays when patients are placed in rooms ,vith a view of trees and open spaces
- Contribute to a sense of community pride and o\vnership

(Excerpts taken from The C.S. Depamnent of .\griculture Forestry Report R8-FR 71)

Spedal!J or Unique Remation Adivities

Aquatic Facilities and facilities that provide for a range of water acti-vities are being developed in many communities. These include exercise, team swimming, and recreational water play for children such as water slides and spraygrounds.

Dog Parks and Dog Runs are parks or portions of parks dedicated to exercising dogs. These can be fenced off-leash parks for dogs, or multi-use pathways that allow pet usage.

Community-wide **Indoor Wellness/Fitness Facilities** offer programs and services that are designed to provide a broad range of fitness facilities as well as wellness education and services to a broad range of age groups and user abilities.

Disc golf courses can prO\--ide outdoor recreational opportunities for a variety of age groups and individuals with a wide range of skill levels. This acti,--ity can be a relatively low cost if suitable lands are available and there are not conflicts with other user groups.

Creative Partnering is also an important trend as communities look to adjacent municipalities, hospitals, corporations and State agencies to share facilities, programs, staff, or infrastructure as a means of raising funds and attracting users. These partnerships also

include the involvement of community members and groups in portions of the maintenance of park areas and in the development of facilities such as community gardens and playgrounds.

As suitable lands for parks become scarce, especially '.Arithin dense urban areas, **Creative Re-use** of existing facilities becomes an option for many communities. Efforts to find ways to re-use existing facilities for new uses (e.g. tennis courts to multi-use sport courts) or incorporating new facility development within existing sites can produce very successful and cost effective results. Related to these efforts are the initiatives to **Redevelop Brownfield Sites.** Funding sources for the redevelopment of contaminated sites are increasing. In many cases these lands are ideally suited for recreational facilities. Many of these parks serve as demonstration projects and enjoy positive public participation and become community showpieces.

Fadlitiesjor Targeted Age Groups

As the population in many communities grows older, **Facilities for Seniors** are commonly being developed as part of a community's parks and recreation system. These facilities often include senior-focused community centers, extended care facilities, and recreational activities within neighborhood parks that are targeted toward seniors.

To target outdoor recreation activities for youths, "X-Games" Parks are being developed. These are facilities that often provide a variety of "extreme" sport activities. Many of the activities include:

- In-line hockey rinks
- B;\fX "Dirt Jump" parks
- Climbing walls
- Single-track mountain biking trails
- Skateboard parks
- Competitive whitewater kayak/ raft courses

Park and Open Space Needs Assessment and Recommendations

The future needs assessment is a critical component of the *Park and Open Space Plan.* This analysis is included to assist the City with planning and budgeting for the acquisition and development of future parks. The future park, open space, and recreation needs of the City are determined by applying the recommended minimum acreage standards to a reasonable population projection for the City of Whitewater in the year 2025, by examining how well the City meets the activity-related standards, by examining how well the locations of existing facilities serve the City's population, and by identifying additional conservancy areas that serve environmental, aesthetic, or property value enhancement functions over recreational needs. No one aspect of this analysis is more important than others.

Gross Recreational Acreage Reqttirements

This *Plan* advises that the City provide active and passive recreational space at an overall rate of 10.5 acres per 1,000 persons for the City to meet the demand created by population growth in accordance with the upper-end NRP.--\ standard. (--\t 7.1 acres per 1,000, the City is presently not meeting this upper-end standard.) As was indicated in Table I of this *Plan,* the City of \'\'hitewater is expected to grow to a population of approximately 14,668 persons *by* the year 2025. The City should therefore plan for at least 154 acres of active and accessible passive recreational space (10.5 acres/1000 x 14,668), or an additional 55 acres of recreational space from the 99.2 acres provided in 2007. This additional 55 acres does not include generally inaccessible conservancy areas that may be separately acquired, or acquired in conjunction \Vith adjoining accessible recreational space. This total also does not consider the needs for recreational space generated by new residential development in different quadrants of the City, v.·hich may lead to the dedication or acquisition of more than 55 acres of recreational space over this period.

Space Needs and Recommendations by Park Type

Moving beyond gross acreage standards, the *location* of park and open space facilities in relation to the City's residents is an important indicator of how well existing facilities meet the needs of the community. To illustrate how well the City of Whitewater's existing park lands serve the various areas of the City, Map 2: Existing Park Service Areas has been prepared. Specific recommendations for future park and recreation facility locations are described below and are indicated on Map 4: Recommended Park and Open Space Facilities.

A. UndeJ'ignated Park Space

In addition to illustrating the location of existing community and neighborhood park space and service areas, Map 2 also depicts "undesignated" park space in the city. These spaces are lands that are currently in City ownership \vi.th the intention of being park space, but are currently unused and/or undesignated publically. One of the priorities of this plan should be to integrate these lands into the City's park and open space system if deemed appropriate for park and open space use.

- **"Walton Oaks" Conservancy Area -** This undeveloped 2.6 acre park is located on the City's far northwest side within the Park Crest subdivision. It includes environmental corridor areas, and should be incorporated as an area for conservation

into the detailed planning for a larger community park planned for this area in the City's *!¥,,est 1¥,,hitewater Neighborhood Development Plan (2001).*

- **Ward Park** - This 3 acre natural area is located in the northwest quadrant of the City. It is currently unmarked and mostly inaccessible for citizens.
- **"Minneiska" Park (Trippe Lake southwest shore)** - This approximately 20 acre undeveloped park is envisioned as a prominent amenity in the "\,'Cater's Edge South" subdivision. Cpon completion, this park would serve active recreational facility needs of the adjacent residential neighborhood as well as environmental buffering benefits bet\veen the neighborhood development and the lake. Potentially, this park could be incorporated with Trippe Lake Park to expand that community park.
- **Trailhead Park** - This 0.7 acre undeveloped and unmarked park is located along Bluff Road, near the Bluff Ridge .-\partments.
- **"Jake's Way" Park** - This roughly 2 acre undeveloped area was dedicated as a public park as part of the "Pine Bluff' subdivision.

