

Rare and Invasive Plant Surveys of Great Lakes Islands in Huron National Wildlife Refuge



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Gene Mensch of the Keweenaw Bay Indian Community Natural Resources Department, an exemplary boat captain. *Background: MNFI botanist Scott Warner (right) and MNFI ecologist Josh Cohen (left).*

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Introduction

Great Lakes islands provide critical habitat for native biodiversity and support rare and endemic natural communities. A diverse assemblage of more than 32,000 islands occurs across the Great Lakes plus the connecting channels (Henson et al. 2010). The United States Fish and Wildlife Service (USFWS) National Wildlife Refuge (NWR) system includes thirty-six islands across the Great Lakes. These islands are managed to maintain the existing natural communities to support the needs of priority and migratory bird species, threatened and endangered species, and resident wildlife and provide valuable stopover habitat for birds and pollinators migrating across the Great Lakes.

Many of the islands within the Great Lakes that are part of the NWR system are remote, difficult to access, and challenging to survey. Despite limited access, these islands still face a variety of anthropogenic pressures including the establishment and spread of invasive plant and animal species and the impacts of climate change. Unfortunately, most biodiversity data are limited or outdated, which hinders effective management and decision-making.

To address this critical information gap, the USFWS contracted Michigan Natural Features Inventory (MNFI) to conduct botanical surveys, including rare and invasive plant species mapping and floristic surveys of natural communities; and ecological surveys, including qualitative natural community surveys and quantitative forest sampling. In 2021, botanical and ecological surveys were conducted in Michigan Islands NWR in Lake Huron (Bassett et al. 2022a, Cohen et al. 2022a) and Gravel Island and Green Bay NWRs in Lake Michigan (Bassett et al. 2022b, Cohen et al. 2022b). In 2022, botanical and ecological surveys were conducted in Huron NWR in Lake Superior (*this report*, Cohen et al. 2023a), Harbor Island NWR in Lake Huron (Bassett et al. 2023a, Cohen et al. 2023b), Michigan Islands NWR in Lake Michigan (Bassett et al. 2023b, Cohen et al. 2023c), and the West Sister Island NWR in Lake Erie (Bassett et al. 2023c, Cohen et al. 2023d). Botanical surveys were also conducted in 2022 in the Detroit River International Wildlife Refuge (Bassett et al. 2023d). This report focuses on the botanical surveys conducted in 2022 in the Huron Islands in the Huron National Wildlife Refuge of the Seney National Wildlife Refuge Complex.



Granite lakeshore cliff on East Huron Island, dominated by the orange lichen, *Xanthera elegans*.

There were 442 rare vascular plant species in Michigan that were tracked in the Michigan Natural Heritage Database at the time of these surveys (MNFI 2023). This included species listed at the state- or federal-levels as threatened and endangered in Michigan that are legally protected. Species of special concern are also tracked and include species that are considered at risk of declining but are not legally protected. Managing populations of these species and their habitat is a high conservation priority. These species are frequently associated with high-quality ecosystems, or natural communities, that further warrant prioritized management.

A critical goal of this project was to collect updated and new data for rare plant species occurrences to provide natural resource managers and planners with accurate, detailed, standardized baseline information on the viability

and extent of rare plant species populations and the condition of their habitat on these islands. An equally critical goal of this project was to collect updated and new data for invasive plant species that potentially threaten the viability of rare plant species and high-quality natural communities on these islands. This baseline information facilitates site-level decisions about biodiversity stewardship; prioritizing protection, management and restoration decisions; monitoring the success of management and restoration; and informing landscape-level biodiversity planning efforts. Data on the location and extent of rare plant species and natural communities enables invasive plant species management to better protect these targets of high conservation value. This report summarizes the findings of MNFI’s rare and invasive plant surveys on the Huron Islands in Huron National Wildlife Refuge of the Seney National Wildlife Refuge Complex.

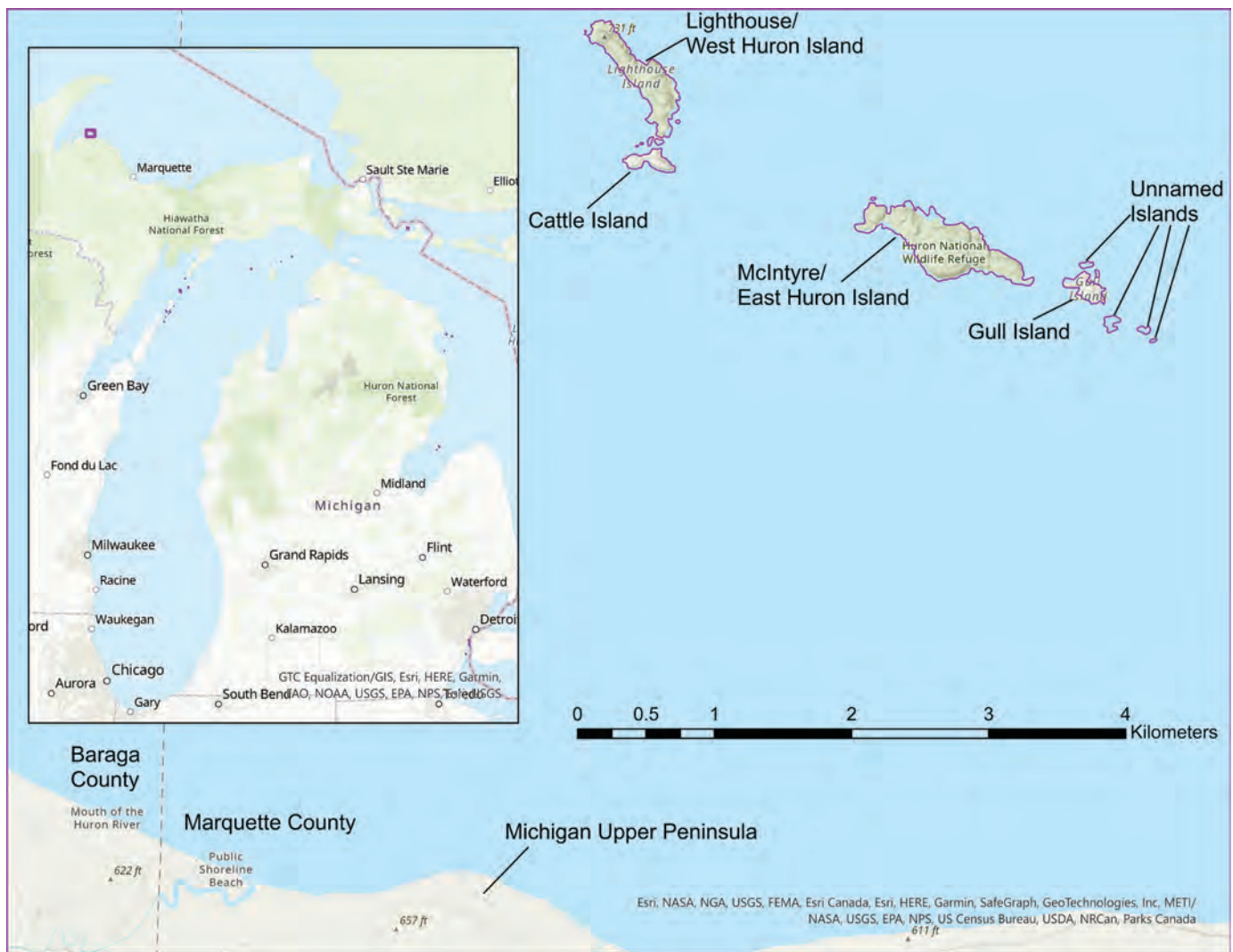


Figure 1. The Huron Islands in Lake Superior.

Methods

Study Area

The Huron Islands are a group of twelve islands that occur in Lake Superior and comprise the Huron National Wildlife Refuge (Figure 1). These islands are composed of granitic outcroppings of Precambrian origin and are located about three miles north of the mouth of the Huron River in northwestern Marquette County. The islands are situated north of the Huron Mountain Club, east of Point Abbaye, and south and southwest of the Keweenaw Peninsula. The lakebed surrounding the Huron Islands is part of the Huron Islands Unit of the Marquette Underwater Preserve, providing strict protections for nearby shipwrecks and their artifacts. The Huron National Wildlife Refuge was established in 1905 as a refuge and breeding ground for migratory birds and other wildlife (Butcher 2008). Public access to the Huron Islands is prohibited, with the exception of West Huron Island (Lighthouse Island) which is open for day use only.

West Huron Island (Lighthouse Island)

West Huron Island or Lighthouse Island is approximately 46 acres and is the largest island in the western cluster of islands. The interior of the island is characterized by intergrading boreal forest and granite bedrock glade that occur on rugged topography. The shoreline of West Huron Island supports granite bedrock lakeshore and Michigan's second largest documented occurrence of granite lakeshore cliff (Cohen et al 2023a, MNFI 2023).

The Huron Islands are located along an important shipping channel for vessels entering Huron Bay, Keweenaw Bay, or Portage Entry. Often shrouded in fog, they constituted a navigational hazard during the copper and iron ore boom of the mid-nineteenth century and caused numerous shipwrecks. Because of the 1860 wreck of the *Arctic* (see Cattle Island below), pressure to build a lighthouse on the Huron Islands intensified. A lighthouse was constructed in 1868 on the highest point of West Huron Island along with a privy and an oil house. The lighthouse was staffed starting in 1868, electrified in 1930, and automated in 1972. While the lighthouse was occupied, selective logging for firewood and building materials likely occurred. A boat dock was constructed at the southern end of the island and the dock and lighthouse were connected by a tramway (currently a pathway). Granite from the island was quarried to supplement the construction of the lighthouse and associated buildings, and the construction of a lighthouse of the nearby Granite Island Lighthouse. Bridges spanning chasms along this tramway were constructed with paper birch (*Betula papyrifera*) harvested from the island. In 1876 and 1881 two fog signal buildings were constructed a half-mile away from the lighthouse along the northern end of the island and a pathway between the lighthouse and the fog signal buildings was constructed (U.S. Coast Guard 2019). The light still functions as an active aid to navigation.



Sedge (*Carex echinata*) and bulrush (*Trichophorum cespitosum*) on edge of splash pool in granite lakeshore cliff on West Huron Island.

Cattle Island

Cattle Island is approximately nine acres in size and is located in the western cluster of the Huron Islands, south of West Huron Island. The interior of Cattle Island is characterized by granite bedrock glade that occurs on rugged topography. The shoreline of Cattle Island supports granite bedrock lakeshore and Michigan's third largest granite lakeshore cliff. Cattle Island occurs near four small unnamed islands, the largest about 0.6 acres (0.2 ha). The eastern most island supports granite lakeshore cliff and the remaining three islands support granite bedrock lakeshore (Cohen et al 2023a, MNFI 2023).

In 1860 the side-wheel steamer *Arctic*, which was carrying passengers and freight including cattle from Marquette to Portage Entry, ran aground on one of the western Huron Islands and began to sink. All the passengers and cattle made it safely ashore and were marooned for two days on what is now known as Cattle Island (The New York Times 1860).

East Huron Island (McIntyre Island)

East Huron Island or McIntyre Island is approximately 73 acres and is the largest island in the eastern cluster of islands. The interior of the island is characterized by intergrading granite bedrock glade and boreal forest that occur on rugged topography and the shoreline supports granite lakeshore cliff and granite bedrock lakeshore. The shoreline of East Huron Island supports Michigan's largest documented occurrence of granite lakeshore cliff (Cohen et al 2023a, MNFI 2023).

Gull Island and Four Unnamed Islands

Gull Island is approximately nine acres in size and is located in the eastern cluster of islands, approximately 0.15 miles east of East Huron Island. Gull Island is composed of three distinct and connected granitic knobs with each knob supporting granite bedrock glade. The knobs are separated by steep ravines that support early-successional boreal forest with localized wetland pockets. The shoreline of Gull Island supports granite lakeshore cliff and granite bedrock lakeshore. Gull Island occurs near four unnamed islands. The northernmost island supports granite lakeshore cliff and the remaining three islands are unvegetated granite bedrock lakeshore (Cohen et al 2023a, MNFI 2023). This complex of granitic islands provides critical nesting habitat for colonial nesting waterbirds, especially herring gulls (*Larus argentatus*) (USFWS 1978, Cuthbert and Wires 2011).

Prioritization and survey targets

Prior to conducting rare and invasive plant surveys, we reviewed previous data and generated target species lists to focus survey effort on known locations and potential habitat

for these species. Invasive species targets are prioritized by USFWS for the Great Lakes region (Table 1). We prioritized survey effort by reviewing natural community delineations and evaluating the conservation status (G- and S-ranks; Appendix 1.1) of each natural community (Table 2; Cohen et al 2023a). Rare plant survey targets were species with previously documented element occurrences (EOs) in the Michigan Natural Heritage Database from the Huron Islands and from adjacent portions of the mainland supporting similar natural communities (e.g., Huron Mountains, Point Abbaye; Table 3; MNFI 2023). An EO is an area of land or water where a significant element of biodiversity (rare species and natural communities) currently occurs or historically occurred. Each EO may be comprised of multiple observations of a species or community through space or time, and is given a unique numeric identifier, an EO ID.

Field surveys

We conducted meander surveys on each island, using the following approach to maximize the probability of encountering targets and incidental observations of rare and invasive plant species. This approach was repeated across all the NWRs surveyed by MNFI in 2021 to 2022 (Basset et al. 2022a, 2022b, 2023a, 2023b, 2023c, 2023d). We surveyed the entire perimeter of each island, as a potential entry point for invasive species and due to the high probability of encountering rare species in the unique

Table 1. USFWS Great Lakes Region target invasive species.

Scientific Name	Common Name
<i>Alliaria petiolata</i>	Garlic mustard
<i>Alnus glutinosa</i>	Black alder
<i>Berberis thunbergii</i>	Japanese barberry
<i>Butomus umbellatus</i>	Flowering rush
<i>Celastrus orbiculatus</i>	Oriental bittersweet
<i>Centaurea stoebe</i>	Spotted knapweed
<i>Cirsium arvense</i>	Canada thistle
<i>Dioscorea polystachya</i>	Chinese yam
<i>Dipsacus fullonum</i>	Wild teasel
<i>Dipsacus laciniatus</i>	Cut-leaf teasel
<i>Eichhornia crassipes</i>	Water hyacinth
<i>Elaeagnus umbellata</i>	Autumn olive
<i>Fallopia japonica</i>	Japanese knotweed
<i>Fallopia sachalinensis</i>	Giant knotweed
<i>Frangula alnus</i> (syn. <i>Rhamnus frangula</i>)	Glossy buckthorn
<i>Hesperis matronalis</i>	Dame's rocket
<i>Hydrocharis morsus-ranae</i>	European frog-bit
<i>Iris pseudacorus</i>	Yellow flag iris
<i>Ligustrum vulgare</i>	Common privet
<i>Lonicera</i> spp.	Bush honeysuckle
<i>Ludwigia peploides</i>	Floating primrose willow
<i>Myriophyllum aquaticum</i>	Parrot-feather milfoil
<i>Phalaris arundinacea</i>	Reed canary grass
<i>Phragmites australis</i> subsp. <i>australis</i>	Invasive reed
<i>Pistia stratiotes</i>	Water lettuce
<i>Populus alba</i>	White poplar
<i>Rhamnus cathartica</i>	Common buckthorn
<i>Robinia pseudoacacia</i>	Black locust
<i>Rosa multiflora</i>	Multiflora rose
<i>Vincetoxicum nigrum</i> (syn. <i>Cynanchum louiseae</i>)	Black swallow-wort
<i>Vincetoxicum rossicum</i> (syn. <i>Cynanchum rossicum</i>)	Dog-strangling vine

Table 2. Natural community types targeted for surveys on the Huron Islands. Natural community delineations are based on Michigan Natural Features Inventory Classification System, were determined remotely, and may differ from natural communities observed during field survey (Cohen et al. 2020). Global and State Rank (G- and S-Rank) values are based on NatureServe (2002) (see Appendix 1).

Natural community	West Huron	East Huron	Gull	Cattle	Unnamed
Dry northern forest	G3?/S3		-	-	-
Granite bedrock glade		GSG5/S2			-
Granite bedrock lakeshore		G4G5/S2			
Granite lakeshore cliff	GU/S1		-	GU/S1	-

Table 3. Rare plant species targeted and observed during surveys. Species observed during 2022 surveys in **bold**. *EOID 2766 observed on West Huron and 26478 on East Huron Island. Species with numerical EOID observed on the Huron Islands. Species with EOID = NA observed from multiple observations on adjacent mainland in Marquette or Baraga Counties (Point Abbaye, Huron Mts) with suitable habitat on islands. See Appendix 1 for G/S, EO Rank definitions.

Scientific Name	Common Name	State Status	G/S Rank	EOID	EO Rank	Year Last Observed	Natural Communities
<i>Collinsia parviflora</i>	Small blue-eyed Mary	T	G5/S2	NA	NA	2005	granite bedrock glade, granite lakeshore cliff
<i>Dryopteris filix-mas</i>	Male fern	SC	G5/S3	2766*	B	2022	boreal forest, granite bedrock glade, granite bedrock lakeshore, granite lakeshore cliff
<i>Dryopteris filix-mas</i>	Male fern	SC	G5/S3	26478*	B	2022	boreal forest, granite bedrock glade, granite bedrock lakeshore, granite lakeshore cliff
<i>Poa interior</i>	Inland bluegrass	SC	G5T5/SNR	NA	NA	1959	granite bedrock glade, granite lakeshore cliff
<i>Pterospora andromodea</i>	Pine-drops	T	G5/S2	NA	NA	2008	boreal forest, granite bedrock glade
<i>Ribes oxycanthoides</i>	Northern gooseberry	SC	G5/S3	NA	NA	1972	granite bedrock glade, granite bedrock lakeshore, granite lakeshore cliff
<i>Trisetum spicatum</i>	Downy oat-grass	SC	G5/S2S3	NA	NA	1996	granite bedrock lakeshore, granite lakeshore cliff

primary granite communities. We conducted meanders through the interior of each island, crossing through each natural community as delineated prior to surveys (USFWS 2021, Cohen et al. 2023a). The survey route adequately covered the natural community and micro-habitats or areas of non-homogenous habitat within each community type. These were noted in either aerial imagery and other GPS data prior to the survey, or while meandering during the survey. We conducted floristic surveys during the course of meanders. On large islands (> 25 acres), we generated a species list for each natural community on each island.

If a natural community was represented by multiple patches or polygons on an island, we pooled species lists across that natural community type. On small islands (≤ 25 acres), we generated a single species list for the whole island. Botanical surveys were conducted on the Huron Islands primarily from August 15 through August 19, with additional surveys on East Huron conducted in conjunction with natural community surveys during the week of August 22 through August 26, 2022. Prior to this survey effort, the Huron Islands had never been surveyed by MNFI staff.

We collected data on rare and invasive plant species using applications on a Samsung tablet, augmented by hand-written field notes. For rare species we used a custom Survey123 form, “MNFI Rare Species App Form” (see Appendix E in USFWS 2021). In this form, we collected data on population parameters including an estimate of abundance and proportion of fertile plants; habitat, including natural community designation and dominant species; any notable microhabitat features; and threats such as invasive species. Refuge staff have access to rare species data through the USFWS subscription to the Michigan Natural Heritage Database. Floristic surveys were completed by recording species lists in a field notebook. Nomenclature follows Voss and Reznicek (2012). We provide a crosswalk of Ojibwe names to scientific and common names for all species observed in the Huron Islands that are listed in “Plants used by the Great Lakes Ojibwa” (Meeker et al. 1993; Appendix 3.1). These culturally significant plants are also indexed to natural community type (Appendix 3.2).

For target and select non-target invasive plant species in high-quality natural communities, and for select invasive plant species occurrences outside high-quality natural communities, we mapped invasive plant species occurrences as a point, line, or polygon using the ArcCollector Web Map “R3 Invasive and Weed Observations layer” managed by the USFWS (see Appendix F in USFWS 2021). In this form, we estimated the percent of mapped area occupied by each invasive plant species, and observer data (e.g., name of observer, observation date). We also noted the presence and abundance of target and select non-target invasive plant species occurring in degraded areas in field notebooks. Refuge staff have access to invasive plant species data through the USFWS R3 portal on ArcGIS Online.

Ranking and assessment

We assessed the viability of each rare plant EO using standard Natural Heritage Methodology (NatureServe 2002). According to this methodology, each EO is assigned a rank from A (excellent estimated viability/ecological integrity) to D (poor estimated viability/ecological integrity) when sufficient data is available to assess a rank. When data is not available and for instances where an EO is not located, additional ranks include E (Verified extant), F (Failed to find), H (Historical), and X (Extirpated). See Appendix 1.2 for EO Rank definitions.

Finally, we conducted Floristic Quality Assessments (FQAs) for each natural community on each island (Reznicek et al. 2014). The FQA utilizes plant species composition to derive the Floristic Quality Index (FQI), a quantitative metric of habitat quality that can be used

as a relatively objective comparison among natural community occurrences of the same type. Drawing upon expert consensus among botanists familiar with the flora of Michigan, each vascular plant species native to Michigan has been assigned an a priori coefficient of conservatism (C-value) that ranges from 0 to 10 on a scale of increasing conservatism or fidelity to pre-European colonization habitats (Reznicek et al. 2014). Plant species with a C-value of 7 to 10 are considered highly conservative (Herman et al. 2001). A C-value of 4 to 6 indicates moderate conservatism and a C-value of 1 to 3 indicates low or no conservatism (e.g., ruderal species). Non-native species were given a C-value of 0 for these calculations. We calculated FQI for each natural community occurrence as

$$FQI = \bar{C} \times \sqrt{n}$$

where \bar{C} = mean C-value and n = species richness. Sites with an FQI of 35 or greater are generally considered to floristically important from a statewide perspective (Herman et al. 2001).



Rusty woodsia (*Woodsia ilvensis*) in granite lakeshore cliff on West Huron Island.

Results and Discussion

Across the Huron Islands in the Huron NWR, we documented two rare plant EOs (Table 3), conducted FQAs in 20 natural communities (Table 4), and documented occurrences of seven invasive plant species (Table 5).

West Huron Island

We recorded 185 plant species in five natural communities and one anthropogenic clearing on West Huron Island, with a mean coefficient of conservatism of 4.1 (Table 4, Appendix 2.1). Four high-quality natural community element occurrences were surveyed on West Huron Island including boreal forest, granite bedrock glade, granite bedrock lakeshore, and granite lakeshore cliff (Cohen et al. 2023a; Appendix 2.2-2.5). Granite bedrock glade and granite lakeshore cliff were the most species-rich natural communities, with 110 and 96 plant species, respectively. We documented 84 plant species in boreal forest and 67 species in granite bedrock lakeshore.

Additionally, we recorded plant species in one additional natural community in the interior of the island that was too small to qualify as an EO, granite cliff (Appendix 2.6). We also recorded plant species in portions of granite bedrock glade around the lighthouse that were too modified by anthropogenic activities to include in the EO (Appendix 2.7). The small granite cliff exposure, which was nested within the boreal forest, supported 24 species. The area surrounding the lighthouse supported 51 species. Only 63% of species in this disturbed glade were native. In comparison, the natural communities on West Huron Island supported at least 90% native species.



Early saxifrage (*Micranthes virginensis*) in granite lakeshore cliff on Cattle Island.

We updated one EO of male fern (*Dryopteris filix-mas*; Special Concern) on West Huron Island (Table 3, Figure 2).

Some individuals show evidence of hybridization with marginal shield fern (*Dryopteris marginalis*).

We mapped one target invasive species on West Huron Island: spotted knapweed (*Centaurea stoebe*) (Table 5, Figure 3). We considered it a potential threat to native plant diversity where it occurs in granite bedrock lakeshore, and for its potential to spread throughout the island. It is occasional near the south dock and a rapid response effort could be successful. One other invasive species that is a potential cause for concern is an invasive bluegrass species (*Poa nemoralis*). This species can occasionally form large stands (Reznicek et al. 2011), and its status should be monitored. It is currently occasional on the island, concentrated in granite bedrock glade and granite lakeshore cliff.

We observed 23 other non-native species on the island, which we did not consider to be management priorities so did not map. These included live-forever (*Hylotelephium telephium*), mouse-eared chickweed (*Cerastium fontanum*), roving bellflower (*Campanula rapunculoides*), and burdock (*Arctium minus*) (Appendix 2.1).

Cattle Island

We recorded 155 plant species in four natural communities on Cattle Island, with a mean coefficient of conservatism of 4.2 (Table 4, Appendix 2.8). The flora of each community, and the island as a whole, were comprised of at least 90% native species. We did not document any rare plant species on Cattle Island. Three high-quality natural community element occurrences were surveyed on Cattle Island including granite bedrock glade, granite bedrock lakeshore, and granite lakeshore cliff (Cohen et al. 2023a; Appendix 2.9-2.11). Species recorded on three small unnamed islands between Cattle and West Huron Islands were included with the granite bedrock glade or granite bedrock lakeshore communities for Cattle Island. Granite bedrock glade was the most species-rich natural communities with 104 species. We documented 81 species in granite lakeshore cliff and 57 species in granite bedrock lakeshore. Additionally, we recorded a plant species list for a boreal forest natural community in the interior of the island that was too small to qualify as an EO (Appendix 2.12). Boreal forest was less diverse with 34 documented species, in part due to limited spatial extent.

