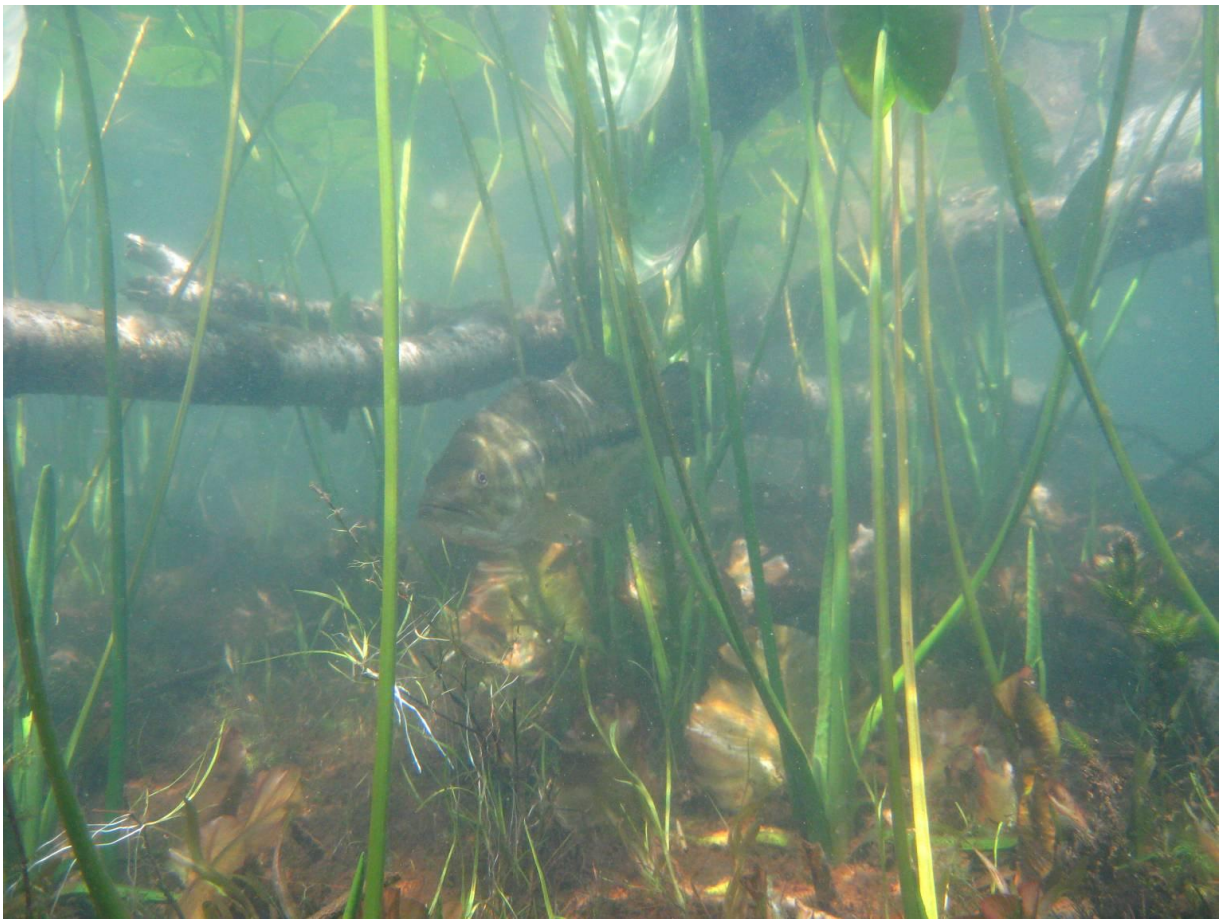
Bony Lake Critical Habitat Designation Report

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:

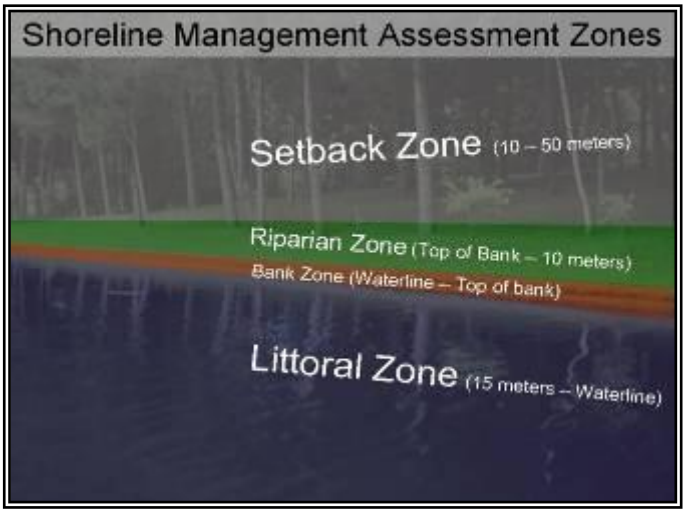
1) Resource protection through science based regulatory review.
2) Community-based resource protection through community education, planning and zoning.
3) As a guide to land-trusts and others acquiring land and conservation easements.
4) A mechanism to track long-term changes in these habitats.

Methods

Critical Habitat Designation occurred on Bony Lake in Bayfield County during 2007 and 2008. Bony Lake, which is a 191 acre lake with a max depth of 55 feet, is part of the Eau Claire Chain of Lakes. Access to Bony Lake is through navigable water from Middle 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.

Management Recommendations

General Lakewide Recommendations. Most of these management guidelines 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 guidelines are recommended for all of Bony Lake and are recommended based on lake type, geographic location, data collection results, and lakewide management opportunities and threats.

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 guidelines are specific to the given site and only supersede general and specific lakewide recommendations if explicitly stated.

Sites

Thirteen areas are designated as Critical Habitat on Bony Lake for a total of 26.4 acres (Figure 1; Tables 1 and 2). Twelve areas are classified as Sensitive Areas and one area is classified as a Public Rights Feature.

Figure 2. Bony Lake Critical Habitat Map

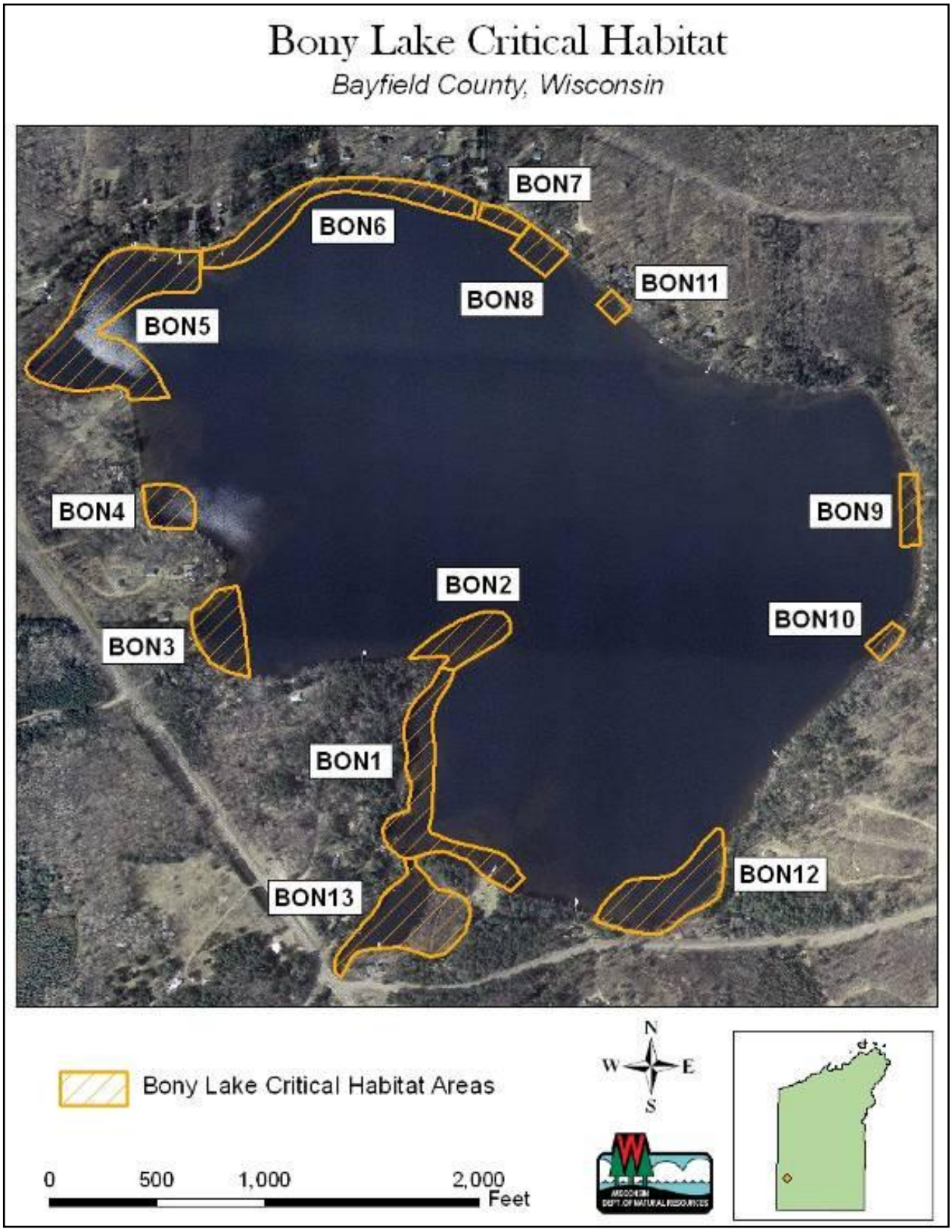


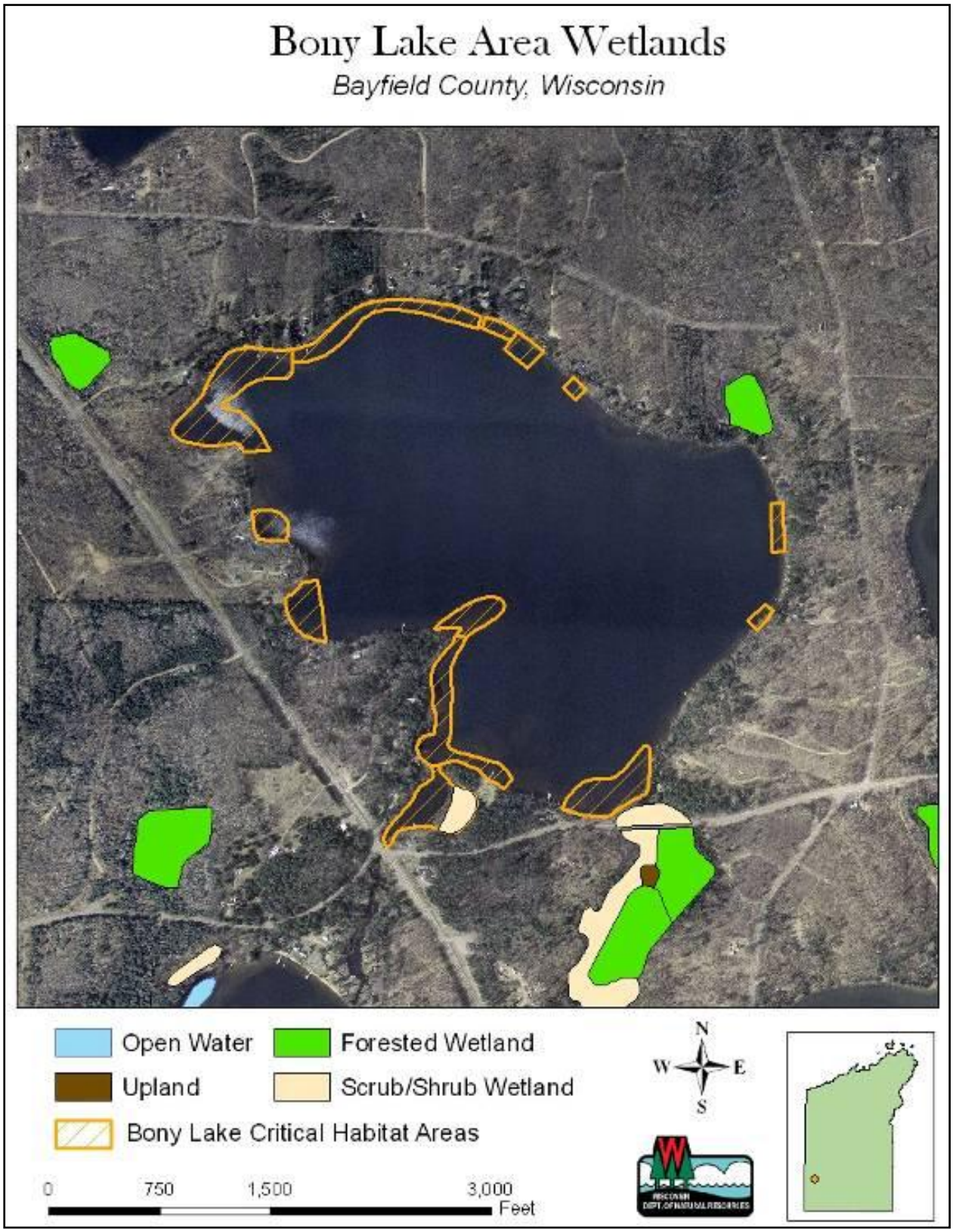
Table 1. Bony Lake Critical Habitat Polygon Justifications

Critical Habitat Polygon ID	Acres	Justification	Justification	Justification	Justification	Justification	Classification
BON1	3.6	4	2	-	-	-	Sensitive Area
BON2	1.5	8	4	-	-	-	Sensitive Area
BON3	1.8	3	1	-	-	-	Sensitive Area
BON4	1.0	3	-	-	-	-	Sensitive Area
BON5	6.4	1	2	3	6	9	Sensitive Area
BON6	3.0	4	-	-	-	-	Sensitive Area
BON7	0.4	8	-	-	-	-	Public Rights Feature
BON8	0.7	4	1	-	-	-	Sensitive Area
BON9	0.7	4	-	-	-	-	Sensitive Area
BON10	0.3	4	-	-	-	-	Sensitive Area
BON11	0.3	4	-	-	-	-	Sensitive Area
BON12	3.2	1	3	-	-	-	Sensitive Area
BON13	3.5	3	2	7	11	6	Sensitive Area

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. Bony Lake Area Wetlands Map



Bony Lake Critical Habitat Site BON1
Critical Habitat site BON1 was designated a Sensitive Area for its Rush Beds and Submersed Aquatic Vegetation Important to Fish and Wildlife Habitat. It is 3.6 acres in size and is located along the Southwest corner of Bony Lake.

Prioritize for permanent land protection along with Site BON2.

Established lawn and beach 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.

Do not remove rush beds. Place piers outside of rushes, or if that's not possible extend the piers beyond the rushes for boat mooring. Restore/replant rush beds that have been destroyed in the past.

Buffers and overhanging vegetation, bog fringe and floating, emergent and submersed aquatic plants should be left alone.