B. Recommended City Community Parks

Based upon a service area of 1½ miles, most of the City is adequately served by community park space. Map 2 shows areas that are not served by a community park. Notable among these is the City's northwest quadrant growth area, planned for residential use most recently in the 2001 *West W'hitewater Veighborhood Development Plan.*

Map 5 suggests the placement of a future Northwest Community Park in this area, which could be built adjacent to or other[1] .rise connected to the aforementioned conservancy area in the Park Crest subdivision. Given low-lying lands in the v-icinity, this park would be combination recreation space and conse1Tancy area. The City should work with property owners to identify park boundaries, prepare a park development master plan, and continue to acquire land for this community park. Actual development of this community park likely will not be within the 5- year planning period.

.-\.lso on Map S, a "Northwest Gateway" community park is also suggested. This suggestion is for a more intensive recreational use, such as an adult sporting facility, which may be more appropriate with the commercial and highway-oriented uses planned for this area.

C. Recommended City eighborhood Parks and i'lli11i-Parks

Map 2 indicates that there are areas of the City that are not currently served by neighborhood parks; that is, they do not fall within the ½ mile recommended service area of any neighborhood park, or the service area is broken by a pedestrian barrier, such as a major street. \,-x;'ithin developed areas of the City, however, there is usually another type of park or school facility within ½ mile. New neighborhood park facilities are recommended to be acquired and developed as other fringe areas develop, including the following future recommended parks:

- The "Gateway East" Neighborhood Park (#3 on Map 5) south of the Pine Bluff subdi-dsion. The City's *1999 East Whitewater .i. eighborhood Development Plan* first identified this area as appropriate for a neighborhood park, and the planned park space south of Jakes \-x;'ay could be expanded or designed to meet the needs of this neighborhood.

- Two active and passive use parks within the proposed Tripp Lake Open Space Area (#4 & 5 on Map 5). The \"'<:'ater's Edge South Upland Park (#5) could potentially merge with Trippe Lake Park to the north to expand that community park. The "South Shore" park lies in an upland area with distinct natural amenities on all sides, and may be a desirable place for a combination recreation and conservancy area. Access to the site, however, presents a challenge. Both of these new parks will likely include significant conservancy areas within or adjacent to them.
- A park adjacent to Spring Brook, north of the bypass and west of Franklin Street (#8 on Map 5). This area may serve predominantly as a conservancy area, 'w-ith small-scale recreational use areas (e.g., playground, open field).
- A park in the area south of the High School (#9) may be more of a conservancy area in public ownership or permanently protected private ownership as the property surrounds it develops.
- A park in the southwest part of the city (#10), that could be incorporated as a passi\·e recreational space to serve proposed mixed-use development in the area.
- A new neighborhood park (#11) in the proposed residential development west of Mound Park Acres subdivision. There may be additional dedication or acquisition of conservancy areas in this vicinity as well.
- A "Near \'1lest" park (#12), which could actually be implemented as an extension or greater definition of \'(;'ard Park west of Tratt Street.
- A neighborhood park north of Main Street in the northwest quadrant of the City, which could be combined with a future school site (#13 on Map 5). There may be additional dedication or acquisition of conservancy areas as well, because of the large area of wetlands and other low-lying lands in this vicinity.
- Two parks north of the C niversiry (#1+ & #15 on ;\Iap 5). The Prairie Village subdivision includes the dedication of nearly 10 acres as public parkland (#15), which consists mostly of wetland areas.
- A future expansion of the Whitewater Creek Nature Area (#16 on Map 5), mainly between the existing area boundaries and the \Vastewater Treatment Plant site. These very low areas could provide for additional wildlife habitat, low-impact trails, and interpretive opportunities. The boundaries of this area could extend west to include the u '-L-\\'\-'CON lands, which may also accommodate additional trails and native area restoration.

D. Recommended Biryde and Pedestrian Fad/ities

In 2000, the City adopted the *Comprehensive Bikewqy Plan* as a component of its master plan. The recommendations of the *Comprehensive Bikewqy Plan* are included by reference within this *Park and Open Space Plan.* The City should follow that *Plan's* recommendations for design and location of facilities to promote bicycle accessibility. As Map 3: Existing Recreational Trails and Routes depicts, the City has made progress in recent years in implementing some of the recommendations of previous plans. Map 4: Comprehensive Bicycle & Trail System Plan mainly echoes but also updates the recommendations of the primary map within the *Comprehensive Bikewqy Plan.* 'here differences occur, Map 4 should control. The on-street and off-street bicycle route system depicted on Map 4- is intended to connect parks, neighborhoods, schools, and commercial and job centers. Key ideas advanced by the *Comprehensive Bikewqy Plan* are a recreational loop and central "spine" off-street bike paths.

Much of the central bike path along \\lhitewater Creek was constructed in 2002. The City should work with the University and private land owners to complete the central spine and circumferential routes in mutually acceptable locations. In general, the City should work to acquire land and easements and make improvements to implement the recommendations of the *Comprehensive Bikewqy Plan* and Map 5.

The follmving types of bicycle facilities are shown on Maps 3 & 4, with definitions included:

1. **Off Road Multi-Use Trails:** Paths separated from the street system and designated for multiple use by pedestrians and non-motorized vehicles such as bicycles and in-line skates. Such trails typically have a paved surface of 10 feet ,vide with 2 foot wide shoulders. A good local example is the \\:.hitewater Creek path. In rural areas, such trails may be 8 feet wide and surfaced with limestone screenings or similar materials. Trails do not include sidewalks except where no other alternative is available.
2. **On Street Bike Routes:** Local streets where bicyclists share a travel lane with automobiles, generally with no special pavement markings or designated lanes for bikes. Traffic volumes on such streets should generally be less than 2000 cars per day and speed limits 30 mph or less. Along designated routes, all basic hazards to bike travel should be eliminated (e.g., parallel stormwater inlet grates, debris) and bicycle route signage with directions to major destinations should be considered.
3. **On Street Bicycle Lanes:** Busier streets with signed and striped bicycle lanes or paved shoulders, with a recommended minimum lane width of 4 feet (not including gutter pan). Perhaps the best local example is Starin Road in the University area. Streets ·with bicycle lanes may become part of a signed bicycle route system.

