Birch Lake Critical Habitat Designation Report

Bayfield County, WI

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Critical Habitat Designation Program – Introduction

Wisconsites are concerned about the growing number of threats to sustainable healthy lakes in the state. Increases in shoreline development are changing lake ecosystems, and the conversion of natural lakeshore to residential development has greatly accelerated over the past 30 years. While many positive measures have been initiated within Wisconsin over the past few decades, habitat and water quality continue to be impacted.

Critical Habitat Designation is a program that includes formal designations of areas considered important to fish and wildlife. Critical Habitat is classified into three categories: sensitive areas, public rights features, and resource protection areas (uplands within the shoreline zone). These three elements combine to provide regulatory and management advice to the State of Wisconsin, counties, local units of governments, and others who are interested in protecting and preserving these unique habitats for future generations. Designation of Critical Habitat aims to serve four primary purposes:

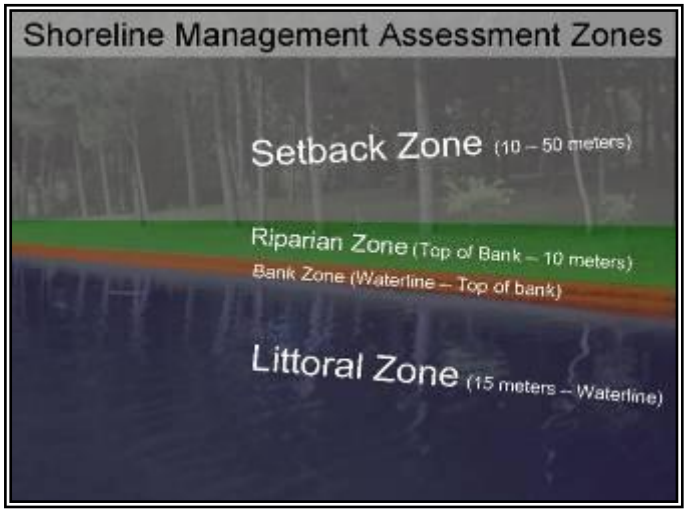
1) Resource protection through science based regulatory review.
2) Community-based resource protection through community education, planning and zoning.
3) As a guide to land-trusts and others acquiring land and conservation easements.
4) A mechanism to track long-term changes in these habitats.

Methods

Critical Habitat Designation occurred on Birch Lake in Bayfield County during 2007 and 2008. Birch Lake, which is a 129 acre lake with a max depth of 8 feet, is part of the Eau Claire Chain of Lakes and is located between Robinson Lake and Upper Eau Claire Lake. Access to Birch Lake is through navigable water from both Robinson Lake and Upper Eau Claire Lake.

Designations were conducted by a team consisting of the county fisheries biologist, water resources specialist, wildlife biologist, and critical habitat coordinator. Initially, DNR staff compiled and reviewed existing natural resource data that helped identify areas of focus related to fish, wildlife, endangered resources, and their habitats before going into the field. In the field, staff used existing natural resource data, delineation guidance, and professional judgment to establish the boundaries of the sites containing critical habitat. Critical Habitat Designation boundaries were recorded in the field using map grade Trimble Geo XM GPS Units. For each site, staff inventoried current shoreline management practices occurring along littoral, bank, riparian, and setback zones following standardized methods. Depending on the features of each area being delineated, standardized sampling of emergent and submergent aquatic vegetation, substrate, and woody habitat was also conducted.

Figure 1. Shoreline Management Zones



Note: A detailed description of the Critical Habitat Designation program, associated methods, and the values of Critical Habitat can be found at http://dnr.wi.gov/lakes/criticalhabitat/. Detailed assessments of each Critical Habitat area including raw sampling data and GIS shape files are available by contacting your local DNR office.

Birch Lake Critical Habitat Designation Management Recommendations

General Lakewide Recommendations: most of these actions will be good for the lake or river regardless if the site is within a designated critical habitat area or not. Emphasis of or exceptions to these general recommendations are discussed in more detail in the specific lakewide and site management recommendations. For example, planting native vegetation along shorelines will generally be beneficial to the lake and property owner. Shorelines that are dominated by established lawn, however, may be out of compliance with current zoning standards and higher priority for restoration since those areas tend to pollute the resource more while simultaneously being devoid of natural fish and wildlife habitat.

Permanent Land Protection
Permanently protect designated critical habitat areas. Permanent land protection tools include: land acquisition, conservation easements, and mutual covenants. Competitive funding opportunities exist for parcels that are large and of particular conservation value. Voluntary protection or private funding sources may be the primary protection methods for smaller parcels. Specific lakewide and site recommendations emphasize priority areas for permanent land protection.

Shoreland Restoration
Leave natural shorelines undisturbed in accordance with local shoreland zoning rules. If the shoreline buffer does not exist or is disturbed, it should be replanted with native vegetation. The Bayfield County Land & Water Conservation Department may provide shoreline restoration technical and funding assistance. Additionally, the Wisconsin Department of Natural Resources offers competitive shoreline restoration grants. Some local landscaping businesses may be able to assist landowners with site planning, including native plant selection.

Runoff Control
Implement lake and river water quality protection tools like rainwater gardens, rain barrels, infiltration pits and trenches, grass swales, etc. that divert and/or infiltrate water before it enters the lake or river. Similar to shoreland restoration, the Bayfield County Land & Water Conservation Department may provide technical and funding assistance for these practices. Additionally, the Wisconsin Department of Natural Resources offers competitive lake protection grants. Some local landscaping businesses may be able to assist landowners with site planning, including plant selection.

Septic Systems
Inspect and maintain septic systems to prevent excess nutrient addition while protecting present water quality conditions. Ideally, a public sanitary sewer system should be constructed. Septic systems are not designed to remove the nutrients (i.e., phosphorous and nitrogen) that pollute water resources. Furthermore, septic water quickly moves through the local sandy soils and speeds delivery of potentially polluted water to the lake or river.

In-Lake Habitat Protection
Consider local recreational boating ordinances (i.e., slow-no-wake) within designated critical habitat areas. Specific lakewide and site recommendations emphasize priority areas for these ordinances.

In general, native aquatic plants should not be actively managed (i.e., no raking, herbicide use, or mechanized removal) and, if within a designated critical habitat site, will

require a permit for manual removal as well as chemical control. Lakewide and site specific recommendations describe exceptions to this general recommendation.

Near shore trees that fall into the water should be left in the water. Site specific recommendations discuss ideal locations for replacing lost woody habitat. There are opportunities with the DNR and Bayfield County Land & Water Conservation Department to implement a Fish Sticks project that replaces this valuable habitat.

Specific Lakewide Recommendations: these management actions are recommended for all of Birch Lake and are recommended based on lake type, geographic location, data collection results, and lakewide management opportunities and threats.

Implement lakewide slow-no-wake ordinance. Lakes less than 50 acres with a public boat landing are automatically Slow-No-Wake by statute. While Birch Lake does not have a public boat landing, it would still benefit from minimizing habitat and water quality problems that result from motorboat use on small, fragile lakes. These problems include disturbing the lake bottom, re-suspending nutrients and sediment that fuel algae blooms, and propeller damage to aquatic plants.

Riprap is not necessary because the wave energy is low for the entire lake. Low-energy sites are typically not eligible/authorized for riprap permits. If shoreline erosion is a problem, overland runoff from rooftops, driveways, and lawns or reckless motorboat use are the most likely causes.

Specific Site Recommendations: these management actions are specific to the given site and only supersede general and specific lakewide recommendations if explicitly stated.

Sites

Eight areas are designated as Critical Habitat on Birch Lake for a total of 36 acres (Figure 1; Tables 1 and 2). Seven areas are classified as Sensitive Areas for rushes, emergent and floating leaf aquatic plants, and/or submergent aquatic plants. One area is classified as a Public Rights Feature for woody habitat.

Figure 2. Birch Lake Critical Habitat Map

Table 1. Birch Lake Critical Habitat Polygon Justifications					
Critical Habitat Polygon ID	**Acres**	**Justification**	**Justification**	**Justification**	**Classification**
BL1	7.0	2	4	-	Sensitive Area
BL2	4.5	3	4	-	Sensitive Area
BL3	7.1	3	4	11	Sensitive Area
BL4	0.3	4	-	-	Sensitive Area
BL5	13.2	3	4	6	Sensitive Area
BL6	1.3	4	-	-	Sensitive Area
BL7	0.2	4	-	-	Sensitive Area
BL8	2.4	7	-	-	Public Rights Feature

Table 2. Critical Habitat Justification Descriptions		
Justifications	**Justification Feature**	**Classification**
1	Bio-diverse Submerged Aquatic Vegetation (SAV)	Sensitive Area
2	SAV Important to Fish and Wildlife Habitat	Sensitive Area
3	Emergent and Floating Leaf Vegetation	Sensitive Area
4	Rush Beds	Sensitive Area
5	Wild Rice Bed	Sensitive Area
6	Extensive Riparian Wetland	Sensitive Area
7	Woody Habitat	Public Rights Feature
8	Spawning Substrate	Public Rights Feature
9	Water Quality (springs, etc)	Public Rights Feature
10	Natural Scenic Beauty	Public Rights Feature
11	Navigational Thoroughfare	Public Rights Feature

Figure 3. Birch Lake Area Wetlands Map

Birch Lake Critical Habitat Site BL1

Critical Habitat site BL1 was designated a Sensitive Area for its Submersed Aquatic Vegetation Important to Fish and Wildlife Habitat and its Rush beds (Figures 4 & 5). It is 7.0 acres in size and encompasses the entire shoreline around the South island.

Aquatic Plants were sampled using a standardized Point Intercept method and a summary of the results can be found in Tables 3 and 4. Table 5 summarizes the current management practices within the Setback, Riparian, Bank and Littoral Zones of BL1.

The island is already in state ownership and thus protected. Consider increasing public recreation opportunity with a primitive camping site.

Rushes are excellent natural shoreline erosion prevention tools. Do not remove rush beds and instead allow them to expand naturally.

Implement fish sticks project. Contact local DNR Fisheries Biologist to investigate funding and technical assistance.

Table 3. BL1 Aquatic Plants

Scientific Name	Common Name	Plant Type	FQI Coefficient	Relative Frequency
Carex sp	Sedges	Emergent	-	3.6
Eleocharis palustris	Creeping spikerush	Emergent	6	1.4
Juncus brevicaudatus	Narrow-panicle rush	Emergent	6	2.2
Juncus palocarpus f. submersus	Brown-fruited rush	Emergent	8	2.2
Pontederia cordata	Pickerelweed	Emergent	9	2.9
Schoenoplectus tabernaemontani	Softstem bulrush	Emergent	4	5.8
Brasenia schreberi	Watershield	Floating Leaf	7	4.3
Nymphaea odorata	White water lily	Floating Leaf	6	3.6
Myrica gale	Sweet gale	Shrub	9	0.7
Chara	Muskgrasses	Submergent	7	1.4
Eleocharis acicularis	Needle spikerush	Submergent	5	2.2
Elodea canadensis	Common waterweed	Submergent	3	4.3
Eriocaulon aquaticum	Pipewort	Submergent	9	3.6
Najas flexilis	Bushy pondweed	Submergent	6	12.3
Potamogeton amplifolius	Large-leaf pondweed	Submergent	7	3.6
Potamogeton richardsonii	Clasping-leaf pondweed	Submergent	5	3.6
Potamogeton robbinsii	Robbins pondweed	Submergent	8	19.6
Sagittaria sp	Arrowhead (rosette)	Submergent	-	15.2
Vallisneria americana	Wild celery	Submergent	6	7.2

Table 4. BL1 Aquatic Plant Sampling Summary Statistics	
SUMMARY STATISTICS	**BL1**
Total number of points sampled	72
Total number of sites with vegetation	55
Total number of sites shallower than maximum depth of plants	70
Frequency of occurrence at sites shallower than maximum depth of plants	78.57
Simpson Diversity Index	0.90
Maximum depth of plants (Feet)	4.5
Number of sites sampled using rake on Rope (R)	0
Number of sites sampled using rake on Pole (P)	72
Average number of all species per site (shallower than max depth)	1.97
Average number of all species per site (veg. sites only)	2.51
Average number of native species per site (shallower than max depth)	1.97
Average number of native species per site (veg. sites only)	2.51
Species Richness	19
Species Richness (including visuals)	19
Floristic Quality Index	26.92