Implement slow-no-wake ordinance or marker buoys in this bay to protect shorelines and aquatic habitat.

Table 3. BON1 Aquatic Plants

Scientific Name	Common Name	Plant Type	FQI Coefficient	Relative Frequency
Carex sp	Sedges	Emergent	-	6.1
Dulichium arundinaceum	Three-way sedge	Emergent	9	Visual
Eleocharis palustris	Creeping spikerush	Emergent	6	4.5
Equisetum fluviatile	Water horsetail	Emergent	7	Visual
Juncus palocarpus f. submersus	Brown-fruited rush	Emergent	8	1.5
Schoenoplectus acutus	Hardstem bulrush	Emergent	5	3
Schoenoplectus pungens	3-square bulrush	Emergent	5	3
Schoenoplectus tabernaemontani	Softstem bulrush	Emergent	4	10.6
Typha sp	Cattail	Emergent	1	Visual
Nuphar variegata	Spatterdock	Floating Leaf	6	1.5
Nymphaea odorata	White water lily	Floating Leaf	6	Visual
Chara	Muskgrasses	Submergent	7	10.6
Eleocharis acicularis	Needle spikerush	Submergent	5	7.6
Myriophyllum sibericum	Northern water-milfoil	Submergent	7	1.5
Myriophyllum tenellum	Dwarf water-milfoil	Submergent	10	3
Najas flexilis	Bushy pondweed	Submergent	6	33.3
Potamogeton amplifolius	Large-leaf pondweed	Submergent	7	1.5
Potamogeton friesii	Frie's pondweed	Submergent	8	1.5
Potamogeton gramineus	Variable pondweed	Submergent	7	3
Potamogeton richardsonii	Clasping-leaf pondweed	Submergent	5	1.5
Ranunculus flammula	Creeping spearwort	Submergent	9	1.5
Vallisneria americana	Wild celery	Submergent	6	4.5

Table 4. BON1 Aquatic Plant Sampling Summary Statistics	
SUMMARY STATISTICS	**BON1**
Total number of points sampled	45
Total number of sites with vegetation	35
Total number of sites shallower than maximum depth of plants	45
Frequency of occurrence at sites shallower than maximum depth of plants	77.78
Simpson Diversity Index	0.85
Maximum depth of plants (Feet)	7
Number of sites sampled using rake on Rope (R)	0
Number of sites sampled using rake on Pole (P)	45
Average number of all species per site (shallower than max depth)	1.47
Average number of all species per site (veg. sites only)	1.89
Average number of native species per site (shallower than max depth)	1.47
Average number of native species per site (veg. sites only)	1.89
Species Richness	18
Species Richness (including visuals)	22
Floristic Quality Index	29.20

Figure 4. BON1 Aquatic Plant Diversity Map

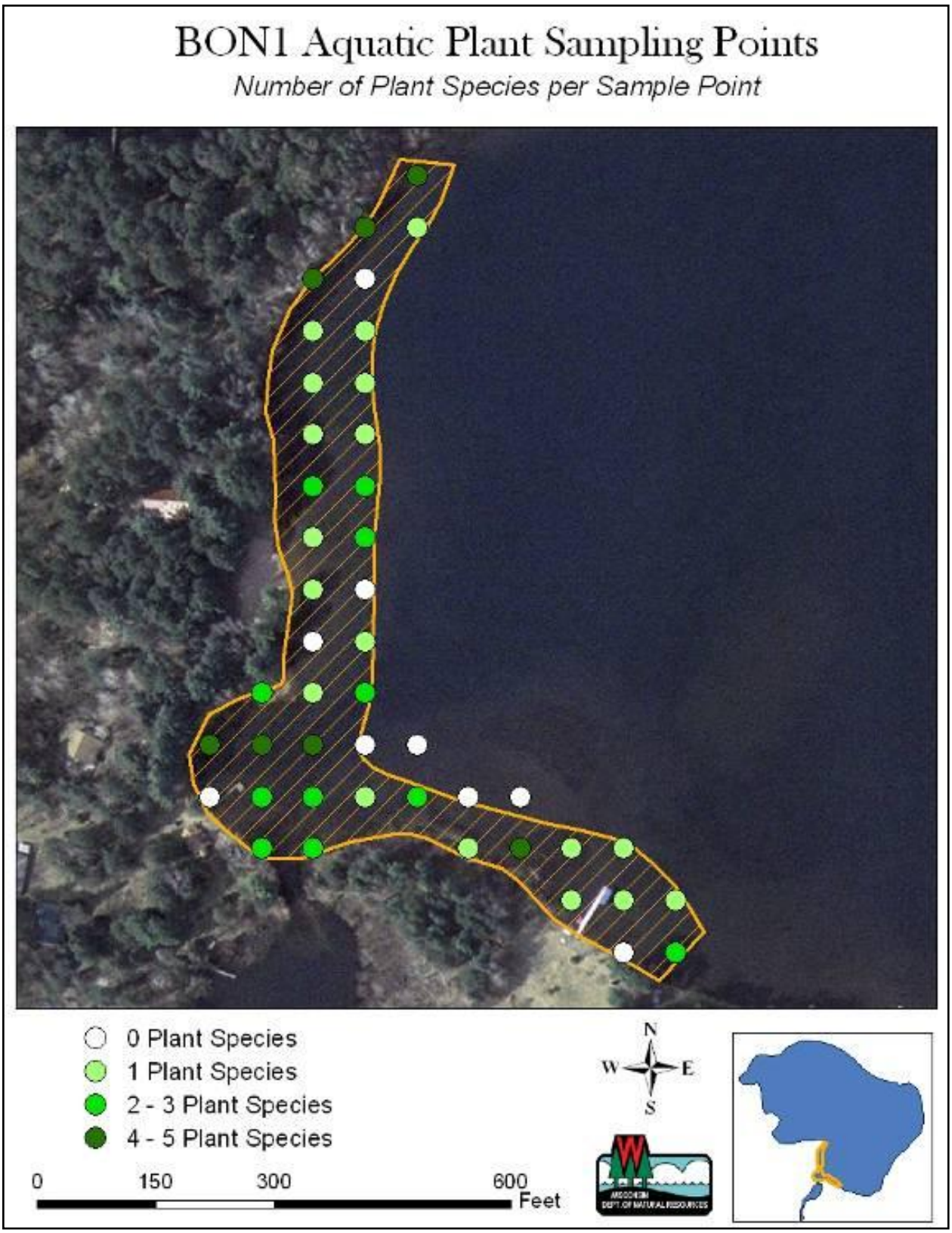


Figure 5. BON1 Aquatic Plant Sample Points Containing Rushes

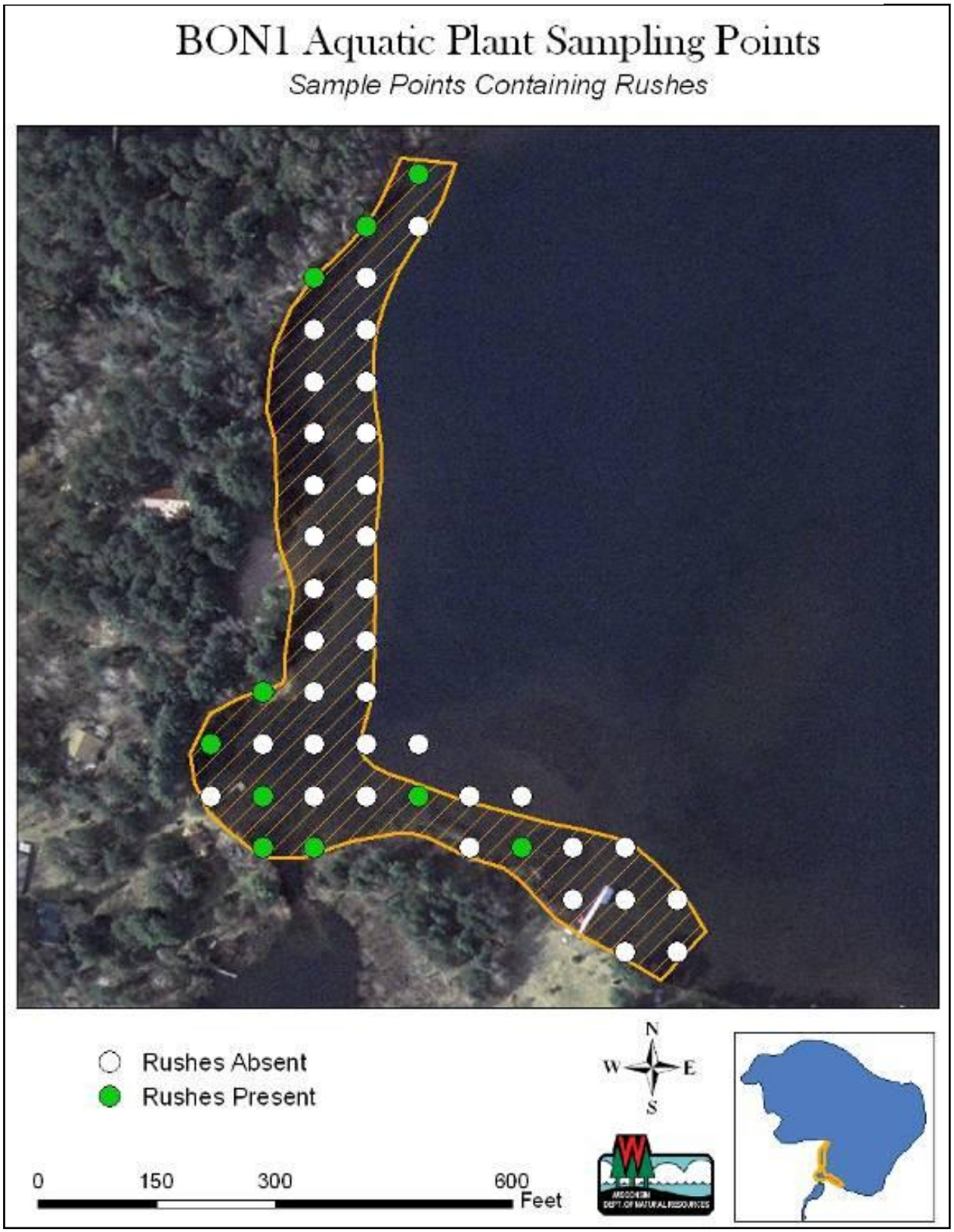


Table 5. Shoreline Assessment of BON1				
Feature	Number	Density (per mile)	Shoreline Length (feet)	% of Shoreline
Setback Zone				
Homes	2	6.6		
Accessory Structures	0	0		
Commercial Buildings	0	0		
Riparian Zone				
Homes	1	3.3		
Accessory Structures	1	3.3		
Commercial Buildings	0	0		
Natural vegetation			1050	66.0
Shrub Layer Removed			16	1.0
Shrub & Ground Cover Removed			0	0
Established Lawn			131	8.2
Pastureland			0	0
Row Crop			0	0
Beach			394	24.8
Impervious Surface (road, parking lots, etc.)			0	0
Other			0	0
Not Visible			0	0
Total Shoreline			1591	100
Bank Zone				
Natural Bank			1440	90.5
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			0	0
Pea Gravel Blanket			0	0
Established Lawn			0	0
Artificial Beach			98	6.2
Seawalls			52	3.3
Total Shoreline			1591	100
Boat Ramp	0	0		
Stormwater Outflow	0	0		
Littoral Zone				
Piers	4	13.3		
Boat Lifts	2	6.6		
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		

Bony Lake Critical Habitat Site BON2
Critical Habitat site BON2 was designated a Sensitive Area for its Spawning Substrate and Rush Beds. It is 1.5 acres in size and is located along the point on the Southwest part of Bony Lake. This site is a premier walleye spawning area for the lake.

Prioritize for permanent land protection along with Site BON1.

Buffers, overhanging vegetation and fallen trees should remain to provide cover and prevent shoreline erosion which could cause undesirable increases in sedimentation on this valuable walleye spawning shoal, consisting of an abundance of cobble, gravel and sand.

Do not remove rush beds. Place piers outside of rushes, or if that's not possible extend the piers beyond the rushes for boat mooring. Restore/replant rush beds that have been destroyed in the past.

Table 6. BON2 Aquatic Plants

Scientific Name	Common Name	Plant Type	FQI Coefficient	Relative Frequency
Eleocharis palustris	Creeping spikerush	Emergent	6	40
Chara	Muskgrasses	Submergent	7	40
Elatine minima	Waterwort	Submergent	9	Visual
Eleocharis acicularis	Needle spikerush	Submergent	5	20
Potamogeton gramineus	Variable pondweed	Submergent	7	Visual

Table 7. BON2 Aquatic Plant Sampling Summary Statistics

SUMMARY STATISTICS	BON2
Total number of points sampled	6
Total number of sites with vegetation	3
Total number of sites shallower than maximum depth of plants	5
Frequency of occurrence at sites shallower than maximum depth of plants	60
Simpson Diversity Index	0.64
Maximum depth of plants (Feet)	2
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)	1.00
Average number of all species per site (veg. sites only)	1.67
Average number of native species per site (shallower than max depth)	1.00
Average number of native species per site (veg. sites only)	1.67
Species Richness	3
Species Richness (including visuals)	5
Floristic Quality Index	15.20