In addition to the recommendations in the previous section, which mainly focus on the acquisition of additional parks in the City, recommendations for improvements to existing park and open space facilities are as follows:

A. General Recommendations:

1. Continue to implement applicable recommendations of previously adopted city plans, such as the *Whitewater Street Corridor Redevelopment Plan* and the *West r 'hitewczter Seighborhood Plan.*
2. Implement the recommendations of the 2000 *Comprehensive BikewC!Y Plan* (see also Map 4). The City's updated Subdivision Ordinance also contains requirements related to sidewalks, bicycle/pedestrian trails, and on-street bicycle routes.
3. Promote civic group "adoption" of parks to assist in acquisition, development, and maintenance of park facilities. Past examples include \Xbitewater Creek Nature Area and Turtle Mound Park, adopted by the University Optimists and Optimists respectively.
4. Coordinate maintenance and upkeep of *ice* rink with the University to pro-vide for demand of University students and other citizens.
5. Develop a coordinated system of park and bikeway signage, including both way-finding and park identification signage.
6. Provide sites for non-organized recreation, including arts, crafts, native plantings, and interpretation of natural, archaeological, and geologic forms.
7. Continue to work with the school district and U\'X"-\'\' to explore opportunities for shared facilities, including appropriate circumferential trail routes through Cniversity land.
8. Consider offering recreational programming for youths during times \.Vhen school is not in session, such as after-school and "early release" days.
9. Set up a youth services committee of students from the middle school and high school to explore recreational programming opportunities for that age group, and implement appropriate recommendations.

B. Department Recommendations

- *Parks and Recreation Participation Sumry* -A new Parks and Recreation Facility and Programming Survey is recommended to be conducted prior to 2013. This survey process should include both a traditional survey that addresses both facility and programming needs as well as focus groups and work sessions. Consideration should be given to create a format that would expand data collection to include qualitative and experiential information. Efforts should also be directed toward identifying future facility and program needs.
- *Capital Improvements Program* - Each year, the city develops a Capital Improvement Plan (CIP) that sets budgets for overall community expenditures for the coming three to five years. The Whitewater Parks and Recreation Department and its staff need to be involved in this process as it is developed by contributing budget requests for park development or improvement projects. As this CIP is reviewed and revised yearly it is able to incorporate new initiatives, planning goals such as those included in this Master Plan, and unforeseen maintenance needs.
- *IFhitewater Unified Schoo/ District* - The city should review the viability of formalizing land management agreements with the \'\"hitewater Unified School District. These

agreements would be intended to build upon recent successful partnerships between both agencies and to redistribute responsibilities related to facilities maintenance in order to draw upon the strengths of each agency and to reduce redundant services.

- *System-wide ADA **11pgradeJ"*** - For several years the City has been systematically upgrading its park shelters and restroom facilities to be compliant with AD -\ regulations. These upgrades should continue, and, as recreation facilities are added or renovated, care should be taken that these facilities, especially playgrounds, are universally accessible to the greatest extent practicable.

C. Recommendations for Specific Existing Parks (See Map 1 for Number References) :

These park-specific recommendations were developed through the planning process and are recommended as targeted improvements to the City's parks within the planning period (between 2008 - 2013).

1. Indian Mounds Park
   - Provide safer and more accessible surfacing of trails
   - Continue to work with NatiYe American cultural groups to protect park
   - Historic sensitivity and restoration
   - Designation as archaeological park
2. Starin Park
   - .Address maintenance needs
     - Turf management
     - Playground equipment
     - Impro"',e accessibility for physically disabled and small children
   - .Assure that restrooms are accessible and open during park hours
   - Explore feasibility of hosting special events at park
3. Trippe Lake Park (North)
   - Construct shelter, restrooms, and trailhead in area where existing building stands
   - Improve maintenance of creek and dam - including erosion control measures
   - Establish swimming prohibition until feasibility of using park as public swimming facility and potential health risks are addressed
   - Continue to work towards more comprehensive lakes management opportunities
4. Cravath Lake \'\'aterfront Park
   - .Assure that restrooms are accessible and open during park hours
   - Involve diverse users and needs in \-X:'hitewater Street redesign and plaza concept
   - Implement and maintain Lakefront Arch
   - Explore options for permanent buffer between railroad tracks and park
   - Improve signage

.:,. Moraine View Park
   - Complete master planning for park with consultant
     - Establish athletic facilities, possibly to include youth soccer fields
     - Identify need for picnic area or shelter
     - Incorporate other necessary improvements (restrooms, parking)
   - Identify areas for trail development

- Relocate and/or improve facilities for Bark Park to accommodate additional amerunes

6. 'Whitewater Creek Nature Area
   - With assistance from the University Optimists, develop:
     - parking area
     - picnic area v,,ith shelter, grills, tables, etc.
     - nature trails
     - fishing areas
     - canoe launch site
7. Brewery Hill Park/Annory
   - Providing electricity to skate park
8. Meadowsweet Park
   - Explore possibility of modest enhancements for passive recreational use
9. Park Crest Park
   - Improve accessibility for disabled persons and small children
   - Improve definition and surfacing of playground
   - Explore name change and incorporate signage
10. Clay Street Nature Park
    - More clearly define boundaries of park
    - Identify opportunities for park expansion
    - Improve signage/public awareness of the park
11. Main Street Shoppes Courtyard
    - Improve signage/public awareness of the park
    - Coordinate park improvement '\'\'1th redesign of adjacent streets and parking lot
    - Explore feasibility of incorporating with proposed rooftop green space at Main Street Shoppes
12. Birge Fountain Park- *no recommended improvements during thisplanningperiod*
13. Big Brick Park
    - Improve safety and cost-effectiveness of winter ice skating opportunities in the park
    - ·work with University and other interested parties on opportunities for resurfacing to accommodate all-season sports and recreation
14. 1\-Iill Race Park
    - Improve visibility and public knowledge of the park
15. Optimists Turtle Mound Park
    - In partnership '\,\,'1th the Optimists Club, explore feasibility of small park pavillion

Item 4.