Figure 2. Male fern (*Dryopteris filix-mas*, Special Concern) was observed on both West Huron and West Huron Islands during this study.

Table 4. Floristic quality summaries of natural communities and other habitats on the Huron Islands. SR = Species richness (% native); C = mean coefficient of conservatism; FQI = Floristic quality index.

		Boreal Forest	Granite Bedrock Glade	Granite Bedrock Lakeshore	Granite Lakeshore Cliff	Granite Cliff	Disturbed Habitat	Whole Island
West Huron	SR	84 (95%)	110 (92%)	67 (93%)	96 (94%)	24 (92%)	51 (63%)	185 (87%)
	C	4.5	4.5	4.4	4.7	4.5	2.5	4.1
	FQI	41.2	47.2	36	46.1	22	17.9	
Cattle	SR	34 (94%)	104 (92%)	57 (97%)	81 (91%)			155 (92%)
	C	4.2	4.2	4	4.2			4.2
	FQI	24.5	42.8	30.2	37.8			
East Huron	SR	57 (100%)	73 (92%)	145 (91%)	75 (96%)	29 (100%)		182 (93%)
	C	4.8	4.5	4.2	5.2	5		4.4
	FQI	36.2	38.4	50.6	45	26.9		
Gull	SR		59 (90%)	74 (82%)	31 (90%)		17 (100%)	105 (85%)
	C		3.5	3.5	4		3.5	3.5
	FQI		27.7	30.1	22.3		14.4	35.9
Unnamed Islands	SR							28 (86%)
	C							3.2
	FQI							16.9



Male fern (*Dryopteris filix-mas*, Special Concern) on margin of boreal forest and granite bedrock glade on West Huron Island. *Above*: Botanist Scott Warner collecting population and habitat data. *Below left*: typical frond showing short petiole. *Below right*: Marginal sori suggesting hybridization with marginal shield-fern (*Dryopteris marginalis*).





Figure 3. Invasive plant species mapped on West Huron and Cattle Islands during this study.

Table 5. Invasive plant species documented on the Huron Islands. Species in **bold** are USFWS Great Lakes Region target invasive species.

Scientific Name	Common Name	West Huron	Cattle	East Huron	Gull	Unnamed
<i>Centaurea stoebe</i>	Spotted knapweed	rare				
<i>Cirsium arvense</i>	Canada thistle		rare	rare		
<i>Cirsium palustre</i>	European swamp thistle			rare		
<i>Phalaris arundinacea</i>	Reed canary grass		rare			
<i>Poa nemoralis</i>	Bluegrass	occasional	occasional			
<i>Rosa rubiginosa</i>	Sweetbrier					rare
<i>Typha</i> spp.	Invasive cat-tail			rare		



Figure 4. Invasive plant species mapped on East Huron Island during this study.

We mapped two invasive species on Cattle Island from the target invasive species list, reed canary grass (*Phalaris arundinacea*) and Canada thistle (*Cirsium arvense*) (Table 5, Figure 3). We considered reed canary grass to be a significant threat to the island's four natural communities. Canada thistle is not as aggressive, but it was detected in a single small patch. If treated promptly, we believe it can be eradicated from the island. As on West Huron Island, the invasive bluegrass *Poa nemoralis* was occasional, and its status should be monitored.

We observed ten other non-native species on the island, which we did not consider to be management priorities so did not map. These include Kentucky bluegrass (*Poa pratensis*), pearlwort (*Sagina procumbens*), common dandelion (*Taraxacum officinale*), common St. John's wort (*Hypericum perforatum*), and king devil (*Hieracium caespitosum*) (Appendix 2.8).

East Huron Island

We recorded 182 plant species in five natural communities on East Huron Island, with a mean coefficient of conservatism of 4.4 (Table 4, Appendix 2.13). The flora of each natural community, and the island as a whole, were comprised of at least 90% native species. Four high-quality natural community element occurrences were surveyed on East Huron Island including boreal forest, granite bedrock glade, granite bedrock lakeshore, and granite lakeshore cliff (Cohen et al. 2023a; Appendix 2.14-2.17). Granite bedrock lakeshore was the most species-rich natural community with 145 plant species. We documented 75 and 73 plant species in granite lakeshore cliff and granite bedrock glade, respectively, and 57 species in boreal forest. Additionally, we recorded plant species in one additional natural community that was nested within boreal forest and too small to qualify as an EO, granite cliff (Appendix 2.18). The granite cliff supported 29 species.

We documented one EO of male fern (*Dryopteris filix-mas*; Special Concern) on East Huron Island (Table 3, Figure 2). Male fern is associated with boreal forest and granite bedrock glade [REDACTED].

We mapped one target invasive species on East Huron Island, Canada thistle, as well as two non-target species: invasive cat-tail (*Typha angustifolia* or *T. × glauca*) and marsh thistle (*C. palustre*) (Table 5, Figure 4). The thistles are not generally as aggressive as cat-tail, but populations of all three species are currently small enough that elimination or eradication is a reasonable management strategy. All three patches occurred in granite bedrock lakeshore in a wet, low spot between two major knobs on its west side (Figure 4).

We observed ten other non-native species on the island, which we did not consider to be management priorities and so did not map. These include common buttercup (*Ranunculus acris*), annual bluegrass (*Poa annua*), ox-eye daisy (*Leucanthemum vulgare*), hemp-nettle (*Galeopsis tetrahit*), and dog mustard (*Erucastrum gallicum*) (Appendix 2.13).

Gull Island

We recorded 105 plant species in three natural communities and one disturbed forest on Gull Island, with a mean coefficient of conservatism of 3.5 (Table 4, Appendix 2.19). We did not document any rare plant species on Gull Island. Three high-quality natural community element occurrences were surveyed on Gull Island including granite bedrock glade, granite bedrock lakeshore, and granite lakeshore cliff (Cohen et al. 2023a; Appendix 2.20-2.22). We recorded a plant species list for a formerly forested community that was too disturbed (presumably by windfall) to include in an EO (Appendix 2.23). Granite bedrock lakeshore was the most species-rich natural communities with 74 species. We documented 59 species in granite bedrock glade, 31 species in granite lakeshore cliff, and 17 species in the disturbed forest. Only 82% of species in granite bedrock lakeshore were native compared to greater than 90% of species in granite bedrock glade, granite lakeshore cliff, and disturbed forest. The non-native component in granite bedrock lakeshore may be linked to the high density of gulls and other waterbirds utilizing the lakeshore community.



Northern wood-sorrel (*Oxalis acetosella*) (foreground) and shining clubmoss (*Huperzia lucidula*) (interspersed) at the base of granite cliff on East Huron Island.



Left: Pink corydalis (*Capnoides sempervirens*). Right: Canopy red pine (*Pinus resinosa*). Both photos taken in granite bedrock glade on East Huron Island, by Elizabeth A. Haber.



Granite bedrock lakeshore on Gull Island. Photo by Joshua G. Cohen.

We did not map any target or non-target invasive species on Gull Island (Table 5). We observed 16 non-native species on the island which we did not consider to be management priorities and so did not map. These include common mullein (*Verbascum thapsus*), rough-fruited cinquefoil (*Potentilla recta*), lady's thumb (*Persicaria maculosa*), quack grass (*Elymus repens*), and yellow rocket (*Barbarea vulgaris*) (Appendix 2.19).

Unnamed Islands

We recorded 28 plant species across five unnamed islands, with a mean coefficient of conservatism of 3.2 (Table 4, Appendix 2.24). We did not document any rare plant species on the unnamed islands. While USFWS (2021) recognizes four unnamed islands east of Gull Island, one island was separated by a submerged valley into

two blocks. The species richness of individual islands ranged from 4 to 24, and 86% of plant species across the five islands were native (Appendix 2.24). Because of the island's small sizes (< 25 acres), we did not differentiate separate species lists between granite bedrock glade, granite lakeshore cliff, and granite bedrock lakeshore communities within the same island. The associated natural community report includes these islands in the latter community with Gull Island (Cohen et al. 2023a).

We did not map any target or non-target invasive species on the unnamed islands (Table 5). In total, we observed four non-native species, which we did consider to be invasive enough and so did not map. These include dog mustard, lady's-thumb, annual bluegrass, and sheep sorrel (*Rumex acetosella*) (Appendix 2.14).



Hairgrass (*Deschampsia cespitosa*) in granite bedrock lakeshore on one of the unnamed islands.

Conclusion

We conducted botanical surveys on Great Lakes islands in the Huron NWR to collect updated and new data for rare and invasive plant species occurrences. Data on the extent and distribution of these occurrences was collected to guide management prioritization and serve as a baseline for tracking the efficacy of that management. We also conducted natural community surveys, and a separate report outlines a management prioritization across the natural community EOs on the same islands (Cohen et al. 2023a). The scope of botanical surveys differs from natural community surveys with the inclusion of additional islands and degraded areas outside of natural community EOs, and the focus on rare plant species as a conservation priority. Here, we summarize these priorities, emphasizing the conservation of rare plant species as a factor for guiding management. We highlight natural communities with exceptional floristic quality and invasive species that are of regional management concern.

We updated one previously known occurrence of male fern (*Dryopteris filix-mas*, Special Concern) on West Huron and documented a new occurrence on East Huron. We targeted but did not document additional rare species (Table 3). There is suitable or ideal habitat for all species we targeted. We recommend additional focused surveys for these species in the future, particularly inland bluegrass (*Poa interior*, Special Concern). This species is difficult to distinguish from an invasive bluegrass (*P. nemoralis*) and a native bluegrass (*P. glauca*) that were observed in the Huron NWR and inland bluegrass may have been overlooked.

Floristic quality of natural community types can help managers to prioritize systems with the greatest native plant diversity. Natural community occurrences with a FQA above 35 are considered management priorities with exceptional floristic quality (Herman et al. 2001). Ten of the 15 natural communities or disturbed habitats we surveyed on West Huron, Cattle, and East Huron had an FQI greater than 35, and an exceptionally low proportion of non-native species (Table 4). Floristic quality was generally low on Gull and the Unnamed Islands, likely due to the

smaller size of these natural communities and the stronger disturbance from nesting birds. A few natural communities are notable in having an FQI of 45 or more, including granite bedrock glade and granite lakeshore cliff on West Huron Island, and granite bedrock lakeshore and granite lakeshore cliff on East Huron Island. With so many natural communities with exceptional floristic quality, management priorities can be difficult to set. As such, the interpretation of FQA results should be weighed against the more in-depth considerations of ecological integrity, rarity, threat severity, and treatment feasibility provided in the natural community survey report for the Huron Islands (Cohen et al. 2023a).

The species lists in this report are associated with overlapping, yet often different areas than in Cohen et al. (2023a; Appendix 2). Different surveyors may interpret community boundaries differently and include species that are associated with species of neighboring natural communities, and here our descriptions are more inclusive as they are not limited to EO boundaries. For example, Cohen et al. (2023a) treated granite cliff on East and West Huron Islands as inclusions within boreal forest due to their small size, but we generated separate species lists in this report.

Across the Huron Islands, non-native species comprised at most 15% of the flora (Tables 4). This is a testament to the limited modern anthropogenic disturbance in Huron NWR. Across all of the islands the highest concentration of non-native species was the disturbed glade community surrounding the lighthouse and near the dock on West Huron Island. Invasive plant species were rare or occasional at most (Table 5). The most cost-effective and efficacious approach to controlling or eliminating invasive species populations is to treat them when populations are small, before invasive species accumulate resilient seedbanks, bud-banks, and root systems that enable persistence (Reaser et al. 2020). We strongly encourage prompt treatment of the few invasive species populations on the Huron Islands, especially given the high ecological integrity of the natural communities (Cohen et al. 2023a).

References

- Bassett, T.J., S.M. Warner, J.G. Cohen, J.M. Lincoln, H.D. Enander, E.A. Haber, and R.A. Hackett. 2022a. Rare and Invasive Plant Surveys of Great Lakes islands in the Michigan Islands National Wildlife Refuge (Lake Huron). Michigan Natural Features Inventory, Report No. 2022-11, Lansing, MI. 52 pp.
- Bassett, T.J., S.M. Warner, J.G. Cohen, J.M. Lincoln, H.D. Enander, E.A. Haber, and R.A. Hackett. 2022b. Rare and Invasive Plant Surveys of Great Lakes Islands in the Green Bay and Gravel Islands National Wildlife Refuges. Michigan Natural Features Inventory, Report No. 2022-10, Lansing, MI. 90 pp.
- Bassett, T.J., S.M. Warner, E.A. Haber, R.A. Hackett, J.G. Cohen, J.M. Lincoln, H.D. Enander, and P.R. Schilke. 2023a. Rare and Invasive Plant Surveys of Great Lakes Islands in Harbor Island National Wildlife Refuge. Michigan Natural Features Inventory, Report No. 2023-12, Lansing, MI.
- Bassett, T.J., S.M. Warner, E.A. Haber, R.A. Hackett, J.G. Cohen, J.M. Lincoln, H.D. Enander, and P.R. Schilke. 2023a. Rare and Invasive Plant Surveys of Great Lakes Islands in Harbor Island National Wildlife Refuge. Michigan Natural Features Inventory, Report No. 2023-12, Lansing, MI. 73 pp.
- Bassett, T.J., S.M. Warner, J.G. Cohen, H.D. Enander, E.A. Haber, R.A. Hackett, P.R. Schilke. 2023b. Rare and Invasive Plant Surveys of Great Lakes Islands in Michigan Islands National Wildlife Refuge (Lake Michigan). Michigan Natural Features Inventory, Report No. 2023-13, Lansing, MI. 60 pp.
- Bassett, T.J., S.M. Warner, E.A. Haber, J.G. Cohen, H.D. Enander, R.A. Hackett, and P.R. Schilke. 2023c. Rare and Invasive Plant Surveys of West Sister Island National Wildlife Refuge. Michigan Natural Features Inventory, Report No. 2023-14, Lansing, MI. 24 pp.
- Bassett, T.J., S.M. Warner, H.D. Enander, E.A. Haber, R.A. Hackett, and P.R. Schilke. 2023d. Rare and Invasive Plant Surveys of Great Lakes Islands in Detroit River International Wildlife Refuge. Michigan Natural Features Inventory, Report No. 2023-15, Lansing, MI. 25 pp.
- Butcher, R.D. 2008. America's National Wildlife Refuges: A Complete Guide. Taylor Trade Publishing, Lanham, MD. 331 pp.
- Cohen, J.G., M.A. Kost, B.S. Slaughter, D.A. Albert, J.M. Lincoln, A.P. Kortenhoven, C.M. Wilton, H.D. Enander, and K.M. Korroch. 2020. Michigan Natural Community Classification [web application]. Michigan Natural Features Inventory, Michigan State University Extension, Lansing, Michigan. Available <https://mnfi.anr.msu.edu/communities/classification>. (Accessed: March 7, 2022).
- Cohen, J.G., J.M. Lincoln, T.J. Bassett, S.M. Warner, H.D. Enander, E.A. Haber, and R.A. Hackett. 2022a. Natural Community Surveys of Michigan Islands National Wildlife Refuge: Big Charity, Crooked, and Sugar Islands. Michigan Natural Features Inventory, Report Number 2022-08, Lansing, MI. 137 pp.
- Cohen, J.G., J.M. Lincoln, T.J. Bassett, S.M. Warner, H.D. Enander, E.A. Haber, and R.A. Hackett. 2022b. Natural Community Surveys of Great Lakes Islands in the Green Bay National Wildlife Refuge. Michigan Natural Features Inventory, Report Number 2022-07, Lansing, MI. 160 pp.
- Cohen, J.G., J.M. Lincoln, T.J. Bassett, S.M. Warner, E.A. Haber, H.D. Enander, and R.A. Hackett. 2023a. Natural Community Surveys of Huron Islands, Seney National Wildlife Refuge, Lake Superior. Michigan Natural Features Inventory, Report Number 2023-05, Lansing, MI. 148 pp.
- Cohen, J.G., J.M. Lincoln, T.J. Bassett, S.M. Warner, E.A. Haber, H.D. Enander, and R.A. Hackett. 2023b. Natural Community Surveys of Harbor Island, Seney National Wildlife Refuge, Lake Huron. Michigan Natural Features Inventory, Report Number 2023-06, Lansing, MI. 87 pp.

- Cohen, J.G., T.J. Bassett, S.M. Warner, H.D. Enander, and R.A. Hackett. 2023c. Natural Community Surveys of Gull Island, Seney National Wildlife Refuge, Lake Michigan. Michigan Natural Features Inventory, Report Number 2023-08, Lansing, MI. 52 pp.
- Cohen, J.G., S.M. Warner, E.A. Haber, H.D. Enander, and R.A. Hackett. 2023d. Natural Community Surveys of West Sister Island, Ottawa National Wildlife Refuge, Lake Erie. Michigan Natural Features Inventory, Report Number 2023-07, Lansing, MI. 40 pp.
- Cuthbert, F.J., and L. Wires. 2011. The fourth decadal U.S. Great Lakes colonial waterbird survey (2007-2010): Results and recommendations to improve the scientific basis for conservation and management. Department of Fisheries, Wildlife and Conservation Biology, University of Minnesota-Twin Cities. Minneapolis, MN. 74 pp.
- Henson, B.L., D.T. Kraus, M.J. McMurtry, and D.N. Ewert. 2010. Islands of Life: A Biodiversity and Conservation Atlas of the Great Lakes Islands. Nature Conservancy of Canada. 154 pp.
- Herman, K.D., L.A. Masters, M.R. Penskar, A.A. Reznicek, G.S. Wilhelm, W.W. Brodovich, and K.P. Gardiner. 2001. Floristic quality assessment with wetland categories and examples of computer applications for the State of Michigan - Revised, 2nd Edition. Michigan Department of Natural Resources, Wildlife, Natural Heritage Program, Lansing, MI. 19 pp. + appendices.
- Meeker, J.E., J.E. Elias, and J.A. Heim. 1993. Plants used by the Great Lakes Ojibwa. Great Lakes Indian Fish and Wildlife Commission. Odanah, WI. 400 pp.
- Michigan Natural Features Inventory (MNFI). 2023. Biotics database. Michigan Natural Features Inventory, Lansing, MI.
- NatureServe. 2002. Element Occurrence Standard. NatureServe: Arlington, VA. Pp. 201.
- Reaser, J.K., S.W. Burgiel, J. Kirkey, K.A. Brantley, S.D. Veatch, and J. Burgos-Rodriguez. 2020. The early detection of and rapid response (EDRR) to invasive species: a conceptual framework and federal capacities assessment. *Biological Invasions*, 22:1-19.
- Reznicek, A.A., E.G. Voss, and B.S. Walters. 2011. Michigan Flora Online [web application]. University of Michigan, Ann Arbor, MI. (Accessed March 21, 2023.)
- Reznicek, A.A., M.R. Penskar, B.S. Walters, and B.S. Slaughter. 2014. Michigan Floristic Quality Assessment Database. Herbarium, University of Michigan, Ann Arbor, MI and Michigan Natural Features Inventory, Michigan State University, Lansing, MI.
- The New York Times. 1860. "Arctic Steamer." June 7, 1860.
- U.S. Coast Guard. 2019. Huron Island Lighthouse [web application]. Available <https://www.history.uscg.mil/Browse-by-Topic/Assets/Land/All/Article/1944935/huron-island-lighthouse/> (Accessed: March 7, 2023).
- U.S. Fish and Wildlife Service (USFWS). 1978. Wilderness Management Plan: Seney National Wildlife Refuge

Appendix 1. Element and Element Occurrence Ranking Criteria

Appendix 1.1. Subnational (State) and Global element ranking criteria.

Subnational Rank		DEFINITION
S1	Critically Imperiled	At very high risk of extirpation in the jurisdiction due to very restricted range, very few populations or occurrences, very steep declines, severe threats, or other factors.
S2	Imperiled	At high risk of extirpation in the jurisdiction due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.
S3	Vulnerable	At moderate risk of extirpation in the jurisdiction due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.
S4	Apparently Secure	At a fairly low risk of extirpation in the jurisdiction due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.
S5	Secure	At very low or no risk of extirpation in the jurisdiction due to a very extensive range, abundant populations or occurrences, with little to no concern from declines or threats.
Global Rank		DEFINITION
G1	Critically Imperiled	At very high risk of extinction or elimination due to very restricted range, very few populations or occurrences, very steep declines, very severe threats, or other factors.
G2	Imperiled	At high risk of extinction or elimination due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.
G3	Vulnerable	At moderate risk of extinction or elimination due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.
G4	Apparently Secure	At fairly low risk of extinction or elimination due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.
G5	Secure	At very low risk of extinction or elimination due to a very extensive range, abundant populations or occurrences, and little to no concern from declines or threats.
GU	Unrankable	Currently unrankable due to lack of information or due to substantially conflicting information about status or trends. NOTE: Whenever possible (when the range of uncertainty is three consecutive ranks or less), a range rank (e.g., G2G3) should be used to delineate the limits (range) of uncertainty.

Appendix 1.2. Element Occurrence ranking criteria.

Rank	Definition
A	Excellent estimated viability - Based on current information on EO rank factors (i.e., condition, size, and landscape context) for the EO, it is believed to have an excellent probability of persisting, if current conditions prevail, for a defined period of time, typically 20-100 years (for communities, persistence within the bounds of natural disturbance regimes).
B	Good estimated viability - Based on current information on EO rank factors (i.e., condition, size, and landscape context) for the EO, it is believed to have a good probability of persisting, if current conditions prevail, for a defined period of time, typically 20-100 years (for communities, persistence within the bounds of natural disturbance regimes).
C	Fair estimated viability - Based on current information on EO rank factors (i.e., condition, size, and landscape context) for the EO, it is believed to have a fair probability of persisting, if current conditions prevail, for a defined period of time, typically 20-100 years (for communities, persistence within the bounds of natural disturbance regimes).
D	Poor estimated viability - Based on current information on EO rank factors (i.e., condition, size, and landscape context) for the EO, it is believed to have a poor probability of persisting, if current conditions prevail, for a defined period of time, typically 20-100 years (for communities, persistence within the bounds of natural disturbance regimes).
E	Verified Extant - EO has been recently verified as still existing, but sufficient information on the factors used to estimate viability of the occurrence has not yet been obtained. Use of the E rank should be reserved for those situations where the occurrence is thought to be extant, but an A, B, C, D, or range rank cannot be assigned.
H	Historical - There is a lack of recent ¹ field information verifying the continued existence of the EO, such as when the occurrence is based only on historical collections data, or when the occurrence was ranked A, B, C, D, or E at one time and is later, without field survey work, considered to be possibly extirpated due to general habitat loss or degradation of the environment in the area.
F	Failed to find - EO has not been found despite a search by an experienced observer at a time and under conditions appropriate for the Element at a location where it was previously reported, but that still might be confirmed to exist at that location with additional field survey efforts. For EOs with vague locational information, the search must include areas of appropriate habitat within the range of locational uncertainty. An F rank, when applicable, supersedes an A, B, C, D, E, or H rank.
X	Extirpated - There is documented destruction of the habitat or environment of the EO, or persuasive evidence of its eradication based on adequate survey (i.e., thorough or repeated survey efforts by one or more experienced observers at times and under conditions appropriate for the Element at that location).
U	Unrankable - An EO rank cannot be assigned due to lack of sufficient information on the occurrence.
NR	Not Ranked - An EO rank has not yet been assigned to the occurrence.

Appendix 2. Floristic Quality Assessments

Finally, we utilized species lists to conduct Floristic Quality Assessments (FQAs) for each natural community on each island (Reznicek et al. 2014). The FQA utilizes plant species composition to derive the Floristic Quality Index (FQI), a quantitative metric of habitat quality that can be used as a relatively objective comparison among natural community occurrences of the same type. Drawing upon expert consensus among botanists familiar with the flora of Michigan, each vascular plant species native to Michigan has been assigned an a priori coefficient of conservatism (C-value) that ranges from 0 to 10 on a scale of increasing conservatism or fidelity to pre-European colonization habitats (Reznicek et al. 2014). Plant species with a C-value of 7 to 10 are considered highly conservative (Herman et al. 2001). A C-value of 4 to 6 indicates moderate conservatism and a C-value of 1 to 3 indicates low or no conservatism (e.g., ruderal species). Non-native species were given a C-value of 0 for these calculations. We calculated FQI for each natural community occurrence as

$$FQI = \bar{C} \times \sqrt{n}$$

where \bar{C} = mean C-value and n = species richness. Sites with an FQI of 35 or greater are generally considered to floristically important from a statewide perspective (Herman et al. 2001).