Figure 4. BL1 Aquatic Plant Diversity Map

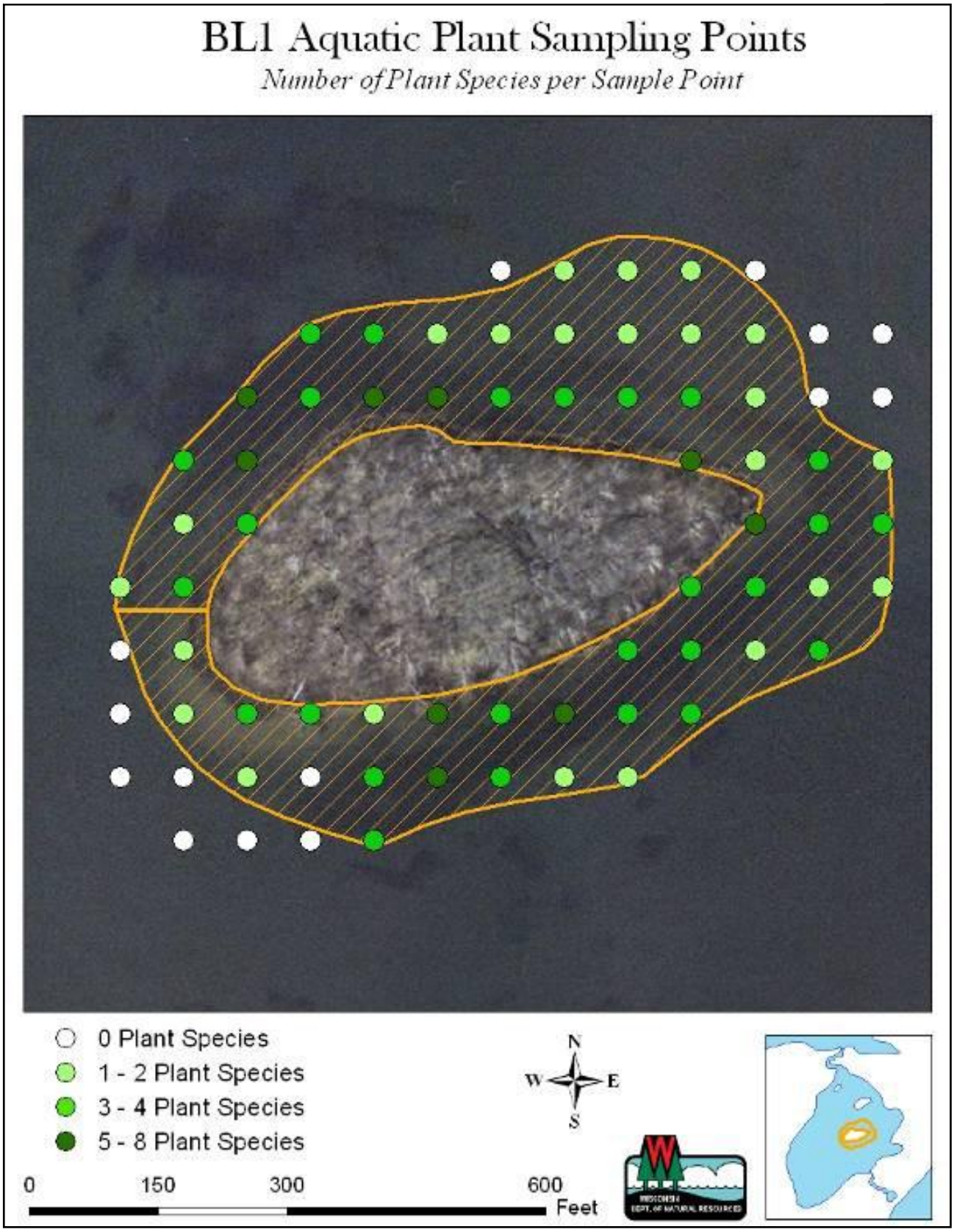


Figure 5. BL1 Rushes Map

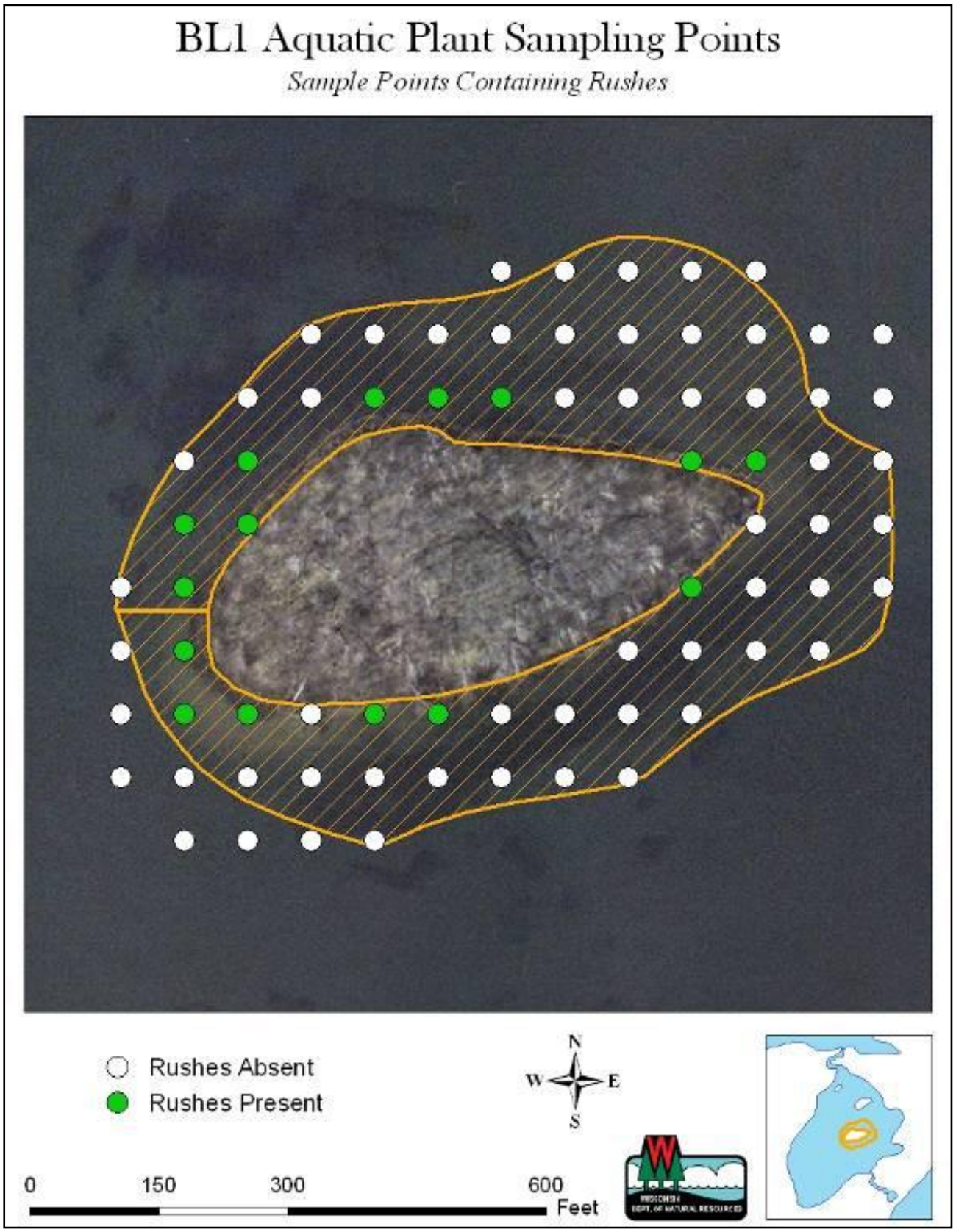


Table 5. Shoreline Inventory of BL1				
Feature	**Number**	**Density** (per mile)	**Shoreline Length** (feet)	**% of Shoreline**
Setback Zone				
Homes	0	0		
Accessory Structures	0	0		
Commercial Buildings	0	0		
Riparian Zone				
Homes	0	0		
Accessory Structures	0	0		
Commercial Buildings	0	0		
Natural vegetation			1574	100
Shrub Layer Removed			0	0
Shrub & Ground Cover Removed			0	0
Established Lawn			0	0
Pastureland			0	0
Row Crop			0	0
Beach			0	0
Impervious Surface (road, parking lots, etc.)			0	0
Other			0	0
Not Visible			0	0
Total Shoreline			1574	100
Bank Zone				
Natural Bank			1574	100
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			0	0
Pea Gravel Blanket			0	0
Established Lawn			0	0
Artificial Beach			0	0
Seawalls			0	0
Total Shoreline			1574	100
Boat Ramp	0	0		
Stormwater Outflow	0	0		
Littoral Zone				
Piers	0	0		
Boat Lifts	0	0		
Swims Rafts/ Trampolines	0	0		
Boathouses	0	0		
Mooring Buoys	0	0		
Dredge channels	0	0		
Commercial Marinas	0	0		
Bridges	0	0		
Plant removal devices	0	0		
Recreational/Public Beaches	0	0		

Birch Lake Critical Habitat Site BL2

Critical Habitat site BL2 was designated a Sensitive Area for its Emergent and Floating Leaf Vegetation and its Rush Beds (Figures 6 & 7). It is 4.5 acres in size and encompasses the entire shoreline around the north island.

Aquatic Plants were sampled using a standardized Point Intercept method and a summary of the results can be found in Tables 6 and 7. Table 8 summarizes the current management practices within the Setback, Riparian, Bank and Littoral Zones of BL2.

The island is already in state ownership and thus protected.

Rushes are excellent natural shoreline erosion prevention tools. Do not remove rush beds and instead allow them to expand naturally.

Implement fish sticks project. Contact local DNR Fisheries Biologist to investigate funding and technical assistance opportunities and initiate water regulation permit process.

Table 6. BL2 Aquatic Plants

Scientific Name	Common Name	Plant Type	FQI Coefficient	Relative Frequency
Carex lasiocarpa	Woolly-fruit sedge	Emergent	9	6.0
Dulichium arundinaceum	Three-way sedge	Emergent	9	1.2
Juncus brevicaudatus	Narrow-panicle rush	Emergent	6	3.6
Pontederia cordata	Pickerelweed	Emergent	9	4.8
Sagittaria graminea	Grass-leaved arrowhead	Emergent	9	1.2
Schoenoplectus tabernaemontani	Softstem bulrush	Emergent	4	9.6
Typha sp	Cattail	Emergent	1	Visual
Brasenia schreberi	Watershield	Floating Leaf	7	14.5
Nuphar variegata	Spatterdock	Floating Leaf	6	2.4
Nymphaea odorata	White water lily	Floating Leaf	6	12.0
Myrica gale	Sweet gale	Shrub	9	2.4
Chara	Muskgrasses	Submergent	7	3.6
Eleocharis acicularis	Needle spikerush	Submergent	5	3.6
Eriocaulon aquaticum	Pipewort	Submergent	9	3.6
Juncus palocarpus f. submersus	Brown-fruited rush	Submergent	8	2.4
Myriophyllum tenellum	Dwarf water-milfoil	Submergent	10	1.2
Najas flexilis	Bushy pondweed	Submergent	6	22.9
Najas gracillima	Slender water-nymph	Submergent	7	1.2
Potamogeton gramineus	Variable pondweed	Submergent	7	1.2
Potamogeton richardsonii	Clasping-leaf pondweed	Submergent	5	1.2
Potamogeton robbinsii	Robbins pondweed	Submergent	8	1.2

Table 7. BL2 Aquatic Plant Sampling Summary Statistics	
SUMMARY STATISTICS	**BL2**
Total number of points sampled	63
Total number of sites with vegetation	37
Total number of sites shallower than maximum depth of plants	62
Frequency of occurrence at sites shallower than maximum depth of plants	59.7
Simpson Diversity Index	0.89
Maximum depth of plants (Feet)	4
Number of sites sampled using rake on Rope (R)	0
Number of sites sampled using rake on Pole (P)	63
Average number of all species per site (shallower than max depth)	1.34
Average number of all species per site (veg. sites only)	2.24
Average number of native species per site (shallower than max depth)	1.34
Average number of native species per site (veg. sites only)	2.24
Species Richness	20
Species Richness (including visuals)	21
Floristic Quality Index	32.08