Appendix A: National Recreation and Park Association Recreation and Open Space Standards

COMPONENT	(IS	SEf<l'IC£ ARt.	D£SIRABL!I SIZ£	;.CRI!S l 1,0/J0 POPIJL.\TION	DESIl!AfiLE Sl'fli Cll.\l\AC:Tf.IUSTIC:S
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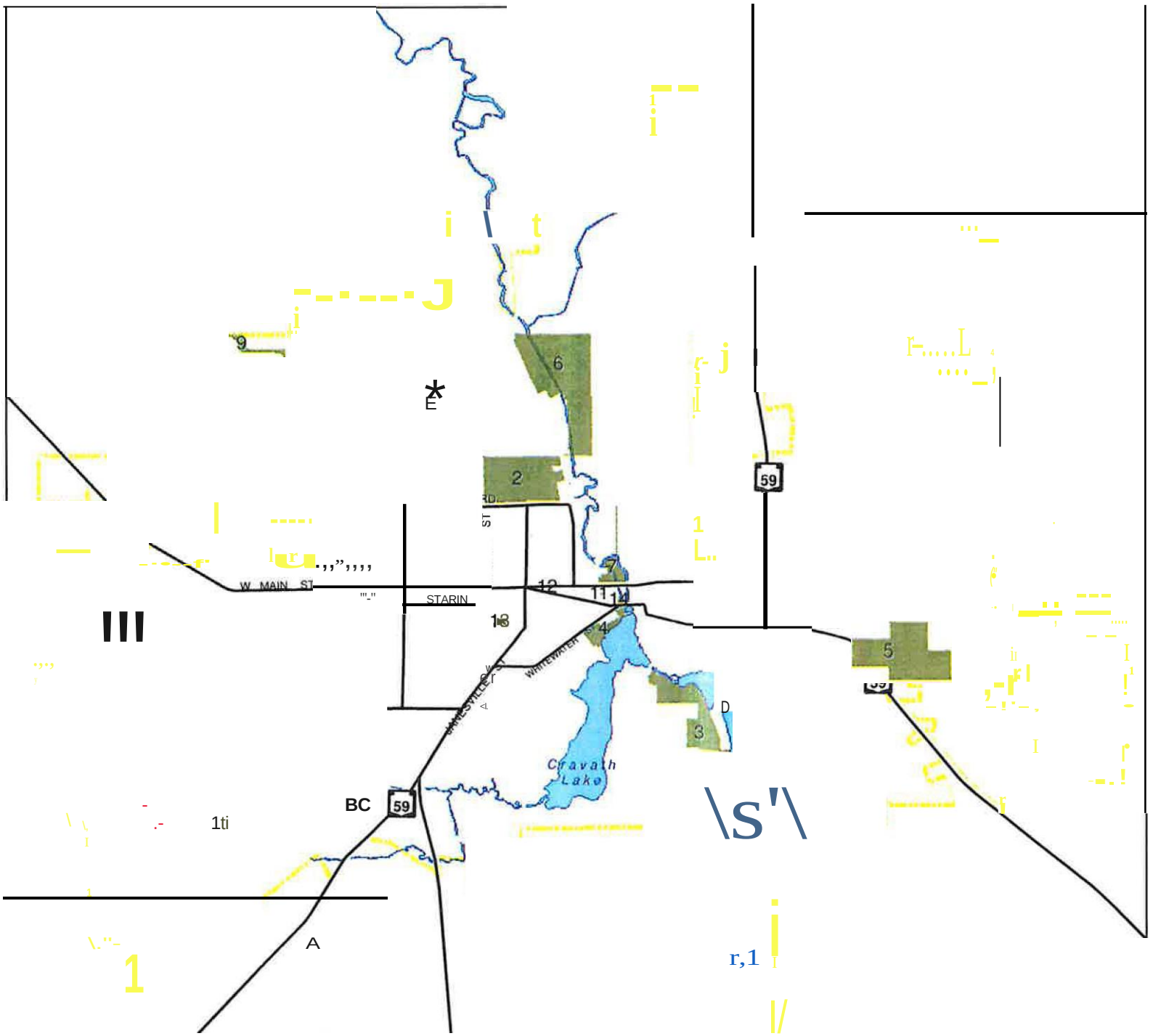
Appendix B: Recreation Amenities in Public Parks - 2008

Community Parks		
Whitewater Creek Nature Area	59.8	•
Moraine View	45.0	
		▪ ▪ ▪ ▪ ▪ ▪ ▪ ▪ ▪ ▪ ▪
Triece Lake	242	
Cravath Lakefront	6.1	
Archeological Park		
Indian Mounds	21.5	
Neighborhood Parks		
Brewery Hill/Armory	7.3	
Meadowsweet	4.0	
Mini Parks		
Park Crest	2.6	
Big Brick	1.1	
Optimist Turtle Mound	1.0	
Birge Fountain	0.7	
Trailhead	0.7	
Clay Street Nature Park	0.6	
Mill Race	0.6	
Main Street Shoppes Courtyard	0.1	

Appendix C: Acreage of Land Develoted to Park and Recreation Uses by Park and School - 2008