Figure 6. BON2 Aquatic Plant Diversity Map

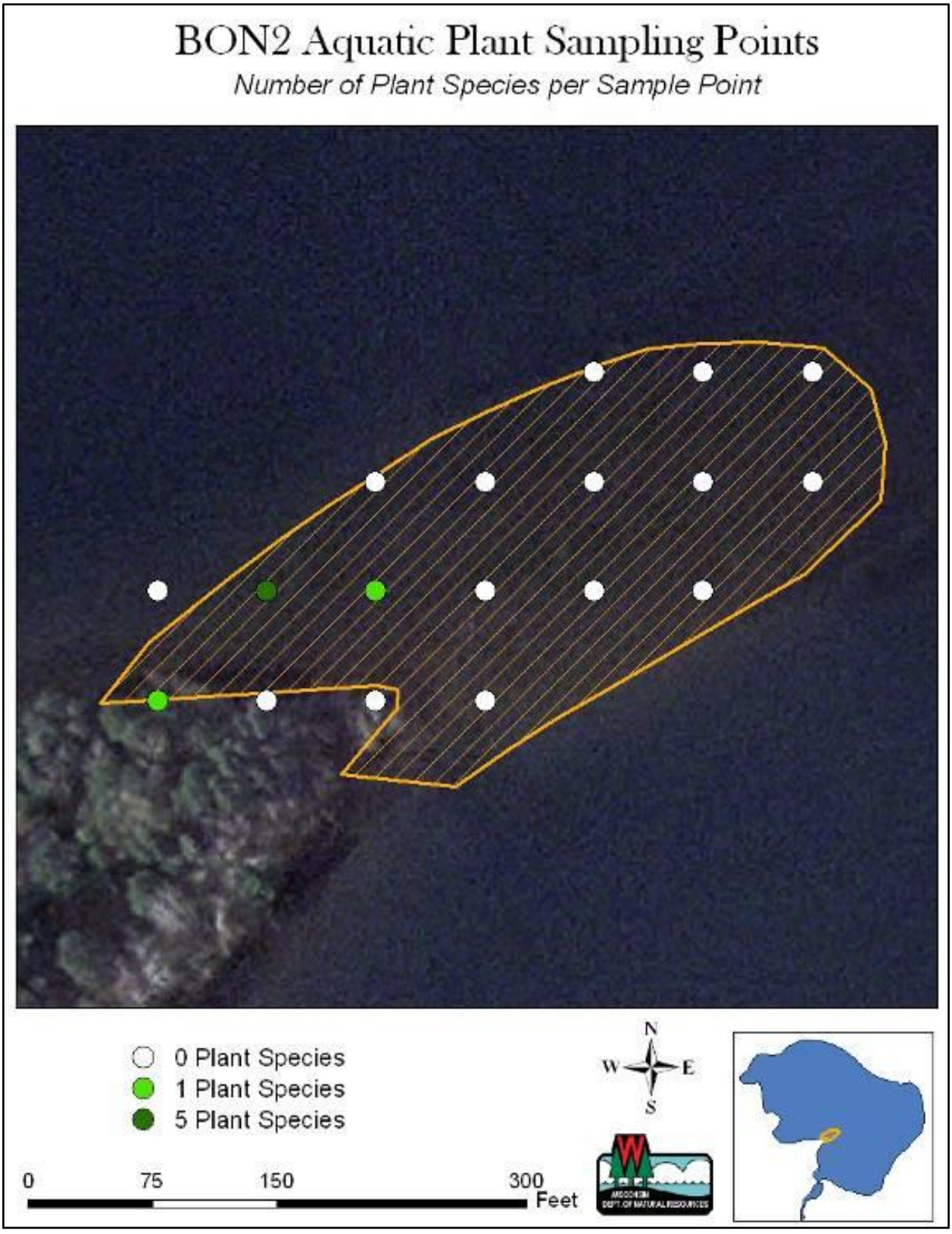


Figure 7. BON2 Aquatic Plant Sample Points Containing Rushes

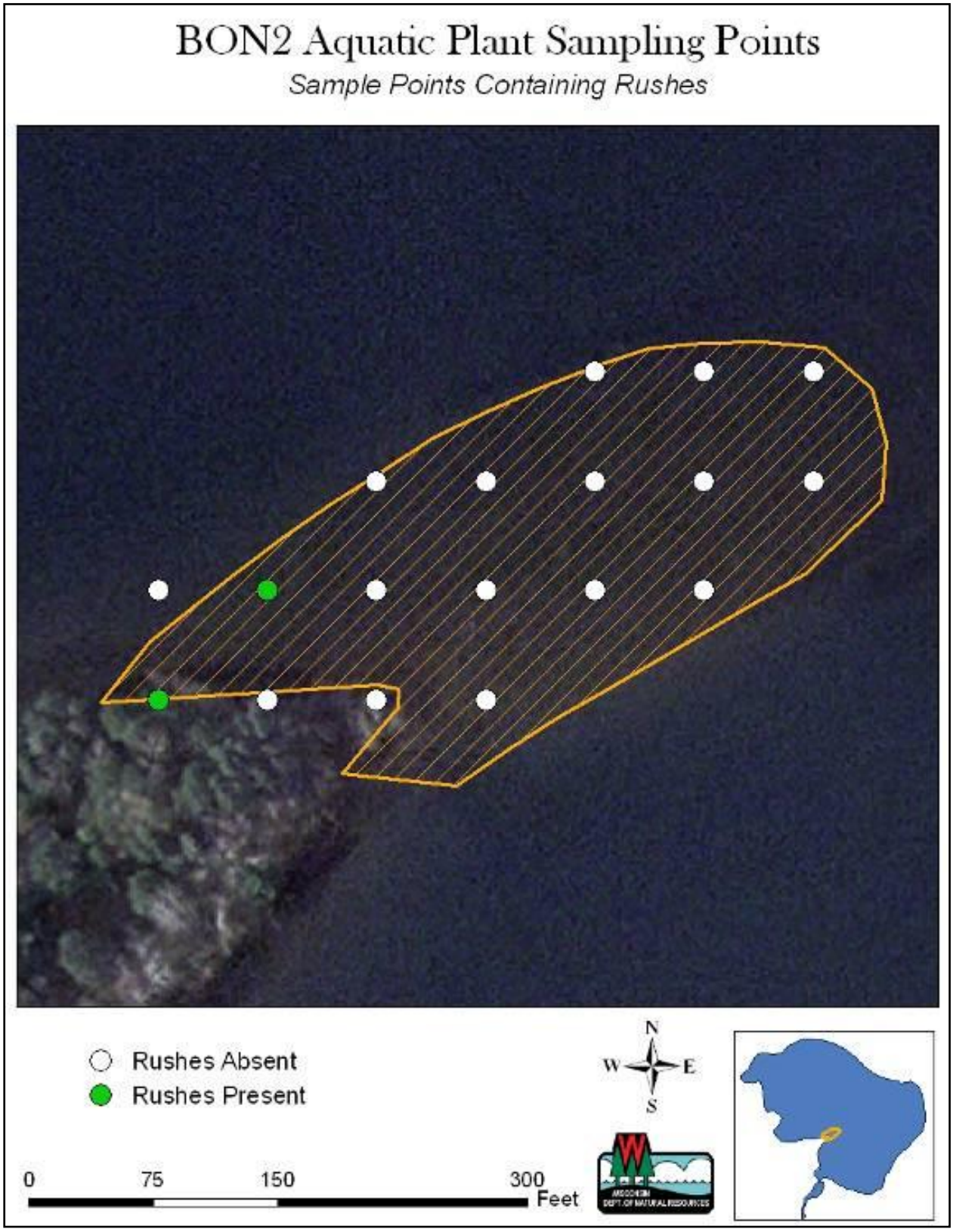


Figure 8. BON2 Spawning Substrate Transects Map

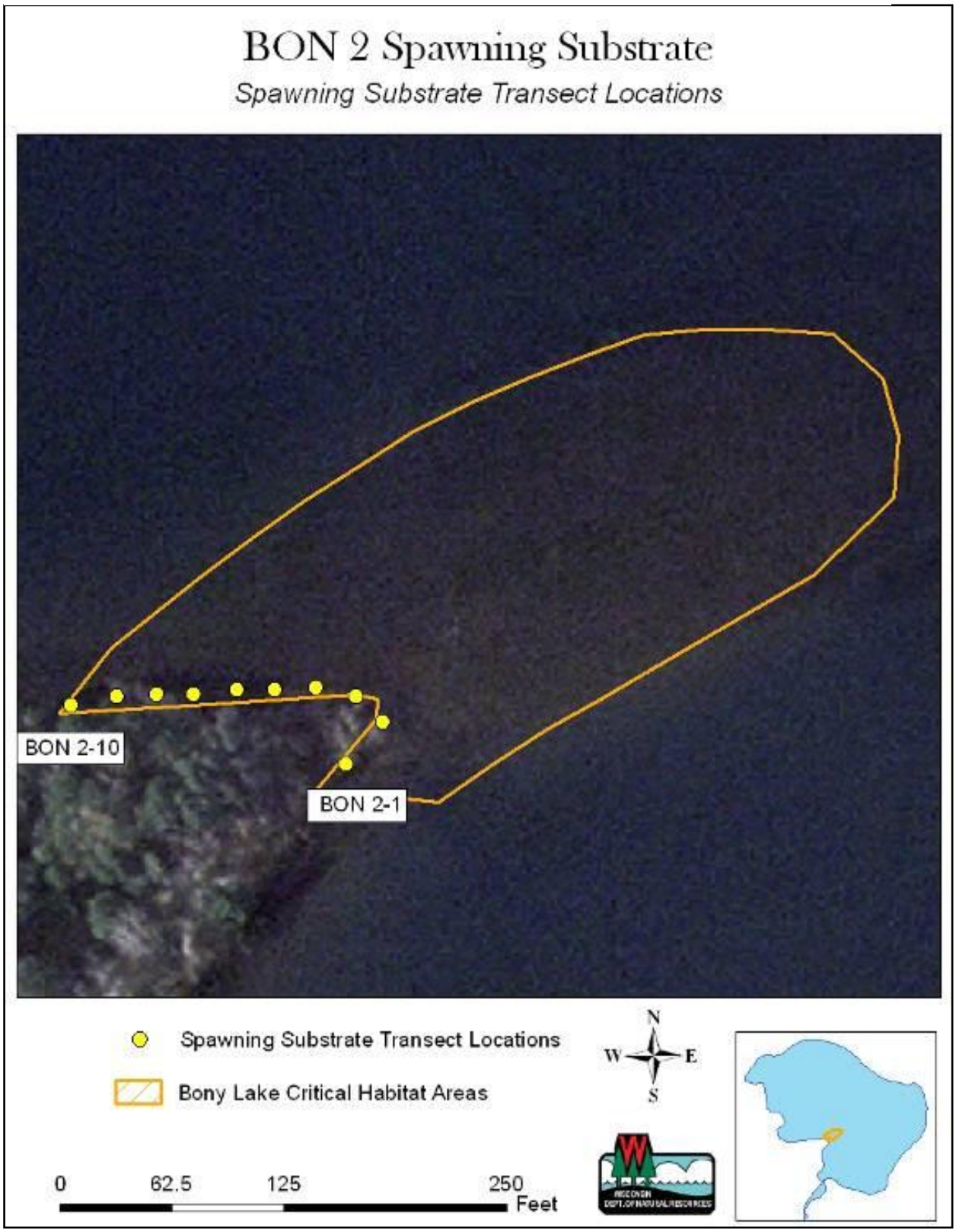


Table 8. BON2 Spawning Substrate Sampling Transect Data

Transect Number	Quadrat Number	Band Start	Band End	Band Width (m)	Embeddedness	Marl	Detritus	Clay	Silt	Sand	Fine Gravel	Coarse Gravel	Cobble / Rubble	Small Boulder	Large Boulder	Bedrock
1	1	0	1	1						100						
1	2	1	10	9			100									
2	1	0	6	6						100						
2	2	6	15	9			50			50						
3	1	0	3.5	3.5						100						
3	2	3.5	7	3.5			80			20						
3	3	7	15	8	1		80			5		15				
4	1	0	2.5	2.5	2					50	10	40				
4	2	2.5	15	12.5	1		50				40	10				
5	1	0	1.3	1.3						100						
5	2	1.3	3	1.7	2					80	5	15				
5	3	3	15	12	1		75			15	5	5				
6	1	0	3	3						100						
6	2	3	4	1	2					85	5	10				
6	3	4	15	11	1		90				10					
7	1	0	1.5	1.5						100						
7	2	1.5	3.5	2	1					85	5	10				
7	3	3.5	11.7	8.2	1		55			25	5	15				
7	4	11.7	15	3.3	1					85	10	5				
8	1	0	2	2	3					85	10	5				
8	2	2	9	7	1		40			50	10					
8	3	9	12	3	3					50	10	40				
8	4	12	15	3	1					90	5	5				
9	1	0	3.7	3.7	3					95		5				
9	2	3.7	13	9.3	1		85				5	10				
9	3	13	15	2	2					85	15					
10	1	0	2.8	2.8						100						
10	2	2.8	12.5	9.7			100									

Table 9. Shoreline Assessment of BON2				
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			230	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			230	100
Bank Zone				
Natural Bank			230	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			230	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		

Bony Lake Critical Habitat Site BON3
Critical Habitat site BON3 was designated a Sensitive Area for its Emergent and Floating Leaf Vegetation and its Bio-Diverse Submerged Aquatic Vegetation. It is 1.8 acres in size and is located in a bay on the West side of Bony Lake.

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.

Buffers and overhanging vegetation, bog fringe and floating, emergent and submersed aquatic plants should be left alone.

Do not actively manage aquatic plants unless an aquatic invasive species should establish.

Implement slow-no-wake ordinance or marker buoys in this bay to protect shorelines and aquatic habitat.

Table 10. BON3 Aquatic Plants

Scientific Name	Common Name	Plant Type	FQI Coefficient	Relative Frequency
Nuphar variegata	Spatterdock	Floating Leaf	6	3.1
Nymphaea odorata	White water lily	Floating Leaf	6	6.3
Polygonum amphibium	Water smartweed	Floating Leaf	5	6.3
Ceratophyllum demersum	Coontail	Submergent	3	3.1
Chara	Muskgrasses	Submergent	7	21.9
Elatine minima	Waterwort	Submergent	9	Visual
Eleocharis acicularis	Needle spikerush	Submergent	5	6.3
Najas flexilis	Bushy pondweed	Submergent	6	25
Potamogeton zosteriformis	Flat-stem pondweed	Submergent	6	6.3
Vallisneria americana	Wild celery	Submergent	6	21.9

Table 11. BON3 Aquatic Plant Sampling Summary Statistics

SUMMARY STATISTICS	BON3
Total number of points sampled	20
Total number of sites with vegetation	16
Total number of sites shallower than maximum depth of plants	19
Frequency of occurrence at sites shallower than maximum depth of plants	84.21
Simpson Diversity Index	0.82
Maximum depth of plants (Feet)	16.5
Number of sites sampled using rake on Rope (R)	0
Number of sites sampled using rake on Pole (P)	20
Average number of all species per site (shallower than max depth)	1.68
Average number of all species per site (veg. sites only)	2.00
Average number of native species per site (shallower than max depth)	1.68
Average number of native species per site (veg. sites only)	2.00
Species Richness	9
Species Richness (including visuals)	10
Floristic Quality Index	18.70