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2.18	East Huron Island Granite Cliff	81
2.19	Gull Island	84
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2.24	Unnamed Islands	98

Appendix 2.1. West Huron Island FQA

Conservatism-Based Metrics:

Total Mean C:	4.1
Native Mean C:	4.8
Total FQI:	55.8
Native FQI:	60.7
Adjusted FQI:	44.6
% C value 0:	15.7
% C value 1-3:	25.4
% C value 4-6:	41.1
% C value 7-10:	17.8
Native Tree Mean C:	3.5
Native Shrub Mean C:	5.1
Native Herbaceous Mean C:	4.9

Species Richness:

Total Species:	185	
Native Species:	160	86.50%
Non-native Species:	25	13.50%

Species Wetness:

Mean Wetness:	1
Native Mean Wetness:	0.7

Physiognomy Metrics:

Tree:	17	9.20%
Shrub:	37	20%
Vine:	7	3.80%
Forb:	68	36.80%
Grass:	18	9.70%
Sedge:	17	9.20%
Rush:	3	1.60%
Fern:	18	9.70%
Bryophyte:	0	0%

Duration Metrics:

Annual:	4	2.20%
Perennial:	176	95.10%
Biennial:	5	2.70%
Native Annual:	4	2.20%
Native Perennial:	154	83.20%
Native Biennial:	2	1.10%

Appendix 2.1. West Huron Island FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Abies balsamea</i>	balsam fir	ABIBAL	native	3	0
<i>Acer pensylvanicum</i>	striped maple	ACEPEN	native	5	3
<i>Acer rubrum</i>	red maple	ACERUB	native	1	0
<i>Acer saccharum</i>	sugar maple	ACESAU	native	5	3
<i>Acer spicatum</i>	mountain maple	ACESPI	native	5	3
<i>Achillea millefolium</i>	yarrow	ACHMIL	native	1	3
<i>Agrostis gigantea</i>	redtop	AGRIGIG	non-native	0	-3
<i>Agrostis scabra</i>	ticklegrass	AGRSCA	native	4	0
<i>Alnus viridis</i>	mountain alder	ALNVIR	native	8	0
<i>Amelanchier interior</i>	serviceberry	AMEINT	native	4	5
<i>Amelanchier sanguinea</i>	round-leaved serviceberry	AMESAN	native	5	5
<i>Anaphalis margaritacea</i>	pearly everlasting	ANAMAR	native	3	5
<i>Antennaria howellii</i>	small pussytoes	ANTHOW	native	2	5
<i>Aquilegia canadensis</i>	wild columbine	AQUCAN	native	5	3
<i>Aralia hispida</i>	bristly sarsaparilla	ARAHIS	native	3	5
<i>Aralia nudicaulis</i>	wild sarsaparilla	ARANUD	native	5	3
<i>Arctium minus</i>	common burdock	ARCMIN	non-native	0	3
<i>Arctostaphylos uva-ursi</i>	bearberry	ARCUVA	native	8	5
<i>Aronia prunifolia</i>	chokeberry	AROPRU	native	5	-3
<i>Athyrium filix-femina</i>	lady fern	ATHFIL	native	4	0
<i>Avenella flexuosa</i>	hair grass	AVEFLE	native	6	5
<i>Betula papyrifera</i>	paper birch	BETPAP	native	2	3
<i>Calamagrostis canadensis</i>	blue-joint	CALCAN	native	3	-5
<i>Campanula rapunculoides</i>	roving bellflower	CAMRAP	non-native	0	5
<i>Campanula rotundifolia</i>	harebell	CAMROT	native	6	3
<i>Capnoides sempervirens</i>	pink or pale corydalis	CAPSEM	native	5	5
<i>Cardamine parviflora</i>	dryland bitter cress	CARPAR	native	10	0
<i>Carex arctata</i>	sedge	CXARTT	native	3	5
<i>Carex aurea</i>	sedge	CXAURE	native	3	-3
<i>Carex brunnescens</i>	sedge	CXBRUN	native	5	-3
<i>Carex canescens</i>	sedge	CXCANE	native	8	-5
<i>Carex communis</i>	sedge	CXCOMM	native	2	5
<i>Carex deweyana</i>	sedge	CXDEWE	native	3	3
<i>Carex echinata</i>	sedge	CXECHA	native	6	-5
<i>Carex magellanica</i>	sedge	CXMAGE	native	8	-5
<i>Carex merritt-fernaldii</i>	sedge	CXMERR	native	4	5
<i>Carex pedunculata</i>	sedge	CXPEDU	native	5	3
<i>Carex pensylvanica</i>	sedge	CXPENS	native	4	5
<i>Carex scoparia</i>	sedge	CXSCOP	native	4	-3
<i>Carex viridula</i>	sedge	CXVIRU	native	4	-5
<i>Centaurea stoebe</i>	spotted knapweed	CENSTO	non-native	0	5
<i>Cerastium fontanum</i>	mouse-ear chickweed	CERFON	non-native	0	3
<i>Chamaedaphne calyculata</i>	leatherleaf	CHACAL	native	8	-5
<i>Chamerion angustifolium</i>	fireweed	CHAANG	native	3	0
<i>Chimaphila umbellata</i>	pipsissewa	CHIUMB	native	8	5
<i>Cirsium vulgare</i>	bull thistle	CIRVUL	non-native	0	3
<i>Clinopodium vulgare</i>	wild-basil	CLIVUL	native	3	5

Appendix 2.1. West Huron Island FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Clintonia borealis</i>	bluebead-lily; corn-lily	CLIBOR	native	5	0
<i>Conyza canadensis</i>	horseweed	CONCAN	native	0	3
<i>Coptis trifolia</i>	goldthread	COPTRI	native	5	-3
<i>Corallorhiza maculata</i>	spotted coral-root	CORMAC	native	5	3
<i>Cornus canadensis</i>	bunchberry	CORCAA	native	6	0
<i>Cornus rugosa</i>	round-leaved dogwood	CORRUG	native	6	5
<i>Cornus sericea</i>	red-osier	CORSER	native	2	-3
<i>Corydalis aurea</i>	golden corydalis	CORAUR	native	5	5
<i>Corylus cornuta</i>	beaked hazelnut	CORCOR	native	5	3
<i>Cystopteris fragilis</i>	fragile fern	CYSFRA	native	4	3
<i>Danthonia spicata</i>	poverty grass; oatgrass	DANSPI	native	4	5
<i>Dendrolycopodium dendroideum</i>	tree clubmoss	DENDEN	native	5	3
<i>Deschampsia cespitosa</i>	hair grass	DESCES	native	9	-3
<i>Dichanthelium implicatum</i>	panic grass	DICIMP	native	3	0
<i>Diervilla lonicera</i>	bush-honeysuckle	DIELON	native	4	5
<i>Drosera rotundifolia</i>	round-leaved sundew	DROROT	native	6	-5
<i>Dryocallis arguta</i>	tall or prairie cinquefoil	DRYARG	native	8	3
<i>Dryopteris carthusiana</i>	spinulose woodfern	DRYCAR	native	5	-3
<i>Dryopteris filix-mas</i>	male fern	DRYFIL	native	10	5
<i>Dryopteris goldiana</i>	goldies woodfern	DRYGOL	native	10	0
<i>Dryopteris intermedia</i>	evergreen woodfern	DRYINT	native	5	0
<i>Dryopteris marginalis</i>	marginal woodfern	DRYMAR	native	5	3
<i>Eleocharis elliptica</i>	golden-seeded spike rush	ELEELL	native	6	-5
<i>Elymus canadensis</i>	canada wild rye	ELYCAN	native	5	3
<i>Elymus repens</i>	quack grass	ELYREP	non-native	0	3
<i>Equisetum arvense</i>	common horsetail	EQUARV	native	0	0
<i>Eurybia macrophylla</i>	big-leaved aster	EURMAC	native	4	5
<i>Euthamia graminifolia</i>	grass-leaved goldenrod	EUTGRA	native	3	0
<i>Fallopia cilinodis</i>	fringed false buckwheat	FALCIL	native	3	5
<i>Festuca occidentalis</i>	western fescue	FESOCC	native	6	5
<i>Fragaria virginiana</i>	wild strawberry	FRAVIR	native	2	3
<i>Fraxinus pennsylvanica</i>	red ash	FRAPEN	native	2	-3
<i>Galium triflorum</i>	fragrant bedstraw	GALTRR	native	4	3
<i>Gaultheria hispidula</i>	creeping-snowberry	GAUHIS	native	8	-3
<i>Gentiana rubricaulis</i>	great lakes gentian	GENRUB	native	7	-5
<i>Geum aleppicum</i>	yellow avens	GEUALE	native	3	0
<i>Gymnocarpium dryopteris</i>	oak fern	GYMDRY	native	5	3
<i>Hemerocallis fulva</i>	orange day-lily	HEMFUL	non-native	0	5
<i>Hepatica americana</i>	round-lobed hepatica	HEPAME	native	6	5
<i>Heracleum maximum</i>	cow-parsnip	HERMAX	native	3	-3
<i>Hieracium aurantiacum</i>	orange hawkweed	HIEAUR	non-native	0	5
<i>Hieracium caespitosum</i>	king devil	HIECAE	non-native	0	5
<i>Hieracium kalmii</i>	kalms hawkweed	HIEKAL	native	3	5
<i>Humulus lupulus</i>	common hops	HUMLUP	native	3	3
<i>Hylotelephium telephium</i>	live-forever	HYLTEL	non-native	0	5
<i>Hypericum perforatum</i>	common st. johns-wort	HYPPER	non-native	0	5
<i>Ilex mucronata</i>	mountain holly	ILEMUC	native	7	-5

Appendix 2.1. West Huron Island FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Ilex verticillata</i>	michigan holly	ILEVER	native	5	-3
<i>Iris versicolor</i>	wild blue flag	IRIVER	native	5	-5
<i>Juncus brevicaudatus</i>	rush	JUNBRE	native	8	-5
<i>Juncus dudleyi</i>	dudleys rush	JUNDUD	native	1	-3
<i>Juncus tenuis</i>	path rush	JUNTEN	native	1	0
<i>Juniperus communis</i>	common or ground juniper	JUNCOI	native	4	3
<i>Juniperus horizontalis</i>	creeping juniper	JUNHOR	native	10	3
<i>Lathyrus japonicus</i>	beach pea	LATJAP	native	10	3
<i>Lathyrus ochroleucus</i>	pale vetchling	LATOCH	native	8	5
<i>Leucanthemum vulgare</i>	ox-eye daisy	LEUVUL	non-native	0	5
<i>Linnaea borealis</i>	twinflower	LINBOR	native	6	0
<i>Lonicera dioica</i>	red honeysuckle	LONDIO	native	5	3
<i>Lonicera hirsuta</i>	hairy honeysuckle	LONHIR	native	6	0
<i>Lonicera villosa</i>	mountain fly honeysuckle	LONVIL	native	8	-3
<i>Lycopodium lagopus</i>	running ground-pine	LYCLAG	native	5	3
<i>Lycopus uniflorus</i>	northern bugle weed	LYCUNI	native	2	-5
<i>Lysimachia thyrsiflora</i>	tufted loosestrife	LYSTHY	native	6	-5
<i>Maianthemum canadense</i>	canada mayflower	MAICAN	native	4	3
<i>Melampyrum lineare</i>	cow-wheat	MELLIN	native	6	3
<i>Menyanthes trifoliata</i>	buckbean	MENTRI	native	8	-5
<i>Micranthes virginensis</i>	early saxifrage	MICVIR	native	10	3
<i>Onoclea sensibilis</i>	sensitive fern	ONOSEN	native	2	-3
<i>Osmorhiza claytonii</i>	hairy sweet-cicely	OSMCLI	native	4	3
<i>Osmunda regalis</i>	royal fern	OSMREG	native	5	-5
<i>Phleum pratense</i>	timothy	PHLPRA	non-native	0	3
<i>Phlox paniculata</i>	garden phlox	PHLPAN	non-native	0	3
<i>Physocarpus opulifolius</i>	ninebark	PHYOPU	native	4	-3
<i>Picea glauca</i>	white spruce	PICGLA	native	3	3
<i>Picea mariana</i>	black spruce	PICMAR	native	6	-3
<i>Pinus resinosa</i>	red pine	PINRES	native	6	3
<i>Pinus strobus</i>	white pine	PINSTR	native	3	3
<i>Platanthera clavellata</i>	small green wood orchid	PLACLA	native	6	-3
<i>Poa compressa</i>	canada bluegrass	POACOM	non-native	0	3
<i>Poa glauca</i>	bluegrass	POAGLA	native	10	5
<i>Poa nemoralis</i>	bluegrass	POANEM	non-native	0	3
<i>Poa palustris</i>	fowl meadow grass	POAPAS	native	3	-3
<i>Poa pratensis</i>	kentucky bluegrass	POAPRA	non-native	0	3
<i>Polygonatum pubescens</i>	downy solomon seal	POLPUB	native	5	5
<i>Polypodium virginianum</i>	common polypody	POLVIR	native	8	5
<i>Populus balsamifera</i>	balsam poplar	POPBAL	native	2	-3
<i>Populus grandidentata</i>	big-tooth aspen	POPGRA	native	4	3
<i>Populus tremuloides</i>	quaking aspen	POPTRE	native	1	0
<i>Potentilla norvegica</i>	rough cinquefoil	POTNOR	native	0	0
<i>Prenanthes alba</i>	white lettuce	PREALB	native	5	3
<i>Prunus pensylvanica</i>	pin cherry	PRUPEN	native	3	3
<i>Prunus virginiana</i>	choke cherry	PRUVIR	native	2	3
<i>Pteridium aquilinum</i>	bracken fern	PTEAQU	native	0	3

Appendix 2.1. West Huron Island FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Pyrola americana</i>	round-leaved pyrola	PYRAME	native	7	0
<i>Ranunculus acris</i>	tall or common buttercup	RANACR	non-native	0	0
<i>Rhododendron groenlandicum</i>	labrador-tea	RHOGRO	native	8	-5
<i>Ribes glandulosum</i>	skunk currant	RIBGLA	native	5	-3
<i>Rosa acicularis</i>	wild rose	ROSACI	native	4	3
<i>Rubus occidentalis</i>	black raspberry	RUBOCC	native	1	5
<i>Rubus setosus</i>	bristly blackberry	RUBSET	native	3	-3
<i>Rubus strigosus</i>	wild red raspberry	RUBSTR	native	2	0
<i>Rumex acetosella</i>	sheep sorrel	RUMACL	non-native	0	3
<i>Rumex crispus</i>	curly dock	RUMCRI	non-native	0	0
<i>Sagina procumbens</i>	pearlwort	SAGPRO	non-native	0	0
<i>Salix bebbiana</i>	bebbs willow	SALBEB	native	1	-3
<i>Salix cordata</i>	sand-dune willow	SALCOR	native	10	0
<i>Salix myricoides</i>	blueleaf willow	SALMYR	native	9	-3
<i>Salix petiolaris</i>	slender willow	SALPET	native	1	-3
<i>Sambucus racemosa</i>	red-berried elder	SAMRAC	native	3	3
<i>Schedonorus pratensis</i>	meadow fescue	SCHPRA	non-native	0	3
<i>Schizachne purpurascens</i>	false melic	SCHPUP	native	5	3
<i>Scirpus cyperinus</i>	wool-grass	SCICYP	native	5	-5
<i>Scirpus expansus</i>	bulrush	SCIEXP	native	5	-5
<i>Selaginella rupestris</i>	sand club moss	SELRUP	native	8	5
<i>Sibbaldiopsis tridentata</i>	three-toothed cinquefoil	SIBTRI	native	10	3
<i>Sisyrinchium montanum</i>	mountain blue-eyed-grass	SISMON	native	4	0
<i>Solidago altissima</i>	tall goldenrod	SOLALT	native	1	3
<i>Solidago canadensis</i>	canada goldenrod	SOLCAN	native	1	3
<i>Solidago hispida</i>	hairy goldenrod	SOLHIS	native	3	5
<i>Sorbus decora</i>	mountain-ash	SORDEC	native	4	3
<i>Spinulum annotinum</i>	stiff clubmoss	SPIANN	native	5	0
<i>Spiraea alba</i>	meadowsweet	SPIALB	native	4	-3
<i>Symphoricarpos albus</i> var. <i>albus</i>	snowberry	SYMALA	native	5	3
<i>Taraxacum officinale</i>	common dandelion	TAROFF	non-native	0	3
<i>Taxus canadensis</i>	yew	TAXCAN	native	5	3
<i>Thalictrum dasycarpum</i>	purple meadow-rue	THADAS	native	3	-3
<i>Thuja occidentalis</i>	arbor vitae	THUOCC	native	4	-3
<i>Trichophorum cespitosum</i>	bulrush	TRICES	native	10	-5
<i>Trientalis borealis</i>	star-flower	TRIBOR	native	5	0
<i>Trifolium repens</i>	white clover	TRIREP	non-native	0	3
<i>Typha latifolia</i>	broad-leaved cat-tail	TYPLAT	native	1	-5
<i>Vaccinium angustifolium</i>	low sweet blueberry	VACANG	native	4	3
<i>Vaccinium myrtilloides</i>	canada blueberry	VACMYR	native	4	-3
<i>Viola labradorica</i>	dog violet	VIOLAB	native	3	0
<i>Viola nephrophylla</i>	northern bog violet	VIONEP	native	8	-3
<i>Vitis labrusca</i>	fox grape	VITLAB	native	7	3
<i>Woodsia ilvensis</i>	rusty woodsia	WOOILV	native	10	5

Appendix 2.2. West Huron Island Boreal Forest FQA.

Conservatism-Based Metrics:

Total Mean C:	4.5
Native Mean C:	4.7
Total FQI:	41.2
Native FQI:	42
Adjusted FQI:	45.9
% C value 0:	4.8
% C value 1-3:	28.6
% C value 4-6:	53.6
% C value 7-10:	13.1
Native Tree Mean C:	3.4
Native Shrub Mean C:	4.7
Native Herbaceous Mean C:	5.1

Species Richness:

Total Species:	84	
Native Species:	80	95.20%
Non-native Species:	4	4.80%

Species Wetness:

Mean Wetness:	1.8
Native Mean Wetness:	1.8

Physiognomy Metrics:

Tree:	13	15.50%
Shrub:	22	26.20%
Vine:	5	6%
Forb:	23	27.40%
Grass:	8	9.50%
Sedge:	5	6%
Rush:	0	0%
Fern:	8	9.50%
Bryophyte:	0	0%

Duration Metrics:

Annual:	1	1.20%
Perennial:	82	97.60%
Biennial:	1	1.20%
Native Annual:	1	1.20%
Native Perennial:	78	92.90%
Native Biennial:	1	1.20%

Appendix 2.2. West Huron Island Boreal Forest FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Abies balsamea</i>	balsam fir	ABIBAL	native	3	0
<i>Acer pensylvanicum</i>	striped maple	ACEPEN	native	5	3
<i>Acer rubrum</i>	red maple	ACERUB	native	1	0
<i>Acer spicatum</i>	mountain maple	ACESPI	native	5	3
<i>Amelanchier interior</i>	serviceberry	AMEINT	native	4	5
<i>Amelanchier sanguinea</i>	round-leaved serviceberry	AMESAN	native	5	5
<i>Anaphalis margaritacea</i>	pearly everlasting	ANAMAR	native	3	5
<i>Antennaria howellii</i>	small pussytoes	ANTHOW	native	2	5
<i>Aralia nudicaulis</i>	wild sarsaparilla	ARANUD	native	5	3
<i>Athyrium filix-femina</i>	lady fern	ATHFIL	native	4	0
<i>Avenella flexuosa</i>	hair grass	AVEFLE	native	6	5
<i>Betula papyrifera</i>	paper birch	BETPAP	native	2	3
<i>Calamagrostis canadensis</i>	blue-joint	CALCAN	native	3	-5
<i>Campanula rapunculoides</i>	roving bellflower	CAMRAP	non-native	0	5
<i>Capnoides sempervirens</i>	pink or pale corydalis	CAPSEM	native	5	5
<i>Carex arctata</i>	sedge	CXARTT	native	3	5
<i>Carex brunnescens</i>	sedge	CXBRUN	native	5	-3
<i>Carex communis</i>	sedge	CXCOMM	native	2	5
<i>Carex deweyana</i>	sedge	CXDEWE	native	3	3
<i>Carex pedunculata</i>	sedge	CXPEDU	native	5	3
<i>Chamaedaphne calyculata</i>	leatherleaf	CHACAL	native	8	-5
<i>Chamerion angustifolium</i>	fireweed	CHAANG	native	3	0
<i>Clinopodium vulgare</i>	wild-basil	CLIVUL	native	3	5
<i>Clintonia borealis</i>	bluebead-lily; corn-lily	CLIBOR	native	5	0
<i>Coptis trifolia</i>	goldthread	COPTRI	native	5	-3
<i>Corallorhiza maculata</i>	spotted coral-root	CORMAC	native	5	3
<i>Cornus canadensis</i>	bunchberry	CORCAA	native	6	0
<i>Cornus rugosa</i>	round-leaved dogwood	CORRUG	native	6	5
<i>Cornus sericea</i>	red-osier	CORSER	native	2	-3
<i>Danthonia spicata</i>	poverty grass; oatgrass	DANSPI	native	4	5
<i>Diervilla lonicera</i>	bush-honeysuckle	DIELON	native	4	5
<i>Dryopteris carthusiana</i>	spinulose woodfern	DRYCAR	native	5	-3
<i>Dryopteris filix-mas</i>	male fern	DRYFIL	native	10	5
<i>Dryopteris goldiana</i>	goldies woodfern	DRYGOL	native	10	0
<i>Dryopteris intermedia</i>	evergreen woodfern	DRYINT	native	5	0
<i>Dryopteris marginalis</i>	marginal woodfern	DRYMAR	native	5	3
<i>Eurybia macrophylla</i>	big-leaved aster	EURMAC	native	4	5
<i>Fallopia cilinodis</i>	fringed false buckwheat	FALCIL	native	3	5
<i>Festuca occidentalis</i>	western fescue	FESOCC	native	6	5
<i>Galium triflorum</i>	fragrant bedstraw	GALTRR	native	4	3
<i>Gaultheria hispidula</i>	creeping-snowberry	GAUHIS	native	8	-3
<i>Geum aleppicum</i>	yellow avens	GEUALE	native	3	0
<i>Gymnocarpium dryopteris</i>	oak fern	GYMDRY	native	5	3
<i>Hepatica americana</i>	round-lobed hepatica	HEPAME	native	6	5
<i>Heracleum maximum</i>	cow-parsnip	HERMAX	native	3	-3
<i>Ilex mucronata</i>	mountain holly	ILEMUC	native	7	-5

Appendix 2.2. West Huron Island Boreal Forest FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Ilex verticillata</i>	michigan holly	ILEVER	native	5	-3
<i>Lathyrus japonicus</i>	beach pea	LATJAP	native	10	3
<i>Lathyrus ochroleucus</i>	pale vetchling	LATOCH	native	8	5
<i>Linnaea borealis</i>	twinline	LINBOR	native	6	0
<i>Lonicera canadensis</i>	canadian fly honeysuckle	LONCAN	native	5	3
<i>Lonicera dioica</i>	red honeysuckle	LONDIO	native	5	3
<i>Lonicera hirsuta</i>	hairy honeysuckle	LONHIR	native	6	0
<i>Maianthemum canadense</i>	canada mayflower	MAICAN	native	4	3
<i>Melampyrum lineare</i>	cow-wheat	MELLIN	native	6	3
<i>Phlox paniculata</i>	garden phlox	PHLPAN	non-native	0	3
<i>Picea glauca</i>	white spruce	PICGLA	native	3	3
<i>Picea mariana</i>	black spruce	PICMAR	native	6	-3
<i>Pinus strobus</i>	white pine	PINSTR	native	3	3
<i>Poa compressa</i>	canada bluegrass	POACOM	non-native	0	3
<i>Poa glauca</i>	bluegrass	POAGLA	native	10	5
<i>Poa nemoralis</i>	bluegrass	POANEM	non-native	0	3
<i>Polygonatum pubescens</i>	downy solomon seal	POLPUB	native	5	5
<i>Polypodium virginianum</i>	common polypody	POLVIR	native	8	5
<i>Populus grandidentata</i>	big-tooth aspen	POPGRA	native	4	3
<i>Populus tremuloides</i>	quaking aspen	POPTRE	native	1	0
<i>Prunus pensylvanica</i>	pin cherry	PRUPEN	native	3	3
<i>Prunus virginiana</i>	choke cherry	PRUVIR	native	2	3
<i>Pyrola americana</i>	round-leaved pyrola	PYRAME	native	7	0
<i>Rhododendron groenlandicum</i>	labrador-tea	RHOGRO	native	8	-5
<i>Ribes glandulosum</i>	skunk currant	RIBGLA	native	5	-3
<i>Rosa acicularis</i>	wild rose	ROSACI	native	4	3
<i>Rubus occidentalis</i>	black raspberry	RUBOCC	native	1	5
<i>Rubus setosus</i>	bristly blackberry	RUBSET	native	3	-3
<i>Sambucus racemosa</i>	red-berried elder	SAMRAC	native	3	3
<i>Schizachne purpurascens</i>	false melic	SCHPUP	native	5	3
<i>Solidago hispida</i>	hairy goldenrod	SOLHIS	native	3	5
<i>Sorbus decora</i>	mountain-ash	SORDEC	native	4	3
<i>Symphoricarpos albus var. albus</i>	snowberry	SYMALA	native	5	3
<i>Taxus canadensis</i>	yew	TAXCAN	native	5	3
<i>Thuja occidentalis</i>	arbor vitae	THUOCC	native	4	-3
<i>Trientalis borealis</i>	star-flower	TRIBOR	native	5	0
<i>Vaccinium angustifolium</i>	low sweet blueberry	VACANG	native	4	3
<i>Vaccinium myrtilloides</i>	canada blueberry	VACMYR	native	4	-3

Appendix 2.3. West Huron Island Granite Bedrock Glade FQA.