	Acreage by Type of Recreation Use Within Specific City Parks				
	Active Recreation Area	Passive Recreation Area	Special Facilities Area	Conservancy Area	Total
Archaeological Park					
1. Indian Mounds		2	19.5		21.5
Community Parks	**39.1**	**54.2**	**0.3**	**75.7**	**169.3**
2. Starin	15	19.2			34.2
3. Trippe Lake	8.1	15.9	0.2		24.2
4. Cravath Lakefront	6		0.1		6.1
5. Moraine View	10	15		20	45
6. Whitewater Creek Nature Area		4.1		55.7	59.8
Neighborhood Parks	**0.6**	**2.5**	**0**	**11.5**	**14.6**
7. Brewery Hill/Armory	0.4	1.9		5	7.3
8. Meadowsweet				4	4
9. Park Crest	0.2	0.6		2.5	3.3
Mini-parks	**2.1**	**0.7**	**1.3**	**0**	**4.1**
10. Clay Street Nature Park			0.6		0.6
11. Main Street Shoppes Courtyard		0.1			0.1
12. Birge Fountain			0.7		0.7
13. Big Brick	1.1				1.1
14. Mill Race		0.6			0.6
15. Optimist Turtle Mound	1				1
Total Public Parks	**41.8**	**57.4**	**1.6**	**87.2**	**188**
Public School Facilities	98.1	11.8	2.2	1	**113.1**
A. Whitewater High School (CP)	54.5	11.8	2	1	69.3
B. Whitewater Middle School (CP)	25.1				25.1
C. Lincoln Elementary (NP)	10.3		0.2		10.5
D. Washington Elementary (NP)	8.2				8.2
University Facilities					
E. UW LAWCON Fields	22	92.4		7.6	**122**
Grand Total	161.s,	161.e;	3.	**95.8**	**423.1**

Map 1: Existing Public Park & School Facilities



LEGEND

-- Major Road

Public Park

Public School

* Archaeological Park

University Facility

City Limits

1. Indian Mounds
2. Starin
3. Trippe Lake
4. Cravath Laketront
5. Moraine View

6. Whitewater Creek Nature Area
7. Brewery Hill/Armory
8. Meadowsweet
9. Park Crest

10. Clay Street Nature Park
11. Main Street Shoppes Courtyard
12. Birge Fountain
13. Big Brick
14. Mill Race

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W E

S

15. Optimist Turtle Mound
A. Whitewater High School (CP)
B. Whitewater Middle School (CP)
C. Lincoln Elementary (NP)
D. Washington Elementary (NP)
E. UW LAWCON Fields

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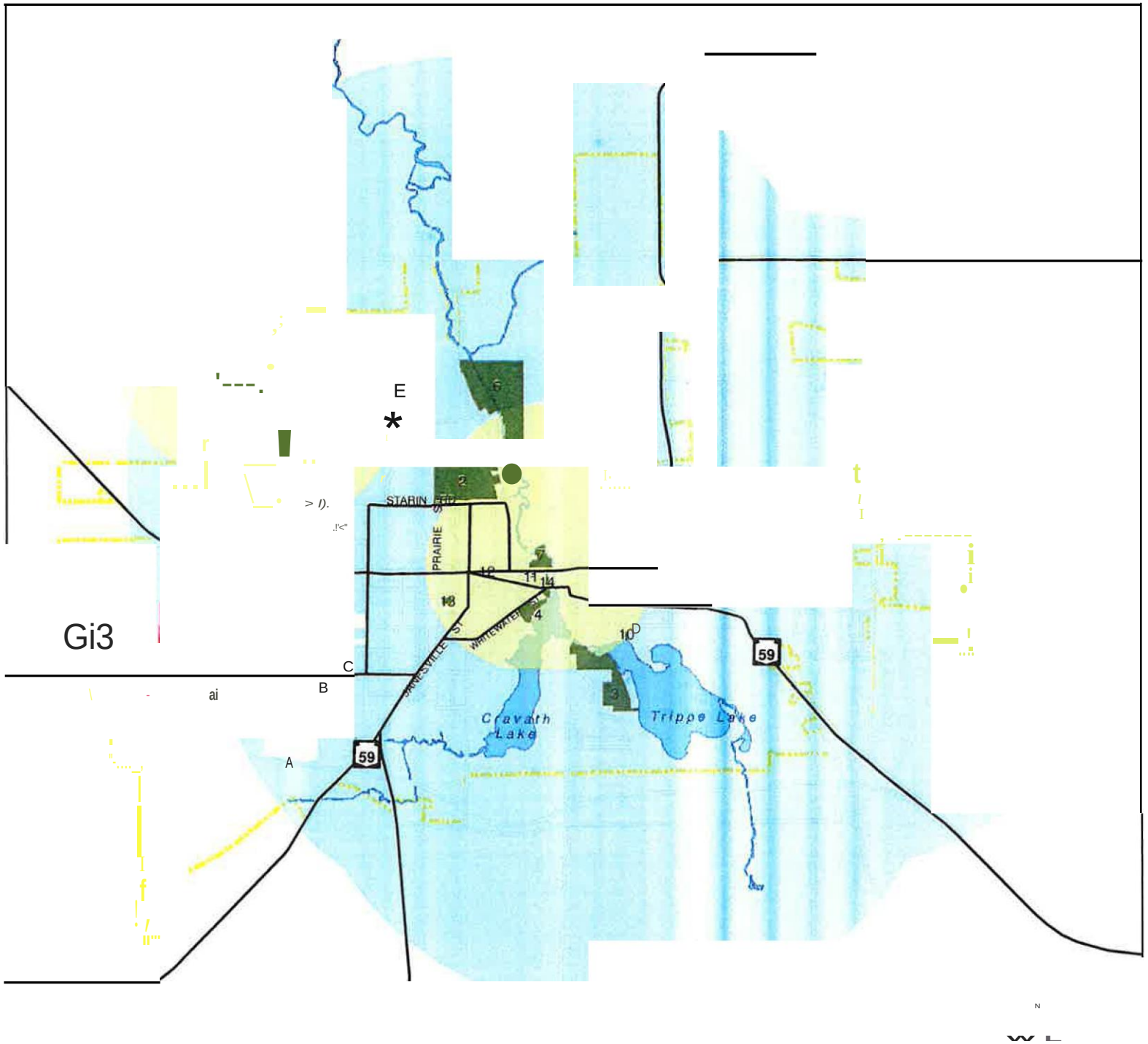
Park & Open Space Plan.
2008-2013

Map not to scale.