Figure 6. BL2 Aquatic Plant Diversity Map

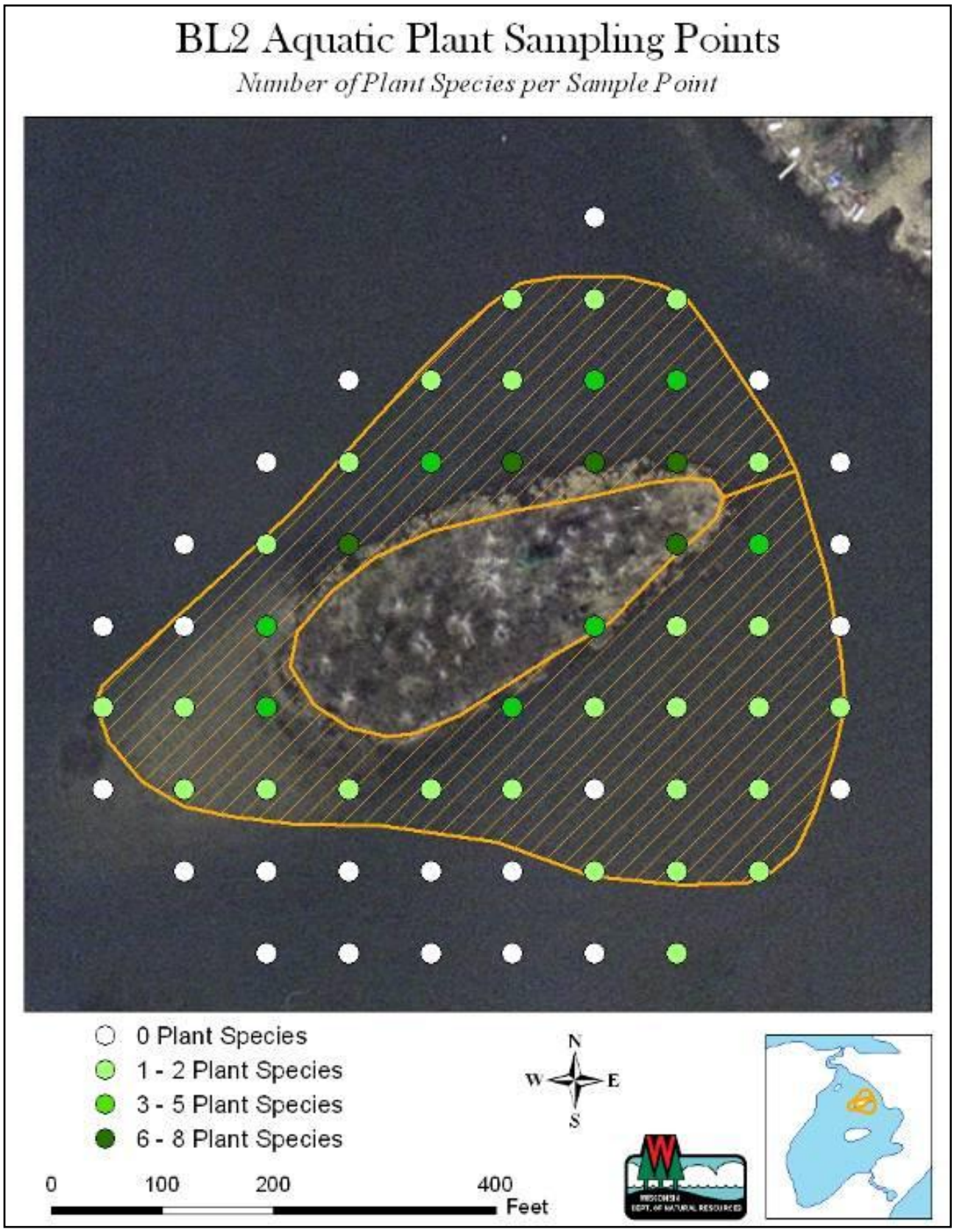


Figure 7. BL2 Rushes Map

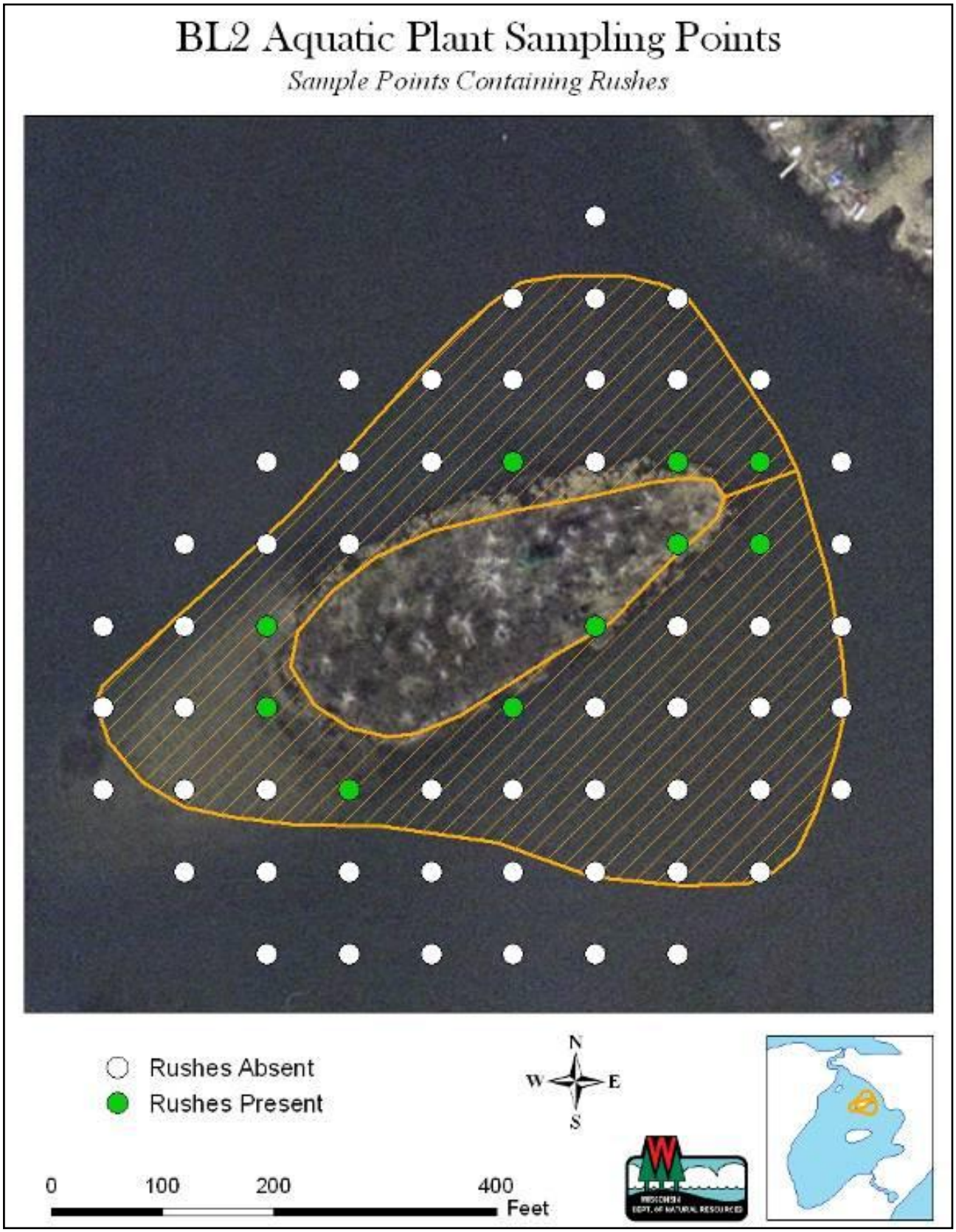


Table 8. Shoreline Inventory of BL2				
Feature	**Number**	**Density** (per mile)	**Shoreline Length** (feet)	**% of Shoreline**
Setback Zone				
Homes	0	0		
Accessory Structures	0	0		
Commercial Buildings	0	0		
Riparian Zone				
Homes	0	0		
Accessory Structures	0	0		
Commercial Buildings	0	0		
Natural vegetation			1017	100
Shrub Layer Removed			0	0
Shrub & Ground Cover Removed			0	0
Established Lawn			0	0
Pastureland			0	0
Row Crop			0	0
Beach			0	0
Impervious Surface (road, parking lots, etc.)			0	0
Other			0	0
Not Visible			0	0
Total Shoreline			1017	100
Bank Zone				
Natural Bank			1017	100
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			0	0
Pea Gravel Blanket			0	0
Established Lawn			0	0
Artificial Beach			0	0
Seawalls			0	0
Total Shoreline			1017	100
Boat Ramp	0	0		
Stormwater Outflow	0	0		
Littoral Zone				
Piers	0	0		
Boat Lifts	0	0		
Swims Rafts/ Trampolines	0	0		
Boathouses	0	0		
Mooring Buoys	0	0		
Dredge channels	0	0		
Commercial Marinas	0	0		
Bridges	0	0		
Plant removal devices	0	0		
Recreational/Public Beaches	0	0		

Birch Lake Critical Habitat Site BL3

Critical Habitat site BL3 was designated a Sensitive Area for its Emergent and Floating Leaf Vegetation, Rush beds, and Extensive Public Use (Figures 8 & 9). It is 7.1 acres in size and encompasses the entire channel between Birch Lake and Robinson Lake.

Aquatic Plants were sampled using a standardized Point Intercept method and a summary of the results can be found in Tables 9 and 10. Table 11 summarizes the current management practices within the Setback, Riparian, Bank and Littoral Zones of BL3.

Rushes are excellent natural shoreline erosion prevention tools. Do not remove rush beds and instead allow them to expand naturally. Place piers outside of rush beds, or extend piers beyond the rush beds to limit disturbance.

Prioritize permanent land protection.

Established lawn within 50 feet of the water's edge should be replanted with native vegetation to comply with Bayfield County shoreland zoning ordinance, minimize erosion and pollution, and improve fish and wildlife habitat.

Dredging of channel to Robinson Lake should not be allowed.

Implement fish sticks project. Contact local DNR Fisheries Biologist to investigate funding and technical assistance opportunities.

Table 9. BL3 Aquatic Plants

Scientific Name	Common Name	Plant Type	FQI Coefficient	Relative Frequency
Carex sp	Sedges	Emergent	-	0.9
Dulichium arundinaceum	Three-way sedge	Emergent	9	Visual
Pontederia cordata	Pickerelweed	Emergent	9	8.1
Schoenoplectus acutus	Hardstem bulrush	Emergent	5	1.8
Schoenoplectus tabernaemontani	Softstem bulrush	Emergent	4	6.3
Typha sp	Cattail	Emergent	1	2.7
Brasenia schreberi	Watershield	Floating Leaf	7	13.5
Nuphar variegata	Spatterdock	Floating Leaf	6	9.9
Nymphaea odorata	White water lily	Floating Leaf	6	9.9
Potamogeton natans	Floating-leaf pondweed	Floating Leaf	5	0.9
Sparganium fluctuans	Floating leaf bur-reed	Floating Leaf	10	1.8
Chara	Muskgrasses	Submergent	7	2.7
Eleocharis acicularis	Needle spikerush	Submergent	5	2.7
Elodea canadensis	Common waterweed	Submergent	3	4.5
Eriocaulon aquaticum	Pipewort	Submergent	9	1.8
Myriophyllum tenellum	Dwarf water-milfoil	Submergent	10	0.9
Najas flexilis	Bushy pondweed	Submergent	6	9.9
Potamogeton gramineus	Variable pondweed	Submergent	7	3.6
Potamogeton richardsonii	Clasping-leaf pondweed	Submergent	5	0.9
Potamogeton robbinsii	Robbins pondweed	Submergent	8	3.6
Sagittaria sp	Arrowhead (rosette)	Submergent	-	10.8
Schoenoplectus subterminalis	Water bulrush	Submergent	9	1.8
Vallisneria americana	Wild celery	Submergent	6	0.9

Table 10. BL3 Aquatic Plant Sampling Summary Statistics	
SUMMARY STATISTICS	**BL3**
Total number of points sampled	91
Total number of sites with vegetation	44
Total number of sites shallower than maximum depth of plants	91
Frequency of occurrence at sites shallower than maximum depth of plants	48.352
Simpson Diversity Index	0.9215
Maximum depth of plants (Feet)	4
Number of sites sampled using rake on Rope (R)	0
Number of sites sampled using rake on Pole (P)	91
Average number of all species per site (shallower than max depth)	1.22
Average number of all species per site (veg. sites only)	2.52
Average number of native species per site (shallower than max depth)	1.22
Average number of native species per site (veg. sites only)	2.52
Species Richness	22
Species Richness (including visuals)	23
Floristic Quality Index	29.90