Conservatism-Based Metrics:

Total Mean C:	4.5
Native Mean C:	4.9
Total FQI:	47.2
Native FQI:	49.2
Adjusted FQI:	47
% C value 0:	9.1
% C value 1-3:	26.4
% C value 4-6:	48.2
% C value 7-10:	16.4
Native Tree Mean C:	3.7
Native Shrub Mean C:	5
Native Herbaceous Mean C:	5.1

Species Richness:

Total Species:	110	
Native Species:	101	91.80%
Non-native Species:	9	8.20%

Species Wetness:

Mean Wetness:	1.2
Native Mean Wetness:	0.9

Physiognomy Metrics:

Tree:	14	12.70%
Shrub:	26	23.60%
Vine:	0	0%
Forb:	39	35.50%
Grass:	11	10%
Sedge:	11	10%
Rush:	1	0.90%
Fern:	8	7.30%
Bryophyte:	0	0%

Duration Metrics:

Annual:	1	0.90%
Perennial:	107	97.30%
Biennial:	2	1.80%
Native Annual:	1	0.90%
Native Perennial:	98	89.10%
Native Biennial:	2	1.80%

Appendix 2.3. West Huron Island Granite Bedrock Glade FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Abies balsamea</i>	balsam fir	ABIBAL	native	3	0
<i>Acer pensylvanicum</i>	striped maple	ACEPEN	native	5	3
<i>Acer rubrum</i>	red maple	ACERUB	native	1	0
<i>Acer saccharum</i>	sugar maple	ACESAU	native	5	3
<i>Acer spicatum</i>	mountain maple	ACESPI	native	5	3
<i>Agrostis scabra</i>	ticklegrass	AGRSCA	native	4	0
<i>Amelanchier sanguinea</i>	round-leaved serviceberry	AMESAN	native	5	5
<i>Anaphalis margaritacea</i>	pearly everlasting	ANAMAR	native	3	5
<i>Aquilegia canadensis</i>	wild columbine	AQUCAN	native	5	3
<i>Aralia hispida</i>	bristly sarsaparilla	ARAHIS	native	3	5
<i>Aralia nudicaulis</i>	wild sarsaparilla	ARANUD	native	5	3
<i>Arctostaphylos uva-ursi</i>	bearberry	ARCUVA	native	8	5
<i>Aronia prunifolia</i>	chokeberry	AROPRU	native	5	-3
<i>Avenella flexuosa</i>	hair grass	AVEFLE	native	6	5
<i>Betula papyrifera</i>	paper birch	BETPAP	native	2	3
<i>Calamagrostis canadensis</i>	blue-joint	CALCAN	native	3	-5
<i>Campanula rotundifolia</i>	harebell	CAMROT	native	6	3
<i>Capnoides sempervirens</i>	pink or pale corydalis	CAPSEM	native	5	5
<i>Carex arctata</i>	sedge	CXARTT	native	3	5
<i>Carex aurea</i>	sedge	CXAURE	native	3	-3
<i>Carex communis</i>	sedge	CXCOMM	native	2	5
<i>Carex echinata</i>	sedge	CXECHA	native	6	-5
<i>Carex magellanica</i>	sedge	CXMAGE	native	8	-5
<i>Carex merritt-fernaldii</i>	sedge	CXMERR	native	4	5
<i>Carex pedunculata</i>	sedge	CXPEDU	native	5	3
<i>Carex pensylvanica</i>	sedge	CXPENS	native	4	5
<i>Carex viridula</i>	sedge	CXVIRU	native	4	-5
<i>Cerastium fontanum</i>	mouse-ear chickweed	CERFON	non-native	0	3
<i>Chamaedaphne calyculata</i>	leatherleaf	CHACAL	native	8	-5
<i>Chamerion angustifolium</i>	fireweed	CHAANG	native	3	0
<i>Clinopodium vulgare</i>	wild-basil	CLIVUL	native	3	5
<i>Clintonia borealis</i>	bluebead-lily; corn-lily	CLIBOR	native	5	0
<i>Coptis trifolia</i>	goldthread	COPTRI	native	5	-3
<i>Cornus canadensis</i>	bunchberry	CORCAA	native	6	0
<i>Cornus rugosa</i>	round-leaved dogwood	CORRUG	native	6	5
<i>Cornus sericea</i>	red-osier	CORSER	native	2	-3
<i>Corydalis aurea</i>	golden corydalis	CORAUR	native	5	5
<i>Danthonia spicata</i>	poverty grass; oatgrass	DANSPI	native	4	5
<i>Deschampsia cespitosa</i>	hair grass	DESCES	native	9	-3
<i>Dichanthelium implicatum</i>	panic grass	DICIMP	native	3	0
<i>Diervilla lonicera</i>	bush-honeysuckle	DIELON	native	4	5
<i>Drosera rotundifolia</i>	round-leaved sundew	DROROT	native	6	-5
<i>Dryopteris filix-mas</i>	male fern	DRYFIL	native	10	5
<i>Dryopteris intermedia</i>	evergreen woodfern	DRYINT	native	5	0
<i>Dryopteris marginalis</i>	marginal woodfern	DRYMAR	native	5	3
<i>Eleocharis elliptica</i>	golden-seeded spike rush	ELEELL	native	6	-5

Appendix 2.3. West Huron Island Granite Bedrock Glade FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Eurybia macrophylla</i>	big-leaved aster	EURMAC	native	4	5
<i>Euthamia graminifolia</i>	grass-leaved goldenrod	EUTGRA	native	3	0
<i>Festuca occidentalis</i>	western fescue	FESOCC	native	6	5
<i>Fragaria virginiana</i>	wild strawberry	FRAVIR	native	2	3
<i>Gaultheria hispidula</i>	creeping-snowberry	GAUHIS	native	8	-3
<i>Gentiana rubricaulis</i>	great lakes gentian	GENRUB	native	7	-5
<i>Geum aleppicum</i>	yellow avens	GEUALE	native	3	0
<i>Hieracium aurantiacum</i>	orange hawkweed	HIEAUR	non-native	0	5
<i>Hieracium caespitosum</i>	king devil	HIECAE	non-native	0	5
<i>Hieracium kalmii</i>	kalms hawkweed	HIEKAL	native	3	5
<i>Hypericum perforatum</i>	common st. johns-wort	HYPPER	non-native	0	5
<i>Juncus brevicaudatus</i>	rush	JUNBRE	native	8	-5
<i>Juniperus horizontalis</i>	creeping juniper	JUNHOR	native	10	3
<i>Leucanthemum vulgare</i>	ox-eye daisy	LEUVUL	non-native	0	5
<i>Linnaea borealis</i>	twinflower	LINBOR	native	6	0
<i>Lysimachia thyrsiflora</i>	tufted loosestrife	LYSTHY	native	6	-5
<i>Maianthemum canadense</i>	canada mayflower	MAICAN	native	4	3
<i>Melampyrum lineare</i>	cow-wheat	MELLIN	native	6	3
<i>Menyanthes trifoliata</i>	buckbean	MENTRI	native	8	-5
<i>Micranthes virginensis</i>	early saxifrage	MICVIR	native	10	3
<i>Osmunda regalis</i>	royal fern	OSMREG	native	5	-5
<i>Phlox paniculata</i>	garden phlox	PHLPAN	non-native	0	3
<i>Physocarpus opulifolius</i>	ninebark	PHYOPU	native	4	-3
<i>Picea mariana</i>	black spruce	PICMAR	native	6	-3
<i>Pinus resinosa</i>	red pine	PINRES	native	6	3
<i>Pinus strobus</i>	white pine	PINSTR	native	3	3
<i>Platanthera clavellata</i>	small green wood orchid	PLACLA	native	6	-3
<i>Poa compressa</i>	canada bluegrass	POACOM	non-native	0	3
<i>Poa palustris</i>	fowl meadow grass	POAPAS	native	3	-3
<i>Poa pratensis</i>	kentucky bluegrass	POAPRA	non-native	0	3
<i>Polygonatum pubescens</i>	downy solomon seal	POLPUB	native	5	5
<i>Polypodium virginianum</i>	common polypody	POLVIR	native	8	5
<i>Populus grandidentata</i>	big-tooth aspen	POPGRA	native	4	3
<i>Populus tremuloides</i>	quaking aspen	POPTRE	native	1	0
<i>Prenanthes alba</i>	white lettuce	PREALB	native	5	3
<i>Prunus pensylvanica</i>	pin cherry	PRUPEN	native	3	3
<i>Prunus virginiana</i>	choke cherry	PRUVIR	native	2	3
<i>Pteridium aquilinum</i>	bracken fern	PTEAQU	native	0	3
<i>Rhododendron groenlandicum</i>	labrador-tea	RHOGRO	native	8	-5
<i>Ribes glandulosum</i>	skunk currant	RIBGLA	native	5	-3
<i>Rosa acicularis</i>	wild rose	ROSACI	native	4	3
<i>Rubus setosus</i>	bristly blackberry	RUBSET	native	3	-3
<i>Rubus strigosus</i>	wild red raspberry	RUBSTR	native	2	0
<i>Rumex acetosella</i>	sheep sorrel	RUMACL	non-native	0	3
<i>Salix cordata</i>	sand-dune willow	SALCOR	native	10	0
<i>Salix petiolaris</i>	slender willow	SALPET	native	1	-3

Appendix 2.3. West Huron Island Granite Bedrock Glade FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Sambucus racemosa</i>	red-berried elder	SAMRAC	native	3	3
<i>Schizachne purpurascens</i>	false melic	SCHPUP	native	5	3
<i>Selaginella rupestris</i>	sand club moss	SELRUP	native	8	5
<i>Sibbaldiopsis tridentata</i>	three-toothed cinquefoil	SIBTRI	native	10	3
<i>Sisyrinchium montanum</i>	mountain blue-eyed-grass	SISMON	native	4	0
<i>Solidago altissima</i>	tall goldenrod	SOLALT	native	1	3
<i>Solidago canadensis</i>	canada goldenrod	SOLCAN	native	1	3
<i>Solidago hispida</i>	hairy goldenrod	SOLHIS	native	3	5
<i>Sorbus decora</i>	mountain-ash	SORDEC	native	4	3
<i>Spiraea alba</i>	meadowsweet	SPIALB	native	4	-3
<i>Symphoricarpos albus</i> var. <i>albus</i>	snowberry	SYMALA	native	5	3
<i>Taxus canadensis</i>	yew	TAXCAN	native	5	3
<i>Thuja occidentalis</i>	arbor vitae	THUOCC	native	4	-3
<i>Trichophorum cespitosum</i>	bulrush	TRICES	native	10	-5
<i>Trientalis borealis</i>	star-flower	TRIBOR	native	5	0
<i>Vaccinium angustifolium</i>	low sweet blueberry	VACANG	native	4	3
<i>Vaccinium myrtilloides</i>	canada blueberry	VACMYR	native	4	-3
<i>Woodsia ilvensis</i>	rusty woodsia	WOOILV	native	10	5

Appendix 2.4. West Huron Island Granite Bedrock Lakeshore FQA.

Conservatism-Based Metrics:

Total Mean C:	4.4
Native Mean C:	4.7
Total FQI:	36
Native FQI:	37
Adjusted FQI:	45.2
% C value 0:	9
% C value 1-3:	29.9
% C value 4-6:	38.8
% C value 7-10:	22.4
Native Tree Mean C:	2.8
Native Shrub Mean C:	5.2
Native Herbaceous Mean C:	5.1

Species Richness:

Total Species:	67	
Native Species:	62	92.50%
Non-native Species:	5	7.50%

Species Wetness:

Mean Wetness:	0.3
Native Mean Wetness:	0

Physiognomy Metrics:

Tree:	12	17.90%
Shrub:	21	31.30%
Vine:	0	0%
Forb:	20	29.90%
Grass:	6	9%
Sedge:	4	6%
Rush:	2	3%
Fern:	2	3%
Bryophyte:	0	0%

Duration Metrics:

Annual:	1	1.50%
Perennial:	64	95.50%
Biennial:	2	3%
Native Annual:	1	1.50%
Native Perennial:	60	89.60%
Native Biennial:	1	1.50%

Appendix 2.4. West Huron Island Granite Bedrock Lakeshore FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Abies balsamea</i>	balsam fir	ABIBAL	native	3	0
<i>Acer rubrum</i>	red maple	ACERUB	native	1	0
<i>Acer spicatum</i>	mountain maple	ACESPI	native	5	3
<i>Achillea millefolium</i>	yarrow	ACHMIL	native	1	3
<i>Agrostis scabra</i>	ticklegrass	AGRSCA	native	4	0
<i>Alnus viridis</i>	mountain alder	ALNVIR	native	8	0
<i>Amelanchier sanguinea</i>	round-leaved serviceberry	AMESAN	native	5	5
<i>Aralia nudicaulis</i>	wild sarsaparilla	ARANUD	native	5	3
<i>Arctostaphylos uva-ursi</i>	bearberry	ARCUVA	native	8	5
<i>Aronia prunifolia</i>	chokeberry	AROPRU	native	5	-3
<i>Athyrium filix-femina</i>	lady fern	ATHFIL	native	4	0
<i>Avenella flexuosa</i>	hair grass	AVEFLE	native	6	5
<i>Betula papyrifera</i>	paper birch	BETPAP	native	2	3
<i>Calamagrostis canadensis</i>	blue-joint	CALCAN	native	3	-5
<i>Campanula rotundifolia</i>	harebell	CAMROT	native	6	3
<i>Capnoides sempervirens</i>	pink or pale corydalis	CAPSEM	native	5	5
<i>Carex canescens</i>	sedge	CXCANE	native	8	-5
<i>Carex echinata</i>	sedge	CXECHA	native	6	-5
<i>Centaurea stoebe</i>	spotted knapweed	CENSTO	non-native	0	5
<i>Chamaedaphne calyculata</i>	leatherleaf	CHACAL	native	8	-5
<i>Chamerion angustifolium</i>	fireweed	CHAANG	native	3	0
<i>Conyza canadensis</i>	horseweed	CONCAN	native	0	3
<i>Cornus canadensis</i>	bunchberry	CORCAA	native	6	0
<i>Cornus sericea</i>	red-osier	CORSER	native	2	-3
<i>Corylus cornuta</i>	beaked hazelnut	CORCOR	native	5	3
<i>Danthonia spicata</i>	poverty grass; oatgrass	DANSPI	native	4	5
<i>Deschampsia cespitosa</i>	hair grass	DESCES	native	9	-3
<i>Diervilla lonicera</i>	bush-honeysuckle	DIELON	native	4	5
<i>Drosera rotundifolia</i>	round-leaved sundew	DROROT	native	6	-5
<i>Drymocallis arguta</i>	tall or prairie cinquefoil	DRYARG	native	8	3
<i>Euthamia graminifolia</i>	grass-leaved goldenrod	EUTGRA	native	3	0
<i>Fraxinus pennsylvanica</i>	red ash	FRAPEN	native	2	-3
<i>Hieracium caespitosum</i>	king devil	HIECAE	non-native	0	5
<i>Hypericum perforatum</i>	common st. johns-wort	HYPPER	non-native	0	5
<i>Juncus brevicaudatus</i>	rush	JUNBRE	native	8	-5
<i>Juncus dudleyi</i>	dudleys rush	JUNDUD	native	1	-3
<i>Juniperus horizontalis</i>	creeping juniper	JUNHOR	native	10	3
<i>Lonicera villosa</i>	mountain fly honeysuckle	LONVIL	native	8	-3
<i>Lycopus uniflorus</i>	northern bugle weed	LYCUNI	native	2	-5
<i>Menyanthes trifoliata</i>	buckbean	MENTRI	native	8	-5
<i>Osmorhiza claytonii</i>	hairy sweet-cicely	OSMCLI	native	4	3
<i>Physocarpus opulifolius</i>	ninebark	PHYOPU	native	4	-3
<i>Pinus strobus</i>	white pine	PINSTR	native	3	3
<i>Poa compressa</i>	canada bluegrass	POACOM	non-native	0	3
<i>Polypodium virginianum</i>	common polypody	POLVIR	native	8	5
<i>Populus balsamifera</i>	balsam poplar	POPBAL	native	2	-3

Appendix 2.4. West Huron Island Granite Bedrock Lakeshore FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Populus grandidentata</i>	big-tooth aspen	POPGRA	native	4	3
<i>Populus tremuloides</i>	quaking aspen	POPTRE	native	1	0
<i>Prenanthes alba</i>	white lettuce	PREALB	native	5	3
<i>Prunus pensylvanica</i>	pin cherry	PRUPEN	native	3	3
<i>Prunus virginiana</i>	choke cherry	PRUVIR	native	2	3
<i>Rhododendron groenlandicum</i>	labrador-tea	RHOGRO	native	8	-5
<i>Rosa acicularis</i>	wild rose	ROSACI	native	4	3
<i>Sagina procumbens</i>	pearlwort	SAGPRO	non-native	0	0
<i>Salix bebbiana</i>	bebb's willow	SALBEB	native	1	-3
<i>Salix myricoides</i>	blueleaf willow	SALMYR	native	9	-3
<i>Salix petiolaris</i>	slender willow	SALPET	native	1	-3
<i>Scirpus cyperinus</i>	wool-grass	SCICYP	native	5	-5
<i>Sibbaldiopsis tridentata</i>	three-toothed cinquefoil	SIBTRI	native	10	3
<i>Solidago hispida</i>	hairy goldenrod	SOLHIS	native	3	5
<i>Sorbus decora</i>	mountain-ash	SORDEC	native	4	3
<i>Spiraea alba</i>	meadowsweet	SPIALB	native	4	-3
<i>Thuja occidentalis</i>	arbor vitae	THUOCC	native	4	-3
<i>Trichophorum cespitosum</i>	bulrush	TRICES	native	10	-5
<i>Vaccinium angustifolium</i>	low sweet blueberry	VACANG	native	4	3
<i>Vaccinium myrtilloides</i>	canada blueberry	VACMYR	native	4	-3
<i>Viola labradorica</i>	dog violet	VIOLAB	native	3	0

Appendix 2.5. West Huron Island Granite Lakeshore Cliff FQA.

Conservatism-Based Metrics:

Total Mean C:	4.7
Native Mean C:	5
Total FQI:	46.1
Native FQI:	47.4
Adjusted FQI:	48.4
% C value 0:	7.3
% C value 1-3:	26
% C value 4-6:	45.8
% C value 7-10:	20.8
Native Tree Mean C:	3.3
Native Shrub Mean C:	5.2
Native Herbaceous Mean C:	5.3

Species Richness:

Total Species:	96	
Native Species:	90	93.80%
Non-native Species:	6	6.30%

Species Wetness:

Mean Wetness:	0.6
Native Mean Wetness:	0.4

Physiognomy Metrics:

Tree:	12	12.50%
Shrub:	22	22.90%
Vine:	3	3.10%
Forb:	31	32.30%
Grass:	9	9.40%
Sedge:	9	9.40%
Rush:	1	1%
Fern:	9	9.40%
Bryophyte:	0	0%

Duration Metrics:

Annual:	0	0%
Perennial:	95	99%
Biennial:	1	1%
Native Annual:	0	0%
Native Perennial:	89	92.70%
Native Biennial:	1	1%

Appendix 2.5. West Huron Island Granite Lakeshore Cliff FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Abies balsamea</i>	balsam fir	ABIBAL	native	3	0
<i>Acer rubrum</i>	red maple	ACERUB	native	1	0
<i>Acer spicatum</i>	mountain maple	ACESPI	native	5	3
<i>Achillea millefolium</i>	yarrow	ACHMIL	native	1	3
<i>Agrostis scabra</i>	ticklegrass	AGRSCA	native	4	0
<i>Anaphalis margaritacea</i>	pearly everlasting	ANAMAR	native	3	5
<i>Aquilegia canadensis</i>	wild columbine	AQUCAN	native	5	3
<i>Aralia hispida</i>	bristly sarsaparilla	ARAHIS	native	3	5
<i>Arctostaphylos uva-ursi</i>	bearberry	ARCUVA	native	8	5
<i>Aronia prunifolia</i>	chokeberry	AROPRU	native	5	-3
<i>Athyrium filix-femina</i>	lady fern	ATHFIL	native	4	0
<i>Avenella flexuosa</i>	hair grass	AVEFLE	native	6	5
<i>Betula papyrifera</i>	paper birch	BETPAP	native	2	3
<i>Calamagrostis canadensis</i>	blue-joint	CALCAN	native	3	-5
<i>Campanula rotundifolia</i>	harebell	CAMROT	native	6	3
<i>Capnoides sempervirens</i>	pink or pale corydalis	CAPSEM	native	5	5
<i>Carex echinata</i>	sedge	CXECHA	native	6	-5
<i>Carex magellanica</i>	sedge	CXMAGE	native	8	-5
<i>Carex merritt-fernaldii</i>	sedge	CXMERR	native	4	5
<i>Carex scoparia</i>	sedge	CXSCOP	native	4	-3
<i>Carex viridula</i>	sedge	CXVIRU	native	4	-5
<i>Chamaedaphne calyculata</i>	leatherleaf	CHACAL	native	8	-5
<i>Chamerion angustifolium</i>	fireweed	CHAANG	native	3	0
<i>Chimaphila umbellata</i>	pipsissewa	CHIUMB	native	8	5
<i>Coptis trifolia</i>	goldthread	COPTRI	native	5	-3
<i>Cornus sericea</i>	red-osier	CORSER	native	2	-3
<i>Danthonia spicata</i>	poverty grass; oatgrass	DANSPI	native	4	5
<i>Dendrolycopodium dendroideum</i>	tree clubmoss	DENDEN	native	5	3
<i>Deschampsia cespitosa</i>	hair grass	DESCES	native	9	-3
<i>Dichanthelium implicatum</i>	panic grass	DICIMP	native	3	0
<i>Diervilla lonicera</i>	bush-honeysuckle	DIELON	native	4	5
<i>Drosera rotundifolia</i>	round-leaved sundew	DROROT	native	6	-5
<i>Dryocallis arguta</i>	tall or prairie cinquefoil	DRYARG	native	8	3
<i>Dryopteris filix-mas</i>	male fern	DRYFIL	native	10	5
<i>Eleocharis elliptica</i>	golden-seeded spike rush	ELEELL	native	6	-5
<i>Equisetum arvense</i>	common horsetail	EQUARV	native	0	0
<i>Euthamia graminifolia</i>	grass-leaved goldenrod	EUTGRA	native	3	0
<i>Festuca occidentalis</i>	western fescue	FESOCC	native	6	5
<i>Fragaria virginiana</i>	wild strawberry	FRAVIR	native	2	3
<i>Galium triflorum</i>	fragrant bedstraw	GALTRR	native	4	3
<i>Hieracium caespitosum</i>	king devil	HIECAE	non-native	0	5
<i>Hieracium kalmii</i>	kalms hawkweed	HIEKAL	native	3	5
<i>Hylotelephium telephium</i>	live-forever	HYLTEL	non-native	0	5
<i>Hypericum perforatum</i>	common st. johns-wort	HYPPER	non-native	0	5
<i>Ilex verticillata</i>	michigan holly	ILEVER	native	5	-3
<i>Iris versicolor</i>	wild blue flag	IRIVER	native	5	-5

Appendix 2.5. West Huron Island Granite Lakeshore Cliff FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Juncus brevicaudatus</i>	rush	JUNBRE	native	8	-5
<i>Juniperus communis</i>	common or ground juniper	JUNCOI	native	4	3
<i>Juniperus horizontalis</i>	creeping juniper	JUNHOR	native	10	3
<i>Lathyrus ochroleucus</i>	pale vetchling	LATOCH	native	8	5
<i>Lonicera dioica</i>	red honeysuckle	LONDIO	native	5	3
<i>Lonicera hirsuta</i>	hairy honeysuckle	LONHIR	native	6	0
<i>Lycopodium lagopus</i>	running ground-pine	LYCLAG	native	5	3
<i>Lycopus uniflorus</i>	northern bugle weed	LYCUNI	native	2	-5
<i>Lysimachia thysiflora</i>	tufted loosestrife	LYSTHY	native	6	-5
<i>Menyanthes trifoliata</i>	buckbean	MENTRI	native	8	-5
<i>Micranthes virginensis</i>	early saxifrage	MICVIR	native	10	3
<i>Onoclea sensibilis</i>	sensitive fern	ONOSEN	native	2	-3
<i>Physocarpus opulifolius</i>	ninebark	PHYOPU	native	4	-3
<i>Picea mariana</i>	black spruce	PICMAR	native	6	-3
<i>Pinus resinosa</i>	red pine	PINRES	native	6	3
<i>Pinus strobus</i>	white pine	PINSTR	native	3	3
<i>Platanthera clavellata</i>	small green wood orchid	PLACLA	native	6	-3
<i>Poa compressa</i>	canada bluegrass	POACOM	non-native	0	3
<i>Poa glauca</i>	bluegrass	POAGLA	native	10	5
<i>Polypodium virginianum</i>	common polypody	POLVIR	native	8	5
<i>Populus balsamifera</i>	balsam poplar	POPBAL	native	2	-3
<i>Populus tremuloides</i>	quaking aspen	POPTRE	native	1	0
<i>Prenanthes alba</i>	white lettuce	PREALB	native	5	3
<i>Prunus pensylvanica</i>	pin cherry	PRUPEN	native	3	3
<i>Prunus virginiana</i>	choke cherry	PRUVIR	native	2	3
<i>Ribes glandulosum</i>	skunk currant	RIBGLA	native	5	-3
<i>Rosa acicularis</i>	wild rose	ROSACI	native	4	3
<i>Rubus strigosus</i>	wild red raspberry	RUBSTR	native	2	0
<i>Rumex acetosella</i>	sheep sorrel	RUMACL	non-native	0	3
<i>Salix cordata</i>	sand-dune willow	SALCOR	native	10	0
<i>Salix myricoides</i>	blueleaf willow	SALMYR	native	9	-3
<i>Sambucus racemosa</i>	red-berried elder	SAMRAC	native	3	3
<i>Scirpus cyperinus</i>	wool-grass	SCICYP	native	5	-5
<i>Scirpus expansus</i>	bulrush	SCIEXP	native	5	-5
<i>Sibbaldiopsis tridentata</i>	three-toothed cinquefoil	SIBTRI	native	10	3
<i>Sisyrinchium montanum</i>	mountain blue-eyed-grass	SISMON	native	4	0
<i>Solidago hispida</i>	hairy goldenrod	SOLHIS	native	3	5
<i>Sorbus decora</i>	mountain-ash	SORDEC	native	4	3
<i>Spinulum annotinum</i>	stiff clubmoss	SPIANN	native	5	0
<i>Symphoricarpos albus</i> var. <i>albus</i>	snowberry	SYMALA	native	5	3
<i>Taraxacum officinale</i>	common dandelion	TAROFF	non-native	0	3
<i>Taxus canadensis</i>	yew	TAXCAN	native	5	3
<i>Thuja occidentalis</i>	arbor vitae	THUOCC	native	4	-3
<i>Trichophorum cespitosum</i>	bulrush	TRICES	native	10	-5
<i>Typha latifolia</i>	broad-leaved cat-tail	TYPLAT	native	1	-5
<i>Vaccinium angustifolium</i>	low sweet blueberry	VACANG	native	4	3

Appendix 2.5. West Huron Island Granite Lakeshore Cliff FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
Vaccinium myrtilloides	canada blueberry	VACMYR	native	4	-3
Viola labradorica	dog violet	VIOLAB	native	3	0
Viola nephrophylla	northern bog violet	VIONEP	native	8	-3
Woodsia ilvensis	rusty woodsia	WOOILV	native	10	5

Appendix 2.6. West Huron Island Granite Cliff FQA.