Figure 9. BON3 Aquatic Plant Diversity Map

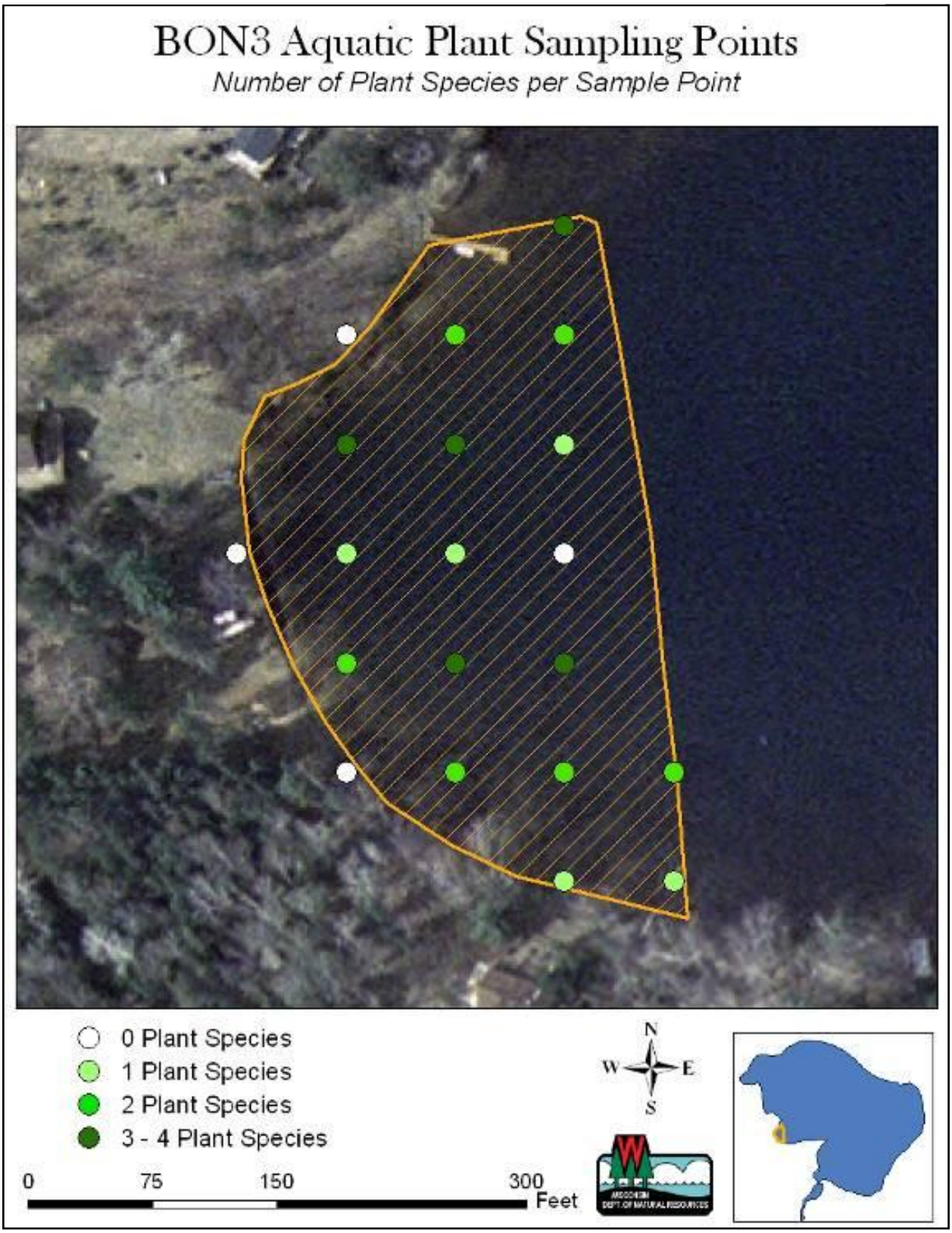


Table 12. Shoreline Assessment of BON3				
Feature	**Number**	**Density** (per mile)	**Shoreline Length** (feet)	**% of Shoreline**
Setback Zone				
Homes	4	36.8		
Accessory Structures	0	0		
Commercial Buildings	0	0		
Riparian Zone				
Homes	0	0		
Accessory Structures	2	18.4		
Commercial Buildings	0	0		
Natural vegetation			230	40.1
Shrub Layer Removed			0	0
Shrub & Ground Cover Removed			0	0
Established Lawn			344	59.9
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			574	100
Bank Zone				
Natural Bank			344	59.9
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			0	0
Pea Gravel Blanket			0	0
Established Lawn			230	40.1
Artificial Beach			0	0
Seawalls			0	0
Total Shoreline			574	100
Boat Ramp	0	0		
Stormwater Outflow	0	0		
Littoral Zone				
Piers	4	36.8		
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		

Bony Lake Critical Habitat Site BON4
Critical Habitat site BON4 was designated a Sensitive Area for its Emergent and Floating Leaf Vegetation. It is 1.0 acres in size and is located in a bay on the West side of Bony Lake.

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.

Buffers and overhanging vegetation, bog fringe and floating, emergent and submersed aquatic plants should be left alone.

Do not actively manage aquatic plants unless an aquatic invasive species should establish. Implement slow-no-wake ordinance or marker buoys in this bay to protect shorelines and aquatic habitat.

Table 13. BON4 Aquatic Plants

Scientific Name	Common Name	Plant Type	FQI Coefficient	Relative Frequency
Nuphar variegata	Spatterdock	Floating Leaf	6	10
Polygonum amphibium	Water smartweed	Floating Leaf	5	5
Chara	Muskgrasses	Submergent	7	10
Elatine minima	Waterwort	Submergent	9	Visual
Elodea canadensis	Common waterweed	Submergent	3	5
Megalodonta beckii	Water marigold	Submergent	8	5
Myriophyllum sibericum	Northern water-milfoil	Submergent	7	10
Myriophyllum tenellum	Dwarf water-milfoil	Submergent	10	5
Najas flexilis	Bushy pondweed	Submergent	6	15
Potamogeton pusillus	Small pondweed	Submergent	7	5
Sagittaria sp	Arrowhead (rosette)	Submergent	-	5
Vallisneria americana	Wild celery	Submergent	6	20
Zosterella dubia	Water star-grass	Submergent	6	5

Table 14. BON4 Aquatic Plant Sampling Summary Statistics

SUMMARY STATISTICS	BON4
Total number of points sampled	11
Total number of sites with vegetation	9
Total number of sites shallower than maximum depth of plants	11
Frequency of occurrence at sites shallower than maximum depth of plants	81.82
Simpson Diversity Index	0.89
Maximum depth of plants (Feet)	6
Number of sites sampled using rake on Rope (R)	0
Number of sites sampled using rake on Pole (P)	11
Average number of all species per site (shallower than max depth)	1.82
Average number of all species per site (veg. sites only)	2.22
Average number of native species per site (shallower than max depth)	1.82
Average number of native species per site (veg. sites only)	2.22
Species Richness	12
Species Richness (including visuals)	13
Floristic Quality Index	23.10

Figure 10. BON4 Aquatic Plant Diversity Map

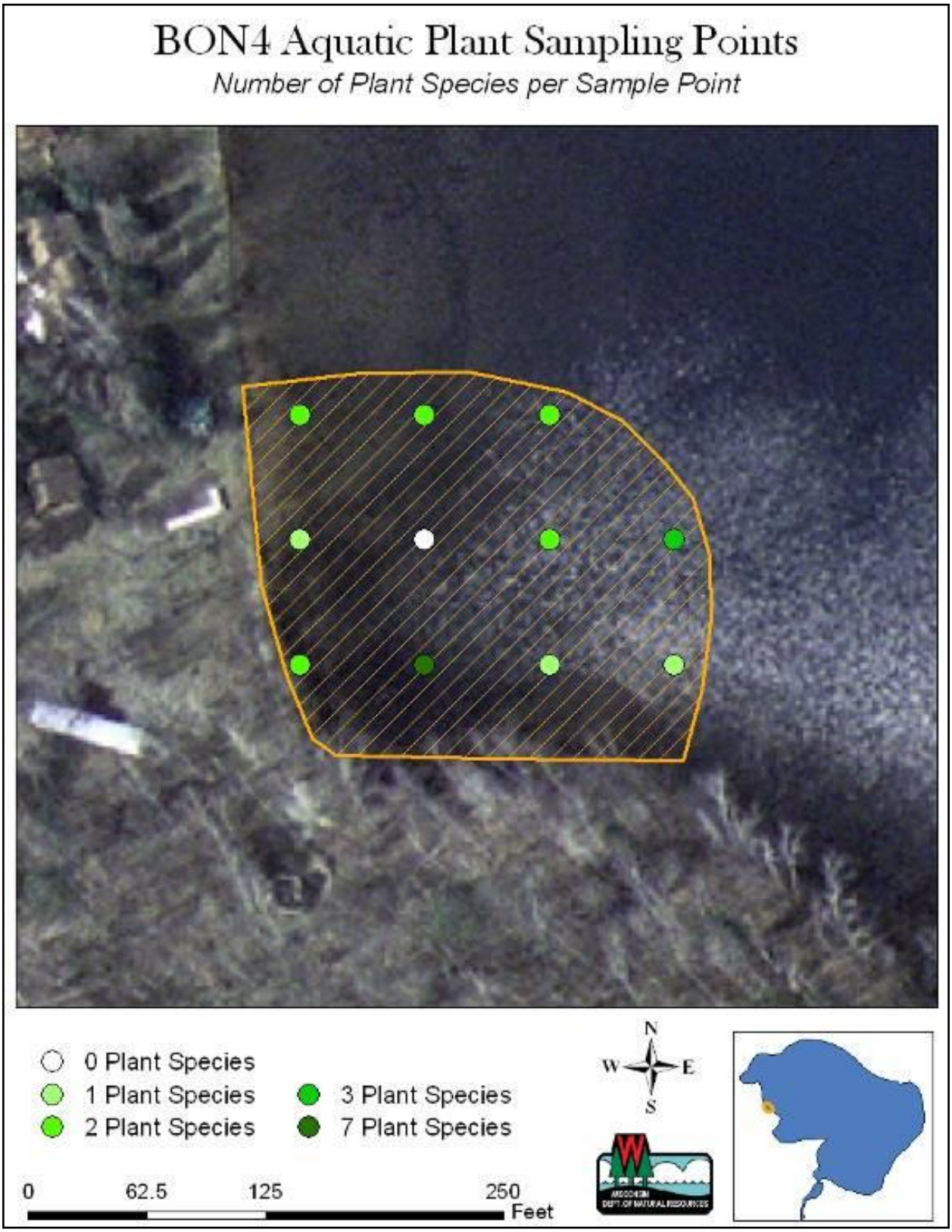


Table 15. Shoreline Assessment of BON4				
Feature	**Number**	**Density** (per mile)	**Shoreline Length** (feet)	**% of Shoreline**
Setback Zone				
Homes	1	16.1		
Accessory Structures	0	0		
Commercial Buildings	0	0		
Riparian Zone				
Homes	1	16.1		
Accessory Structures	2	32.2		
Commercial Buildings	0	0		
Natural vegetation			197	60.1
Shrub Layer Removed			0	0
Shrub & Ground Cover Removed			0	0
Established Lawn			131	39.9
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			328	100
Bank Zone				
Natural Bank			305	93.0
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			0	0
Pea Gravel Blanket			0	0
Established Lawn			23	7.0
Artificial Beach			0	0
Seawalls			0	0
Total Shoreline			328	100
Boat Ramp	0	0		
Stormwater Outflow	0	0		
Littoral Zone				
Piers	2	32.2		
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		

Bony Lake Critical Habitat Site BON5
Critical Habitat site BON5 was designated a Sensitive Area for its Submerged Aquatic Vegetation Important to Fish and Wildlife, Extensive Riparian Wetland, Bio-diverse Submerged Aquatic Vegetation, Emergent and Floating Leaf Vegetation, and Water Quality (Springs). It is 6.4 acres in size and is located along the Northwest corner of Bony Lake.

Prioritize for permanent land protection along with Site BON1.

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.

Buffers and overhanging vegetation, bog fringe and floating, emergent and submersed aquatic plants should be left alone.

Do not actively manage aquatic plants unless an aquatic invasive species should establish.

Continue to implement Fish Sticks project. Contact local DNR Fisheries Biologist to investigate funding and technical assistance opportunities.

Leave fallen trees in the water.

Implement slow-no-wake ordinance or marker buoys in this bay to protect shorelines and aquatic habitat.

Table 16. BON5 Aquatic Plants

Scientific Name	Common Name	Plant Type	FQI Coefficient	Relative Frequency
Carex lasiocarpa	Wolly-fruit sedge	Emergent	9	1.8
Dulichium arundinaceum	Three-way sedge	Emergent	9	0.9
Eleocharis palustris	Creeping spikerush	Emergent	6	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
Glyceria canadensis	Rattlesnake manna grass	Semi-aquatic grass	7	0.9
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	0.4
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 17. BON5 Aquatic Plant Sampling Summary Statistics

SUMMARY STATISTICS	BON5
Total number of points sampled	59
Total number of sites with vegetation	46
Total number of sites shallower than maximum depth of plants	59
Frequency of occurrence at sites shallower than maximum depth of plants	77.97
Simpson Diversity Index	0.88
Maximum depth of plants (Feet)	14
Number of sites sampled using rake on Rope (R)	0
Number of sites sampled using rake on Pole (P)	59
Average number of all species per site (shallower than max depth)	1.64
Average number of all species per site (veg. sites only)	2.11
Average number of native species per site (shallower than max depth)	1.64
Average number of native species per site (veg. sites only)	2.11
Species Richness	21
Species Richness (including visuals)	22
Floristic Quality Index	37.40

Figure 11. BON5 Aquatic Plant Diversity Map

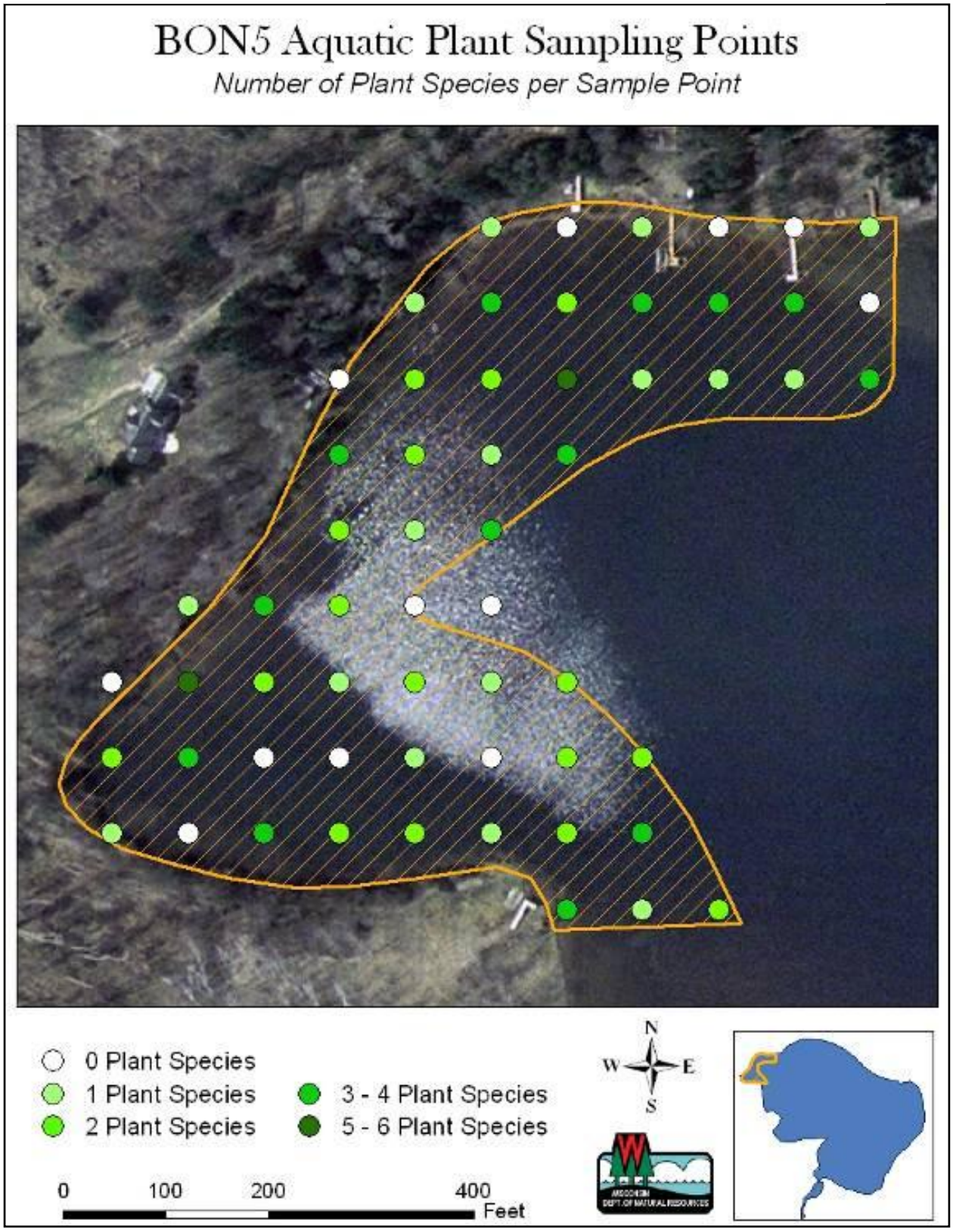


Table 18. Shoreline Assessment of BON5				
Feature	**Number**	**Density** (per mile)	**Shoreline Length** (feet)	**% of Shoreline**
Setback Zone				
Homes	4	12.9		
Accessory Structures	3	9.7		
Commercial Buildings	0	0		
Riparian Zone				
Homes	1	3.2		
Accessory Structures	8	25.8		
Commercial Buildings	0	0		
Natural vegetation			1296	79.0
Shrub Layer Removed			49	3.0
Shrub & Ground Cover Removed			0	0
Established Lawn			295	18.0
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			1640	100
Bank Zone				
Natural Bank			1476	90.0
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			0	0
Pea Gravel Blanket			0	0
Established Lawn			164	10.0
Artificial Beach			0	0
Seawalls			0	0
Total Shoreline			1640	100
Boat Ramp	0	0		
Stormwater Outflow	0	0		
Littoral Zone				
Piers	7	22.5		
Boat Lifts	2	6.4		
Swims Rafts/ Trampolines	1	3.2		
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		