Figure 8. BL3 Aquatic Plant Diversity Map

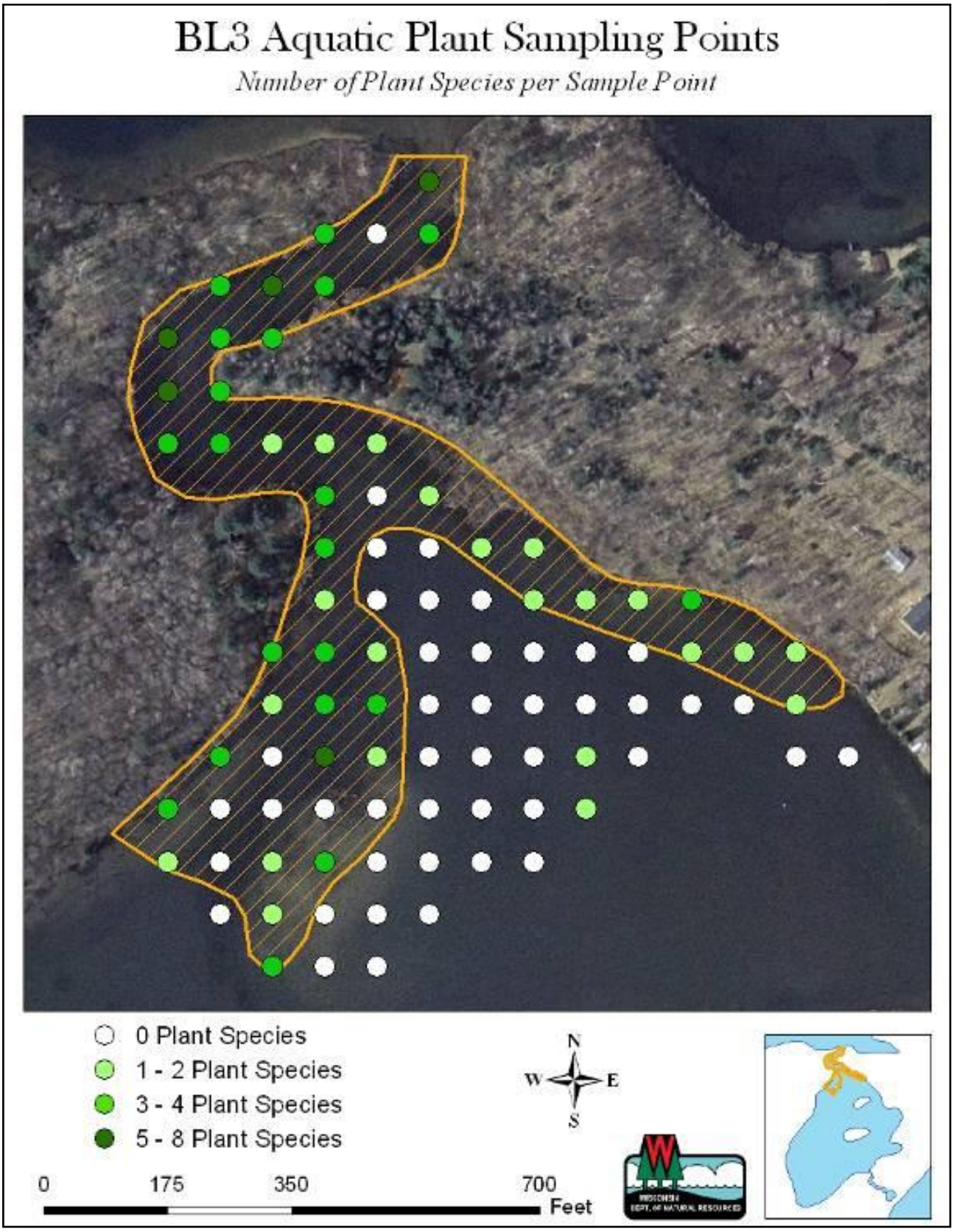


Figure 9. BL3 Rushes Map

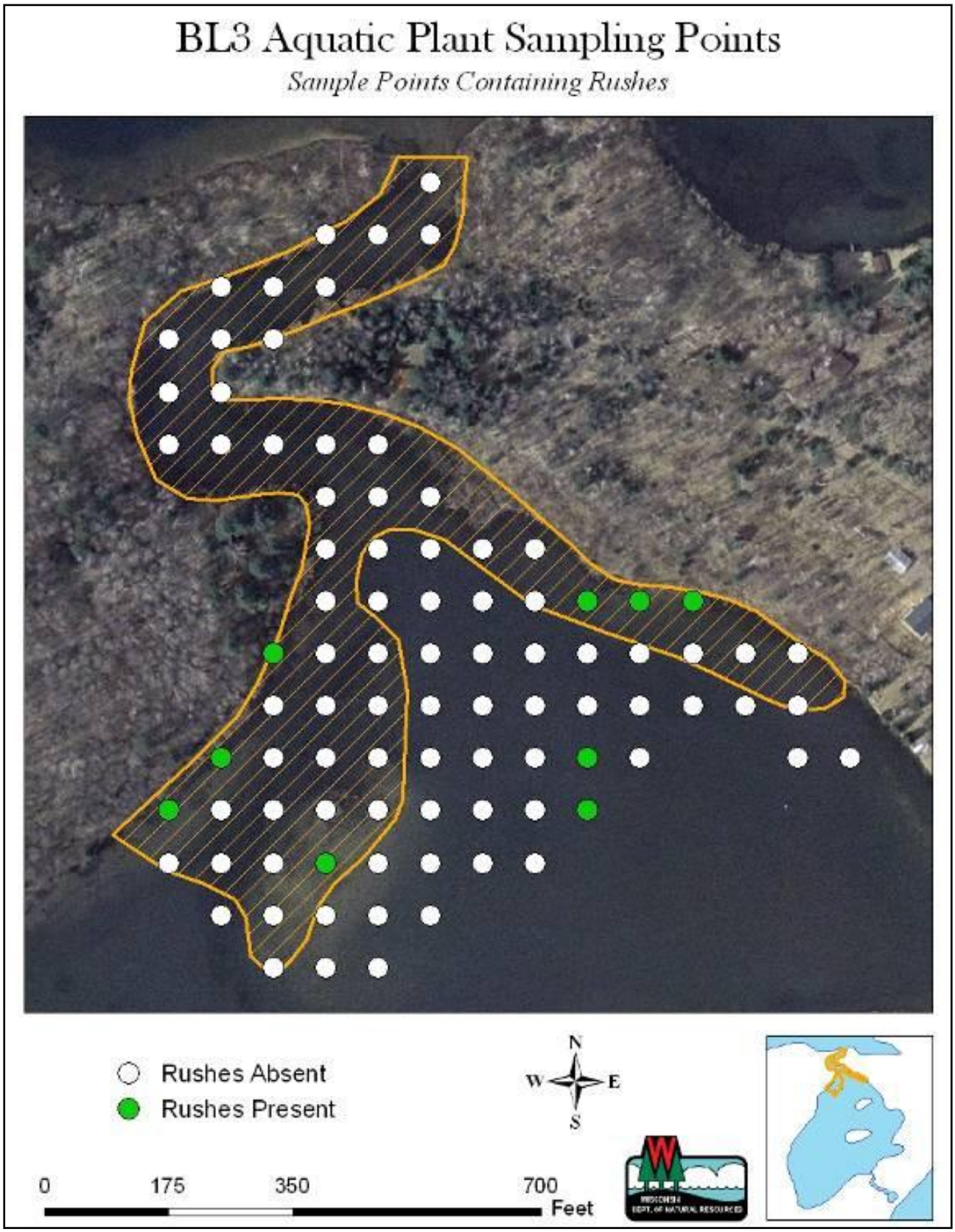


Table 11. Shoreline Inventory of BL3				
Feature	**Number**	**Density** (per mile)	**Shoreline Length** (feet)	**% of Shoreline**
Setback Zone				
Homes	3	5.1		
Accessory Structures	4	6.8		
Commercial Buildings	0	0		
Riparian Zone				
Homes	0	0		
Accessory Structures	0	0		
Commercial Buildings	0	0		
Natural vegetation			2985	95.8
Shrub Layer Removed			49	1.6
Shrub & Ground Cover Removed			0	0
Established Lawn			82	2.6
Pastureland			0	0
Row Crop			0	0
Beach			0	0
Impervious Surface (road, parking lots, etc.)			0	0
Other			0	0
Not Visible			0	0
Total Shoreline			3116	100
Bank Zone				
Natural Bank			3083	98.9
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			0	0
Pea Gravel Blanket			0	0
Established Lawn			33	1.1
Artificial Beach			0	0
Seawalls			0	0
Total Shoreline			3116	100
Boat Ramp	0	0		
Stormwater Outflow	0	0		
Littoral Zone				
Piers	1	1.7		
Boat Lifts	0	0		
Swims Rafts/ Trampolines	0	0		
Boathouses	0	0		
Mooring Buoys	0	0		
Dredge channels	0	0		
Commercial Marinas	0	0		
Bridges	0	0		
Plant removal devices	0	0		
Recreational/Public Beaches	0	0		

Birch Lake Critical Habitat Site BL4

Critical Habitat site BL4 was designated a Sensitive Area for its Rush beds (Figures 10 & 11). It is 0.3 acres in size and located along the Northeast shore.

Aquatic Plants were sampled using a standardized Point Intercept method and a summary of the results can be found in Tables 12 and 13. Table 14 summarizes the current management practices within the Setback, Riparian, Bank and Littoral Zones of BL4.

Rushes are excellent natural shoreline erosion prevention tools. Do not remove rush beds and instead allow them to expand naturally. Place piers outside of rush beds, or extend piers beyond the rush beds to limit disturbance.

Established lawn within 50 feet of the water's edge should be replanted with native vegetation to comply with Bayfield County shoreland zoning ordinance, minimize erosion and pollution, and improve fish and wildlife habitat.

Table 12. BL4 Aquatic Plants

Scientific Name	Common Name	Plant Type	FQI Coefficient	Relative Frequency
Pontederia cordata	Pickerelweed	Emergent	9	Visual
Schoenoplectus acutus	Hardstem bulrush	Emergent	5	11.1
Elatine minima	Waterwort	Submergent	9	11.1
Eleocharis acicularis	Needle spikerush	Submergent	5	22.2
Eriocaulon aquaticum	Pipewort	Submergent	9	Visual
Najas flexilis	Bushy pondweed	Submergent	6	11.1
Potamogeton gramineus	Variable pondweed	Submergent	7	11.1
Ranunculus aquatilis	Stiff water crowfoot	Submergent	7	11.1
Vallisneria americana	Wild celery	Submergent	6	22.2

Table 13. BL4 Aquatic Plant Sampling Summary Statistics

SUMMARY STATISTICS	BL4
Total number of points sampled	5
Total number of sites with vegetation	4
Total number of sites shallower than maximum depth of plants	4
Frequency of occurrence at sites shallower than maximum depth of plants	100
Simpson Diversity Index	0.8395
Maximum depth of plants (Feet)	2.5
Number of sites sampled using rake on Rope (R)	0
Number of sites sampled using rake on Pole (P)	5
Average number of all species per site (shallower than max depth)	2.25
Average number of all species per site (veg. sites only)	2.25
Average number of native species per site (shallower than max depth)	2.25
Average number of native species per site (veg. sites only)	2.25
Species Richness	7
Species Richness (including visuals)	9
Floristic Quality Index	21.00

Figure 10. BL4 Aquatic Plant Diversity Map

Figure 11. BL4 Rushes Map

Table 14. Shoreline Inventory of BL4				
Feature	**Number**	**Density** (per mile)	**Shoreline Length** (feet)	**% of Shoreline**
Setback Zone				
Homes	2	91.8		
Accessory Structures	2	91.8		
Commercial Buildings	0	0		
Riparian Zone				
Homes	0	0		
Accessory Structures	1	45.9		
Commercial Buildings	0	0		
Natural vegetation			49	42.6
Shrub Layer Removed			0	0
Shrub & Ground Cover Removed			0	0
Established Lawn			66	57.4
Pastureland			0	0
Row Crop			0	0
Beach			0	0
Impervious Surface (road, parking lots, etc.)			0	0
Other			0	0
Not Visible			0	0
Total Shoreline			115	100
Bank Zone				
Natural Bank			115	100
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			0	0
Pea Gravel Blanket			0	0
Established Lawn			0	0
Artificial Beach			0	0
Seawalls			0	0
Total Shoreline			115	100
Boat Ramp	0	0		
Stormwater Outflow	0	0		
Littoral Zone				
Piers	1			
Boat Lifts	0	0		
Swims Rafts/ Trampolines	0	0		
Boathouses	0	0		
Mooring Buoys	0	0		
Dredge channels	0	0		
Commercial Marinas	0	0		
Bridges	0	0		
Plant removal devices	0	0		
Recreational/Public Beaches	0	0		

Birch Lake Critical Habitat Site BL5

Critical Habitat site BL5 was designated a Sensitive Area for its Emergent and Floating Leaf Vegetation, Rush beds, and Extensive Riparian Wetland (Figures 12 & 13). It is 13.2 acres in size and located along the East shore.