Conservatism-Based Metrics:

Total Mean C:	4.5
Native Mean C:	4.9
Total FQI:	22
Native FQI:	23
Adjusted FQI:	46.9
% C value 0:	8.3
% C value 1-3:	33.3
% C value 4-6:	41.7
% C value 7-10:	16.7
Native Tree Mean C:	3.8
Native Shrub Mean C:	3.7
Native Herbaceous Mean C:	5.6

Species Richness:

Total Species:	24	
Native Species:	22	91.70%
Non-native Species:	2	8.30%

Species Wetness:

Mean Wetness:	1.7
Native Mean Wetness:	1.6

Physiognomy Metrics:

Tree:	5	20.80%
Shrub:	3	12.50%
Vine:	1	4.20%
Forb:	7	29.20%
Grass:	2	8.30%
Sedge:	2	8.30%
Rush:	0	0%
Fern:	4	16.70%
Bryophyte:	0	0%

Duration Metrics:

Annual:	2	8.30%
Perennial:	22	91.70%
Biennial:	0	0%
Native Annual:	2	8.30%
Native Perennial:	20	83.30%
Native Biennial:	0	0%

Appendix 2.6. West Huron Island Granite Cliff FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Acer pensylvanicum</i>	striped maple	ACEPEN	native	5	3
<i>Acer spicatum</i>	mountain maple	ACESPI	native	5	3
<i>Aquilegia canadensis</i>	wild columbine	AQUCAN	native	5	3
<i>Betula papyrifera</i>	paper birch	BETPAP	native	2	3
<i>Cardamine parviflora</i>	dryland bitter cress	CARPAR	native	10	0
<i>Carex canescens</i>	sedge	CXCANE	native	8	-5
<i>Carex deweyana</i>	sedge	CXDEWE	native	3	3
<i>Chamerion angustifolium</i>	fireweed	CHAANG	native	3	0
<i>Cornus canadensis</i>	bunchberry	CORCAA	native	6	0
<i>Cystopteris fragilis</i>	fragile fern	CYSFRA	native	4	3
<i>Dryopteris intermedia</i>	evergreen woodfern	DRYINT	native	5	0
<i>Dryopteris marginalis</i>	marginal woodfern	DRYMAR	native	5	3
<i>Fallopia cilinodis</i>	fringed false buckwheat	FALCIL	native	3	5
<i>Melampyrum lineare</i>	cow-wheat	MELLIN	native	6	3
<i>Micranthes virginiana</i>	early saxifrage	MICVIR	native	10	3
<i>Poa compressa</i>	canada bluegrass	POACOM	non-native	0	3
<i>Poa nemoralis</i>	bluegrass	POANEM	non-native	0	3
<i>Polypodium virginianum</i>	common polypody	POLVIR	native	8	5
<i>Prunus pensylvanica</i>	pin cherry	PRUPEN	native	3	3
<i>Rubus strigosus</i>	wild red raspberry	RUBSTR	native	2	0
<i>Sambucus racemosa</i>	red-berried elder	SAMRAC	native	3	3
<i>Thuja occidentalis</i>	arbor vitae	THUOCC	native	4	-3
<i>Trientalis borealis</i>	star-flower	TRIBOR	native	5	0
<i>Viola labradorica</i>	dog violet	VIOLAB	native	3	0

Appendix 2.7. West Huron Island Disturbed Habitat FQA.

Conservatism-Based Metrics:

Total Mean C:	2.5
Native Mean C:	3.9
Total FQI:	17.9
Native FQI:	22.1
Adjusted FQI:	30.9
% C value 0:	41.2
% C value 1-3:	31.4
% C value 4-6:	17.6
% C value 7-10:	9.8
Native Tree Mean C:	3.7
Native Shrub Mean C:	4.4
Native Herbaceous Mean C:	3.9

Species Richness:

Total Species:	51	
Native Species:	32	62.70%
Non-native Species:	19	37.30%

Species Wetness:

Mean Wetness:	2.9
Native Mean Wetness:	2.8

Physiognomy Metrics:

Tree:	6	11.80%
Shrub:	5	9.80%
Vine:	2	3.90%
Forb:	26	51%
Grass:	8	15.70%
Sedge:	0	0%
Rush:	1	2%
Fern:	3	5.90%
Bryophyte:	0	0%

Duration Metrics:

Annual:	2	3.90%
Perennial:	47	92.20%
Biennial:	2	3.90%
Native Annual:	2	3.90%
Native Perennial:	30	58.80%
Native Biennial:	0	0%

Appendix 2.7. West Huron Island Disturbed Habitat FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Abies balsamea</i>	balsam fir	ABIBAL	native	3	0
<i>Acer saccharum</i>	sugar maple	ACESAU	native	5	3
<i>Acer spicatum</i>	mountain maple	ACESPI	native	5	3
<i>Achillea millefolium</i>	yarrow	ACHMIL	native	1	3
<i>Agrostis gigantea</i>	redtop	AGRGIG	non-native	0	-3
<i>Amelanchier sanguinea</i>	round-leaved serviceberry	AMESAN	native	5	5
<i>Anaphalis margaritacea</i>	pearly everlasting	ANAMAR	native	3	5
<i>Aquilegia canadensis</i>	wild columbine	AQUCAN	native	5	3
<i>Arctium minus</i>	common burdock	ARCMIN	non-native	0	3
<i>Arctostaphylos uva-ursi</i>	bearberry	ARCUVA	native	8	5
<i>Avenella flexuosa</i>	hair grass	AVEFLE	native	6	5
<i>Betula papyrifera</i>	paper birch	BETPAP	native	2	3
<i>Campanula rapunculoides</i>	roving bellflower	CAMRAP	non-native	0	5
<i>Cerastium fontanum</i>	mouse-ear chickweed	CERFON	non-native	0	3
<i>Chamerion angustifolium</i>	fireweed	CHAANG	native	3	0
<i>Cirsium vulgare</i>	bull thistle	CIRVUL	non-native	0	3
<i>Clinopodium vulgare</i>	wild-basil	CLIVUL	native	3	5
<i>Conyza canadensis</i>	horseweed	CONCAN	native	0	3
<i>Dryocallis arguta</i>	tall or prairie cinquefoil	DRYARG	native	8	3
<i>Dryopteris filix-mas</i>	male fern	DRYFIL	native	10	5
<i>Dryopteris marginalis</i>	marginal woodfern	DRYMAR	native	5	3
<i>Elymus canadensis</i>	canada wild rye	ELYCAN	native	5	3
<i>Elymus repens</i>	quack grass	ELYREP	non-native	0	3
<i>Fragaria virginiana</i>	wild strawberry	FRAVIR	native	2	3
<i>Geum aleppicum</i>	yellow avens	GEUALE	native	3	0
<i>Hemerocallis fulva</i>	orange day-lily	HEMFUL	non-native	0	5
<i>Hieracium caespitosum</i>	king devil	HIECAE	non-native	0	5
<i>Hieracium kalmii</i>	kalms hawkweed	HIEKAL	native	3	5
<i>Humulus lupulus</i>	common hops	HUMLUP	native	3	3
<i>Hylotelephium telephium</i>	live-forever	HYLTEL	non-native	0	5
<i>Hypericum perforatum</i>	common st. johns-wort	HYPPER	non-native	0	5
<i>Juncus tenuis</i>	path rush	JUNTEN	native	1	0
<i>Leucanthemum vulgare</i>	ox-eye daisy	LEUVUL	non-native	0	5
<i>Phleum pratense</i>	timothy	PHLPRA	non-native	0	3
<i>Phlox paniculata</i>	garden phlox	PHLPAN	non-native	0	3
<i>Poa compressa</i>	canada bluegrass	POACOM	non-native	0	3
<i>Poa pratensis</i>	kentucky bluegrass	POAPRA	non-native	0	3
<i>Polypodium virginianum</i>	common polypody	POLVIR	native	8	5
<i>Potentilla norvegica</i>	rough cinquefoil	POTNOR	native	0	0
<i>Prunus pensylvanica</i>	pin cherry	PRUPEN	native	3	3
<i>Prunus virginiana</i>	choke cherry	PRUVIR	native	2	3
<i>Ranunculus acris</i>	tall or common buttercup	RANACR	non-native	0	0
<i>Rubus strigosus</i>	wild red raspberry	RUBSTR	native	2	0
<i>Rumex crispus</i>	curly dock	RUMCRI	non-native	0	0
<i>Schedonorus pratensis</i>	meadow fescue	SCHPRA	non-native	0	3
<i>Solidago hispida</i>	hairy goldenrod	SOLHIS	native	3	5

Appendix 2.7. West Huron Island Disturbed Habitat FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Sorbus decora</i>	mountain-ash	SORDEC	native	4	3
<i>Taxus canadensis</i>	yew	TAXCAN	native	5	3
<i>Thalictrum dasycarpum</i>	purple meadow-rue	THADAS	native	3	-3
<i>Trifolium repens</i>	white clover	TRIREP	non-native	0	3
<i>Vitis labrusca</i>	fox grape	VITLAB	native	7	3

Appendix 2.8. Cattle Island FQA.

Conservatism-Based Metrics:

Total Mean C:	4.2
Native Mean C:	4.5
Total FQI:	52.3
Native FQI:	53.8
Adjusted FQI:	43.2
% C value 0:	12.3
% C value 1-3:	27.1
% C value 4-6:	44.5
% C value 7-10:	16.1
Native Tree Mean C:	3.6
Native Shrub Mean C:	4.9
Native Herbaceous Mean C:	4.5

Species Richness:

Total Species:	155	
Native Species:	143	92.30%
Non-native Species:	12	7.70%

Species Wetness:

Mean Wetness:	0.6
Native Mean Wetness:	0.4

Physiognomy Metrics:

Tree:	17	11%
Shrub:	30	19.40%
Vine:	3	1.90%
Forb:	59	38.10%
Grass:	13	8.40%
Sedge:	17	11%
Rush:	3	1.90%
Fern:	13	8.40%
Bryophyte:	0	0%

Duration Metrics:

Annual:	4	2.60%
Perennial:	148	95.50%
Biennial:	3	1.90%
Native Annual:	4	2.60%
Native Perennial:	136	87.70%
Native Biennial:	3	1.90%

Appendix 2.8. Cattle Island FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Abies balsamea</i>	balsam fir	ABIBAL	native	3	0
<i>Acer pensylvanicum</i>	striped maple	ACEPEN	native	5	3
<i>Acer rubrum</i>	red maple	ACERUB	native	1	0
<i>Acer saccharum</i>	sugar maple	ACESAU	native	5	3
<i>Acer spicatum</i>	mountain maple	ACESPI	native	5	3
<i>Achillea millefolium</i>	yarrow	ACHMIL	native	1	3
<i>Agrostis scabra</i>	ticklegass	AGRSCA	native	4	0
<i>Alnus incana</i>	speckled alder	ALNINC	native	5	-3
<i>Alnus viridis</i>	mountain alder	ALNVIR	native	8	0
<i>Amelanchier interior</i>	serviceberry	AMEINT	native	4	5
<i>Amelanchier sanguinea</i>	round-leaved serviceberry	AMESAN	native	5	5
<i>Aquilegia canadensis</i>	wild columbine	AQUCAN	native	5	3
<i>Arabidopsis lyrata</i>	sand cress	ARALYR	native	7	3
<i>Aralia hispida</i>	bristly sarsaparilla	ARAHIS	native	3	5
<i>Aralia nudicaulis</i>	wild sarsaparilla	ARANUD	native	5	3
<i>Arctostaphylos uva-ursi</i>	bearberry	ARCUVA	native	8	5
<i>Athyrium filix-femina</i>	lady fern	ATHFIL	native	4	0
<i>Avenella flexuosa</i>	hair grass	AVEFLE	native	6	5
<i>Betula papyrifera</i>	paper birch	BETPAP	native	2	3
<i>Calamagrostis canadensis</i>	blue-joint	CALCAN	native	3	-5
<i>Caltha palustris</i>	marsh-marigold	CALPAR	native	6	-5
<i>Campanula rotundifolia</i>	harebell	CAMROT	native	6	3
<i>Capnoides sempervirens</i>	pink or pale corydalis	CAPSEM	native	5	5
<i>Carex aquatilis</i>	sedge	CXAQUA	native	7	-5
<i>Carex arctata</i>	sedge	CXARTT	native	3	5
<i>Carex aurea</i>	sedge	CXAURE	native	3	-3
<i>Carex brunnescens</i>	sedge	CXBRUN	native	5	-3
<i>Carex canescens</i>	sedge	CXCANE	native	8	-5
<i>Carex communis</i>	sedge	CXCOMM	native	2	5
<i>Carex crawei</i>	sedge	CXCRAE	native	10	-3
<i>Carex crinita</i>	sedge	CXCRIN	native	4	-5
<i>Carex deweyana</i>	sedge	CXDEWE	native	3	3
<i>Carex echinata</i>	sedge	CXECHA	native	6	-5
<i>Carex hystericina</i>	sedge	CXHYST	native	2	-5
<i>Carex pedunculata</i>	sedge	CXPEDU	native	5	3
<i>Carex pensylvanica</i>	sedge	CXPENS	native	4	5
<i>Carex scoparia</i>	sedge	CXSCOP	native	4	-3
<i>Carex stipata</i>	sedge	CXSTIP	native	1	-5
<i>Carex viridula</i>	sedge	CXVIRU	native	4	-5
<i>Cerastium fontanum</i>	mouse-ear chickweed	CERFON	non-native	0	3
<i>Chamerion angustifolium</i>	fireweed	CHAANG	native	3	0
<i>Chelone glabra</i>	turtlehead	CHEGLB	native	7	-5
<i>Cirsium arvense</i>	canada thistle	CIRARV	non-native	0	3
<i>Clinopodium vulgare</i>	wild-basil	CLIVUL	native	3	5
<i>Clintonia borealis</i>	bluebead-lily; corn-lily	CLIBOR	native	5	0
<i>Coptis trifolia</i>	goldthread	COPTRI	native	5	-3

Appendix 2.8. Cattle Island FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Cornus canadensis</i>	bunchberry	CORCAA	native	6	0
<i>Cornus rugosa</i>	round-leaved dogwood	CORRUG	native	6	5
<i>Cornus sericea</i>	red-osier	CORSER	native	2	-3
<i>Cystopteris fragilis</i>	fragile fern	CYSFRA	native	4	3
<i>Danthonia spicata</i>	poverty grass; oatgrass	DANSPI	native	4	5
<i>Dendrolycopodium dendroideum</i>	tree clubmoss	DENDEN	native	5	3
<i>Deschampsia cespitosa</i>	hair grass	DESCES	native	9	-3
<i>Diervilla lonicera</i>	bush-honeysuckle	DIELON	native	4	5
<i>Drymocallis arguta</i>	tall or prairie cinquefoil	DRYARG	native	8	3
<i>Dryopteris carthusiana</i>	spinulose woodfern	DRYCAR	native	5	-3
<i>Dryopteris intermedia</i>	evergreen woodfern	DRYINT	native	5	0
<i>Dryopteris marginalis</i>	marginal woodfern	DRYMAR	native	5	3
<i>Epilobium coloratum</i>	cinnamon willow-herb	EPICOL	native	3	-5
<i>Equisetum arvense</i>	common horsetail	EQUARV	native	0	0
<i>Eurybia macrophylla</i>	big-leaved aster	EURMAC	native	4	5
<i>Euthamia graminifolia</i>	grass-leaved goldenrod	EUTGRA	native	3	0
<i>Fallopia cilinodis</i>	fringed false buckwheat	FALCIL	native	3	5
<i>Festuca occidentalis</i>	western fescue	FESOCC	native	6	5
<i>Fragaria vesca</i>	woodland strawberry	FRAVES	native	2	3
<i>Fragaria virginiana</i>	wild strawberry	FRAVIR	native	2	3
<i>Fraxinus pennsylvanica</i>	red ash	FRAPEN	native	2	-3
<i>Galium triflorum</i>	fragrant bedstraw	GALTRR	native	4	3
<i>Gaultheria hispidula</i>	creeping-snowberry	GAUHis	native	8	-3
<i>Gentiana rubricaulis</i>	great lakes gentian	GENRUB	native	7	-5
<i>Goodyera tessellata</i>	tesselated rattlesnake plantain	GOOTES	native	8	3
<i>Gymnocarpium dryopteris</i>	oak fern	GYMDRY	native	5	3
<i>Hepatica americana</i>	round-lobed hepatica	HEPAME	native	6	5
<i>Hieracium caespitosum</i>	king devil	HIECAE	non-native	0	5
<i>Hypericum perforatum</i>	common st. johns-wort	HYPPER	non-native	0	5
<i>Ilex verticillata</i>	michigan holly	ILEVER	native	5	-3
<i>Iris versicolor</i>	wild blue flag	IRIVER	native	5	-5
<i>Juncus brevicaudatus</i>	rush	JUNBRE	native	8	-5
<i>Juncus dudleyi</i>	dudleys rush	JUNDUD	native	1	-3
<i>Juncus tenuis</i>	path rush	JUNTEN	native	1	0
<i>Juniperus horizontalis</i>	creeping juniper	JUNHOR	native	10	3
<i>Lathyrus japonicus</i>	beach pea	LATJAP	native	10	3
<i>Leucanthemum vulgare</i>	ox-eye daisy	LEUVUL	non-native	0	5
<i>Linnaea borealis</i>	twinflower	LINBOR	native	6	0
<i>Lobelia inflata</i>	indian-tobacco	LOBINF	native	0	3
<i>Lobelia kalmii</i>	bog lobelia	LOBKAL	native	10	-5
<i>Lonicera canadensis</i>	canadian fly honeysuckle	LONCAN	native	5	3
<i>Lonicera dioica</i>	red honeysuckle	LONDIO	native	5	3
<i>Lycopodium lagopus</i>	running ground-pine	LYCLAG	native	5	3
<i>Lycopus americanus</i>	common water horehound	LYCAME	native	2	-5
<i>Lycopus uniflorus</i>	northern bugle weed	LYCUNI	native	2	-5
<i>Lysimachia terrestris</i>	swamp-candles	LYSTER	native	6	-5

Appendix 2.8. Cattle Island FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Maianthemum canadense</i>	canada mayflower	MAICAN	native	4	3
<i>Melampyrum lineare</i>	cow-wheat	MELLIN	native	6	3
<i>Mentha canadensis</i>	wild mint	MENCAS	native	3	-3
<i>Micranthes virginensis</i>	early saxifrage	MICVIR	native	10	3
<i>Monotropa uniflora</i>	indian-pipe	MONOUN	native	5	3
<i>Myrica gale</i>	sweet gale	MYRGAL	native	6	-5
<i>Oenothera biennis</i>	common evening-primrose	OENBIE	native	2	3
<i>Ostrya virginiana</i>	ironwood; hop-hornbeam	OSTVIR	native	5	3
<i>Phalaris arundinacea</i>	reed canary grass	PHAARU	native	0	-3
<i>Physocarpus opulifolius</i>	ninebark	PHYOPU	native	4	-3
<i>Picea glauca</i>	white spruce	PICGLA	native	3	3
<i>Picea mariana</i>	black spruce	PICMAR	native	6	-3
<i>Pinus resinosa</i>	red pine	PINRES	native	6	3
<i>Pinus strobus</i>	white pine	PINSTR	native	3	3
<i>Plantago rugelii</i>	red-stalked plantain	PLARUG	native	0	0
<i>Poa compressa</i>	canada bluegrass	POACOM	non-native	0	3
<i>Poa glauca</i>	bluegrass	POAGLA	native	10	5
<i>Poa nemoralis</i>	bluegrass	POANEM	non-native	0	3
<i>Poa palustris</i>	fowl meadow grass	POAPAS	native	3	-3
<i>Poa pratensis</i>	kentucky bluegrass	POAPRA	non-native	0	3
<i>Polypodium virginianum</i>	common polypody	POLVIR	native	8	5
<i>Populus grandidentata</i>	big-tooth aspen	POPGRA	native	4	3
<i>Populus tremuloides</i>	quaking aspen	POPTRE	native	1	0
<i>Portulaca oleracea</i>	purslane	POROLE	native	0	3
<i>Potentilla norvegica</i>	rough cinquefoil	POTNOR	native	0	0
<i>Prenanthes alba</i>	white lettuce	PREALB	native	5	3
<i>Prunus pensylvanica</i>	pin cherry	PRUPEN	native	3	3
<i>Prunus virginiana</i>	choke cherry	PRUVIR	native	2	3
<i>Pteridium aquilinum</i>	bracken fern	PTEAQU	native	0	3
<i>Pyrola americana</i>	round-leaved pyrola	PYRAME	native	7	0
<i>Rhododendron groenlandicum</i>	labrador-tea	RHOGRO	native	8	-5
<i>Ribes glandulosum</i>	skunk currant	RIBGLA	native	5	-3
<i>Rosa acicularis</i>	wild rose	ROSACI	native	4	3
<i>Rubus setosus</i>	bristly blackberry	RUBSET	native	3	-3
<i>Rubus strigosus</i>	wild red raspberry	RUBSTR	native	2	0
<i>Rumex acetosella</i>	sheep sorrel	RUMACL	non-native	0	3
<i>Sagina procumbens</i>	pearlwort	SAGPRO	non-native	0	0
<i>Salix bebbiana</i>	bebbs willow	SALBEB	native	1	-3
<i>Salix myricoides</i>	blueleaf willow	SALMYR	native	9	-3
<i>Sambucus racemosa</i>	red-berried elder	SAMRAC	native	3	3
<i>Schizachne purpurascens</i>	false melic	SCHPUP	native	5	3
<i>Scirpus cyperinus</i>	wool-grass	SCICYP	native	5	-5
<i>Scutellaria galericulata</i>	marsh skullcap	SCUGAL	native	5	-5
<i>Selaginella rupestris</i>	sand club moss	SELRUP	native	8	5
<i>Sibbaldiopsis tridentata</i>	three-toothed cinquefoil	SIBTRI	native	10	3
<i>Sisyrinchium montanum</i>	mountain blue-eyed-grass	SISMON	native	4	0

Appendix 2.8. Cattle Island FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Solidago hispida</i>	hairy goldenrod	SOLHIS	native	3	5
<i>Solidago rugosa</i>	rough-leaved goldenrod	SOLRUG	native	3	0
<i>Sorbus decora</i>	mountain-ash	SORDEC	native	4	3
<i>Spinulum annotinum</i>	stiff clubmoss	SPIANN	native	5	0
<i>Spiraea alba</i>	meadowsweet	SPIALB	native	4	-3
<i>Symphoricarpos albus</i> var. <i>albus</i>	snowberry	SYMALA	native	5	3
<i>Symphotrichum lanceolatum</i>	panicled aster	SYMLAN	native	2	-3
<i>Taraxacum officinale</i>	common dandelion	TAROFF	non-native	0	3
<i>Taxus canadensis</i>	yew	TAXCAN	native	5	3
<i>Thalictrum dasycarpum</i>	purple meadow-rue	THADAS	native	3	-3
<i>Thuja occidentalis</i>	arbor vitae	THUOCC	native	4	-3
<i>Trientalis borealis</i>	star-flower	TRIBOR	native	5	0
<i>Typha latifolia</i>	broad-leaved cat-tail	TYPLAT	native	1	-5
<i>Vaccinium angustifolium</i>	low sweet blueberry	VACANG	native	4	3
<i>Vaccinium myrtilloides</i>	canada blueberry	VACMYR	native	4	-3
<i>Veronica officinalis</i>	common speedwell	VEROOF	non-native	0	3
<i>Viola nephrophylla</i>	northern bog violet	VIONEP	native	8	-3

Appendix 2.9. Cattle Island Granite Bedrock Glade FQA.