Bony Lake Critical Habitat Site BON6
Critical Habitat site BON6 was designated a Sensitive Area for its Rush Beds. It is 3.0 acres in size and is located along the Northern shore of Bony Lake.

We applaud the shoreline restorations have occurred since the initial field work, however any remaining 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.

Do not remove rush beds. Place piers outside of rushes, or if that's not possible extend the piers beyond the rushes for boat mooring. Restore/replant rush beds that have been destroyed in the past.

Buffers and overhanging vegetation, bog fringe and floating, emergent and submersed aquatic plants should be left alone.

Table 19. BON6 Aquatic Plants

Scientific Name	Common Name	Plant Type	FQI Coefficient	Relative Frequency
Eleocharis palustris	Creeping spikerush	Emergent	6	11.5
Juncus palocarpus f. submersus	Brown-fruited rush	Emergent	8	1.9
Schoenoplectus tabernaemontani	Softstem bulrush	Emergent	4	19.2
Nuphar variegata	Spatterdock	Floating Leaf	6	3.8
Ceratophyllum demersum	Coontail	Submergent	3	1.9
Chara	Muskgrasses	Submergent	7	7.7
Eleocharis acicularis	Needle spikerush	Submergent	5	5.8
Elodea canadensis	Common waterweed	Submergent	3	7.7
Eriocaulon aquaticum	Pipewort	Submergent	9	3.8
Myriophyllum sibericum	Northern water-milfoil	Submergent	7	5.8
Najas flexilis	Bushy pondweed	Submergent	6	9.6
Nitella	Nitella	Submergent	7	1.9
Potamogeton amplifolius	Large-leaf pondweed	Submergent	7	1.9
Potamogeton gramineus	Variable pondweed	Submergent	7	1.9
Potamogeton pusillus	Small pondweed	Submergent	7	1.9
Potamogeton robbinsii	Robbins pondweed	Submergent	8	1.9
Potamogeton zosteriformis	Flat-stem pondweed	Submergent	6	1.9
Vallisneria americana	Wild celery	Submergent	6	9.6

Table 20. BON6 Aquatic Plant Sampling Summary Statistics	
SUMMARY STATISTICS	**BON6**
Total number of points sampled	41
Total number of sites with vegetation	27
Total number of sites shallower than maximum depth of plants	37
Frequency of occurrence at sites shallower than maximum depth of plants	72.97
Simpson Diversity Index	0.91
Maximum depth of plants (Feet)	16
Number of sites sampled using rake on Rope (R)	0
Number of sites sampled using rake on Pole (P)	0
Average number of all species per site (shallower than max depth)	1.41
Average number of all species per site (veg. sites only)	1.93
Average number of native species per site (shallower than max depth)	1.41
Average number of native species per site (veg. sites only)	1.93
Species Richness	18
Species Richness (including visuals)	18
Floristic Quality Index	26.40

Figure 12. BON6 Aquatic Plant Diversity Map

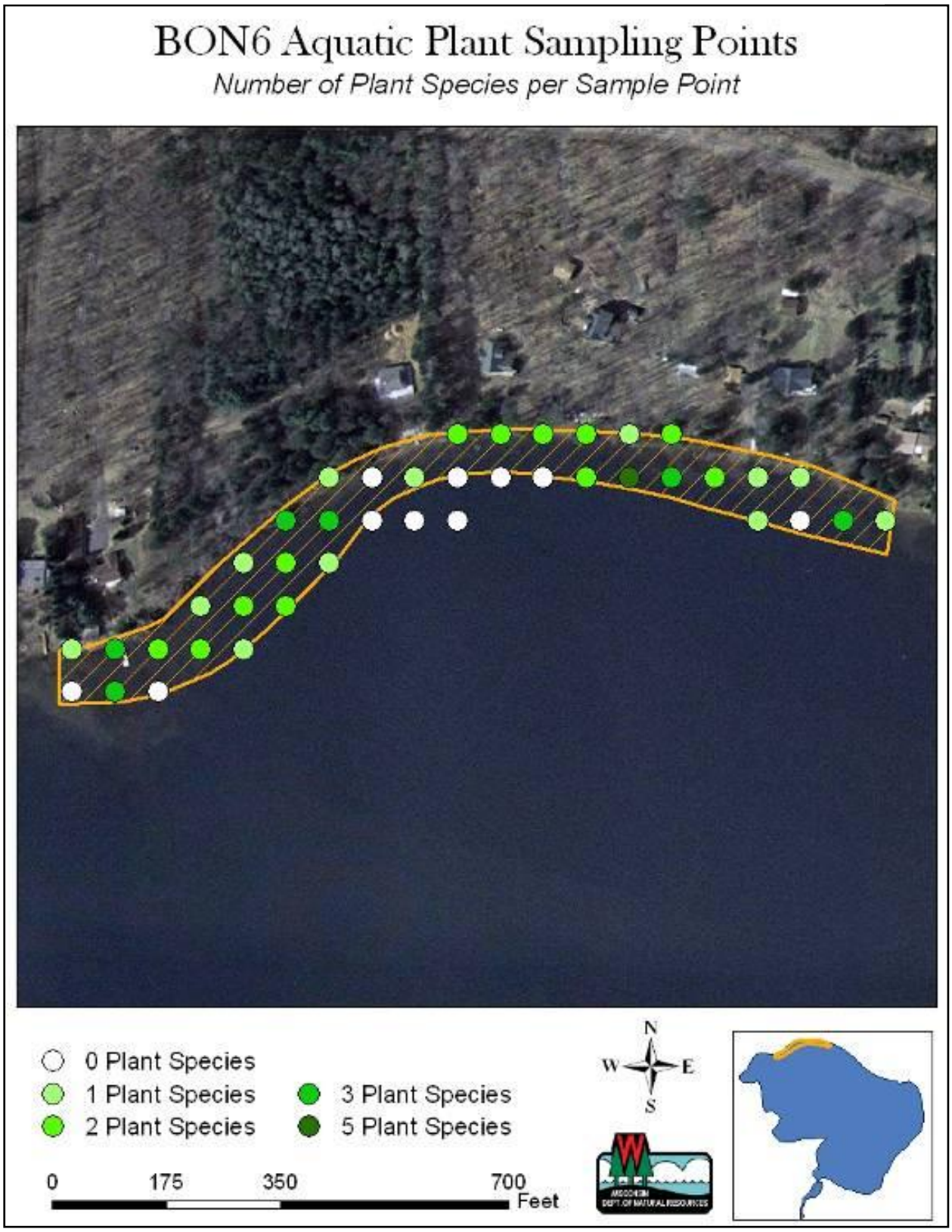


Figure 13. BON6 Aquatic Plant Sample Points Containing Rushes

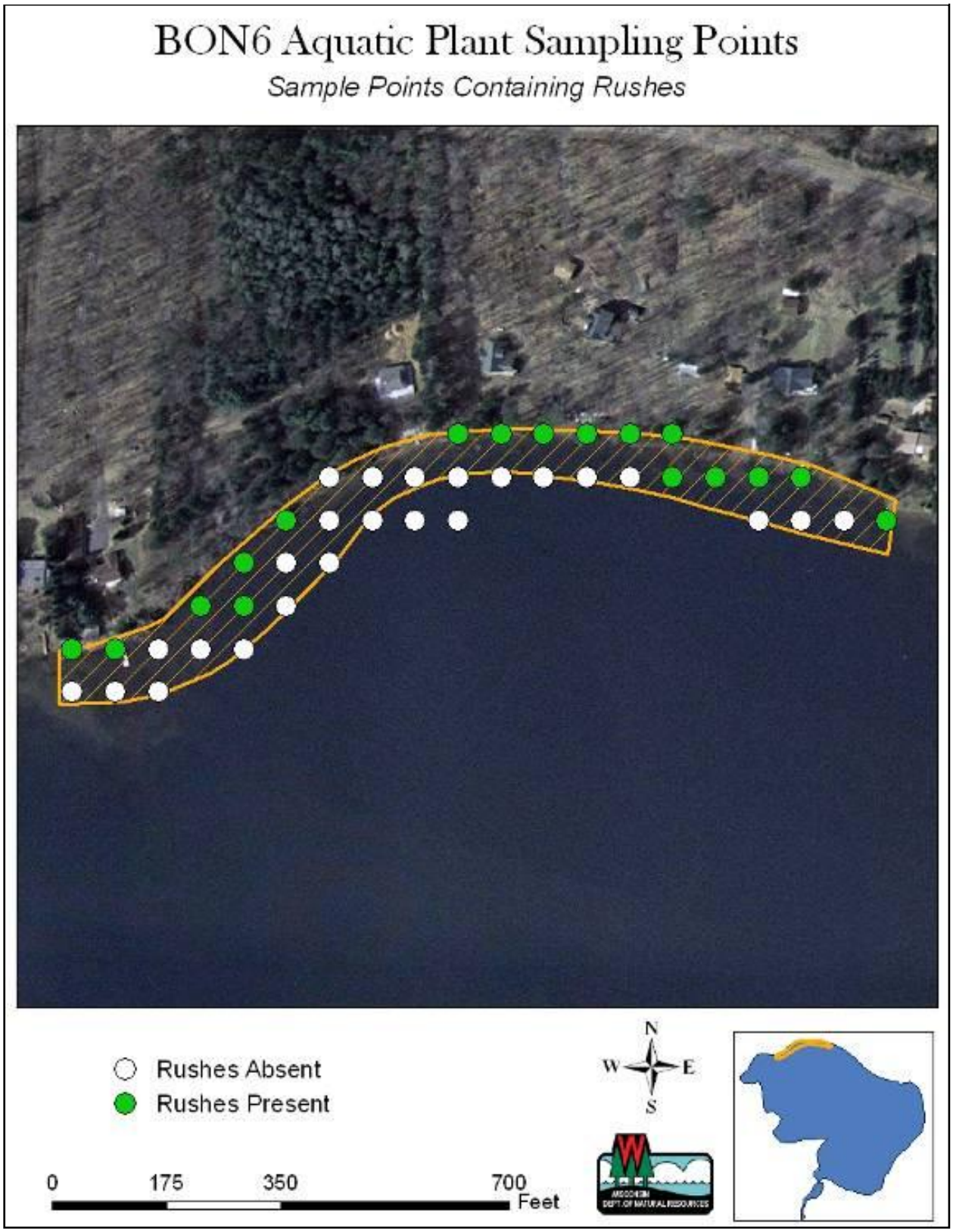


Table 21. Shoreline Assessment of BON6				
Feature	**Number**	**Density** (per mile)	**Shoreline Length** (feet)	**% of Shoreline**
Setback Zone				
Homes	9	34.1		
Accessory Structures	5	18.9		
Commercial Buildings	0	0		
Riparian Zone				
Homes	0	0		
Accessory Structures	15	56.8		
Commercial Buildings	0	0		
Natural vegetation			820*	58.8
Shrub Layer Removed			98	7.0
Shrub & Ground Cover Removed			0	0
Established Lawn			443*	31.8
Pastureland			0	0
Row Crop			0	0
Beach			33*	2.4
Impervious Surface (road, parking lots, etc.)			0	0
Other			0	0
Not Visible			0	0
Total Shoreline			1394*	100
Bank Zone				
Natural Bank			1197*	85.9
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			98*	7.0
Pea Gravel Blanket			0	0
Established Lawn			49*	3.5
Artificial Beach			16*	1.1
Seawalls			33*	2.4
Total Shoreline			1394*	100
Boat Ramp	0	0		
Stormwater Outflow	0	0		
Littoral Zone				
Piers	9	34.1		
Boat Lifts	5	18.9		
Swims Rafts/ Trampolines	4	15.2		
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		

*Shoreline restoration work has occurred since initial Shoreline Assessment.

Bony Lake Critical Habitat Site BON7
Critical Habitat site BON7 was designated a Public Rights Feature for its Spawning Substrate. It is 0.4 acres in size and is located along the Northern shore of Bony Lake.

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.

Buffers and overhanging vegetation, bog fringe and floating, emergent and submersed aquatic plants should be left alone.

Continue to implement Fish Sticks project. Contact local DNR Fisheries Biologist to investigate funding and technical assistance opportunities.

Leave fallen trees in the water.