Aquatic Plants were sampled using a standardized Point Intercept method and a summary of the results can be found in Tables 15 and 16. Table 17 summarizes the current management practices within the Setback, Riparian, Bank and Littoral Zones of BL5.

Rushes are excellent natural shoreline erosion prevention tools. Do not remove rush beds and instead allow them to expand naturally. Place piers outside of rush beds, or extend piers beyond the rush beds to limit disturbance.

Established lawn within 50 feet of the water's edge should be replanted with native vegetation to comply with Bayfield County shoreland zoning ordinance, minimize erosion and pollution, and improve fish and wildlife habitat.

Implement fish sticks project. Contact local DNR Fisheries Biologist to investigate funding and technical assistance opportunities.

Table 15. BL5 Aquatic Plants

Scientific Name	Common Name	Plant Type	FQI Coefficient	Relative Frequency
Carex lasiocarpa	Woolly-fruit sedge	Emergent	9	1.8
Dulichium arundinaceum	Three-way sedge	Emergent	9	0.9
Eleocharis palustris	Creeping spikerush	Emergent	6	0.9
Glyceria canadensis	Rattlesnake manna grass	Emergent	7	0.9
Myrica gale	Sweet Gale	Emergent	9	1.8
Pontederia cordata	Pickerelweed	Emergent	9	6.2
Sagittaria graminea	Grass-leaved arrowhead	Emergent	9	7.1
Schoenoplectus acutus	Hardstem bulrush	Emergent	5	6.2
Typha sp.	Cattail	Emergent	1	0.9
Brasenia schreberi	Watershield	Floating Leaf	7	6.2
Nuphar variegata	Spatterdock	Floating Leaf	6	0.9
Nymphaea odorata	White water lily	Floating Leaf	6	5.3
Potamogeton natans	Floating-leaf pondweed	Floating Leaf	5	0.9
Utricularia intermedia	Flat-leaf bladderwort	Free Floating	9	1.8
Utricularia vulgaris	Common bladderwort	Free Floating	7	1.8
Chara	Muskgrasses	Submergent	7	2.7
Elatine minima	Waterwort	Submergent	9	0.9
Eleocharis acicularis	Needle spikerush	Submergent	5	2.7
Elodea canadensis	Common waterweed	Submergent	3	4.4
Eriocaulon aquaticum	Pipewort	Submergent	9	4.4
Myriophyllum sibericum	Northern water-milfoil	Submergent	7	0.9
Najas flexilis	Bushy pondweed	Submergent	6	23.0
Potamogeton amplifolius	Large-leaf pondweed	Submergent	7	1.8
Potamogeton gramineus	Variable pondweed	Submergent	7	0.9
Potamogeton richardsonii	Clasping-leaf pondweed	Submergent	5	3.5
Potamogeton robbinsii	Robbins pondweed	Submergent	8	4.4

Ranunculus aquatilis	Stiff water crowfoot	Submergent	7	1.8
Schoenoplectus subterminalis	Water bulrush	Submergent	9	Visual
Vallisneria americana	Wild celery	Submergent	6	3.5
Zosterella dubia	Water star-grass	Submergent	6	1.8

Table 16. BL5 Aquatic Plant Sampling Summary Statistics

SUMMARY STATISTICS	**BL5**
Total number of points sampled	93
Total number of sites with vegetation	46
Total number of sites shallower than maximum depth of plants	86
Frequency of occurrence at sites shallower than maximum depth of plants	53.488
Simpson Diversity Index	0.915
Maximum depth of plants (Feet)	4.5
Number of sites sampled using rake on Rope (R)	0
Number of sites sampled using rake on Pole (P)	93
Average number of all species per site (shallower than max depth)	1.31
Average number of all species per site (veg. sites only)	2.46
Average number of native species per site (shallower than max depth)	1.31
Average number of native species per site (veg. sites only)	2.46
Species Richness	29
Species Richness (including visuals)	30
Floristic Quality Index	37.43

Figure 12. BL5 Aquatic Plant Diversity Map

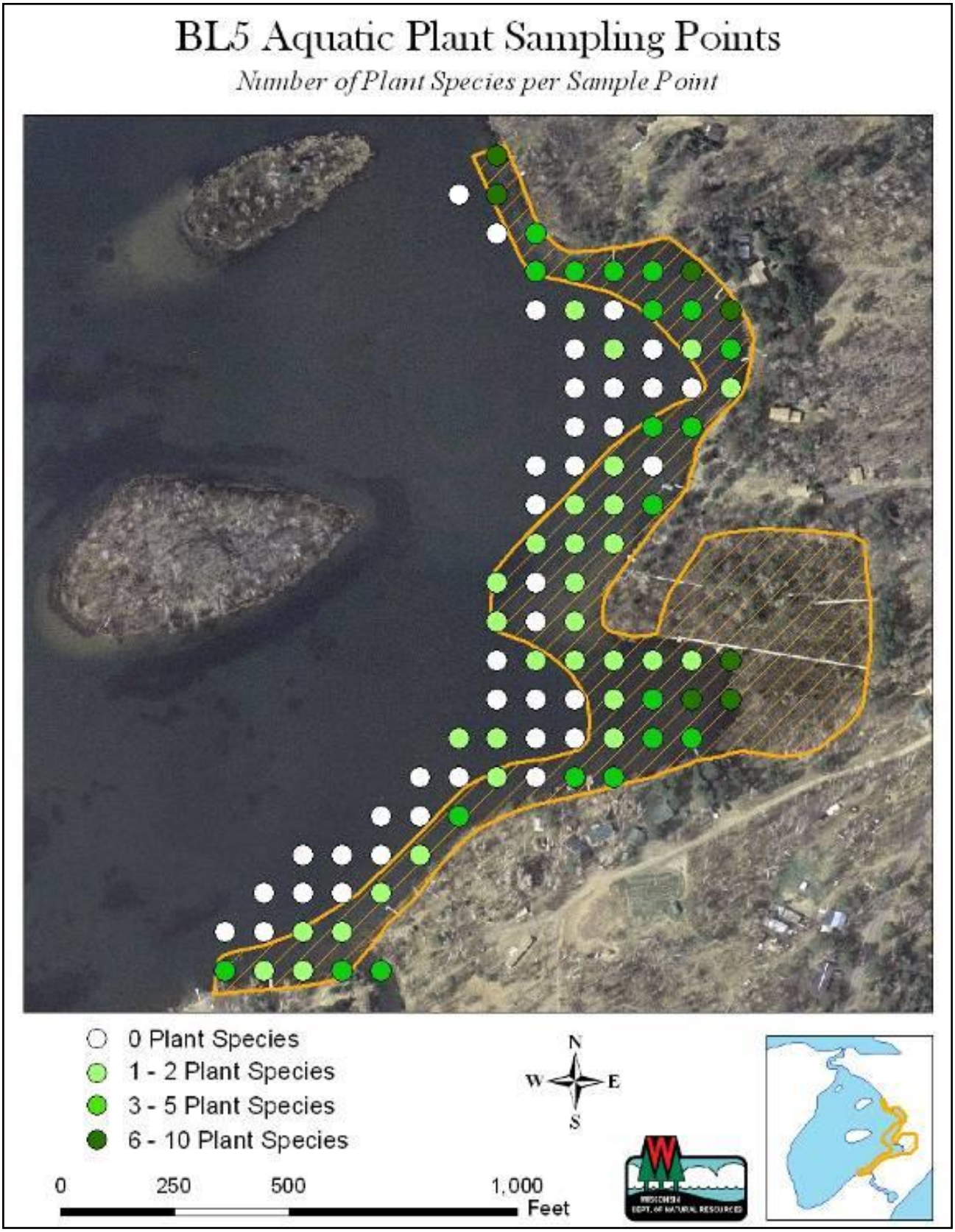


Figure 13. BL5 Rushes Map

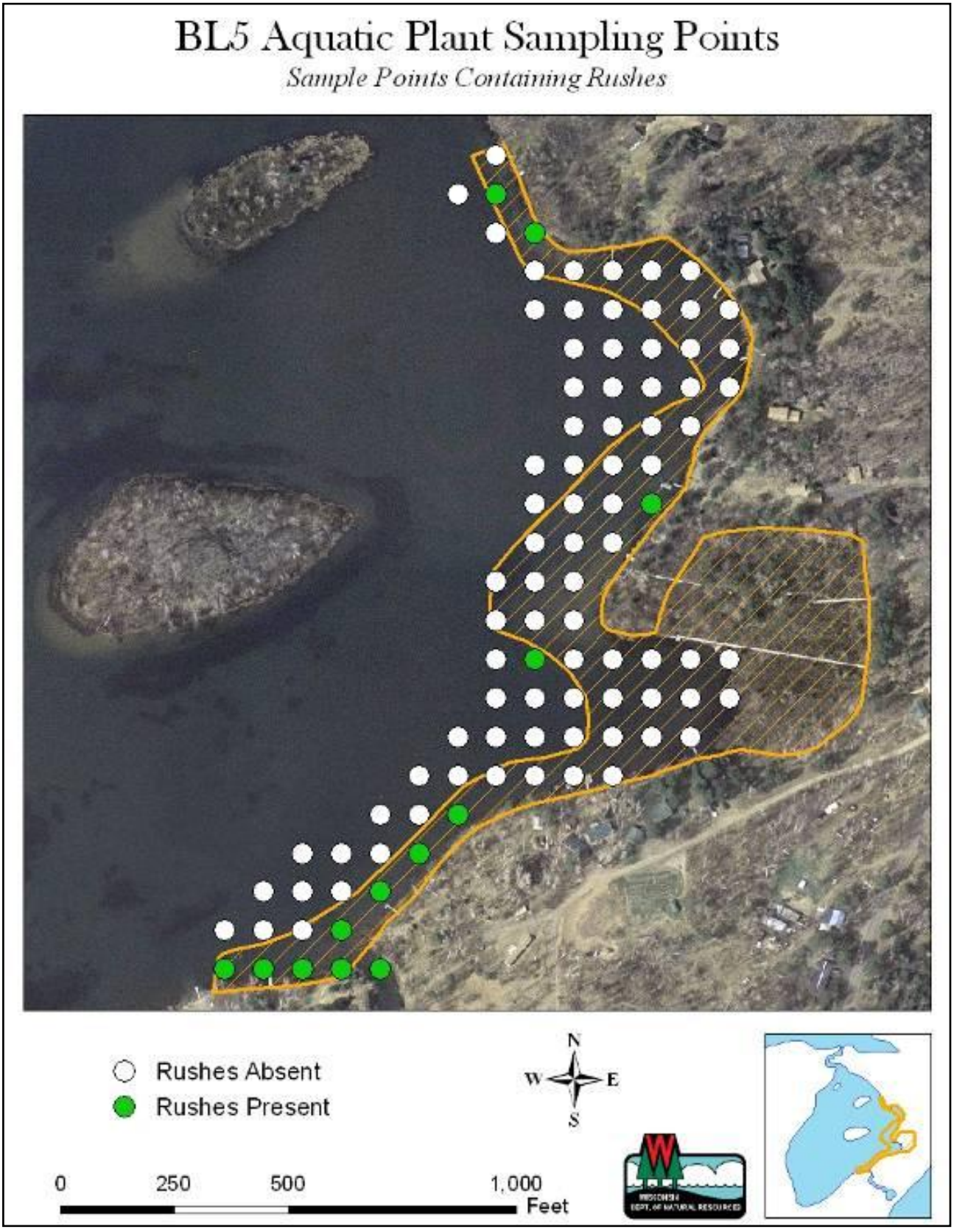


Table 17. Shoreline Inventory of BL5				
Feature	**Number**	**Density** (per mile)	**Shoreline Length** (feet)	**% of Shoreline**
Setback Zone				
Homes	13	21.5		
Accessory Structures	6	9.9		
Commercial Buildings	0	0		
Riparian Zone				
Homes	1	1.7		
Accessory Structures	1	1.7		
Commercial Buildings	0	0		
Natural vegetation			1542	48.2
Shrub Layer Removed			377	11.8
Shrub & Ground Cover Removed			0	0
Established Lawn			1279	40.0
Pastureland			0	0
Row Crop			0	0
Beach			0	0
Impervious Surface (road, parking lots, etc.)			0	0
Other			0	0
Not Visible			0	0
Total Shoreline			3198	100
Bank Zone				
Natural Bank			2886	90.2
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			33	1.0
Pea Gravel Blanket			0	0
Established Lawn			279	8.7
Artificial Beach			0	0
Seawalls			0	0
Total Shoreline			3198	100
Boat Ramp	0	0		
Stormwater Outflow	0	0		
Littoral Zone				
Piers	15	24.8		
Boat Lifts	7	11.6		
Swims Rafts/ Trampolines	0	0		
Boathouses	0	0		
Mooring Buoys	0	0		
Dredge channels	0	0		
Commercial Marinas	0	0		
Bridges	0	0		
Plant removal devices	0	0		
Recreational/Public Beaches	0	0		

Birch Lake Critical Habitat Site BL6

Critical Habitat site BL6 was designated a Sensitive Area for its Rush beds (Figure 14 & 15). It is 1.3 acres in size and located along the West shore.