Map 2: Existing Park Service Areas



LEGEND

- University Facility
- Major Road
- Public Park
- Public School
- Neighborhood Park Service Area (1/2 Mile)
- Communily Park Service Area (1 1/2 Miles)
- Archaeological Park
- City Limits

1. Indian Mounds
2. Starin
3. Trippe Lake
4. Cravath Lakefront
5. Moraine View
6. Whitewater Creek Nature Area
7. Brewery Hill/Armory
8. Meadowsweet
9. Park Crest
10. Clay Street Nature Park

11. Main Street Shoppes Courtyard
12. Birge Fountain
13. Big Brick
14. Mill Race
15. Optimist Turtle Mound

A. Whitewater High School (CP)
B. Whitewater Middle School (CP)
C. Lincoln Elementary **(NP)**
D. Washington Elementary (NP)
E. UW LAWCON Fields

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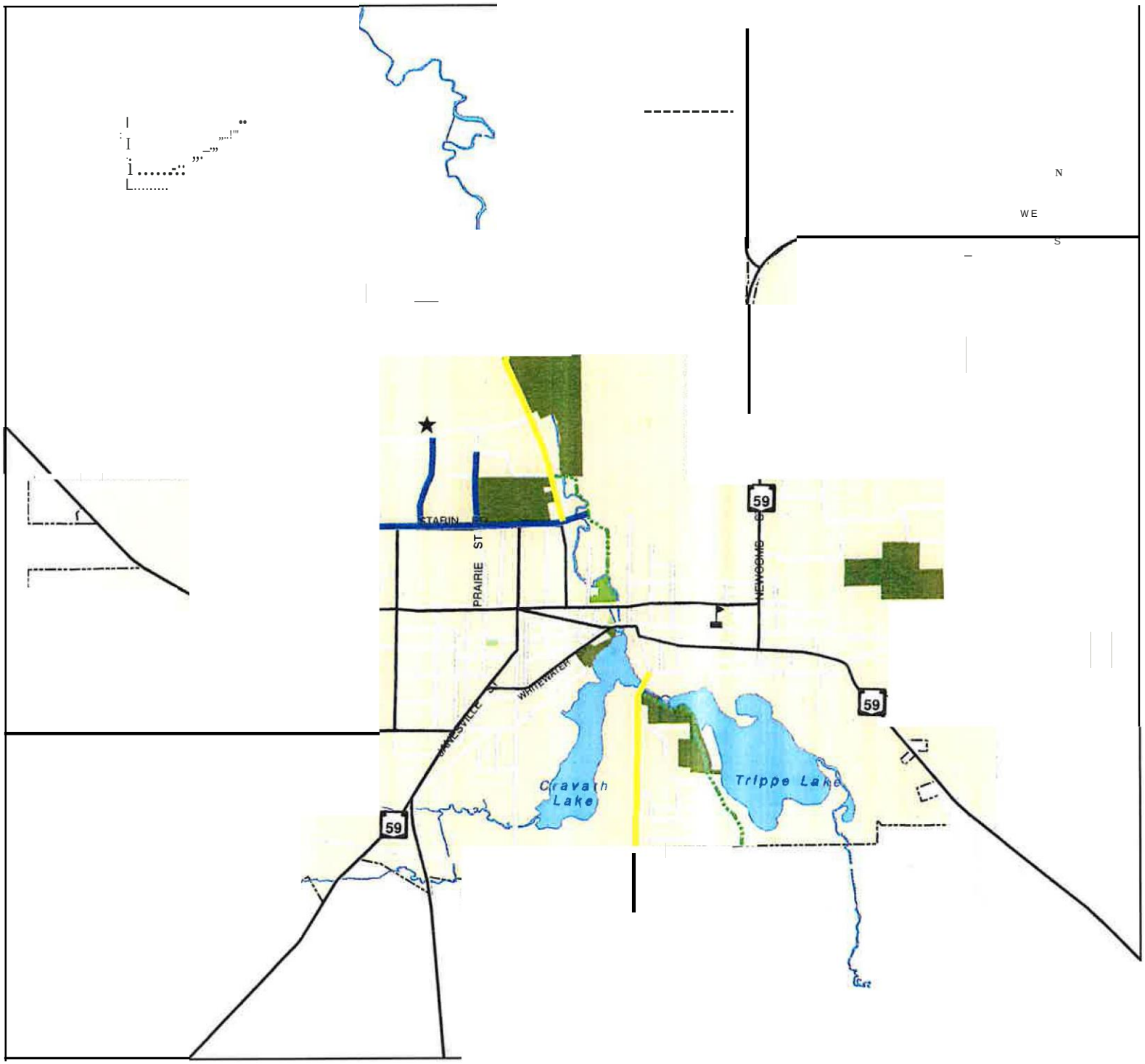
Map no1lo scale