Conservatism-Based Metrics:

Total Mean C:	4.2
Native Mean C:	4.6
Total FQI:	42.8
Native FQI:	44.8
Adjusted FQI:	44
% C value 0:	11.5
% C value 1-3:	23.1
% C value 4-6:	52.9
% C value 7-10:	12.5
Native Tree Mean C:	3.6
Native Shrub Mean C:	4.5
Native Herbaceous Mean C:	4.9

Species Richness:

Total Species:	104	
Native Species:	95	91.30%
Non-native Species:	9	8.70%

Species Wetness:

Mean Wetness:	1.5
Native Mean Wetness:	1.3

Physiognomy Metrics:

Tree:	14	13.50%
Shrub:	22	21.20%
Vine:	2	1.90%
Forb:	37	35.60%
Grass:	10	9.60%
Sedge:	8	7.70%
Rush:	1	1%
Fern:	10	9.60%
Bryophyte:	0	0%

Duration Metrics:

Annual:	3	2.90%
Perennial:	100	96.20%
Biennial:	1	1%
Native Annual:	3	2.90%
Native Perennial:	91	87.50%
Native Biennial:	1	1%

Appendix 2.9. Cattle Island Granite Bedrock Glade FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Abies balsamea</i>	balsam fir	ABIBAL	native	3	0
<i>Acer rubrum</i>	red maple	ACERUB	native	1	0
<i>Acer saccharum</i>	sugar maple	ACESAU	native	5	3
<i>Acer spicatum</i>	mountain maple	ACESPI	native	5	3
<i>Achillea millefolium</i>	yarrow	ACHMIL	native	1	3
<i>Agrostis scabra</i>	ticklegass	AGRSCA	native	4	0
<i>Amelanchier interior</i>	serviceberry	AMEINT	native	4	5
<i>Amelanchier sanguinea</i>	round-leaved serviceberry	AMESAN	native	5	5
<i>Aquilegia canadensis</i>	wild columbine	AQUCAN	native	5	3
<i>Aralia hispida</i>	bristly sarsaparilla	ARAHIS	native	3	5
<i>Aralia nudicaulis</i>	wild sarsaparilla	ARANUD	native	5	3
<i>Arctostaphylos uva-ursi</i>	bearberry	ARCUVA	native	8	5
<i>Avenella flexuosa</i>	hair grass	AVEFLE	native	6	5
<i>Betula papyrifera</i>	paper birch	BETPAP	native	2	3
<i>Calamagrostis canadensis</i>	blue-joint	CALCAN	native	3	-5
<i>Campanula rotundifolia</i>	harebell	CAMROT	native	6	3
<i>Capnoides sempervirens</i>	pink or pale corydalis	CAPSEM	native	5	5
<i>Carex arctata</i>	sedge	CXARTT	native	3	5
<i>Carex brunnescens</i>	sedge	CXBRUN	native	5	-3
<i>Carex canescens</i>	sedge	CXCANE	native	8	-5
<i>Carex crawei</i>	sedge	CXCRAE	native	10	-3
<i>Carex pedunculata</i>	sedge	CXPEDU	native	5	3
<i>Carex pensylvanica</i>	sedge	CXPENS	native	4	5
<i>Carex scoparia</i>	sedge	CXSCOP	native	4	-3
<i>Carex viridula</i>	sedge	CXVIRU	native	4	-5
<i>Cerastium fontanum</i>	mouse-ear chickweed	CERFON	non-native	0	3
<i>Chamerion angustifolium</i>	fireweed	CHAANG	native	3	0
<i>Clinopodium vulgare</i>	wild-basil	CLIVUL	native	3	5
<i>Clintonia borealis</i>	bluebead-lily; corn-lily	CLIBOR	native	5	0
<i>Coptis trifolia</i>	goldthread	COPTRI	native	5	-3
<i>Cornus canadensis</i>	bunchberry	CORCAA	native	6	0
<i>Cornus rugosa</i>	round-leaved dogwood	CORRUG	native	6	5
<i>Cornus sericea</i>	red-osier	CORSER	native	2	-3
<i>Cystopteris fragilis</i>	fragile fern	CYSFRA	native	4	3
<i>Danthonia spicata</i>	poverty grass; oatgrass	DANSPI	native	4	5
<i>Dendrolycopodium dendroideum</i>	tree clubmoss	DENDEN	native	5	3
<i>Deschampsia cespitosa</i>	hair grass	DESCES	native	9	-3
<i>Diervilla lonicera</i>	bush-honeysuckle	DIELON	native	4	5
<i>Dryopteris carthusiana</i>	spinulose woodfern	DRYCAR	native	5	-3
<i>Dryopteris intermedia</i>	evergreen woodfern	DRYINT	native	5	0
<i>Dryopteris marginalis</i>	marginal woodfern	DRYMAR	native	5	3
<i>Epilobium coloratum</i>	cinnamon willow-herb	EPICOL	native	3	-5
<i>Eurybia macrophylla</i>	big-leaved aster	EURMAC	native	4	5
<i>Euthamia graminifolia</i>	grass-leaved goldenrod	EUTGRA	native	3	0
<i>Fallopia cilinodis</i>	fringed false buckwheat	FALCIL	native	3	5
<i>Festuca occidentalis</i>	western fescue	FESOCC	native	6	5

Appendix 2.9. Cattle Island Granite Bedrock Glade FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Fragaria virginiana</i>	wild strawberry	FRAVIR	native	2	3
<i>Galium triflorum</i>	fragrant bedstraw	GALTRR	native	4	3
<i>Gaultheria hispida</i>	creeping-snowberry	GAUHis	native	8	-3
<i>Goodyera tessellata</i>	tesselated rattlesnake plantain	GOOTES	native	8	3
<i>Gymnocarpium dryopteris</i>	oak fern	GYMDRY	native	5	3
<i>Hepatica americana</i>	round-lobed hepatica	HEPAME	native	6	5
<i>Hieracium aurantiacum</i>	orange hawkweed	HIEAUR	non-native	0	5
<i>Hieracium caespitosum</i>	king devil	HIECAE	non-native	0	5
<i>Hypericum perforatum</i>	common st. johns-wort	HYPPER	non-native	0	5
<i>Iris versicolor</i>	wild blue flag	IRIVER	native	5	-5
<i>Juncus brevicaudatus</i>	rush	JUNBRE	native	8	-5
<i>Leucanthemum vulgare</i>	ox-eye daisy	LEUVUL	non-native	0	5
<i>Linnaea borealis</i>	twinflower	LINBOR	native	6	0
<i>Lonicera canadensis</i>	canadian fly honeysuckle	LONCAN	native	5	3
<i>Lonicera dioica</i>	red honeysuckle	LONDIO	native	5	3
<i>Lysimachia terrestris</i>	swamp-candles	LYSTER	native	6	-5
<i>Maianthemum canadense</i>	canada mayflower	MAICAN	native	4	3
<i>Melampyrum lineare</i>	cow-wheat	MELLIN	native	6	3
<i>Monotropa uniflora</i>	indian-pipe	MONOUN	native	5	3
<i>Physocarpus opulifolius</i>	ninebark	PHYOPU	native	4	-3
<i>Picea glauca</i>	white spruce	PICGLA	native	3	3
<i>Picea mariana</i>	black spruce	PICMAR	native	6	-3
<i>Pinus resinosa</i>	red pine	PINRES	native	6	3
<i>Pinus strobus</i>	white pine	PINSTR	native	3	3
<i>Poa compressa</i>	canada bluegrass	POACOM	non-native	0	3
<i>Poa glauca</i>	bluegrass	POAGLA	native	10	5
<i>Poa pratensis</i>	kentucky bluegrass	POAPRA	non-native	0	3
<i>Polypodium virginianum</i>	common polypody	POLVIR	native	8	5
<i>Populus grandidentata</i>	big-tooth aspen	POPGRA	native	4	3
<i>Populus tremuloides</i>	quaking aspen	POPTRE	native	1	0
<i>Portulaca oleracea</i>	purslane	POROLE	native	0	3
<i>Potentilla norvegica</i>	rough cinquefoil	POTNOR	native	0	0
<i>Prenanthes alba</i>	white lettuce	PREALB	native	5	3
<i>Prunus pensylvanica</i>	pin cherry	PRUPEN	native	3	3
<i>Prunus virginiana</i>	choke cherry	PRUVIR	native	2	3
<i>Pteridium aquilinum</i>	bracken fern	PTEAQU	native	0	3
<i>Pyrola americana</i>	round-leaved pyrola	PYRAME	native	7	0
<i>Rhododendron groenlandicum</i>	labrador-tea	RHOGRO	native	8	-5
<i>Ribes glandulosum</i>	skunk currant	RIBGLA	native	5	-3
<i>Rosa acicularis</i>	wild rose	ROSACI	native	4	3
<i>Rubus setosus</i>	bristly blackberry	RUBSET	native	3	-3
<i>Rubus strigosus</i>	wild red raspberry	RUBSTR	native	2	0
<i>Rumex acetosella</i>	sheep sorrel	RUMACL	non-native	0	3
<i>Sambucus racemosa</i>	red-berried elder	SAMRAC	native	3	3
<i>Schizachne purpurascens</i>	false melic	SCHPUP	native	5	3
<i>Selaginella rupestris</i>	sand club moss	SELRUP	native	8	5

Appendix 2.9. Cattle Island Granite Bedrock Glade FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Sibbaldiopsis tridentata</i>	three-toothed cinquefoil	SIBTRI	native	10	3
<i>Solidago hispida</i>	hairy goldenrod	SOLHIS	native	3	5
<i>Sorbus decora</i>	mountain-ash	SORDEC	native	4	3
<i>Spinulum annotinum</i>	stiff clubmoss	SPIANN	native	5	0
<i>Spiraea alba</i>	meadowsweet	SPIALB	native	4	-3
<i>Taxus canadensis</i>	yew	TAXCAN	native	5	3
<i>Thalictrum dasycarpum</i>	purple meadow-rue	THADAS	native	3	-3
<i>Thuja occidentalis</i>	arbor vitae	THUOCC	native	4	-3
<i>Trientalis borealis</i>	star-flower	TRIBOR	native	5	0
<i>Vaccinium angustifolium</i>	low sweet blueberry	VACANG	native	4	3
<i>Vaccinium myrtilloides</i>	canada blueberry	VACMYR	native	4	-3
<i>Veronica officinalis</i>	common speedwell	VEROOF	non-native	0	3

Appendix 2.10. Cattle Island Granite Bedrock Lakeshore FQA.

Conservatism-Based Metrics:

Total Mean C:	4
Native Mean C:	4.1
Total FQI:	30.2
Native FQI:	30.4
Adjusted FQI:	40.3
% C value 0:	10.5
% C value 1-3:	38.6
% C value 4-6:	33.3
% C value 7-10:	17.5
Native Tree Mean C:	2.5
Native Shrub Mean C:	5.5
Native Herbaceous Mean C:	4.1

Species Richness:

Total Species:	57	
Native Species:	55	96.50%
Non-native Species:	2	3.50%

Species Wetness:

Mean Wetness:	-0.6
Native Mean Wetness:	-0.8

Physiognomy Metrics:

Tree:	8	14%
Shrub:	12	21.10%
Vine:	1	1.80%
Forb:	24	42.10%
Grass:	6	10.50%
Sedge:	5	8.80%
Rush:	0	0%
Fern:	1	1.80%
Bryophyte:	0	0%

Duration Metrics:

Annual:	2	3.50%
Perennial:	53	93%
Biennial:	2	3.50%
Native Annual:	2	3.50%
Native Perennial:	51	89.50%
Native Biennial:	2	3.50%

Appendix 2.10. Cattle Island Granite Bedrock Lakeshore FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Abies balsamea</i>	balsam fir	ABIBAL	native	3	0
<i>Acer rubrum</i>	red maple	ACERUB	native	1	0
<i>Achillea millefolium</i>	yarrow	ACHMIL	native	1	3
<i>Alnus incana</i> ; <i>a. rugosa</i>	speckled alder	ALNINC	native	5	-3
<i>Aquilegia canadensis</i>	wild columbine	AQUCAN	native	5	3
<i>Arctostaphylos uva-ursi</i>	bearberry	ARCUVA	native	8	5
<i>Avenella flexuosa</i>	hair grass	AVEFLE	native	6	5
<i>Betula papyrifera</i>	paper birch	BETPAP	native	2	3
<i>Calamagrostis canadensis</i>	blue-joint	CALCAN	native	3	-5
<i>Caltha palustris</i>	marsh-marigold	CALPAR	native	6	-5
<i>Campanula rotundifolia</i>	harebell	CAMROT	native	6	3
<i>Capnoides sempervirens</i>	pink or pale corydalis	CAPSEM	native	5	5
<i>Carex aquatilis</i>	sedge	CXAQUA	native	7	-5
<i>Carex communis</i>	sedge	CXCOMM	native	2	5
<i>Carex crinita</i>	sedge	CXCRIN	native	4	-5
<i>Carex hystericina</i>	sedge	CXHYST	native	2	-5
<i>Carex stipata</i>	sedge	CXSTIP	native	1	-5
<i>Chelone glabra</i>	turtlehead	CHEGLB	native	7	-5
<i>Cirsium arvense</i>	canada thistle	CIRARV	non-native	0	3
<i>Deschampsia cespitosa</i>	hair grass	DESCES	native	9	-3
<i>Equisetum arvense</i>	common horsetail	EQUARV	native	0	0
<i>Euthamia graminifolia</i>	grass-leaved goldenrod	EUTGRA	native	3	0
<i>Fraxinus pennsylvanica</i>	red ash	FRAPEN	native	2	-3
<i>Gentiana rubricaulis</i>	great lakes gentian	GENRUB	native	7	-5
<i>Ilex verticillata</i>	michigan holly	ILEVER	native	5	-3
<i>Iris versicolor</i>	wild blue flag	IRIVER	native	5	-5
<i>Juniperus horizontalis</i>	creeping juniper	JUNHOR	native	10	3
<i>Lathyrus japonicus</i>	beach pea	LATJAP	native	10	3
<i>Lobelia inflata</i>	indian-tobacco	LOBINF	native	0	3
<i>Lobelia kalmii</i>	bog lobelia	LOBKAL	native	10	-5
<i>Lycopus americanus</i>	common water horehound	LYCAME	native	2	-5
<i>Lycopus uniflorus</i>	northern bugle weed	LYCUNI	native	2	-5
<i>Mentha canadensis</i>	wild mint	MENCAS	native	3	-3
<i>Myrica gale</i>	sweet gale	MYRGAL	native	6	-5
<i>Oenothera biennis</i>	common evening-primrose	OENBIE	native	2	3
<i>Phalaris arundinacea</i>	reed canary grass	PHAARU	native	0	-3
<i>Physocarpus opulifolius</i>	ninebark	PHYOPU	native	4	-3
<i>Pinus strobus</i>	white pine	PINSTR	native	3	3
<i>Poa compressa</i>	canada bluegrass	POACOM	non-native	0	3
<i>Poa palustris</i>	fowl meadow grass	POAPAS	native	3	-3
<i>Populus grandidentata</i>	big-tooth aspen	POPGRA	native	4	3
<i>Populus tremuloides</i>	quaking aspen	POPTRE	native	1	0
<i>Potentilla norvegica</i>	rough cinquefoil	POTNOR	native	0	0
<i>Prenanthes alba</i>	white lettuce	PREALB	native	5	3
<i>Prunus virginiana</i>	choke cherry	PRUVIR	native	2	3
<i>Salix myricoides</i>	blueleaf willow	SALMYR	native	9	-3

Appendix 2.10. Cattle Island Granite Bedrock Lakeshore FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Scutellaria galericulata</i>	marsh skullcap	SCUGAL	native	5	-5
<i>Sibbaldiopsis tridentata</i>	three-toothed cinquefoil	SIBTRI	native	10	3
<i>Solidago hispida</i>	hairy goldenrod	SOLHIS	native	3	5
<i>Solidago rugosa</i>	rough-leaved goldenrod	SOLRUG	native	3	0
<i>Spiraea alba</i>	meadowsweet	SPIALB	native	4	-3
<i>Symphoricarpos albus</i> var. <i>albus</i>	snowberry	SYMALA	native	5	3
<i>Symphotrichum lanceolatum</i>	panicled aster	SYMLAN	native	2	-3
<i>Thalictrum dasycarpum</i>	purple meadow-rue	THADAS	native	3	-3
<i>Thuja occidentalis</i>	arbor vitae	THUOCC	native	4	-3
<i>Vaccinium angustifolium</i>	low sweet blueberry	VACANG	native	4	3
<i>Vaccinium myrtilloides</i>	canada blueberry	VACMYR	native	4	-3

Appendix 2.11. Cattle Island Granite Lakeshore Cliff FQA.

Conservatism-Based Metrics:

Total Mean C:	4.2
Native Mean C:	4.6
Total FQI:	37.8
Native FQI:	39.6
Adjusted FQI:	44
% C value 0:	11.1
% C value 1-3:	28.4
% C value 4-6:	42
% C value 7-10:	18.5
Native Tree Mean C:	3.6
Native Shrub Mean C:	4.7
Native Herbaceous Mean C:	4.7

Species Richness:

Total Species:	81	
Native Species:	74	91.40%
Non-native Species:	7	8.60%

Species Wetness:

Mean Wetness:	0.7
Native Mean Wetness:	0.5

Physiognomy Metrics:

Tree:	9	11.10%
Shrub:	22	27.20%
Vine:	2	2.50%
Forb:	25	30.90%
Grass:	8	9.90%
Sedge:	7	8.60%
Rush:	3	3.70%
Fern:	5	6.20%
Bryophyte:	0	0%

Duration Metrics:

Annual:	1	1.20%
Perennial:	78	96.30%
Biennial:	2	2.50%
Native Annual:	1	1.20%
Native Perennial:	71	87.70%
Native Biennial:	2	2.50%

Appendix 2.11. Cattle Island Granite Lakeshore Cliff FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Abies balsamea</i>	balsam fir	ABIBAL	native	3	0
<i>Achillea millefolium</i>	yarrow	ACHMIL	native	1	3
<i>Agrostis scabra</i>	ticklegrass	AGRSCA	native	4	0
<i>Alnus incana</i>	speckled alder	ALNINC	native	5	-3
<i>Alnus viridis</i>	mountain alder	ALNVIR	native	8	0
<i>Amelanchier sanguinea</i>	round-leaved serviceberry	AMESAN	native	5	5
<i>Aquilegia canadensis</i>	wild columbine	AQUCAN	native	5	3
<i>Arabidopsis lyrata</i>	sand cress	ARALYR	native	7	3
<i>Aralia hispida</i>	bristly sarsaparilla	ARAHIS	native	3	5
<i>Arctostaphylos uva-ursi</i>	bearberry	ARCUVA	native	8	5
<i>Athyrium filix-femina</i>	lady fern	ATHFIL	native	4	0
<i>Avenella flexuosa</i>	hair grass	AVEFLE	native	6	5
<i>Betula papyrifera</i>	paper birch	BETPAP	native	2	3
<i>Calamagrostis canadensis</i>	blue-joint	CALCAN	native	3	-5
<i>Campanula rotundifolia</i>	harebell	CAMROT	native	6	3
<i>Capnoides sempervirens</i>	pink or pale corydalis	CAPSEM	native	5	5
<i>Carex aquatilis</i>	sedge	CXAQUA	native	7	-5
<i>Carex arctata</i>	sedge	CXARTT	native	3	5
<i>Carex aurea</i>	sedge	CXAURE	native	3	-3
<i>Carex canescens</i>	sedge	CXCANE	native	8	-5
<i>Carex echinata</i>	sedge	CXECHA	native	6	-5
<i>Carex scoparia</i>	sedge	CXSCOP	native	4	-3
<i>Chamerion angustifolium</i>	fireweed	CHAANG	native	3	0
<i>Cornus canadensis</i>	bunchberry	CORCAA	native	6	0
<i>Cornus sericea</i>	red-osier	CORSER	native	2	-3
<i>Cystopteris fragilis</i>	fragile fern	CYSFRA	native	4	3
<i>Danthonia spicata</i>	poverty grass; oatgrass	DANSPI	native	4	5
<i>Deschampsia cespitosa</i>	hair grass	DESCES	native	9	-3
<i>Diervilla lonicera</i>	bush-honeysuckle	DIELON	native	4	5
<i>Drymocallis arguta</i>	tall or prairie cinquefoil	DRYARG	native	8	3
<i>Dryopteris intermedia</i>	evergreen woodfern	DRYINT	native	5	0
<i>Epilobium coloratum</i>	cinnamon willow-herb	EPICOL	native	3	-5
<i>Euthamia graminifolia</i>	grass-leaved goldenrod	EUTGRA	native	3	0
<i>Fragaria vesca</i>	woodland strawberry	FRAVES	native	2	3
<i>Gaultheria hispida</i>	creeping-snowberry	GAUHIS	native	8	-3
<i>Hypericum perforatum</i>	common st. johns-wort	HYPPER	non-native	0	5
<i>Ilex verticillata</i>	michigan holly	ILEVER	native	5	-3
<i>Juncus brevicaudatus</i>	rush	JUNBRE	native	8	-5
<i>Juncus dudleyi</i>	dudleys rush	JUNDUD	native	1	-3
<i>Juncus tenuis</i>	path rush	JUNTEN	native	1	0
<i>Juniperus horizontalis</i>	creeping juniper	JUNHOR	native	10	3
<i>Lathyrus japonicus</i>	beach pea	LATJAP	native	10	3
<i>Leucanthemum vulgare</i>	ox-eye daisy	LEUVUL	non-native	0	5
<i>Lonicera dioica</i>	red honeysuckle	LONDIO	native	5	3
<i>Lycopodium lagopus</i>	running ground-pine	LYCLAG	native	5	3
<i>Maianthemum canadense</i>	canada mayflower	MAICAN	native	4	3

Appendix 2.11. Cattle Island Granite Lakeshore Cliff FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Micranthes virginensis</i>	early saxifrage	MICVIR	native	10	3
<i>Physocarpus opulifolius</i>	ninebark	PHYOPU	native	4	-3
<i>Picea glauca</i>	white spruce	PICGLA	native	3	3
<i>Picea mariana</i>	black spruce	PICMAR	native	6	-3
<i>Pinus resinosa</i>	red pine	PINRES	native	6	3
<i>Pinus strobus</i>	white pine	PINSTR	native	3	3
<i>Plantago rugelii</i>	red-stalked plantain	PLARUG	native	0	0
<i>Poa compressa</i>	canada bluegrass	POACOM	non-native	0	3
<i>Poa palustris</i>	fowl meadow grass	POAPAS	native	3	-3
<i>Poa pratensis</i>	kentucky bluegrass	POAPRA	non-native	0	3
<i>Polypodium virginianum</i>	common polypody	POLVIR	native	8	5
<i>Populus tremuloides</i>	quaking aspen	POPTRE	native	1	0
<i>Potentilla norvegica</i>	rough cinquefoil	POTNOR	native	0	0
<i>Prenanthes alba</i>	white lettuce	PREALB	native	5	3
<i>Prunus virginiana</i>	choke cherry	PRUVIR	native	2	3
<i>Ribes glandulosum</i>	skunk currant	RIBGLA	native	5	-3
<i>Rosa acicularis</i>	wild rose	ROSACI	native	4	3
<i>Rubus strigosus</i>	wild red raspberry	RUBSTR	native	2	0
<i>Rumex acetosella</i>	sheep sorrel	RUMACL	non-native	0	3
<i>Salix bebbiana</i>	bebb's willow	SALBEB	native	1	-3
<i>Scirpus cyperinus</i>	wool-grass	SCICYP	native	5	-5
<i>Sibbaldiopsis tridentata</i>	three-toothed cinquefoil	SIBTRI	native	10	3
<i>Sisyrinchium montanum</i>	mountain blue-eyed-grass	SISMON	native	4	0
<i>Solidago hispida</i>	hairy goldenrod	SOLHIS	native	3	5
<i>Sorbus decora</i>	mountain-ash	SORDEC	native	4	3
<i>Spiraea alba</i>	meadowsweet	SPIALB	native	4	-3
<i>Symphoricarpos albus</i> var. <i>albus</i>	snowberry	SYMALA	native	5	3
<i>Taraxacum officinale</i>	common dandelion	TAROFF	non-native	0	3
<i>Taxus canadensis</i>	yew	TAXCAN	native	5	3
<i>Thuja occidentalis</i>	arbor vitae	THUOCC	native	4	-3
<i>Typha latifolia</i>	broad-leaved cat-tail	TYPLAT	native	1	-5
<i>Vaccinium angustifolium</i>	low sweet blueberry	VACANG	native	4	3
<i>Vaccinium myrtilloides</i>	canada blueberry	VACMYR	native	4	-3
<i>Veronica officinalis</i>	common speedwell	VEROOF	non-native	0	3
<i>Viola nephrophylla</i>	northern bog violet	VIONEP	native	8	-3

Appendix 2.12. Cattle Island Boreal Forest FQA.