Aquatic Plants were sampled using a standardized Point Intercept method and a summary of the results can be found in Tables 18 and 19. Table 20 summarizes the current management practices within the Setback, Riparian, Bank, and Littoral Zones of BL6.

Rushes are excellent natural shoreline erosion prevention tools. Do not remove rush beds and instead allow them to expand naturally. Place piers outside of rush beds, or extend piers beyond the rush beds to limit disturbance.

Implement fish sticks project. Contact local DNR Fisheries Biologist to investigate funding and technical assistance opportunities

Figure 18. BL6 Aquatic Plants

Scientific Name	Common Name	Plant Type	FQI Coefficient	Relative Frequency
Carex lasiocarpa	Woolly-fruit sedge	Emergent	9	Visual
Juncus palocarpus f. submersus	Brown-fruited rush	Emergent	8	13.0
Sagittaria graminea	Grass-leaved arrowhead	Emergent	9	4.3
Schoenoplectus acutus	Hardstem bulrush	Emergent	5	26.1
Nymphaea odorata	White water lily	Floating Leaf	6	4.3
Eleocharis acicularis	Needle spikerush	Submergent	5	4.3
Elodea canadensis	Common waterweed	Submergent	3	4.3
Eriocaulon aquaticum	Pipewort	Submergent	9	13.0
Myriophyllum tenellum	Dwarf water-milfoil	Submergent	10	4.3
Najas flexilis	Bushy pondweed	Submergent	6	4.3
Potamogeton richardsonii	Clasping-leaf pondweed	Submergent	5	8.7
Potamogeton robbinsii	Robbins pondweed	Submergent	8	13.0

Table 19. BL6 Aquatic Plant Sampling Summary Statistics

SUMMARY STATISTICS	BL6
Total number of points sampled	23
Total number of sites with vegetation	13
Total number of sites shallower than maximum depth of plants	20
Frequency of occurrence at sites shallower than maximum depth of plants	65
Simpson Diversity Index	0.862
Maximum depth of plants (Feet)	4.5
Number of sites sampled using rake on Rope (R)	0
Number of sites sampled using rake on Pole (P)	23
Average number of all species per site (shallower than max depth)	1.15
Average number of all species per site (veg. sites only)	1.77
Average number of native species per site (shallower than max depth)	1.15
Average number of native species per site (veg. sites only)	1.77
Species Richness	11
Species Richness (including visuals)	12
Floristic Quality Index	23.96

Figure 14. BL6 Aquatic Plant Diversity Map

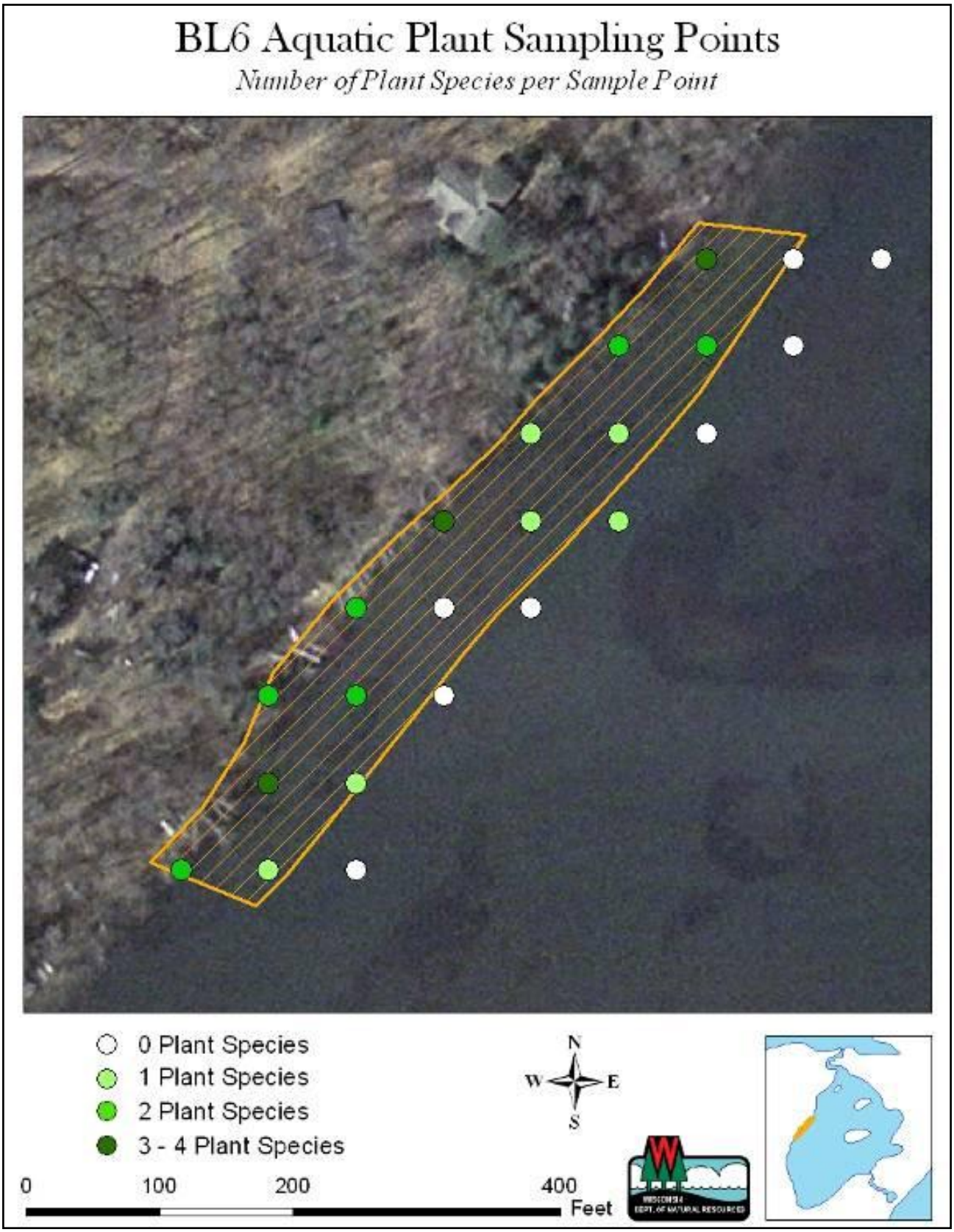


Figure 15. BL6 Rushes Map

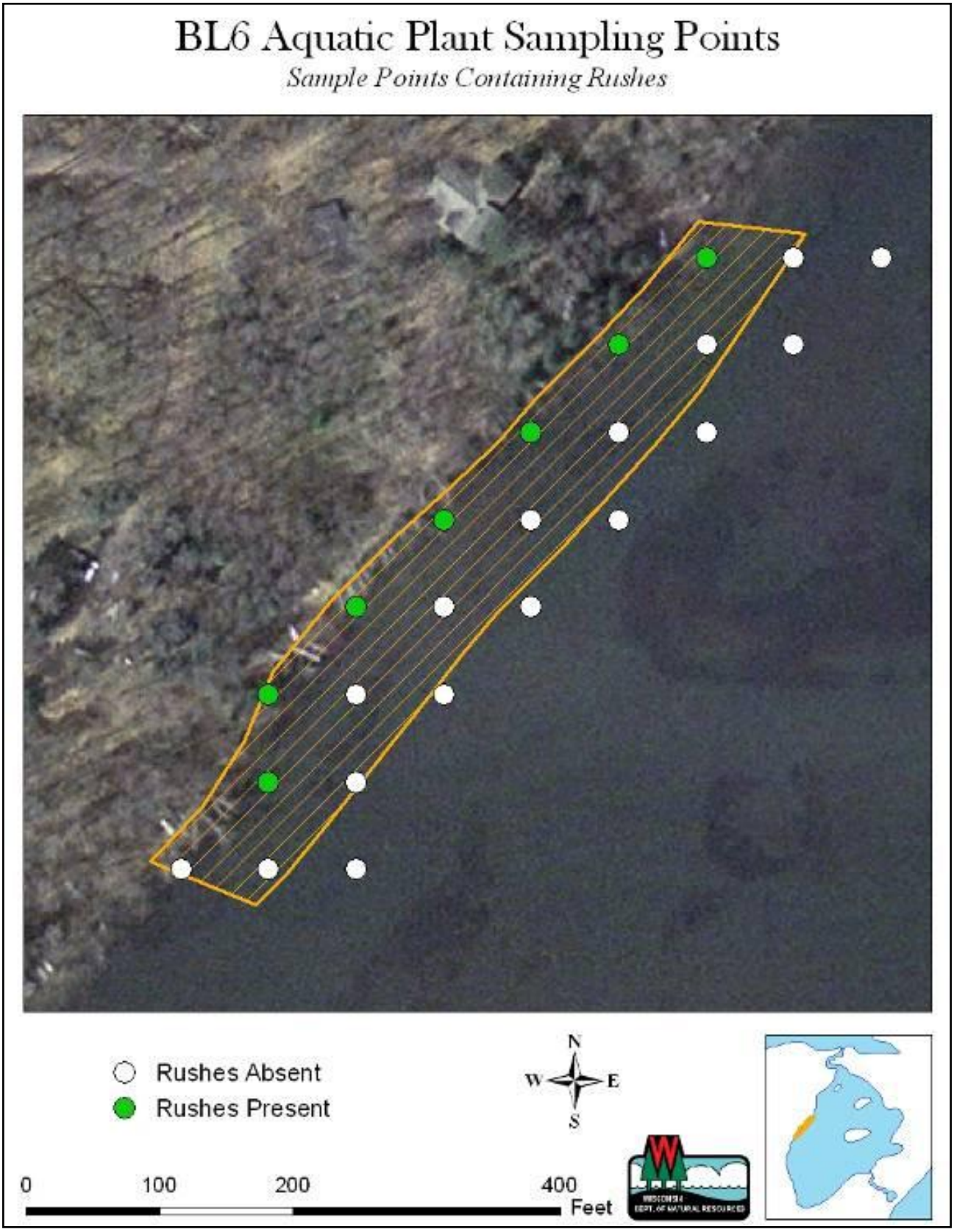


Table 20. Shoreline Inventory of BL6				
Feature	**Number**	**Density** (per mile)	**Shoreline Length** (feet)	**% of Shoreline**
Setback Zone				
Homes	3	24.1		
Accessory Structures	3	24.1		
Commercial Buildings	0	0		
Riparian Zone				
Homes	0	0		
Accessory Structures	1	8.0		
Commercial Buildings	0	0		
Natural vegetation			558	85.1
Shrub Layer Removed			98	14.9
Shrub & Ground Cover Removed			0	0
Established Lawn			0	0
Pastureland			0	0
Row Crop			0	0
Beach			0	0
Impervious Surface (road, parking lots, etc.)			0	0
Other			0	0
Not Visible			0	0
Total Shoreline			656	100
Bank Zone				
Natural Bank			656	100
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			0	0
Pea Gravel Blanket			0	0
Established Lawn			0	0
Artificial Beach			0	0
Seawalls			0	0
Total Shoreline			656	100
Boat Ramp	0	0		
Stormwater Outflow	0	0		
Littoral Zone				
Piers	3	24.1		
Boat Lifts	0	0		
Swims Rafts/ Trampolines	0	0		
Boathouses	0	0		
Mooring Buoys	0	0		
Dredge channels	0	0		
Commercial Marinas	0	0		
Bridges	0	0		
Plant removal devices	0	0		
Recreational/Public Beaches	0	0		

Birch Lake Critical Habitat Site BL7

Critical habitat site BL7 was designated a Sensitive Area for its Rush beds (Figure 16 & 17). It is 0.2 acres in size and located along the South shore.