Map 3:
Existing Recreational Trails and Routes

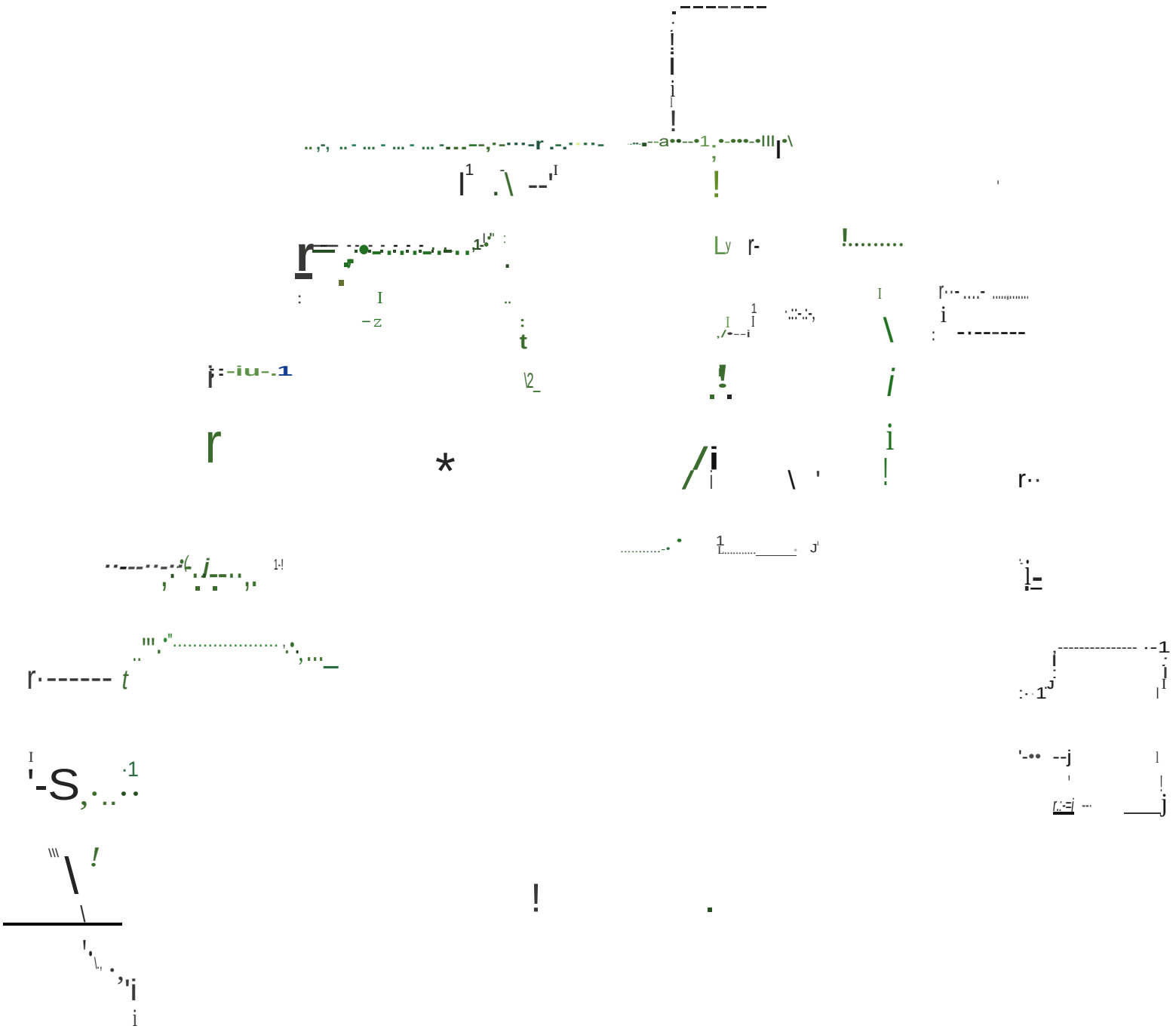
WHITEWATER

Park & Open Space Plan:
2008-2013



Map 4: Comprehensive Bicycle & Trail System Plan

/Intended to be general only.)