Figure 14. BON7 Spawning Substrate Transects Map

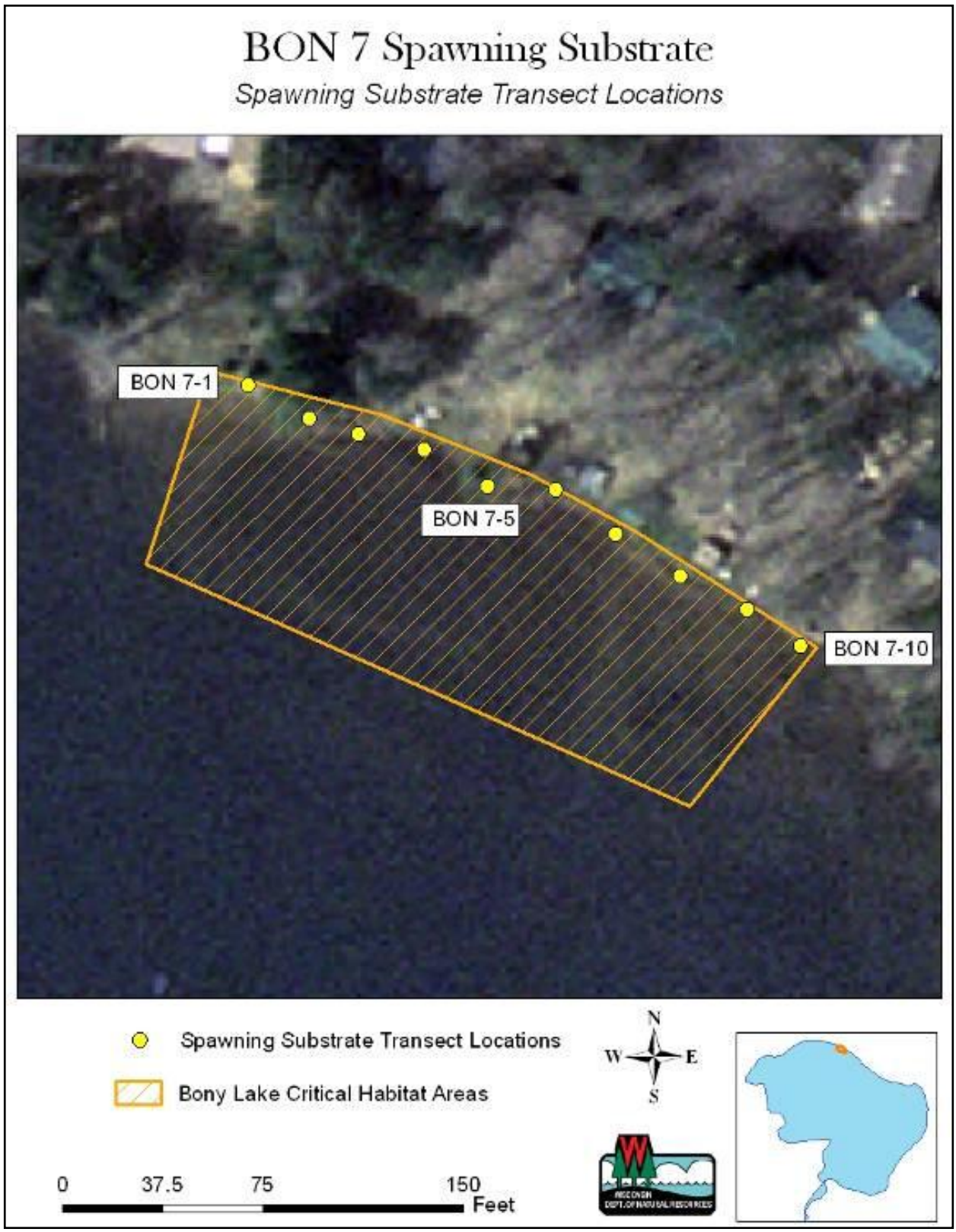


Table 22. BON 7 Spawning Substrate Sampling Transect Data

Transect Number	Quadrat Number	Band Start	Band End	Band Width (m)	Embeddedness	Marl	Detritus	Clay	Silt	Sand	Fine Gravel	Coarse Gravel	Cobble / Rubble	Small Boulder	Large Boulder	Bedrock
1	1	0	7	7						100						
1	2	7	15	8	5						85	15				
2	1	0	5.5	5.5						100						
2	2	5.5	14.5	9	5					5	70	25				
2	3	14.5	15	0.5	5					10	70	20				
3	1	0	4.4	4.4	2					95		5				
3	2	4.4	15	10.6	5						30	20	50			
4	1	0	3	3						100						
4	2	3	15	12	3					30	70					
5	1	0	0.3	0.3	4					10			90			
5	2	0.3	1.8	1.5						100						
5	3	1.8	6.5	4.7	2					80	20					
5	4	6.5	15	8.5	5						50	10	40			
6	1	0	2.5	2.5	2					60	40					
6	2	2.5	4	1.5	2					70	10	20				
6	3	4	6	2	1					95	5					
6	4	6	15	9	3					20	80					
7	1	0	0.7	0.7	3					25	5	20	50			
7	2	0.7	7.5	6.8	2					90	5	5				
7	3	7.5	15	7.5	2					20	70	10				
8	1	0	1.2	1.2	2					25		15	60			
8	2	1.2	11.5	10.3						100						
8	3	11.5	15	3.5	2					85			15			
9	1	0	1.5	1.5	3					65	15	20				
9	2	1.5	7	5.5	2					85	15					
9	3	7	14	7						100						
10	1	0	2.5	2.5	1					95	5					
10	2	2.5	4.5	2	2					75	10	15				
10	3	4.5	15	10.5			80			20						

Table 23. Shoreline Assessment of BON7				
Feature	**Number**	**Density** (per mile)	**Shoreline Length** (feet)	**% of Shoreline**
Setback Zone				
Homes	6	128.8		
Accessory Structures	5	107.3		
Commercial Buildings	0	0		
Riparian Zone				
Homes	0	0		
Accessory Structures	1	21.5		
Commercial Buildings	0	0		
Natural vegetation			16	6.5
Shrub Layer Removed			0	0
Shrub & Ground Cover Removed			0	0
Established Lawn			230	93.5
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			246	100
Bank Zone				
Natural Bank			49	19.9
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			0	0
Pea Gravel Blanket			0	0
Established Lawn			197	80.1
Artificial Beach			0	0
Seawalls			0	0
Total Shoreline			246	100
Boat Ramp	0	0		
Stormwater Outflow	0	0		
Littoral Zone				
Piers	3	64.4		
Boat Lifts	2	42.9		
Swims Rafts/ Trampolines	1	21.5		
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		

Bony Lake Critical Habitat Site BON8
Critical Habitat site BON8 was designated a Sensitive Area for its Rush Beds and Bio-Diverse Submerged Aquatic Vegetation. It is 0.7 acres in size and is located along the Northern shore of Bony Lake.

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.

Do not remove rush beds. Place piers outside of rushes, or if that's not possible extend the piers beyond the rushes for boat mooring. Restore/replant rush beds that have been destroyed in the past.

Buffers and overhanging vegetation, bog fringe and floating, emergent and submersed aquatic plants should be left alone.

Do not actively manage aquatic plants unless an aquatic invasive species should establish.

Table 24. BON8 Aquatic Plants

Scientific Name	Common Name	Plant Type	FQI Coefficient	Relative Frequency
Eleocharis palustris	Creeping spikerush	Emergent	6	25.0
Schoenoplectus tabernaemontani	Softstem bulrush	Emergent	4	8.3
Chara	Muskgrasses	Submergent	7	8.3
Najas flexilis	Bushy pondweed	Submergent	6	33.3
Potamogeton amplifolius	Large-leaf pondweed	Submergent	7	16.7
Potamogeton robbinsii	Robbins pondweed	Submergent	8	8.3

Table 25. BON8 Aquatic Plant Sampling Summary Statistics

SUMMARY STATISTICS	BON8
Total number of points sampled	9
Total number of sites with vegetation	8
Total number of sites shallower than maximum depth of plants	9
Frequency of occurrence at sites shallower than maximum depth of plants	88.89
Simpson Diversity Index	0.78
Maximum depth of plants (Feet)	8
Number of sites sampled using rake on Rope (R)	0
Number of sites sampled using rake on Pole (P)	9
Average number of all species per site (shallower than max depth)	1.33
Average number of all species per site (veg. sites only)	1.50
Average number of native species per site (shallower than max depth)	1.33
Average number of native species per site (veg. sites only)	1.50
Species Richness	6
Species Richness (including visuals)	6
Floristic Quality Index	15.50

Figure 15. BON8 Aquatic Plant Diversity

Figure 16. BON8 Aquatic Plant Sample Points Containing Rushes

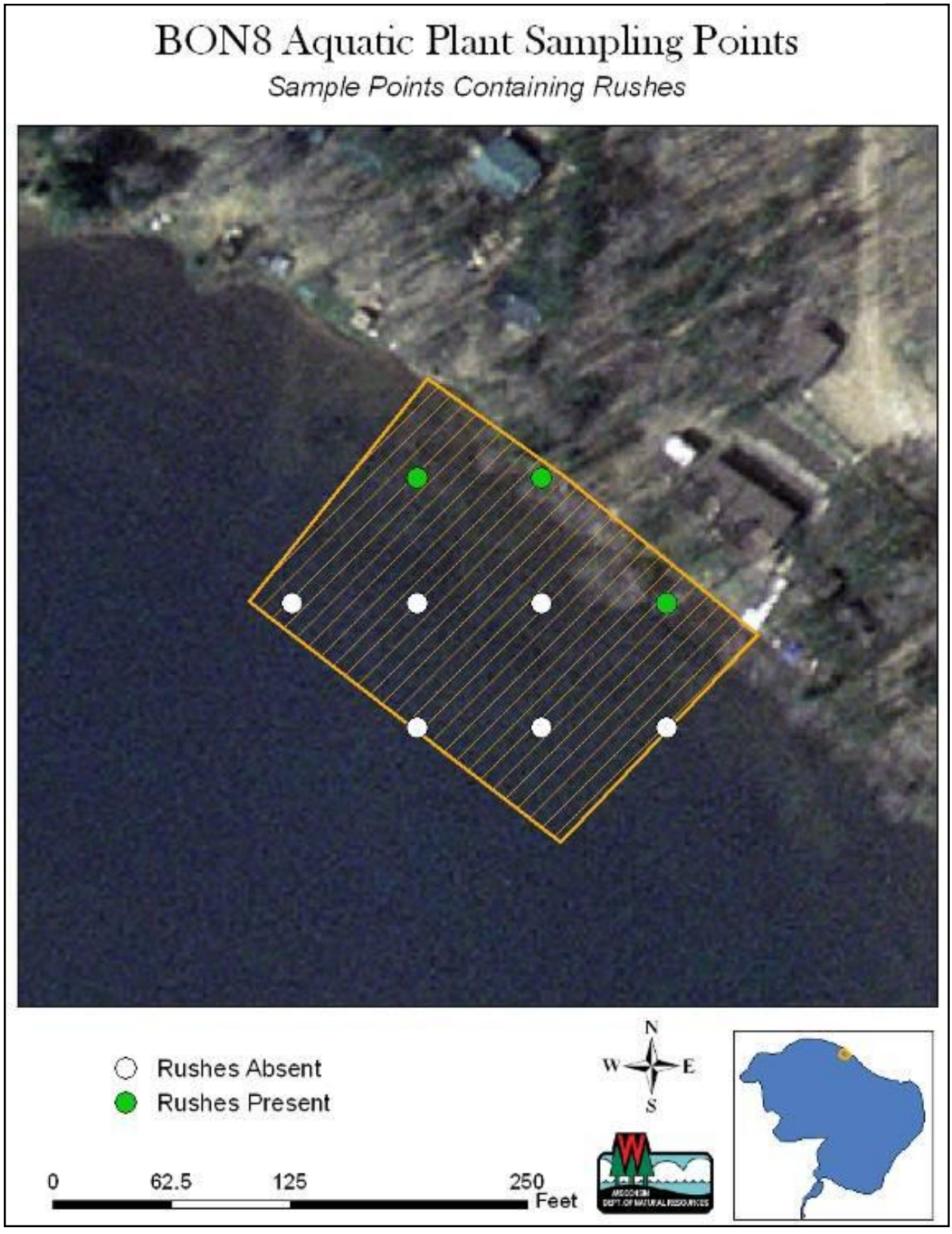


Table 26. Shoreline Assessment of BON8				
Feature	**Number**	**Density** (per mile)	**Shoreline Length** (feet)	**% of Shoreline**
Setback Zone				
Homes	2	53.6		
Accessory Structures	0	0		
Commercial Buildings	0	0		
Riparian Zone				
Homes	0	0		
Accessory Structures	1	26.8		
Commercial Buildings	0	0		
Natural vegetation			83.5	42.4
Shrub Layer Removed			0	0
Shrub & Ground Cover Removed			0	0
Established Lawn			98.5	50.0
Pastureland			0	0
Row Crop			0	0
Beach			0	0
Impervious Surface (road, parking lots, etc.)			0	0
Other: Gravel Path			15	7.6
Not Visible			0	0
Total Shoreline			197	100
Bank Zone				
Natural Bank			98.5	50.0
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			0	0
Pea Gravel Blanket			0	0
Established Lawn			98.5	50.0
Artificial Beach			0	0
Seawalls			0	0
Total Shoreline			197	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		

Bony Lake Critical Habitat Site BON9
Critical Habitat site BON9 was designated a Sensitive Area for its Rush Beds. It is 0.7 acres in size and is located along the Eastern shore of Bony Lake.

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.

Do not remove rush beds. Place piers outside of rushes, or if that's not possible extend the piers beyond the rushes for boat mooring. Restore/replant rush beds that have been destroyed in the past.

Buffers and overhanging vegetation, bog fringe and floating, emergent and submersed aquatic plants should be left alone.

Implement Fish Sticks project. Contact local DNR Fisheries Biologist to investigate funding and technical assistance opportunities.