Conservatism-Based Metrics:

Total Mean C:	4.2
Native Mean C:	4.4
Total FQI:	24.5
Native FQI:	24.9
Adjusted FQI:	42.7
% C value 0:	8.8
% C value 1-3:	23.5
% C value 4-6:	58.8
% C value 7-10:	8.8
Native Tree Mean C:	3.6
Native Shrub Mean C:	6.3
Native Herbaceous Mean C:	4.5

Species Richness:

Total Species:	34	
Native Species:	32	94.10%
Non-native Species:	2	5.90%

Species Wetness:

Mean Wetness:	1.9
Native Mean Wetness:	1.9

Physiognomy Metrics:

Tree:	11	32.40%
Shrub:	4	11.80%
Vine:	1	2.90%
Forb:	7	20.60%
Grass:	3	8.80%
Sedge:	5	14.70%
Rush:	0	0%
Fern:	3	8.80%
Bryophyte:	0	0%

Duration Metrics:

Annual:	0	0%
Perennial:	34	100%
Biennial:	0	0%
Native Annual:	0	0%
Native Perennial:	32	94.10%
Native Biennial:	0	0%

Appendix 2.12. Cattle Island Boreal Forest FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Abies balsamea</i>	balsam fir	ABIBAL	native	3	0
<i>Acer pensylvanicum</i>	striped maple	ACEPEN	native	5	3
<i>Acer rubrum</i>	red maple	ACERUB	native	1	0
<i>Acer spicatum</i>	mountain maple	ACESPI	native	5	3
<i>Alnus viridis</i>	mountain alder	ALNVIR	native	8	0
<i>Aralia nudicaulis</i>	wild sarsaparilla	ARANUD	native	5	3
<i>Avenella flexuosa</i>	hair grass	AVEFLE	native	6	5
<i>Campanula rotundifolia</i>	harebell	CAMROT	native	6	3
<i>Carex canescens</i>	sedge	CXCANE	native	8	-5
<i>Carex communis</i>	sedge	CXCOMM	native	2	5
<i>Carex deweyana</i>	sedge	CXDEWE	native	3	3
<i>Carex pedunculata</i>	sedge	CXPEDU	native	5	3
<i>Carex pensylvanica</i>	sedge	CXPENS	native	4	5
<i>Dendrolycopodium dendroideum</i>	tree clubmoss	DENDEN	native	5	3
<i>Diervilla lonicera</i>	bush-honeysuckle	DIELON	native	4	5
<i>Fallopia cilinodis</i>	fringed false buckwheat	FALCIL	native	3	5
<i>Festuca occidentalis</i>	western fescue	FESOCC	native	6	5
<i>Galium triflorum</i>	fragrant bedstraw	GALTRR	native	4	3
<i>Linnaea borealis</i>	twinflower	LINBOR	native	6	0
<i>Maianthemum canadense</i>	canada mayflower	MAICAN	native	4	3
<i>Monotropa uniflora</i>	indian-pipe	MONOUN	native	5	3
<i>Ostrya virginiana</i>	ironwood; hop-hornbeam	OSTVIR	native	5	3
<i>Picea glauca</i>	white spruce	PICGLA	native	3	3
<i>Picea mariana</i>	black spruce	PICMAR	native	6	-3
<i>Poa nemoralis</i>	bluegrass	POANEM	non-native	0	3
<i>Populus grandidentata</i>	big-tooth aspen	POPGRA	native	4	3
<i>Populus tremuloides</i>	quaking aspen	POPTRE	native	1	0
<i>Prunus pensylvanica</i>	pin cherry	PRUPEN	native	3	3
<i>Pteridium aquilinum</i>	bracken fern	PTEAQU	native	0	3
<i>Rhododendron groenlandicum</i>	labrador-tea	RHOGRO	native	8	-5
<i>Sagina procumbens</i>	pearlwort	SAGPRO	non-native	0	0
<i>Spinulum annotinum</i>	stiff clubmoss	SPIANN	native	5	0
<i>Taxus canadensis</i>	yew	TAXCAN	native	5	3
<i>Thuja occidentalis</i>	arbor vitae	THUOCC	native	4	-3

Appendix 2.13. East Huron Island FQA.

Conservatism-Based Metrics:

Total Mean C:	4.4
Native Mean C:	4.7
Total FQI:	59.4
Native FQI:	61.1
Adjusted FQI:	45.3
% C value 0:	9.9
% C value 1-3:	25.8
% C value 4-6:	46.2
% C value 7-10:	18.1
Native Tree Mean C:	3.9
Native Shrub Mean C:	4.8
Native Herbaceous Mean C:	4.8

Species Richness:

Total Species:	182	
Native Species:	169	92.90%
Non-native Species:	13	7.10%

Species Wetness:

Mean Wetness:	-0.3
Native Mean Wetness:	-0.5

Physiognomy Metrics:

Tree:	19	10.40%
Shrub:	32	17.60%
Vine:	4	2.20%
Forb:	75	41.20%
Grass:	12	6.60%
Sedge:	21	11.50%
Rush:	4	2.20%
Fern:	15	8.20%
Bryophyte:	0	0%

Duration Metrics:

Annual:	14	7.70%
Perennial:	163	89.60%
Biennial:	5	2.70%
Native Annual:	11	6%
Native Perennial:	154	84.60%
Native Biennial:	4	2.20%

Appendix 2.13. East Huron Island FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Abies balsamea</i>	balsam fir	ABIBAL	native	3	0
<i>Acer pensylvanicum</i>	striped maple	ACEPEN	native	5	3
<i>Acer rubrum</i>	red maple	ACERUB	native	1	0
<i>Acer saccharum</i>	sugar maple	ACESAU	native	5	3
<i>Acer spicatum</i>	mountain maple	ACESPI	native	5	3
<i>Achillea millefolium</i>	yarrow	ACHMIL	native	1	3
<i>Agrimonia striata</i>	roadside agrimony	AGRSTR	native	3	3
<i>Agrostis scabra</i>	ticklegass	AGRSCA	native	4	0
<i>Alnus incana</i>	speckled alder	ALNINC	native	5	-3
<i>Alnus viridis</i>	mountain alder	ALNVIR	native	8	0
<i>Amelanchier interior</i>	serviceberry	AMEINT	native	4	5
<i>Amelanchier sanguinea</i>	round-leaved serviceberry	AMESAN	native	5	5
<i>Anaphalis margaritacea</i>	pearly everlasting	ANAMAR	native	3	5
<i>Antennaria howellii</i>	small pussytoes	ANTHOW	native	2	5
<i>Aquilegia canadensis</i>	wild columbine	AQUCAN	native	5	3
<i>Arabidopsis lyrata</i>	sand cress	ARALYR	native	7	3
<i>Aralia hispida</i>	bristly sarsaparilla	ARAHIS	native	3	5
<i>Aralia nudicaulis</i>	wild sarsaparilla	ARANUD	native	5	3
<i>Arctostaphylos uva-ursi</i>	bearberry	ARCUVA	native	8	5
<i>Aronia prunifolia</i>	chokeberry	AROPRU	native	5	-3
<i>Asplenium trichomanes</i>	maidenhair spleenwort	ASPTRI	native	10	5
<i>Athyrium filix-femina</i>	lady fern	ATHFIL	native	4	0
<i>Avenella flexuosa</i>	hair grass	AVEFLE	native	6	5
<i>Betula alleghaniensis</i>	yellow birch	BETALL	native	7	0
<i>Betula papyrifera</i>	paper birch	BETPAP	native	2	3
<i>Bidens cernua</i>	nodding beggar-ticks	BIDCER	native	3	-5
<i>Calamagrostis canadensis</i>	blue-joint	CALCAN	native	3	-5
<i>Callitriche palustris</i>	water-starwort	CALPAS	native	6	-5
<i>Caltha palustris</i>	marsh-marigold	CALPAR	native	6	-5
<i>Campanula rotundifolia</i>	harebell	CAMROT	native	6	3
<i>Capnoides sempervirens</i>	pink or pale corydalis	CAPSEM	native	5	5
<i>Carex aquatilis</i>	sedge	CXAQUA	native	7	-5
<i>Carex bebbii</i>	sedge	CXBEBB	native	4	-5
<i>Carex blanda</i>	sedge	CXBLAN	native	1	0
<i>Carex buxbaumii</i>	sedge	CXBUXB	native	10	-5
<i>Carex canescens</i>	sedge	CXCANE	native	8	-5
<i>Carex crinita</i>	sedge	CXCRIN	native	4	-5
<i>Carex deweyana</i>	sedge	CXDEWE	native	3	3
<i>Carex eburnea</i>	sedge	CXE BUR	native	7	3
<i>Carex echinata</i>	sedge	CXECHA	native	6	-5
<i>Carex flava</i>	sedge	CXFLAV	native	4	-5
<i>Carex magellanica</i>	sedge	CXMAGE	native	8	-5
<i>Carex pedunculata</i>	sedge	CXPEDU	native	5	3
<i>Carex pensylvanica</i>	sedge	CXPENS	native	4	5
<i>Carex stipata</i>	sedge	CXSTIP	native	1	-5
<i>Carex stricta</i>	sedge	CXSTRI	native	4	-5

Appendix 2.13. East Huron Island FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Carex trisperma</i>	sedge	CXTRIS	native	9	-5
<i>Carex vesicaria</i>	sedge	CXVESI	native	7	-5
<i>Carex viridula</i>	sedge	CXVIRU	native	4	-5
<i>Chamaedaphne calyculata</i>	leatherleaf	CHACAL	native	8	-5
<i>Chamerion angustifolium</i>	fireweed	CHAANG	native	3	0
<i>Chelone glabra</i>	turtlehead	CHEGLB	native	7	-5
<i>Cicuta bulbifera</i>	water hemlock	CICBUL	native	5	-5
<i>Cirsium arvense</i>	canada thistle	CIRARV	non-native	0	3
<i>Cirsium palustre</i>	marsh thistle	CIRPAL	non-native	0	-3
<i>Conyza canadensis</i>	horseweed	CONCAN	native	0	3
<i>Cornus canadensis</i>	bunchberry	CORCAA	native	6	0
<i>Cornus rugosa</i>	round-leaved dogwood	CORRUG	native	6	5
<i>Cornus sericea</i>	red-osier	CORSER	native	2	-3
<i>Cypripedium acaule</i>	pink lady-slipper; moccasin flower	CYPACA	native	5	-3
<i>Danthonia spicata</i>	poverty grass; oatgrass	DANSPI	native	4	5
<i>Dendrolycopodium dendroideum</i>	tree clubmoss	DENDEN	native	5	3
<i>Deschampsia cespitosa</i>	hair grass	DESCES	native	9	-3
<i>Dichanthelium implicatum</i>	panic grass	DICIMP	native	3	0
<i>Diervilla lonicera</i>	bush-honeysuckle	DIELON	native	4	5
<i>Drosera rotundifolia</i>	round-leaved sundew	DROROT	native	6	-5
<i>Dryopteris carthusiana</i>	spinulose woodfern	DRYCAR	native	5	-3
<i>Dryopteris filix-mas</i>	male fern	DRYFIL	native	10	5
<i>Dryopteris intermedia</i>	evergreen woodfern	DRYINT	native	5	0
<i>Eleocharis intermedia</i>	spike-rush	ELEINT	native	7	-5
<i>Epilobium ciliatum</i>	willow-herb	EPICIL	native	3	-3
<i>Epipactis helleborine</i>	helleborine	EPIHEL	non-native	0	0
<i>Equisetum arvense</i>	common horsetail	EQUARV	native	0	0
<i>Erechtites hieraciifolius</i>	fireweed	EREHIE	native	2	3
<i>Erucastrum gallicum</i>	dog mustard	ERUGAL	non-native	0	3
<i>Eurybia macrophylla</i>	big-leaved aster	EURMAC	native	4	5
<i>Euthamia graminifolia</i>	grass-leaved goldenrod	EUTGRA	native	3	0
<i>Eutrochium maculatum</i>	joe-pye-weed	EUTMAC	native	4	-5
<i>Fallopia cilinodis</i>	fringed false buckwheat	FALCIL	native	3	5
<i>Fragaria virginiana</i>	wild strawberry	FRAVIR	native	2	3
<i>Fraxinus pennsylvanica</i>	red ash	FRAPEN	native	2	-3
<i>Galeopsis tetrahit</i>	hemp-nettle	GALTET	non-native	0	3
<i>Galium triflorum</i>	fragrant bedstraw	GALTRR	native	4	3
<i>Gaultheria hispidula</i>	creeping-snowberry	GAUHIS	native	8	-3
<i>Gaultheria procumbens</i>	wintergreen	GAUPRO	native	5	3
<i>Geranium bicknellii</i>	northern cranes-bill	GERBIC	native	4	5
<i>Glyceria grandis</i>	reed manna grass	GLYGRA	native	6	-5
<i>Glyceria striata</i>	fowl manna grass	GLYSTR	native	4	-5
<i>Heracleum maximum</i>	cow-parsnip	HERMAX	native	3	-3
<i>Hieracium caespitosum</i>	king devil	HIECAE	non-native	0	5
<i>Huperzia lucidula</i>	shining clubmoss	HUPLUC	native	5	0
<i>Hypericum majus</i>	larger canada st. johns-wort	HYPMAJ	native	4	-3

Appendix 2.13. East Huron Island FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Hypericum perforatum</i>	common st. johns-wort	HYPPER	non-native	0	5
<i>Ilex verticillata</i>	michigan holly	ILEVER	native	5	-3
<i>Impatiens capensis</i>	spotted touch-me-not	IMPCAP	native	2	-3
<i>Iris versicolor</i>	wild blue flag	IRIVER	native	5	-5
<i>Juncus brachycephalus</i>	rush	JUNBRP	native	7	-5
<i>Juncus brevicaudatus</i>	rush	JUNBRE	native	8	-5
<i>Juncus dudleyi</i>	dudleys rush	JUNDUD	native	1	-3
<i>Juncus effusus</i>	soft-stemmed rush	JUNEFF	native	3	-5
<i>Juniperus communis</i>	common or ground juniper	JUNCOI	native	4	3
<i>Juniperus horizontalis</i>	creeping juniper	JUNHOR	native	10	3
<i>Lactuca biennis</i>	tall blue lettuce	LACBIE	native	2	0
<i>Lactuca canadensis</i>	tall lettuce	LACCAN	native	2	3
<i>Lathyrus japonicus</i>	beach pea	LATJAP	native	10	3
<i>Lemna minor</i>	common duckweed	LEMMIN	native	5	-5
<i>Lemna turionifera</i>	red duckweed	LEMTUR	native	5	-5
<i>Leucanthemum vulgare</i>	ox-eye daisy	LEUVUL	non-native	0	5
<i>Linnaea borealis</i>	twinflower	LINBOR	native	6	0
<i>Lobelia kalmii</i>	bog lobelia	LOBKAL	native	10	-5
<i>Lonicera dioica</i>	red honeysuckle	LONDIO	native	5	3
<i>Lonicera hirsuta</i>	hairy honeysuckle	LONHIR	native	6	0
<i>Lycopus uniflorus</i>	northern bugle weed	LYCUNI	native	2	-5
<i>Lysimachia terrestris</i>	swamp-candles	LYSTER	native	6	-5
<i>Lysimachia thysiflora</i>	tufted loosestrife	LYSTHY	native	6	-5
<i>Maianthemum canadense</i>	canada mayflower	MAICAN	native	4	3
<i>Melampyrum lineare</i>	cow-wheat	MELLIN	native	6	3
<i>Menyanthes trifoliata</i>	buckbean	MENTRI	native	8	-5
<i>Myosotis laxa</i>	small forget-me-not	MYOLAX	native	6	-5
<i>Myrica gale</i>	sweet gale	MYRGAL	native	6	-5
<i>Onoclea sensibilis</i>	sensitive fern	ONOSEN	native	2	-3
<i>Osmunda claytoniana</i>	interrupted fern	OSMCLN	native	6	0
<i>Osmunda regalis</i>	royal fern	OSMREG	native	5	-5
<i>Oxalis acetosella</i>	northern wood-sorrel	OXAACE	native	7	3
<i>Persicaria hydropiper</i>	water-pepper	PERHYR	native	1	-5
<i>Persicaria sagittata</i>	arrow-leaved tear-thumb	PERSAG	native	5	-5
<i>Phegopteris connectilis</i>	northern beech-fern	PHECON	native	5	3
<i>Physocarpus opulifolius</i>	ninebark	PHYOPU	native	4	-3
<i>Picea glauca</i>	white spruce	PICGLA	native	3	3
<i>Picea mariana</i>	black spruce	PICMAR	native	6	-3
<i>Pinus banksiana</i>	jack pine	PINBAN	native	5	3
<i>Pinus resinosa</i>	red pine	PINRES	native	6	3
<i>Pinus strobus</i>	white pine	PINSTR	native	3	3
<i>Poa annua</i>	annual bluegrass	POAANN	non-native	0	3
<i>Poa compressa</i>	canada bluegrass	POACOM	non-native	0	3
<i>Poa glauca</i>	bluegrass	POAGLA	native	10	5
<i>Poa palustris</i>	fowl meadow grass	POAPAS	native	3	-3
<i>Polypodium virginianum</i>	common polypody	POLVIR	native	8	5

Appendix 2.13. East Huron Island FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Populus tremuloides</i>	quaking aspen	POPTRE	native	1	0
<i>Potamogeton praelongus</i>	white-stemmed pondweed	POTPRA	native	8	-5
<i>Potentilla norvegica</i>	rough cinquefoil	POTNOR	native	0	0
<i>Prenanthes alba</i>	white lettuce	PREALB	native	5	3
<i>Prunella vulgaris</i>	self-heal	PRUVUL	native	0	0
<i>Prunus pensylvanica</i>	pin cherry	PRUPEN	native	3	3
<i>Prunus virginiana</i>	choke cherry	PRUVIR	native	2	3
<i>Pteridium aquilinum</i>	bracken fern	PTEAQU	native	0	3
<i>Quercus rubra</i>	red oak	QUERUB	native	5	3
<i>Ranunculus acris</i>	tall or common buttercup	RANACR	non-native	0	0
<i>Ranunculus pensylvanicus</i>	bristly crowfoot	RANPEN	native	6	-5
<i>Rhododendron groenlandicum</i>	labrador-tea	RHOGRO	native	8	-5
<i>Ribes glandulosum</i>	skunk currant	RIBGLA	native	5	-3
<i>Rosa acicularis</i>	wild rose	ROSACI	native	4	3
<i>Rubus pubescens</i>	dwarf raspberry	RUBPUB	native	4	-3
<i>Rubus setosus</i>	bristly blackberry	RUBSET	native	3	-3
<i>Rubus strigosus</i>	wild red raspberry	RUBSTR	native	2	0
<i>Rumex acetosella</i>	sheep sorrel	RUMACL	non-native	0	3
<i>Salix bebbiana</i>	bebbs willow	SALBEB	native	1	-3
<i>Sambucus racemosa</i>	red-berried elder	SAMRAC	native	3	3
<i>Scirpus cyperinus</i>	wool-grass	SCICYP	native	5	-5
<i>Scutellaria lateriflora</i>	mad-dog skullcap	SCULAT	native	5	-5
<i>Sibbaldiopsis tridentata</i>	three-toothed cinquefoil	SIBTRI	native	10	3
<i>Solidago altissima</i>	tall goldenrod	SOLALT	native	1	3
<i>Solidago hispida</i>	hairy goldenrod	SOLHIS	native	3	5
<i>Solidago ptarmicoides</i>	upland white goldenrod	SOLPTA	native	6	3
<i>Sorbus decora</i>	mountain-ash	SORDEC	native	4	3
<i>Spinulum annotinum</i>	stiff clubmoss	SPIANN	native	5	0
<i>Spiraea alba</i>	meadowsweet	SPIALB	native	4	-3
<i>Spiranthes romanzoffiana</i>	hooded ladies-tresses	SPIROM	native	8	-5
<i>Symphyotrichum lanceolatum</i>	panicked aster	SYMLAN	native	2	-3
<i>Symphyotrichum lateriflorum</i>	calico aster	SYMLAT	native	2	0
<i>Taxus canadensis</i>	yew	TAXCAN	native	5	3
<i>Thalictrum dasycarpum</i>	purple meadow-rue	THADAS	native	3	-3
<i>Thuja occidentalis</i>	arbor vitae	THUOCC	native	4	-3
<i>Trichophorum cespitosum</i>	bulrush	TRICES	native	10	-5
<i>Trientalis borealis</i>	star-flower	TRIBOR	native	5	0
<i>Triosteum aurantiacum</i>	horse-gentian	TRIAUN	native	5	5
<i>Tsuga canadensis</i>	hemlock	TSUCAN	native	5	3
<i>Typha Å—gluca</i>	hybrid cat-tail	TYPGLA	non-native	0	-5
<i>Urtica dioica</i>	stinging nettle	URTDIO	native	1	0
<i>Vaccinium angustifolium</i>	low sweet blueberry	VACANG	native	4	3
<i>Vaccinium myrtilloides</i>	canada blueberry	VACMYR	native	4	-3
<i>Viola nephrophylla</i>	northern bog violet	VIONEP	native	8	-3

Appendix 2.14. East Huron Island Boreal Forest FQA.