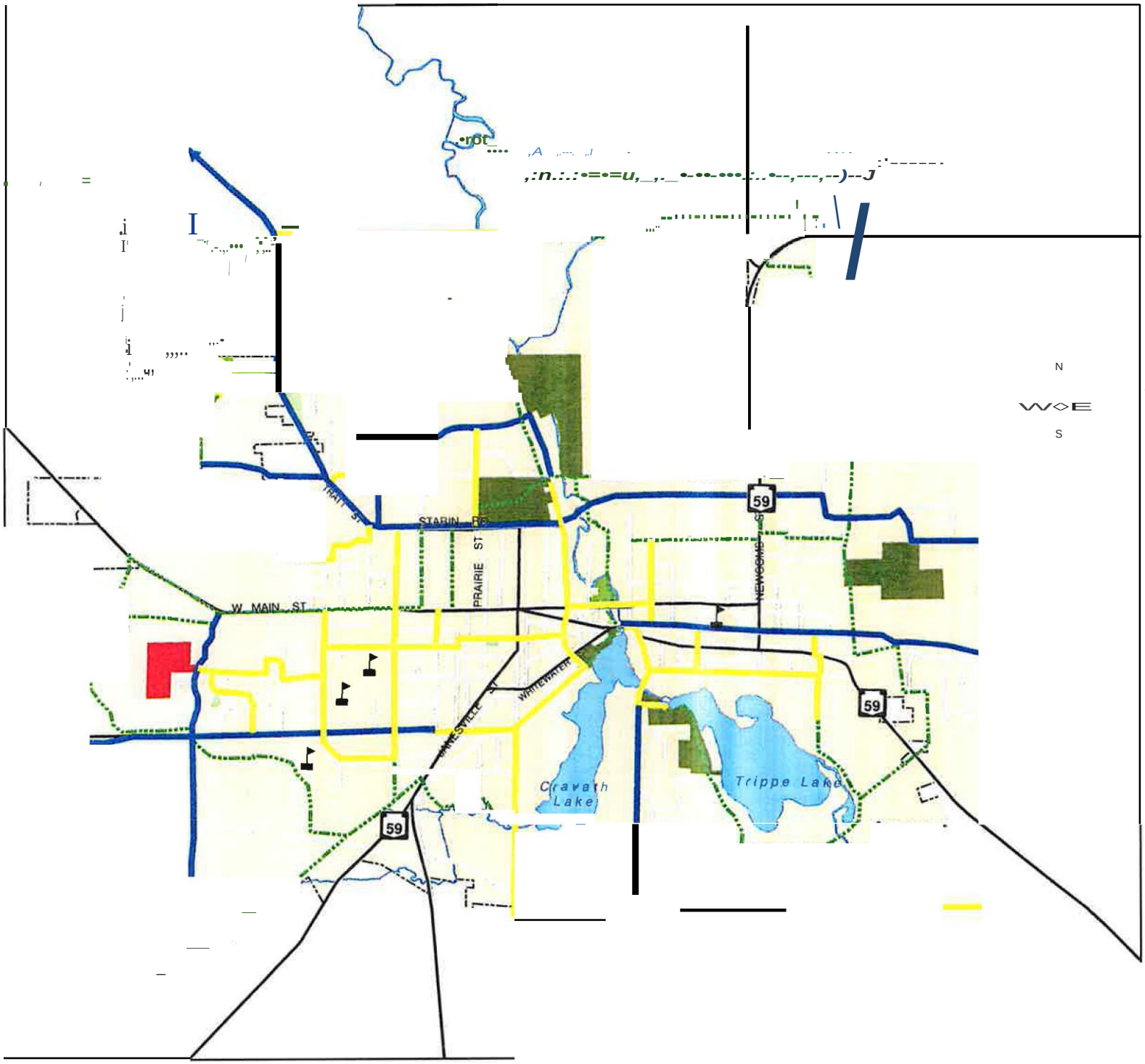


LEGEND

- University Facility
- School
- Major Road

Trail System

- OU-street Mulli-use Path
- Unmarked On-slreel Route
- On-slreel Bike Lane
- Connecl lo County System
- Connecl lo County System
- Neighborhood Park
- Mini-park
- Community Park
- Archaeological Park
- City Limits



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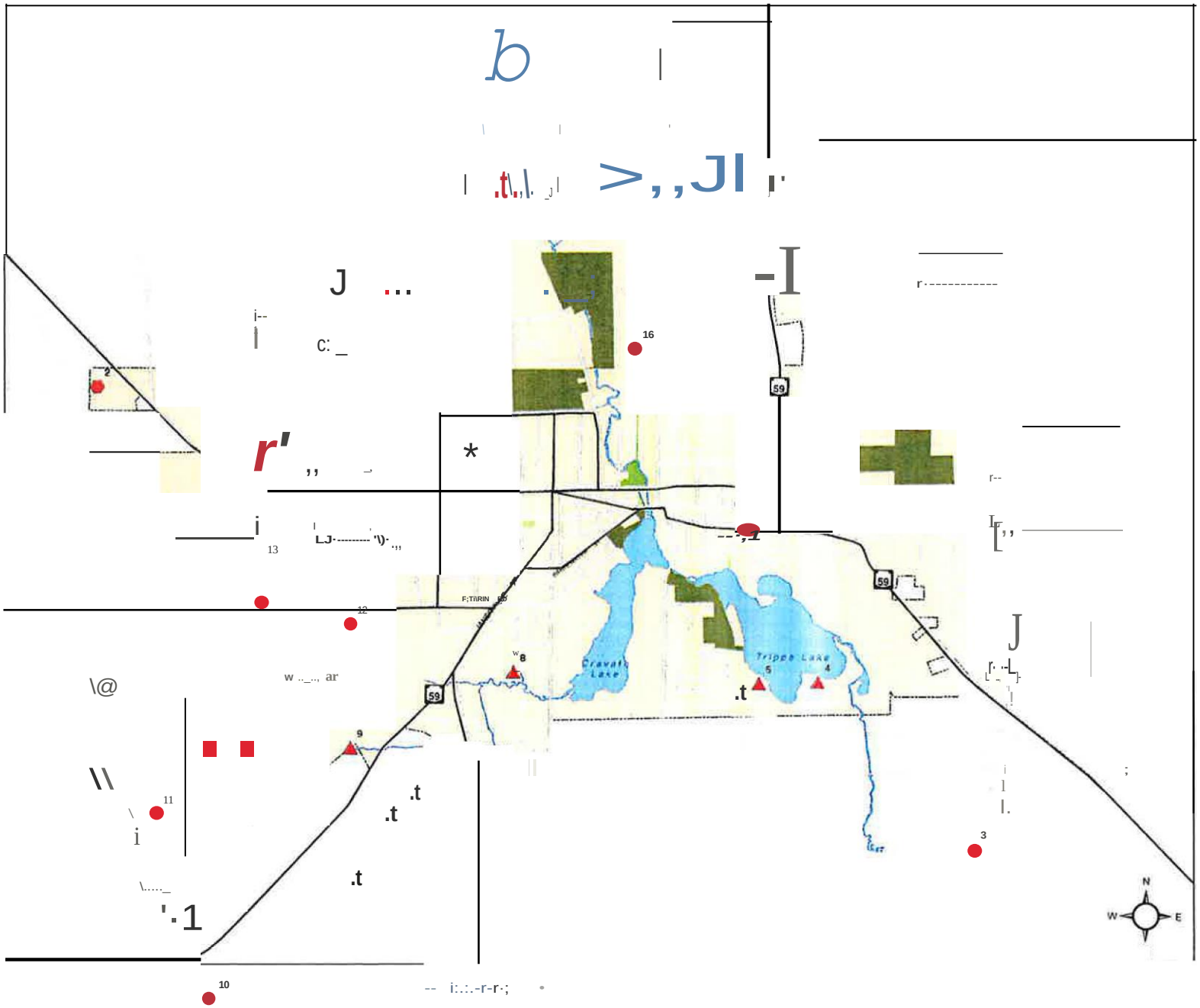
Park & Open Space Plan:
2008 - 2013



Map 5: Recommended Park & Open Space Facilities

/Intended to be general only)

LEGEND

- University Facility
- School
- Communily
- Neighborhood
- Major Road
- Undesignated Park Space
- Neighborhood Park
- Mini-park
- Community Park
- Archaeological Park
- Cily Limits

1. Northwest Community Park
2. West Gateway Community Park
3. East Gateway Neighborhood Park
4. Soulh Shore Communily Park
5. Water's Edge South Upland Park
6. Far Southeast Park
7. South Franklin Park
8. Spring Brook Park
9. South Campus Neighborhood Park
10. Southwest Neighborhood Park
11. Emerald Ridge Neighborhood Park
12. Near West Neighborhood Park
13. Northwest Neighborhood Park
14. Northwest Campus Neighborhood Park

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15. Prairie Village Neighborhood Park
16. Whitewater Creek Nature Park Expansion
17. Eastside Neighborhood Park

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WHITEWATER

Park & Open Space Plan:

2008-2013

Nol to scale.