Aquatic Plants were sampled using a standardized Point Intercept method and a summary of the results can be found in Tables 21 and 22. Table 23 summarizes the current management practices within the Setback, Riparian, Bank, and Littoral Zones of BL7.

Rushes are excellent natural shoreline erosion prevention tools. Do not remove rush beds and instead allow them to expand naturally. Place piers outside of rush beds, or extend piers beyond the rush beds to limit disturbance.

Established lawn within 50 feet of the water's edge should be replanted with native vegetation to comply with Bayfield County shoreland zoning ordinance, minimize erosion and pollution, and improve fish and wildlife habitat.

Figure 21. BL7 Aquatic Plants

Scientific Name	Common Name	Plant Type	FQI Coefficient	Relative Frequency
Juncus palocarpus f. submersus	Brown-fruited rush	Submergent	8	11.1
Schoenoplectus acutus	Hardstem bulrush	Emergent	5	22.2
Chara	Muskgrasses	Submergent	7	11.1
Najas flexilis	Bushy pondweed	Submergent	6	22.2
Potamogeton richardsonii	Clasping-leaf pondweed	Submergent	5	Visual
Potamogeton robbinsii	Robbins pondweed	Submergent	8	11.1
Vallisneria americana	Wild celery	Submergent	6	22.2

Table 22. BL7 Aquatic Plant Sampling Summary Statistics

SUMMARY STATISTICS	BL7
Total number of points sampled	6
Total number of sites with vegetation	4
Total number of sites shallower than maximum depth of plants	5
Frequency of occurrence at sites shallower than maximum depth of plants	80
Simpson Diversity Index	0.815
Maximum depth of plants (Feet)	4
Number of sites sampled using rake on Rope (R)	0
Number of sites sampled using rake on Pole (P)	6
Average number of all species per site (shallower than max depth)	1.80
Average number of all species per site (veg. sites only)	2.25
Average number of native species per site (shallower than max depth)	1.80
Average number of native species per site (veg. sites only)	2.25
Species Richness	6
Species Richness (including visuals)	7
Floristic Quality Index	17.01

Figure 16. BL7 Aquatic Plant Diversity Map

Figure 17. BL7 Rushes Map

Table 23. Shoreline Inventory of BL7				
Feature	**Number**	**Density** (per mile)	**Shoreline Length** (feet)	**% of Shoreline**
Setback Zone				
Homes	1	45.9		
Accessory Structures	1	45.9		
Commercial Buildings	0	0		
Riparian Zone				
Homes	0	0		
Accessory Structures	0	0		
Commercial Buildings	0	0		
Natural vegetation			82	71.3
Shrub Layer Removed			0	0
Shrub & Ground Cover Removed			0	0
Established Lawn			33	28.7
Pastureland			0	0
Row Crop			0	0
Beach			0	0
Impervious Surface (road, parking lots, etc.)			0	0
Other			0	0
Not Visible			0	0
Total Shoreline			115	100
Bank Zone				
Natural Bank			98	85.2
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			0	0
Pea Gravel Blanket			0	0
Established Lawn			17	14.8
Artificial Beach			0	0
Seawalls			0	0
Total Shoreline			115	100
Boat Ramp	0	0		
Stormwater Outflow	0	0		
Littoral Zone				
Piers	1	45.9		
Boat Lifts	0	0		
Swims Rafts/ Trampolines	0	0		
Boathouses	0	0		
Mooring Buoys	0	0		
Dredge channels	0	0		
Commercial Marinas	0	0		
Bridges	0	0		
Plant removal devices	0	0		
Recreational/Public Beaches	0	0		

Birch Lake Critical Habitat Site BL8

Critical habitat site BL8 was designated a Public Rights Feature for its Coarse Woody Habitat (Figure 18). It is 2.4 acres in size and located along the West shore.

Woody habitat was sampled using a standardized transect method and a summary of the results can be found in Table 24. Big Logs are defined as being greater than 10 cm (4 in) in diameter and greater than 150 cm (5 ft) in length. Small Logs are defined as being between 5-10 cm (2-4 in) in diameter and greater than 150 cm (5 ft) in length. Table 25 summarizes the current management practices within the Setback, Riparian, Bank and Littoral Zones of BL8.

Implement fish sticks project to supplement existing wood. Contact local DNR Fisheries Biologist to investigate funding and technical assistance opportunities.

Established lawn within 50 feet of the water's edge should be replanted with native vegetation to comply with Bayfield County shoreland zoning ordinance, minimize erosion and pollution, and improve fish and wildlife habitat.

Remove riprap and implement shoreline restoration using native shoreline plants. Riprap is not necessary because the wave energy is low for the entire lake. Low-energy sites are typically not eligible/authorized for riprap permits. If shoreline erosion is a problem, overland runoff from rooftops, driveways, and lawns or reckless motorboat use are the most likely causes.

Table 24. BL8 Woody Habitat Sampling Transects

Transect	# Big Logs	# Small Logs	Transect Length (feet)	Transect Length (meters)	Big Logs per Mile	Small Logs per Mile
BL8-1	1	2	65.6	20	80.5	161.0
BL8-2	3	10	65.6	20	241.5	804.9
BL8-3	1	3	65.6	20	80.5	241.5
BL8-4	0	3	65.6	20	0.0	241.5
BL8 Total	5	18	262.4	80	100.6	362.2

Figure 18. BL8 Woody Habitat Sampling Transects Locations Map

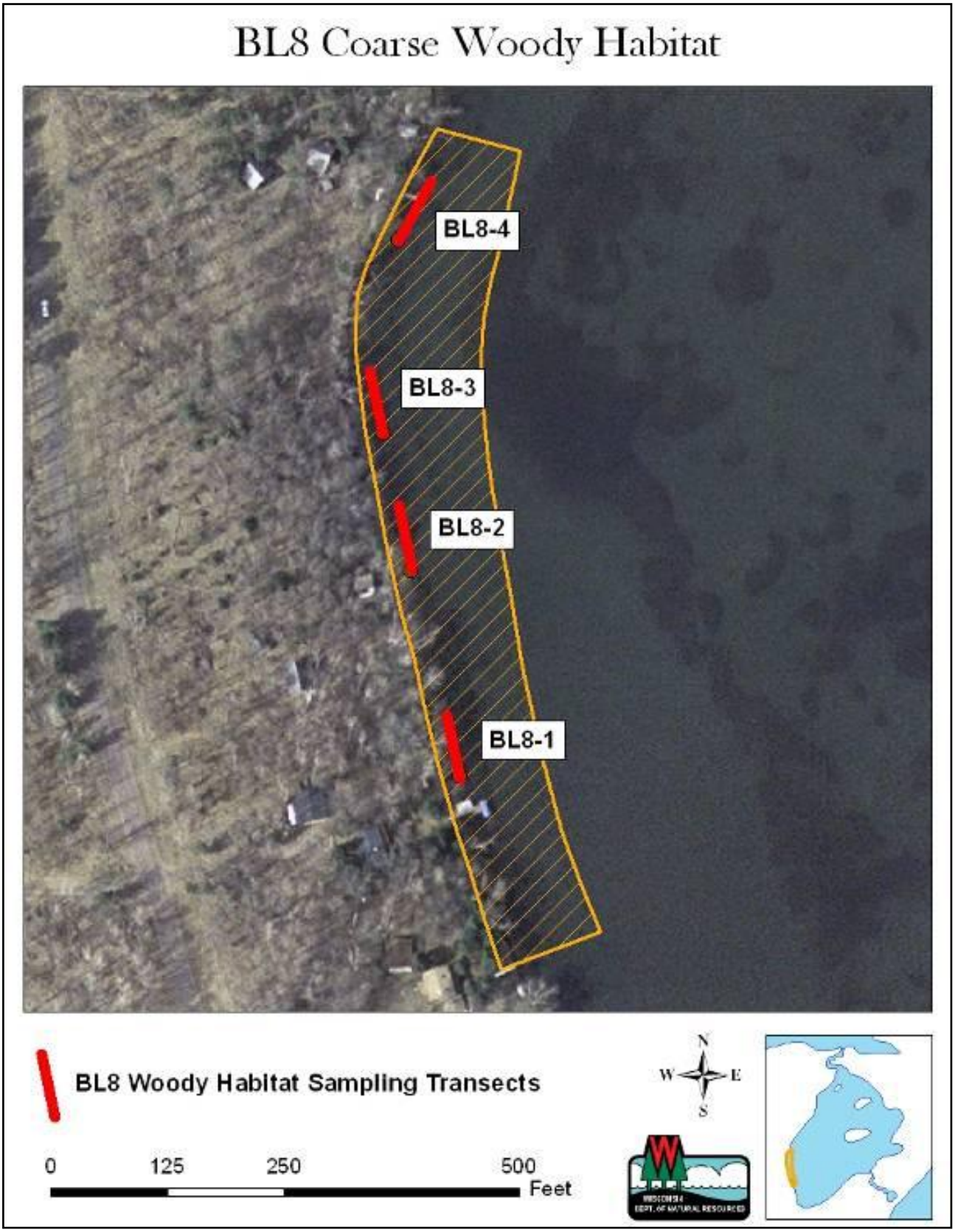


Table 25. Shoreline Inventory of BL8				
Feature	**Number**	**Density** (per mile)	**Shoreline Length** (feet)	**% of Shoreline**
Setback Zone				
Homes	3	16.9		
Accessory Structures	3	16.9		
Commercial Buildings	0	0		
Riparian Zone				
Homes	1	5.6		
Accessory Structures	7	39.5		
Commercial Buildings	0	0		
Natural vegetation			722	77.2
Shrub Layer Removed			66	7.1
Shrub & Ground Cover Removed			0	0
Established Lawn			148	15.8
Pastureland			0	0
Row Crop			0	0
Beach			0	0
Impervious Surface (road, parking lots, etc.)			0	0
Other			0	0
Not Visible			0	0
Total Shoreline			935	100
Bank Zone				
Natural Bank			870	93.0
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			33	3.5
Pea Gravel Blanket			0	0
Established Lawn			16	1.7
Artificial Beach			0	0
Seawalls			16	1.7
Total Shoreline			935	100
Boat Ramp	0	0		
Stormwater Outflow	0	0		
Littoral Zone				
Piers	4	22.6		
Boat Lifts	2	11.3		
Swims Rafts/ Trampolines	0	0		
Boathouses	0	0		
Mooring Buoys	0	0		
Dredge channels	0	0		
Commercial Marinas	0	0		
Bridges	0	0		
Plant removal devices	0	0		
Recreational/Public Beaches	0	0		

Appendix 1. Personnel and dates of Critical Habitat Designation, Birch Lake, Bayfield County

Critical Habitat Designations occurred on 6/27/2007 by Scott Toshner, Pamela Toshner, Greg Kessler, and Paul Cunningham.

Shoreline management inventories occurred on 6/16/2008 by Alex Smith and Paul Riordan.

Aquatic plant sampling occurred 8/5/2008 – 8/7/2008 by Alex Smith, Paul Riordan, Debbie Konkel, and Neil Trombly.

Woody habitat sampling occurred on 5/2/2008 by Alex Smith and Paul Riordan.

Appendix 2: Notice of Public Information Meeting and Hearing for Proposed Critical Habitat Designation

The Department of Natural Resources has located areas that meet the criteria for Critical Habitat Designation on the Eau Claire Chain of Lakes in Bayfield and Douglas Counties. A public information meeting and hearing has been scheduled to discuss the proposed Critical Habitat Sites on Birch Lake, Bony Lake, Cranberry Lake, Devils Lake, Lower Eau Claire Lake, Middle Eau Claire Lake, Robinson Lake, Shunenberg Lake, Smith Lake, Sweet Lake, and Upper Eau Claire Lake in Bayfield and Douglas Counties.

Because the Critical Habitat Designations are in waters held in trust by the state for all citizens and may be adjacent to private lands, state law provides an opportunity for public input to the Department's decision.