Table 27. BON9 Aquatic Plants

Scientific Name	Common Name	Plant Type	FQI Coefficient	Relative Frequency
Schoenoplectus tabernaemontani	Softstem bulrush	Emergent	4	38.5
Eleocharis acicularis	Needle spikerush	Submergent	5	7.7
Elodea canadensis	Common waterweed	Submergent	3	15.4
Najas flexilis	Bushy pondweed	Submergent	6	7.7
Potamogeton amplifolius	Large-leaf pondweed	Submergent	7	7.7
Potamogeton gramineus	Variable pondweed	Submergent	7	7.7
Vallisneria americana	Wild celery	Submergent	6	7.7
Zosterella dubia	Water star-grass	Submergent	6	7.7

Table 28. BON9 Aquatic Plant Sampling Summary Statistics

SUMMARY STATISTICS	BON9
Total number of points sampled	11
Total number of sites with vegetation	8
Total number of sites shallower than maximum depth of plants	11
Frequency of occurrence at sites shallower than maximum depth of plants	72.73
Simpson Diversity Index	0.79
Maximum depth of plants (Feet)	3
Number of sites sampled using rake on Rope (R)	0
Number of sites sampled using rake on Pole (P)	11
Average number of all species per site (shallower than max depth)	1.18
Average number of all species per site (veg. sites only)	1.63
Average number of native species per site (shallower than max depth)	1.18
Average number of native species per site (veg. sites only)	1.63
Species Richness	8
Species Richness (including visuals)	8
Floristic Quality Index	15.60

Figure 17. BON9 Aquatic Plant Diversity

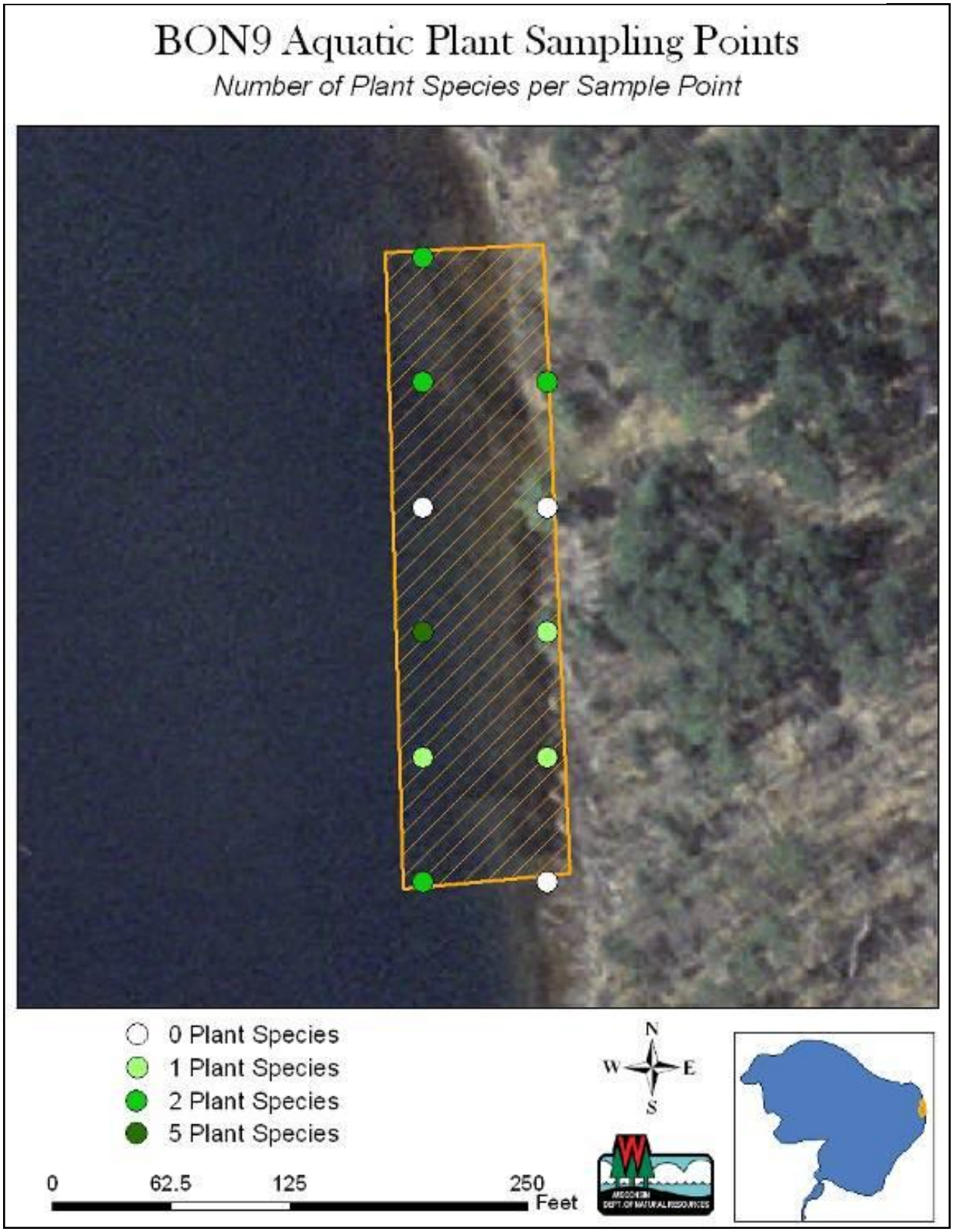


Figure 18. BON9 Aquatic Plant Sample Points Containing Rushes

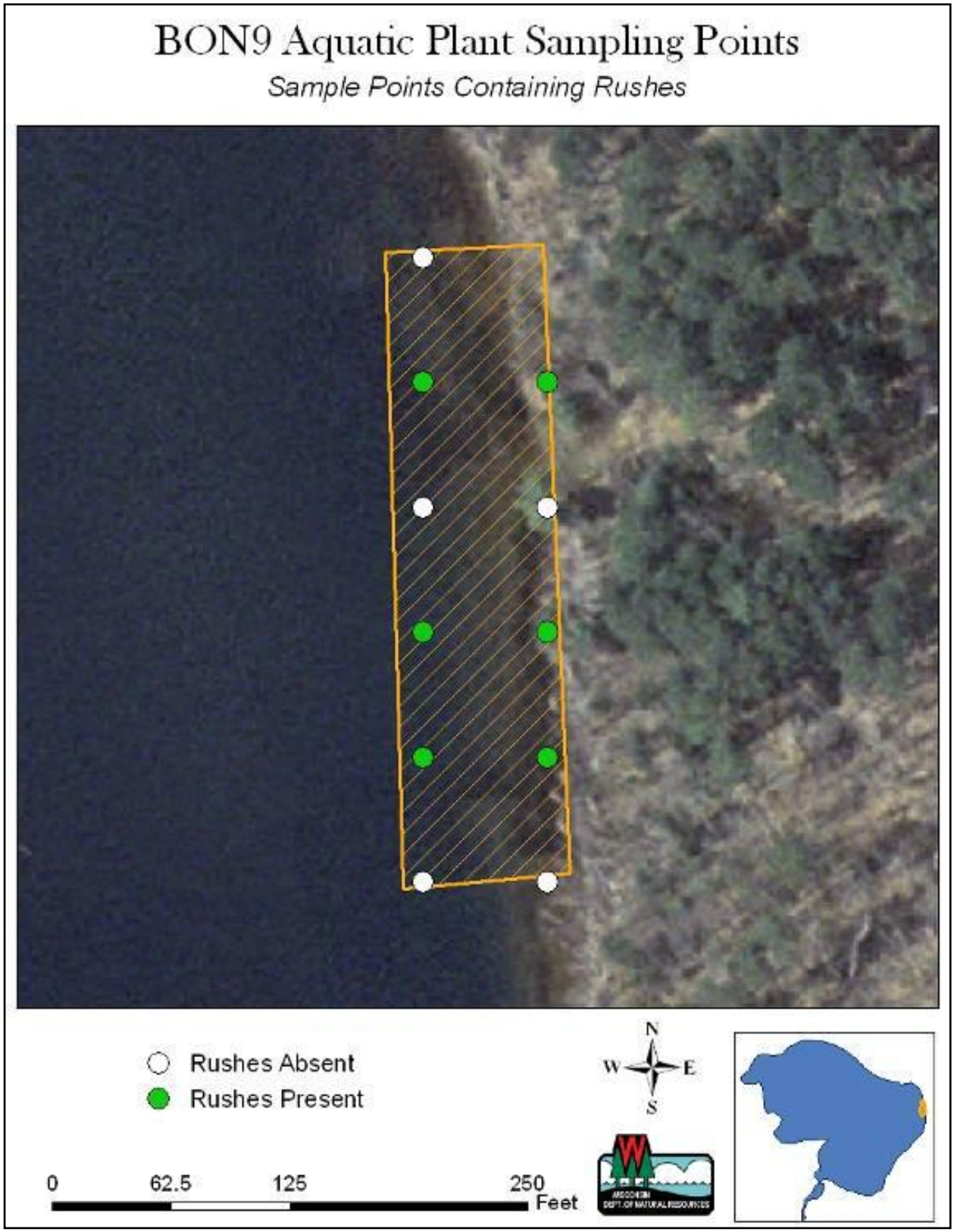


Table 29. Shoreline Assessment of BON9				
Feature	**Number**	**Density** (per mile)	**Shoreline Length** (feet)	**% of Shoreline**
Setback Zone				
Homes	0	0		
Accessory Structures	0	0		
Commercial Buildings	0	0		
Riparian Zone				
Homes	0	0		
Accessory Structures	1	16.1		
Commercial Buildings	0	0		
Natural vegetation			262	80
Shrub Layer Removed			0	0
Shrub & Ground Cover Removed			0	0
Established Lawn			66	20
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			328	100
Bank Zone				
Natural Bank			262	80
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			0	0
Pea Gravel Blanket			0	0
Established Lawn			66	20
Artificial Beach			0	0
Seawalls			0	0
Total Shoreline			328	100
Boat Ramp	0	0		
Stormwater Outflow	0	0		
Littoral Zone				
Piers	1	16.1		
Boat Lifts	1	16.1		
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		

Bony Lake Critical Habitat Site BON10
Critical Habitat site BON10 was designated a Sensitive Area for its Rush Beds. It is 0.3 acres in size and is located along the Eastern shore of Bony Lake.

Do not remove rush beds. Place piers outside of rushes, or if that's not possible extend the piers beyond the rushes for boat mooring. Restore/replant rush beds that have been destroyed in the past.

Buffers and overhanging vegetation, bog fringe and floating, emergent and submersed aquatic plants should be left alone.

Implement Fish Sticks project. Contact local DNR Fisheries Biologist to investigate funding and technical assistance opportunities.

Leave fallen trees in the water.

Table 30. BON10 Aquatic Plants

Scientific Name	Common Name	Plant Type	FQI Coefficient	Relative Frequency
Schoenoplectus tabernaemontani	Softstem bulrush	Emergent	4	80
Najas flexilis	Bushy pondweed	Submergent	6	20

Table 31. BON10 Aquatic Plant Sampling Summary Statistics

SUMMARY STATISTICS	BON10
Total number of points sampled	6
Total number of sites with vegetation	5
Total number of sites shallower than maximum depth of plants	5
Frequency of occurrence at sites shallower than maximum depth of plants	100
Simpson Diversity Index	0.32
Maximum depth of plants (Feet)	8
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)	1.00
Average number of all species per site (veg. sites only)	1.00
Average number of native species per site (shallower than max depth)	1.00
Average number of native species per site (veg. sites only)	1.00
Species Richness	2
Species Richness (including visuals)	2
Floristic Quality Index	7.10

Figure 19. BON10 Aquatic Plant Diversity

Figure 20. BON10 Aquatic Plant Sample Points Containing Rushes

Table 32. Shoreline Assessment of BON10				
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			197	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			197	100
Bank Zone				
Natural Bank			197	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			197	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		

Bony Lake Critical Habitat Site BON11
Critical Habitat site BON11 was designated a Sensitive Area for its Rush Beds. It is 0.3 acres in size and is located along the Northern shore of Bony Lake.

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.

Do not remove rush beds. Place piers outside of rushes, or if that's not possible extend the piers beyond the rushes for boat mooring. Restore/replant rush beds that have been destroyed in the past.

Buffers and overhanging vegetation, bog fringe and floating, emergent and submersed aquatic plants should be left alone.

Implement Fish Sticks project. Contact local DNR Fisheries Biologist to investigate funding and technical assistance opportunities.

Table 33. BON11 Aquatic Plants

Scientific Name	Common Name	Plant Type	FQI Coefficient	Relative Frequency
Eleocharis palustris	Creeping spikerush	Emergent	6	25
Chara	Muskgrasses	Submergent	7	50
Najas flexilis	Bushy pondweed	Submergent	6	25

Table 34. BON11 Aquatic Plant Sampling Summary Statistics

SUMMARY STATISTICS	BON11
Total number of points sampled	5
Total number of sites with vegetation	3
Total number of sites shallower than maximum depth of plants	5
Frequency of occurrence at sites shallower than maximum depth of plants	60
Simpson Diversity Index	0.625
Maximum depth of plants (Feet)	3
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)	0.80
Average number of all species per site (veg. sites only)	1.33
Average number of native species per site (shallower than max depth)	0.80
Average number of native species per site (veg. sites only)	1.33
Species Richness	3
Species Richness (including visuals)	3
Floristic Quality Index	11.00

Figure 21. BON11 Aquatic Plant Diversity

Figure 22. BON11 Aquatic Plant Sample Points Containing Rushes

Table 35. Shoreline Assessment of BON11				
Feature	**Number**	**Density** (per mile)	**Shoreline Length** (feet)	**% of Shoreline**
Setback Zone				
Homes	1	53.9		
Accessory Structures	1	53.9		
Commercial Buildings	0	0		
Riparian Zone				
Homes	0	0		
Accessory Structures	2	107.8		
Commercial Buildings	0	0		
Natural vegetation			33	33.7
Shrub Layer Removed			0	0
Shrub & Ground Cover Removed			0	0
Established Lawn			66	67.3
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			98	100
Bank Zone				
Natural Bank			33	33.7
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			0	0
Pea Gravel Blanket			0	0
Established Lawn			66	67.3
Artificial Beach			0	0
Seawalls			0	0
Total Shoreline			98	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		

Bony Lake Critical Habitat Site BON12
Critical Habitat site BON12 was designated a Sensitive Area for its Bio-Diverse Submerged Aquatic Vegetation, and Emergent and Floating Leaf Vegetation. It is 3.2 acres in size and is located along the Southeast corner of Bony Lake.

Prioritize for 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.

According to the shoreline inventory, there is some riprap in BON11. The wave energy is low. Riprap should not be permitted, and alternative bank stabilization methods should be used instead if evidence of erosion develops. Remove previously placed riprap and continue shoreline restoration efforts.

Buffers and overhanging vegetation, bog fringe and floating, emergent and submersed aquatic plants should be left alone.

Do not actively manage aquatic plants unless an aquatic invasive species should establish.

Continue to implement Fish Sticks project. Contact local DNR Fisheries Biologist to investigate funding and technical assistance opportunities.

Leave fallen trees in the water.

Implement slow-no-wake ordinance or marker buoys in this bay to protect shorelines and aquatic habitat.

Table 36. BON12 Aquatic Plants

Scientific Name	Common Name	Plant Type	FQI Coefficient	Relative Frequency
Juncus palocarpus f. submersus	Brown-fruited rush	Emergent	8	1.4
Nuphar variegata	Spatterdock	Floating Leaf	6	2.8
Nymphaea odorata	White water lily	Floating Leaf	6	Visual
Potamogeton natans	Floating-leaf pondweed	Floating Leaf	5	Visual
Chara	Muskgrasses	Submergent	7	11.3
Eleocharis acicularis	Needle spikerush	Submergent	5	12.7
Elodea canadensis	Common waterweed	Submergent	3	8.5
Megalodonta beckii	Water marigold	Submergent	8	4.2
Myriophyllum sibericum	Northern water-milfoil	Submergent	7	1.4
Myriophyllum tenellum	Dwarf water-milfoil	Submergent	10	1.4
Najas flexilis	Bushy pondweed	Submergent	6	11.3
Potamogeton amplifolius	Large-leaf pondweed	Submergent	7	4.2
Potamogeton gramineus	Variable pondweed	Submergent	7	1.4
Potamogeton pusillus	Small pondweed	Submergent	7	7.0
Potamogeton robbinsii	Robbins pondweed	Submergent	8	4.2
Potamogeton zosteriformis	Flat-stem pondweed	Submergent	6	1.4
Ranunculus flammula	Creeping spearwort	Submergent	9	1.4
Sagittaria sp	Arrowhead (rosette)	Submergent	-	2.8
Vallisneria americana	Wild celery	Submergent	6	21.1
Zosterella dubia	Water star-grass	Submergent	6	1.4

Table 37. BON12 Aquatic Plant Sampling Summary Statistics	
SUMMARY STATISTICS	**BON12**
Total number of points sampled	33
Total number of sites with vegetation	29
Total number of sites shallower than maximum depth of plants	33
Frequency of occurrence at sites shallower than maximum depth of plants	87.88
Simpson Diversity Index	0.89
Maximum depth of plants (Feet)	12
Number of sites sampled using rake on Rope (R)	0
Number of sites sampled using rake on Pole (P)	33
Average number of all species per site (shallower than max depth)	2.09
Average number of all species per site (veg. sites only)	2.45
Average number of native species per site (shallower than max depth)	2.09
Average number of native species per site (veg. sites only)	2.45
Species Richness	18
Species Richness (including visuals)	20
Floristic Quality Index	28.40

Figure 23. BON12 Aquatic Plant Diversity

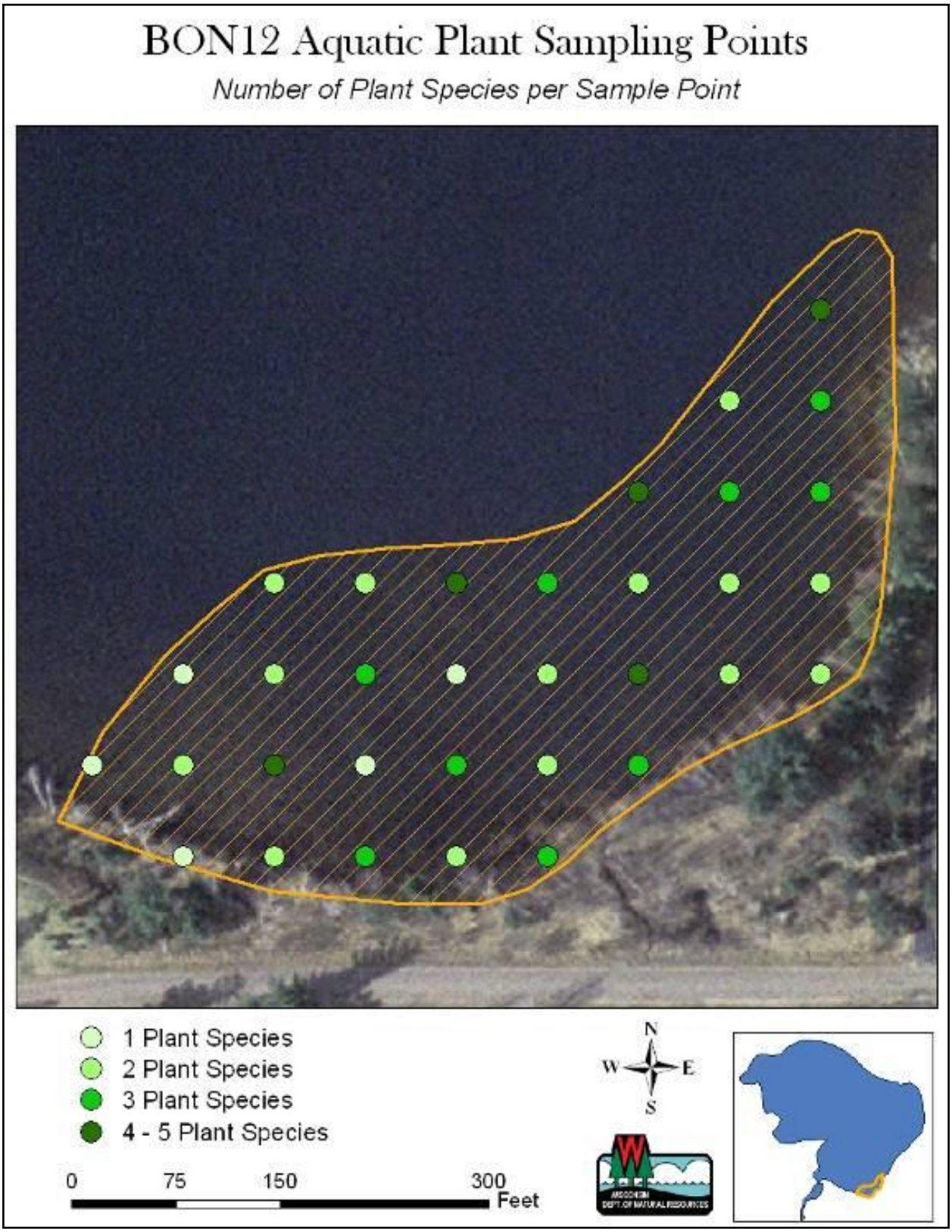


Table 38. Shoreline Assessment of BON12				
Feature	**Number**	**Density** (per mile)	**Shoreline Length** (feet)	**% of Shoreline**
Setback Zone				
Homes	2	11.1		
Accessory Structures	1	5.6		
Commercial Buildings	0	0		
Riparian Zone				
Homes	1	5.6		
Accessory Structures	0	0		
Commercial Buildings	0	0		
Natural vegetation			787	82.8
Shrub Layer Removed			0	0
Shrub & Ground Cover Removed			98	10.3
Established Lawn			66	6.9
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			951	100
Bank Zone				
Natural Bank			886	93.2
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			66	6.9
Pea Gravel Blanket			0	0
Established Lawn			0	0
Artificial Beach			0	0
Seawalls			0	0
Total Shoreline			951	100
Boat Ramp	0	0		
Stormwater Outflow	0	0		
Littoral Zone				
Piers	2	11.1		
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		

Bony Lake Critical Habitat Site BON13
Critical Habitat site BON13 was designated a Sensitive Area for its Emergent and Floating Leaf Vegetation, Submerged Aquatic Vegetation Important to Fish and Wildlife Habitat, Woody Habitat, Navigational Thoroughfare, and Extensive Riparian Wetland. It is 3.5 acres in size and is located along Bony Creek between Bony Lake and Highway 27.

Prioritize for 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 should not be allowed.

Buffers and overhanging vegetation, bog fringe and floating, emergent and submersed aquatic plants should be left alone.

Do not actively manage aquatic plants unless an aquatic invasive species should establish.

Enforce current slow-no-wake ordinance.

Implement Fish Sticks project. Contact local DNR Fisheries Biologist to investigate funding and technical assistance opportunities.

Leave fallen trees in the water.

Table 39. BON13 Aquatic Plants

Scientific Name	Common Name	Plant Type	FQI Coefficient	Relative Frequency
Carex sp	Sedges	Emergent	-	2.0
Dulichium arundinaceum	Three-way sedge	Emergent	9	Visual
Eleocharis palustris	Creeping spikerush	Emergent	6	Visual
Juncus palocarpus f. submersus	Brown-fruited rush	Emergent	8	Visual
Schoenoplectus acutus	Hardstem bulrush	Emergent	5	6.1
Schoenoplectus tabernaemontani	Softstem bulrush	Emergent	4	2.0
Typha sp	Cattail	Emergent	1	Visual
Nuphar variegata	Spatterdock	Floating Leaf	6	2.0
Nymphaea odorata	White water lily	Floating Leaf	6	20.4
Najas flexilis	Bushy pondweed	Submergent	6	12.2
Potamogeton amplifolius	Large-leaf pondweed	Submergent	7	10.2
Potamogeton richardsonii	Clasping-leaf pondweed	Submergent	5	Visual
Potamogeton robbinsii	Robbins pondweed	Submergent	8	4.1
Potamogeton zosteriformis	Flat-stem pondweed	Submergent	6	Visual
Sagittaria sp	Arrowhead (rosette)	Submergent	-	12.2
Vallisneria americana	Wild celery	Submergent	6	24.5
Zosterella dubia	Water star-grass	Submergent	6	4.1

Table 40. BON13 Aquatic Plant Sampling Summary Statistics	
SUMMARY STATISTICS	**BON13**
Total number of points sampled	24
Total number of sites with vegetation	18
Total number of sites shallower than maximum depth of plants	24
Frequency of occurrence at sites shallower than maximum depth of plants	75
Simpson Diversity Index	0.85
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)	24
Average number of all species per site (shallower than max depth)	2.04
Average number of all species per site (veg. sites only)	2.72
Average number of native species per site (shallower than max depth)	2.04
Average number of native species per site (veg. sites only)	2.72
Species Richness	11
Species Richness (including visuals)	17
Floristic Quality Index	23.00

Figure 24. BON13 Aquatic Plant Diversity

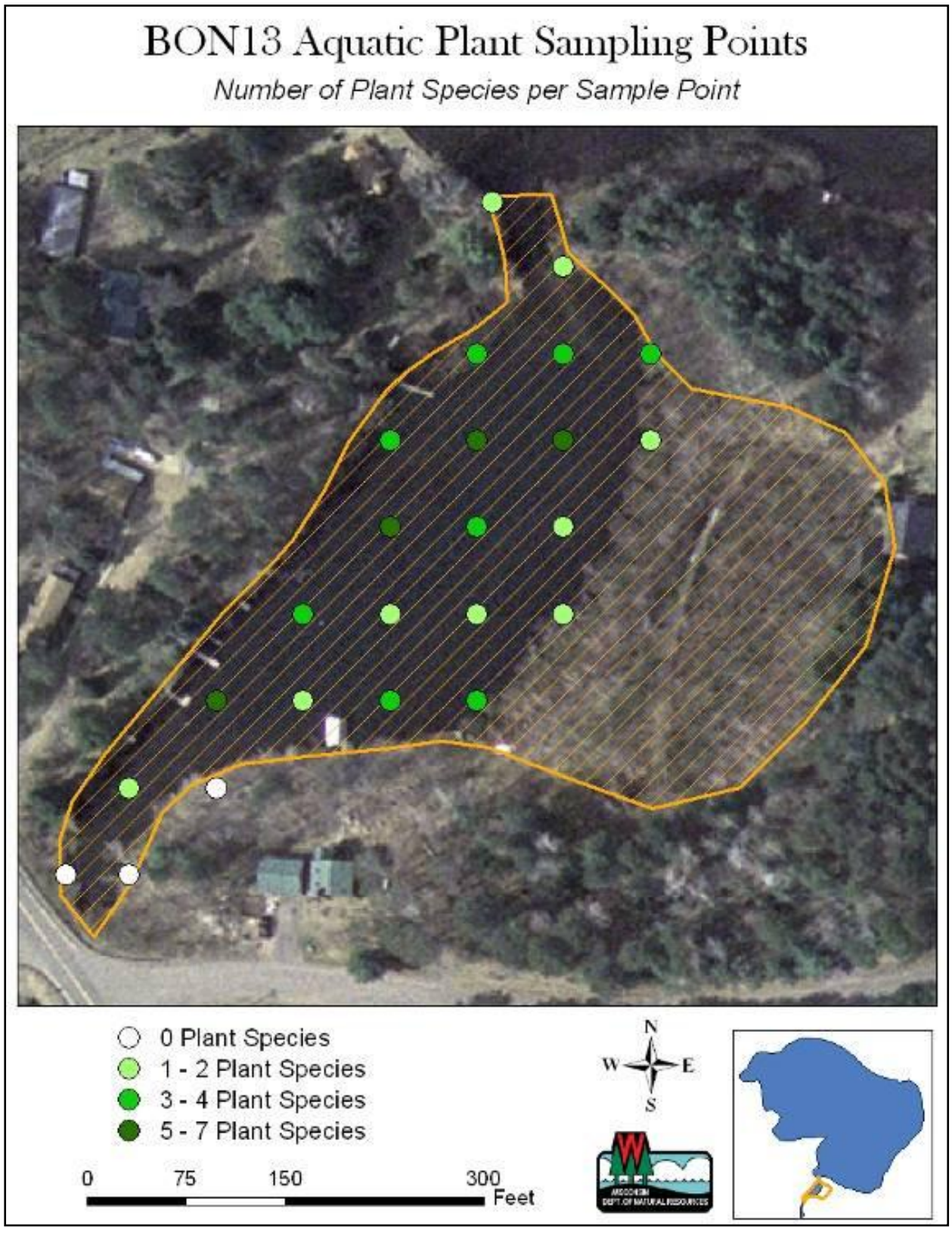


Figure 25. BON13 Woody Habitat Transects Map

Table 41. BON13 East Woody Habitat Sampling Transects						
Transect	**# Big Logs**	**# Small Logs**	**Transect Length (feet)**	**Transect Length (m)**	**Big Logs per Mile**	**Small Logs per Mile**
BON13 East-1	1	0	65.6	20	80.5	0.0
BON13 East-2	2	2	65.6	20	161.0	161.0
BON13 East-3	0	0	65.6	20	0.0	0.0
BON13 East-4	0	0	65.6	20	0.0	0.0
BON13 East Total	3	2	262.4	80	60.4	40.2

Table 42. BON13West Woody Habitat Sampling Transects						
Transect	**# Big Logs**	**# Small Logs**	**Transect Length (feet)**	**Transect Length (m)**	**Big Logs per Mile**	**Small Logs per Mile**
BON13 West-1	1	0	65.6	20	80.5	0.0
BON13 West-2	1	11	65.6	20	80.5	885.4
BON13 West-3	1	0	65.6	20	80.5	0.0
BON13 West-4	0	0	65.6	20	0.0	0.0
BON13 West Total	3	11	262.4	80	60.4	221.3

Table 43. Shoreline Assessment of BON13				
Feature	**Number**	**Density** (per mile)	**Shoreline Length** (feet)	**% of Shoreline**
Setback Zone				
Homes	3	11.0		
Accessory Structures	4	14.6		
Commercial Buildings	0	0		
Riparian Zone				
Homes	0	0		
Accessory Structures	1	3.7		
Commercial Buildings	0	0		
Natural vegetation			1263	87.5
Shrub Layer Removed			0	0
Shrub & Ground Cover Removed			0	0
Established Lawn			180	12.5
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			1443	100
Bank Zone				
Natural Bank			1427	98.9
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			0	0
Pea Gravel Blanket			0	0
Established Lawn			16	1.1
Artificial Beach			0	0
Seawalls			0	0
Total Shoreline			1443	100
Boat Ramp	0	0		
Stormwater Outflow	0	0		
Littoral Zone				
Piers	7	25.6		
Boat Lifts	2	7.3		
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, Bony Lake, Bayfield County

Critical Habitat Designations occurred on 8/28/2007 by Scott Toshner, Pamela Toshner, and Alex Smith.

Shoreline management inventories occurred on 6/9/2008 by Alex Smith, Debbie Konkel, and Neil Trombly.

Aquatic plant sampling occurred on 8/11/2008 and 8/18/2008 by Alex Smith and Paul Riordan.

Woody habitat sampling occurred on 6/9/2008 by Alex Smith, Debbie Konkel, and Neil Trombly.

Spawning substrate sampling occurred on 6/9/2008 by Alex Smith, Debbie Konkel, and Neil Trombly.

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.