The public informational meeting will be held Saturday, May 15, at 9:00 am at the Barnes Town Hall, 3360 Co Hwy N, Barnes, in Bayfield County. The informational meeting will be an open house format that will allow time to talk with DNR staff, ask questions, and provide written comments regarding the designations.

A public hearing will follow the informational meeting at 11:00 am for persons wishing to present oral testimony. During the hearing, the public can provide factual information about the waterway or the areas proposed for designations in light of the standards below.

Critical Habitat is of vital importance to water quality, hunting, fishing, and natural beauty of Wisconsin's lakes and streams. The Department has made a tentative determination that specific locations in the Eau Claire Chain of Lakes contain:

- Fish and wildlife habitat, including specific sites necessary for breeding, nesting, nursery, and feeding.
- Physical features that ensure protection of water quality.
- Reaches of bank, shore or bed that are predominately natural in appearance (not man-made or artificial) or that screen man-made or artificial features.
- Navigation thoroughfares or areas traditionally used for navigation during recreational boating, angling, hunting, or enjoyment of natural scenic beauty.
- Areas of aquatic vegetation offering critical or unique fish and wildlife habitat, including seasonal or lifestage requirements, or offering water quality or erosion control benefits to the body of water.

The identified locations are eligible for Critical Habitat Designation, and if approved, they will be sufficiently preserved to ensure healthy aquatic systems and protected to maintain the cultural/aesthetic value of lakes to Wisconsin.
Critical Habitat Designation means that special permit conditions or denial of permits may apply to landowners who wish to alter Critical Habitat Areas through activities such as dredging, installing or repairing riprap, grading, irrigation, building dams, or establishing culverts, piers, and docks. Furthermore, in designated Critical Habitat Areas, manual removal of aquatic plants may require a permit, and the chemical treatment or mechanical removal of native aquatic plants is unlikely to be approved.

Draft reports, maps, and more information on Critical Habitat Designations are all available at http://dnr.wi.gov/lakes/criticalhabitat/ or by contacting Alex Smith at (715) 635-4124.

Response to Public Comments on Critical Habitat Designations

Location: Eau Claire Chain of Lakes in Bayfield and Douglas Counties
Public Hearing Held: May 15, 2010 at Barnes Town Hall, Barnes, WI
Comment Period Ended: July 31, 2010

Thank you to everyone who took the time to submit oral and written comments. Seven individuals provided oral comments during the May 15 public hearing. Ten individuals submitted hearing forms but did not speak. During the comment period, the Department received 14 written comments. We organized descriptive comments into the general categories listed below, followed by specific comments and responses.

Category #1 – Comments related to the boundaries and justifications for each Critical Habitat Area

Comment 1 – This comment is in regards to UEC 20 on Upper Eau Claire Lake. The person disagreed that the shoreline to the south of the channel leading to Birch Lake offers any spawning habitat. They went on to say that the area experiences very, very intense pressure from swimmers and boaters as it is primarily sand bottom is this area.

Response 1 – The Barnes Conservation Club in cooperation with the Wisconsin DNR constructed an off shore spawning reef in this area. The intent of the designation in this area is to protect this off shore reef from becoming covered with silt and sand. Electrofishing surveys have documented walleye spawning in this site.

Comment 2 – Some individuals requested that DNR add Critical Habitat Areas to include the Fish Sticks projects.

Response 2 – Critical habitat sites were identified based on the features present during the survey. Fish Sticks projects are ongoing and will be captured if future surveys occur. Property owners who participate in Fish Sticks projects enter into agreements that the habitat structures will remain.

Comment 3 – This comment is in regards to BON 5 on Bony Lake. It was suggested that the DNR add the justifications of Submerged Aquatic Vegetation Important to Fish and Wildlife Habitat and Extensive Riparian Wetland to this area.

Response 3 – The aquatic plant sampling work done by the DNR and the Wetland Delineation work that was done on the Loon Echo Bay Condo property when a Bayfield County Conditional Use Permit was requested provide evidence to support adding these two justifications.

Comment 4 – The submerged island off of Pickle barrel Point on Middle Eau Claire Lake should be added as a Critical Habitat Area because there used to be bulrushes growing there in the shallow water.

Response 4 – A review of historical data and information did not result in evidence that would warrant adding this site. This comment will be considered for future reference

and surveys. DNR welcomes any maps, historical narratives, or other evidence documenting the habitat features.

Category #2 – Comments related to our Management Recommendations

Comment 1 – One person would like to see the island on Upper Eau Claire Lake closed to camping due to the partying and erosion from foot traffic.

Response 1 – In the report, we recommended that the foot paths and stairways be repaired to help mitigate the foot traffic and erosion issues. DNR promotes public access and recreational opportunities. This is the only public camping site in the Eau Claire Lakes area.

Comment 2 – A few people commented on the excessive partying and swimming occurring at the mouth of the Eau Claire River and "Pickle Barrel Point," both on Middle Eau Claire Lake.

Response 2 – Swimming is a form of recreation protected by the Public Trust Doctrine. We cannot restrict this right as long as they are not trespassing. Law enforcement should be contacted if trespassing or rowdy behavior occurs.

Comment 3 – A few individuals commented that they disagree that riprap should not be used in certain Critical Habitat Areas.

Response 3 – Riprap is an unnatural structure that creates a physical barrier between the lake and upland areas, and often transfers erosion problems further along the shoreline. Even though properly installed riprap can prevent shoreline erosion, it often does not address the root causes of the shoreline erosion, usually disturbances and impervious surfaces upland from the lake. Naturally vegetated shorelines are the best for reducing erosion.

Natural shorelines along the lakes of Northern Wisconsin are wooded ecosystems. Terrestrial and aquatic animals have evolved with this ecosystem and it is essential to their life cycles. Shifting the near shore cover from vegetation to rock diminishes the ability of the ecosystem to sustain itself.

Comment 4 – One person commented that we add into our Management Recommendations a recommendation that the rivers and channels between the lakes on the Eau Claire Chain be reclassified to a more protective classification.

Response 4 – The Recommendations have been added to the reports.

Category #3 – Comments related to the shoreline restorations that have occurred since the initial field work in 2008

Comment 1 – Some individuals requested that DNR update the shoreline data to reflect the shoreline restorations that have occurred since 2008. Rip rap and seawalls have been removed and some lawns have been replanted since DNR conducted field work.

Response 1 – The recommendations regarding the removal of riprap have been removed from the reports. The riprap and lawn data remains in the tables however, and an asterisk has been added with a footnote stating that shoreline restoration work has occurred since the initial field work. This data is a snapshot in time, and we intend to revisit the lake in the future to make comparisons.

Category #4 – Comments related to navigable channel from Middle Eau Claire Lake to Bony Lake

Comment 1 – Some individuals commented that the channel from Middle Eau Claire Lake to Bony Lake needs to remain navigable as there is no public access on Bony Lake.

Response 1 – The channel between Bony and Middle Eau Claire Lakes is considered navigable.
Public lakes, rivers, and streams that have a bottom (bed) and side (bank), and enough water to float any boat, skiff, or canoe of the shallowest draft on a reoccurring basis are considered navigable. Occasionally, barriers such as wood or plant debris may impede actual navigation, but waters are public even when multiple portages are required to get around obstructions. A waterway does not need to be regularly used for recreational or other general purposes, but is a public waterway based on its *capacity* to be navigable and public. Provided a small boat can float, it is considered navigable. In other words, there is no requirement that the channel provide navigability to large watercraft or boats with inboard motors.

Category #5 – Comments related to Private Property Rights and Current Regulation

Comment 1 – It was stated that government is consistently imposing new regulation, restrictions, laws and taxes on citizens and that Critical Habitat Designations are a ruse of propaganda by the DNR to make a new power grab and infringe on our property rights.

Response 1 – The Critical Habitat Designation program is not designed to infringe upon the *private* rights of riparian citizens. Instead, the Designations are designed to protect the *public* rights held within the Public Trust Doctrine for all citizens, including those yet unborn.

Wisconsin law recognizes that owners of lands bordering lakes and rivers - "riparian" owners - hold rights in the water next to their property. These riparian rights include the use of the shoreline, reasonable use of the water, and a right to access the water. However, the Wisconsin State Supreme Court has ruled that when conflicts occur

between the rights of riparian owners and public rights, the public's rights are primary and the riparian owner's secondary.

Comment 2 – County Zoning and the new statewide NR 115 Shoreland Zoning Ordinance are already in place to protect these lakes. If an effort was put into enforcing the regulations which are already on the books, the lakes would be protected.

Response 2 – The county zoning ordinances are specifically for the shoreland zone above the ordinary high water mark (OHWM). The counties only have jurisdiction above the OHWM. The DNR, and thus Critical Habitat Designations, only have jurisdiction below the OHWM.
The counties can and are encouraged to use our reports to further protect terrestrial areas.

Comment 3 - Why are some of the areas listed as "some of the most zoning non-compliant areas on the lake" and still be listed as Critical habitat areas with a long list of vegetation and fish habitat. Wouldn't those areas have been destroyed?

Response 3 – Not necessarily. CHDs document in-lake habitat, scenic beauty, and wildlife features. It is correct that how people care for their properties can affect all of these things, but overall the Eau Claire Chain shoreline is in good shape. Eventually the cumulative impacts of unhealthy shoreline and land use management can tip the in-lake features out of balance. When this occurs, native fish and wildlife reproduction are reduced or stop altogether, natural scenic beauty diminishes, and water quality declines.

Comment 4 – It is important property owners have a right to enjoy the lake, including having a swimming area.

Response 4 – Property owners certainly deserve to enjoy the lakes. As such, DNR rules provide property owners an area up to 30 feet wide along their shoreline and out into the water where they may manually remove aquatic plants without a permit. Please note this 30-foot corridor correlates to the 30-foot access and viewing corridor that is allowed on the landward property through county zoning, as well.

Category #6 – Comments related to the support for the Critical Habitat Designation

Comment 1 – Many individuals commented on how they support the Designation. Most commented on how much the lakes have changed since they first started visiting the chain and they fully support protecting what is left for future generations.

Response 1 – Thank you for your support.

Comment 2 – Over the last 30 years I have seen the water quality decline on the whole Eau Claire Chain, (Sweet Lake & Upper Eau Claire in particular). I am pleased to see a

proposal to maintain/improve shorelines/water quality for future generations. I feel that private property rights should not trump our children's right to clean lakes and rivers.

Response 2 – As previously stated, the Critical Habitat Program is rooted in the Public Trust Doctrine, which protects the public rights of all citizens including those yet unborn. The science shows shoreline disturbance impacts lake health. Critical Habitat Designation is a tool to protect and improve lake health. The tool is more powerful with community support.

Category #7 – Why did the DNR choose to Designate the Eau Claire Chain?

Comment 1 – Why did the DNR choose to do Critical Habitat Designations on the Eau Claire Chain of Lakes?

Response 1 – There are multiple reasons to do the Critical Habitat Designations on the Eau Claire Chain. First of, the Department knows these lakes are really special and would like to keep them that way. The lakes are classified as Outstanding Resource Waters (ORW), muskellunge recruitment waters, walleye recruitment waters, and have exceptional water quality. Also, both the Town of Barnes Comprehensive Plan and the Eau Claire Lakes Management Plan contain recommendations to have a Critical Habitat Designation completed on the Eau Claire Chain of Lakes.

However, the Eau Claire Chain is not alone in the Critical Habitat Process. The DNR has done Sensitive Area Designations on many lakes statewide. Legislative Act 118, which changed the program from Sensitive Area Designations focusing only on aquatic plants to Critical Habitat Designations considering all public rights features. Currently, several lakes in the area are in the process of having Critical Habitat Designations done as well. Some of those lakes include Amnicon Lake, Upper St. Croix Lake, Gordon Flowage, Minong Flowage, Nancy Lake, Granite Lake, and Beaver Dam Lake.

Closing Statement

While the purpose of the Critical Habitat Designations is to guide state decisions for the public waterway and inform lakeshore owners about the high quality habitat in the lake, we value the input given from local citizens and organizations during the process. State statutes grant primary management responsibilities over navigable waters to the DNR (except planning, land, acquisition, and boating ordinance development, where local units of government hold authority). As such, the DNR reviews all state permit applications relating to shoreline activities. Since the Critical Habitat Designations affect the state permit process, it does not significantly affect regulations administered by local units of government unless they choose to alter their local regulations and ordinances to utilize the Designations.