Conservatism-Based Metrics:

Total Mean C:	4.8
Native Mean C:	4.8
Total FQI:	36.2
Native FQI:	36.2
Adjusted FQI:	48
% C value 0:	1.8
% C value 1-3:	19.3
% C value 4-6:	66.7
% C value 7-10:	12.3
Native Tree Mean C:	3.9
Native Shrub Mean C:	4.9
Native Herbaceous Mean C:	5.3

Species Richness:

Total Species:	57	
Native Species:	57	100%
Non-native Species:	0	0%

Species Wetness:

Mean Wetness:	1.4
Native Mean Wetness:	1.4

Physiognomy Metrics:

Tree:	16	28.10%
Shrub:	17	29.80%
Vine:	2	3.50%
Forb:	12	21.10%
Grass:	2	3.50%
Sedge:	2	3.50%
Rush:	0	0%
Fern:	6	10.50%
Bryophyte:	0	0%

Duration Metrics:

Annual:	1	1.80%
Perennial:	55	96.50%
Biennial:	1	1.80%
Native Annual:	1	1.80%
Native Perennial:	55	96.50%
Native Biennial:	1	1.80%

Appendix 2.14. East Huron Island Boreal Forest FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Abies balsamea</i>	balsam fir	ABIBAL	native	3	0
<i>Acer pensylvanicum</i>	striped maple	ACEPEN	native	5	3
<i>Acer rubrum</i>	red maple	ACERUB	native	1	0
<i>Acer saccharum</i>	sugar maple	ACESAU	native	5	3
<i>Acer spicatum</i>	mountain maple	ACESPI	native	5	3
<i>Alnus incana</i> ; <i>a. rugosa</i>	speckled alder	ALNINC	native	5	-3
<i>Amelanchier interior</i>	serviceberry	AMEINT	native	4	5
<i>Amelanchier sanguinea</i>	round-leaved serviceberry	AMESAN	native	5	5
<i>Aquilegia canadensis</i>	wild columbine	AQUCAN	native	5	3
<i>Aralia nudicaulis</i>	wild sarsaparilla	ARANUD	native	5	3
<i>Arctostaphylos uva-ursi</i>	bearberry	ARCUVA	native	8	5
<i>Avenella flexuosa</i>	hair grass	AVEFLE	native	6	5
<i>Betula alleghaniensis</i>	yellow birch	BETALL	native	7	0
<i>Betula papyrifera</i>	paper birch	BETPAP	native	2	3
<i>Capnoides sempervirens</i>	pink or pale corydalis	CAPSEM	native	5	5
<i>Carex deweyana</i>	sedge	CXDEWE	native	3	3
<i>Carex pensylvanica</i>	sedge	CXPENS	native	4	5
<i>Cornus canadensis</i>	bunchberry	CORCAA	native	6	0
<i>Cypripedium acaule</i>	pink lady-slipper; moccasin flower	CYPACA	native	5	-3
<i>Dendrolycopodium dendroideum</i>	tree clubmoss	DENDEN	native	5	3
<i>Diervilla lonicera</i>	bush-honeysuckle	DIELON	native	4	5
<i>Dryopteris carthusiana</i>	spinulose woodfern	DRYCAR	native	5	-3
<i>Dryopteris filix-mas</i>	male fern	DRYFIL	native	10	5
<i>Dryopteris intermedia</i>	evergreen woodfern	DRYINT	native	5	0
<i>Eurybia macrophylla</i>	big-leaved aster	EURMAC	native	4	5
<i>Gaultheria hispida</i>	creeping-snowberry	GAUHIS	native	8	-3
<i>Ilex verticillata</i>	michigan holly	ILEVER	native	5	-3
<i>Iris versicolor</i>	wild blue flag	IRIVER	native	5	-5
<i>Linnaea borealis</i>	twinflower	LINBOR	native	6	0
<i>Lonicera dioica</i>	red honeysuckle	LONDIO	native	5	3
<i>Lonicera hirsuta</i>	hairy honeysuckle	LONHIR	native	6	0
<i>Lysimachia terrestris</i>	swamp-candles	LYSTER	native	6	-5
<i>Maianthemum canadense</i>	canada mayflower	MAICAN	native	4	3
<i>Melampyrum lineare</i>	cow-wheat	MELLIN	native	6	3
<i>Oxalis acetosella</i>	northern wood-sorrel	OXAACE	native	7	3
<i>Picea glauca</i>	white spruce	PICGLA	native	3	3
<i>Picea mariana</i>	black spruce	PICMAR	native	6	-3
<i>Pinus resinosa</i>	red pine	PINRES	native	6	3
<i>Pinus strobus</i>	white pine	PINSTR	native	3	3
<i>Poa glauca</i>	bluegrass	POAGLA	native	10	5
<i>Populus tremuloides</i>	quaking aspen	POPTRE	native	1	0
<i>Prunus pensylvanica</i>	pin cherry	PRUPEN	native	3	3
<i>Prunus virginiana</i>	choke cherry	PRUVIR	native	2	3
<i>Pteridium aquilinum</i>	bracken fern	PTEAQU	native	0	3
<i>Quercus rubra</i>	red oak	QUERUB	native	5	3
<i>Rhododendron groenlandicum</i>	labrador-tea	RHOGRO	native	8	-5

Appendix 2.14. East Huron Island Boreal Forest FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Ribes glandulosum</i>	skunk currant	RIBGLA	native	5	-3
<i>Rosa acicularis</i>	wild rose	ROSACI	native	4	3
<i>Rubus setosus</i>	bristly blackberry	RUBSET	native	3	-3
<i>Sambucus racemosa</i>	red-berried elder	SAMRAC	native	3	3
<i>Sorbus decora</i>	mountain-ash	SORDEC	native	4	3
<i>Spinulum annotinum</i>	stiff clubmoss	SPIANN	native	5	0
<i>Taxus canadensis</i>	yew	TAXCAN	native	5	3
<i>Thuja occidentalis</i>	arbor vitae	THUOCC	native	4	-3
<i>Trientalis borealis</i>	star-flower	TRIBOR	native	5	0
<i>Vaccinium angustifolium</i>	low sweet blueberry	VACANG	native	4	3
<i>Vaccinium myrtilloides</i>	canada blueberry	VACMYR	native	4	-3

Appendix 2.15. East Huron Island Granite Bedrock Glade FQA.

Conservatism-Based Metrics:

Total Mean C:	4.5
Native Mean C:	4.9
Total FQI:	38.4
Native FQI:	40.1
Adjusted FQI:	46.9
% C value 0:	8.2
% C value 1-3:	27.4
% C value 4-6:	47.9
% C value 7-10:	16.4
Native Tree Mean C:	3.7
Native Shrub Mean C:	5.2
Native Herbaceous Mean C:	5.2

Species Richness:

Total Species:	73	
Native Species:	67	91.80%
Non-native Species:	6	8.20%

Species Wetness:

Mean Wetness:	1.1
Native Mean Wetness:	1.1

Physiognomy Metrics:

Tree:	15	20.50%
Shrub:	20	27.40%
Vine:	2	2.70%
Forb:	21	28.80%
Grass:	7	9.60%
Sedge:	3	4.10%
Rush:	1	1.40%
Fern:	4	5.50%
Bryophyte:	0	0%

Duration Metrics:

Annual:	2	2.70%
Perennial:	69	94.50%
Biennial:	2	2.70%
Native Annual:	2	2.70%
Native Perennial:	64	87.70%
Native Biennial:	1	1.40%

Appendix 2.15. East Huron Island Granite Bedrock Glade FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Abies balsamea</i>	balsam fir	ABIBAL	native	3	0
<i>Acer rubrum</i>	red maple	ACERUB	native	1	0
<i>Acer spicatum</i>	mountain maple	ACESPI	native	5	3
<i>Achillea millefolium</i>	yarrow	ACHMIL	native	1	3
<i>Agrostis scabra</i> ; <i>a. hyemalis</i>	ticklegass	AGRSCA	native	4	0
<i>Amelanchier sanguinea</i>	round-leaved serviceberry	AMESAN	native	5	5
<i>Aralia hispida</i>	bristly sarsaparilla	ARAHIS	native	3	5
<i>Arctostaphylos uva-ursi</i>	bearberry	ARCUVA	native	8	5
<i>Aronia prunifolia</i>	chokeberry	AROPRU	native	5	-3
<i>Avenella flexuosa</i>	hair grass	AVEFLE	native	6	5
<i>Betula papyrifera</i>	paper birch	BETPAP	native	2	3
<i>Calamagrostis canadensis</i>	blue-joint	CALCAN	native	3	-5
<i>Campanula rotundifolia</i>	harebell	CAMROT	native	6	3
<i>Capnoides sempervirens</i>	pink or pale corydalis	CAPSEM	native	5	5
<i>Carex deweyana</i>	sedge	CXDEWE	native	3	3
<i>Carex magellanica</i>	sedge	CXMAGE	native	8	-5
<i>Carex pensylvanica</i>	sedge	CXPENS	native	4	5
<i>Chamaedaphne calyculata</i>	leatherleaf	CHACAL	native	8	-5
<i>Chamerion angustifolium</i>	fireweed	CHAANG	native	3	0
<i>Cirsium arvense</i>	canada thistle	CIRARV	non-native	0	3
<i>Cirsium palustre</i>	marsh thistle	CIRPAL	non-native	0	-3
<i>Cornus rugosa</i>	round-leaved dogwood	CORRUG	native	6	5
<i>Cypripedium acaule</i>	pink lady-slipper; moccasin flower	CYPACA	native	5	-3
<i>Danthonia spicata</i>	poverty grass; oatgrass	DANSPI	native	4	5
<i>Dendrolycopodium dendroideum</i>	tree clubmoss	DENDEN	native	5	3
<i>Deschampsia cespitosa</i>	hair grass	DESCES	native	9	-3
<i>Drosera rotundifolia</i>	round-leaved sundew	DROROT	native	6	-5
<i>Dryopteris filix-mas</i>	male fern	DRYFIL	native	10	5
<i>Dryopteris intermedia</i>	evergreen woodfern	DRYINT	native	5	0
<i>Erechtites hieraciifolius</i>	fireweed	EREHIE	native	2	3
<i>Eurybia macrophylla</i>	big-leaved aster	EURMAC	native	4	5
<i>Euthamia graminifolia</i>	grass-leaved goldenrod	EUTGRA	native	3	0
<i>Fallopia cilinodis</i>	fringed false buckwheat	FALCIL	native	3	5
<i>Gaultheria hispidula</i>	creeping-snowberry	GAUHIS	native	8	-3
<i>Gaylussacia baccata</i>	huckleberry	GAYBAC	native	7	3
<i>Heracleum maximum</i>	cow-parsnip	HERMAX	native	3	-3
<i>Hieracium caespitosum</i>	king devil	HIECAE	non-native	0	5
<i>Ilex verticillata</i>	michigan holly	ILEVER	native	5	-3
<i>Juncus brevicaudatus</i>	rush	JUNBRE	native	8	-5
<i>Lonicera dioica</i>	red honeysuckle	LONDIO	native	5	3
<i>Maianthemum canadense</i>	canada mayflower	MAICAN	native	4	3
<i>Melampyrum lineare</i>	cow-wheat	MELLIN	native	6	3
<i>Myrica gale</i>	sweet gale	MYRGAL	native	6	-5
<i>Picea glauca</i>	white spruce	PICGLA	native	3	3
<i>Picea mariana</i>	black spruce	PICMAR	native	6	-3
<i>Pinus banksiana</i>	jack pine	PINBAN	native	5	3

Appendix 2.15. East Huron Island Granite Bedrock Glade FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Pinus resinosa</i>	red pine	PINRES	native	6	3
<i>Pinus strobus</i>	white pine	PINSTR	native	3	3
<i>Poa compressa</i>	canada bluegrass	POACOM	non-native	0	3
<i>Poa glauca</i>	bluegrass	POAGLA	native	10	5
<i>Polypodium virginianum</i>	common polypody	POLVIR	native	8	5
<i>Populus tremuloides</i>	quaking aspen	POPTRE	native	1	0
<i>Prunus pensylvanica</i>	pin cherry	PRUPEN	native	3	3
<i>Prunus virginiana</i>	choke cherry	PRUVIR	native	2	3
<i>Quercus rubra</i>	red oak	QUERUB	native	5	3
<i>Rhododendron groenlandicum</i>	labrador-tea	RHOGRO	native	8	-5
<i>Ribes glandulosum</i>	skunk currant	RIBGLA	native	5	-3
<i>Rosa acicularis</i>	wild rose	ROSACI	native	4	3
<i>Rubus pubescens</i>	dwarf raspberry	RUBPUB	native	4	-3
<i>Rubus setosus</i>	bristly blackberry	RUBSET	native	3	-3
<i>Rumex acetosella</i>	sheep sorrel	RUMACL	non-native	0	3
<i>Sambucus racemosa</i>	red-berried elder	SAMRAC	native	3	3
<i>Sibbaldiopsis tridentata</i>	three-toothed cinquefoil	SIBTRI	native	10	3
<i>Solidago hispida</i>	hairy goldenrod	SOLHIS	native	3	5
<i>Solidago ptarmicoides</i>	upland white goldenrod	SOLPTA	native	6	3
<i>Sorbus decora</i>	mountain-ash	SORDEC	native	4	3
<i>Taxus canadensis</i>	yew	TAXCAN	native	5	3
<i>Thuja occidentalis</i>	arbor vitae	THUOCC	native	4	-3
<i>Trientalis borealis</i>	star-flower	TRIBOR	native	5	0
<i>Tsuga canadensis</i>	hemlock	TSUCAN	native	5	3
<i>Typha Æ—glauca</i>	hybrid cat-tail	TYPGLA	non-native	0	-5
<i>Vaccinium angustifolium</i>	low sweet blueberry	VACANG	native	4	3
<i>Vaccinium myrtilloides</i>	canada blueberry	VACMYR	native	4	-3

Appendix 2.16. East Huron Island Granite Bedrock Lakeshore FQA.

Conservatism-Based Metrics:

Total Mean C:	4.2
Native Mean C:	4.6
Total FQI:	50.6
Native FQI:	52.8
Adjusted FQI:	43.9
% C value 0:	11.7
% C value 1-3:	29
% C value 4-6:	41.4
% C value 7-10:	17.9
Native Tree Mean C:	3.4
Native Shrub Mean C:	4.8
Native Herbaceous Mean C:	4.8

Species Richness:

Total Species:	145	
Native Species:	132	91%
Non-native Species:	13	9%

Species Wetness:

Mean Wetness:	-0.7
Native Mean Wetness:	-0.9

Physiognomy Metrics:

Tree:	14	9.70%
Shrub:	26	17.90%
Vine:	2	1.40%
Forb:	65	44.80%
Grass:	10	6.90%
Sedge:	16	11%
Rush:	4	2.80%
Fern:	8	5.50%
Bryophyte:	0	0%

Duration Metrics:

Annual:	11	7.60%
Perennial:	130	89.70%
Biennial:	4	2.80%
Native Annual:	8	5.50%
Native Perennial:	121	83.40%
Native Biennial:	3	2.10%

Appendix 2.16. East Huron Island Granite Bedrock Lakeshore FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Abies balsamea</i>	balsam fir	ABIBAL	native	3	0
<i>Acer rubrum</i>	red maple	ACERUB	native	1	0
<i>Acer saccharum</i>	sugar maple	ACESAU	native	5	3
<i>Acer spicatum</i>	mountain maple	ACESPI	native	5	3
<i>Achillea millefolium</i>	yarrow	ACHMIL	native	1	3
<i>Agrimonia striata</i>	roadside agrimony	AGRSTR	native	3	3
<i>Agrostis scabra</i>	ticklegass	AGRSCA	native	4	0
<i>Alnus incana</i> ; <i>a. rugosa</i>	speckled alder	ALNINC	native	5	-3
<i>Alnus viridis</i> ; <i>a. crispa</i>	mountain alder	ALNVIR	native	8	0
<i>Anaphalis margaritacea</i>	pearly everlasting	ANAMAR	native	3	5
<i>Aquilegia canadensis</i>	wild columbine	AQUCAN	native	5	3
<i>Aralia hispida</i>	bristly sarsaparilla	ARAHIS	native	3	5
<i>Arctostaphylos uva-ursi</i>	bearberry	ARCUVA	native	8	5
<i>Aronia prunifolia</i>	chokeberry	AROPRU	native	5	-3
<i>Asplenium trichomanes</i>	maidenhair spleenwort	ASPTRI	native	10	5
<i>Athyrium filix-femina</i>	lady fern	ATHFIL	native	4	0
<i>Avenella flexuosa</i>	hair grass	AVEFLE	native	6	5
<i>Betula papyrifera</i>	paper birch	BETPAP	native	2	3
<i>Bidens cernua</i>	nodding beggar-ticks	BIDCER	native	3	-5
<i>Calamagrostis canadensis</i>	blue-joint	CALCAN	native	3	-5
<i>Callitriche palustris</i>	water-starwort	CALPAS	native	6	-5
<i>Caltha palustris</i>	marsh-marigold	CALPAR	native	6	-5
<i>Campanula rotundifolia</i>	harebell	CAMROT	native	6	3
<i>Capnoides sempervirens</i>	pink or pale corydalis	CAPSEM	native	5	5
<i>Carex aquatilis</i>	sedge	CXAQUA	native	7	-5
<i>Carex bebbii</i>	sedge	CXBEBB	native	4	-5
<i>Carex blanda</i>	sedge	CXBLAN	native	1	0
<i>Carex buxbaumii</i>	sedge	CXBUXB	native	10	-5
<i>Carex canescens</i>	sedge	CXCANE	native	8	-5
<i>Carex crinita</i>	sedge	CXCRIN	native	4	-5
<i>Carex eburnea</i>	sedge	CXEBUR	native	7	3
<i>Carex echinata</i>	sedge	CXECHA	native	6	-5
<i>Carex flava</i>	sedge	CXFLAV	native	4	-5
<i>Carex magellanica</i>	sedge	CXMAGE	native	8	-5
<i>Carex stipata</i>	sedge	CXSTIP	native	1	-5
<i>Carex stricta</i>	sedge	CXSTRI	native	4	-5
<i>Carex trisperma</i>	sedge	CXTRIS	native	9	-5
<i>Carex vesicaria</i>	sedge	CXVESI	native	7	-5
<i>Chamaedaphne calyculata</i>	leatherleaf	CHACAL	native	8	-5
<i>Chamerion angustifolium</i>	fireweed	CHAANG	native	3	0
<i>Chelone glabra</i>	turtlehead	CHEGLB	native	7	-5
<i>Cicuta bulbifera</i>	water hemlock	CICBUL	native	5	-5
<i>Cirsium arvense</i>	canada thistle	CIRARV	non-native	0	3
<i>Cirsium palustre</i>	marsh thistle	CIRPAL	non-native	0	-3
<i>Conyza canadensis</i>	horseweed	CONCAN	native	0	3
<i>Cornus rugosa</i>	round-leaved dogwood	CORRUG	native	6	5

Appendix 2.16. East Huron Island Granite Bedrock Lakeshore FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Cornus sericea</i> ; <i>c. stolonifera</i>	red-osier	CORSER	native	2	-3
<i>Danthonia spicata</i>	poverty grass; oatgrass	DANSPI	native	4	5
<i>Deschampsia cespitosa</i>	hair grass	DESCES	native	9	-3
<i>Diervilla lonicera</i>	bush-honeysuckle	DIELON	native	4	5
<i>Drosera rotundifolia</i>	round-leaved sundew	DROROT	native	6	-5
<i>Dryopteris carthusiana</i>	spinulose woodfern	DRYCAR	native	5	-3
<i>Epilobium ciliatum</i>	willow-herb	EPICIL	native	3	-3
<i>Epipactis helleborine</i>	helleborine	EPIHEL	non-native	0	0
<i>Equisetum arvense</i>	common horsetail	EQUARV	native	0	0
<i>Erucastrum gallicum</i>	dog mustard	ERUGAL	non-native	0	3
<i>Euthamia graminifolia</i>	grass-leaved goldenrod	EUTGRA	native	3	0
<i>Eutrochium maculatum</i>	joe-pye-weed	EUTMAC	native	4	-5
<i>Fallopia cilinodis</i>	fringed false buckwheat	FALCIL	native	3	5
<i>Fragaria virginiana</i>	wild strawberry	FRAVIR	native	2	3
<i>Fraxinus pennsylvanica</i>	red ash	FRAPEN	native	2	-3
<i>Galeopsis tetrahit</i>	hemp-nettle	GALTET	non-native	0	3
<i>Galium triflorum</i>	fragrant bedstraw	GALTRR	native	4	3
<i>Gaultheria procumbens</i>	wintergreen	GAUPRO	native	5	3
<i>Geranium bicknellii</i>	northern cranes-bill	GERBIC	native	4	5
<i>Glyceria grandis</i>	reed manna grass	GLYGRA	native	6	-5
<i>Glyceria striata</i>	fowl manna grass	GLYSTR	native	4	-5
<i>Heracleum maximum</i>	cow-parsnip	HERMAX	native	3	-3
<i>Hieracium caespitosum</i>	king devil	HIECAE	non-native	0	5
<i>Hypericum majus</i>	larger canada st. johns-wort	HYPMAJ	native	4	-3
<i>Hypericum perforatum</i>	common st. johns-wort	HYPPER	non-native	0	5
<i>Ilex verticillata</i>	michigan holly	ILEVER	native	5	-3
<i>Impatiens capensis</i>	spotted touch-me-not	IMPCAP	native	2	-3
<i>Iris versicolor</i>	wild blue flag	IRIVER	native	5	-5
<i>Juncus brachycephalus</i>	rush	JUNBRP	native	7	-5
<i>Juncus brevicaudatus</i>	rush	JUNBRE	native	8	-5
<i>Juncus dudleyi</i>	dudleys rush	JUNDUD	native	1	-3
<i>Juncus effusus</i>	soft-stemmed rush	JUNEFF	native	3	-5
<i>Juniperus communis</i>	common or ground juniper	JUNCOI	native	4	3
<i>Juniperus horizontalis</i>	creeping juniper	JUNHOR	native	10	3
<i>Lactuca biennis</i>	tall blue lettuce	LACBIE	native	2	0
<i>Lactuca canadensis</i>	tall lettuce	LACCAN	native	2	3
<i>Lathyrus japonicus</i>	beach pea	LATJAP	native	10	3
<i>Lemna minor</i>	common duckweed	LEMMIN	native	5	-5
<i>Lemna turionifera</i> ; <i>l. minor</i>	red duckweed	LEMTUR	native	5	-5
<i>Leucanthemum vulgare</i>	ox-eye daisy	LEUVUL	non-native	0	5
<i>Lobelia kalmii</i>	bog lobelia	LOBKAL	native	10	-5
<i>Lycopus uniflorus</i>	northern bugle weed	LYCUNI	native	2	-5
<i>Lysimachia terrestris</i>	swamp-candles	LYSTER	native	6	-5
<i>Lysimachia thysiflora</i>	tufted loosestrife	LYSTHY	native	6	-5
<i>Maianthemum canadense</i>	canada mayflower	MAICAN	native	4	3
<i>Menyanthes trifoliata</i>	buckbean	MENTRI	native	8	-5

Appendix 2.16. East Huron Island Granite Bedrock Lakeshore FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Myosotis laxa</i>	small forget-me-not	MYOLAX	native	6	-5
<i>Myrica gale</i>	sweet gale	MYRGAL	native	6	-5
<i>Osmunda claytoniana</i>	interrupted fern	OSMCLN	native	6	0
<i>Osmunda regalis</i>	royal fern	OSMREG	native	5	-5
<i>Persicaria hydropiper</i>	water-pepper	PERHYR	native	1	-5
<i>Persicaria sagittata</i>	arrow-leaved tear-thumb	PERSAG	native	5	-5
<i>Phegopteris connectilis</i>	northern beech-fern	PHECON	native	5	3
<i>Physocarpus opulifolius</i>	ninebark	PHYOPU	native	4	-3
<i>Picea glauca</i>	white spruce	PICGLA	native	3	3
<i>Picea mariana</i>	black spruce	PICMAR	native	6	-3
<i>Pinus resinosa</i>	red pine	PINRES	native	6	3
<i>Pinus strobus</i>	white pine	PINSTR	native	3	3
<i>Poa annua</i>	annual bluegrass	POAANN	non-native	0	3
<i>Poa glauca</i>	bluegrass	POAGLA	native	10	5
<i>Poa palustris</i>	fowl meadow grass	POAPAS	native	3	-3
<i>Polypodium virginianum</i>	common polypody	POLVIR	native	8	5
<i>Populus tremuloides</i>	quaking aspen	POPTRE	native	1	0
<i>Potamogeton praelongus</i>	white-stemmed pondweed	POTPRA	native	8	-5
<i>Potentilla norvegica</i>	rough cinquefoil	POTNOR	native	0	0
<i>Prenanthes alba</i>	white lettuce	PREALB	native	5	3
<i>Prunella vulgaris</i>	self-heal	PRUVUL	native	0	0
<i>Prunus pensylvanica</i>	pin cherry	PRUPEN	native	3	3
<i>Prunus virginiana</i>	choke cherry	PRUVIR	native	2	3
<i>Ranunculus acris</i>	tall or common buttercup	RANACR	non-native	0	0
<i>Ranunculus pensylvanicus</i>	bristly crowfoot	RANPEN	native	6	-5
<i>Rhododendron groenlandicum</i>	labrador-tea	RHOGRO	native	8	-5
<i>Ribes glandulosum</i>	skunk currant	RIBGLA	native	5	-3
<i>Rosa acicularis</i>	wild rose	ROSACI	native	4	3
<i>Rubus setosus</i>	bristly blackberry	RUBSET	native	3	-3
<i>Rubus strigosus</i>	wild red raspberry	RUBSTR	native	2	0
<i>Rumex acetosella</i>	sheep sorrel	RUMACL	non-native	0	3
<i>Sagina procumbens</i>	pearlwort	SAGPRO	non-native	0	0
<i>Salix bebbiana</i>	bebbs willow	SALBEB	native	1	-3
<i>Sambucus racemosa</i>	red-berried elder	SAMRAC	native	3	3
<i>Scirpus cyperinus</i>	wool-grass	SCICYP	native	5	-5
<i>Scutellaria lateriflora</i>	mad-dog skullcap	SCULAT	native	5	-5
<i>Sibbaldiopsis tridentata</i>	three-toothed cinquefoil	SIBTRI	native	10	3
<i>Solidago altissima</i>	tall goldenrod	SOLALT	native	1	3
<i>Solidago hispida</i>	hairy goldenrod	SOLHIS	native	3	5
<i>Solidago ptarmicoides</i>	upland white goldenrod	SOLPTA	native	6	3
<i>Sorbus decora</i>	mountain-ash	SORDEC	native	4	3
<i>Spiraea alba</i>	meadowsweet	SPIALB	native	4	-3
<i>Symphyotrichum lanceolatum</i>	panicled aster	SYMLAN	native	2	-3
<i>Symphyotrichum lateriflorum</i>	calico aster	SYMLAT	native	2	0
<i>Taxus canadensis</i>	yew	TAXCAN	native	5	3
<i>Thalictrum dasycarpum</i>	purple meadow-rue	THADAS	native	3	-3

Appendix 2.16. East Huron Island Granite Bedrock Lakeshore FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Thuja occidentalis</i>	arbor vitae	THUOCC	native	4	-3
<i>Trichophorum cespitosum</i>	bulrush	TRICES	native	10	-5
<i>Triosteum aurantiacum</i>	horse-gentian	TRIAUN	native	5	5
<i>Typha × glauca</i>	hybrid cat-tail	TYPGLA	non-native	0	-5
<i>Urtica dioica</i>	stinging nettle	URTDIO	native	1	0
<i>Vaccinium angustifolium</i>	low sweet blueberry	VACANG	native	4	3
<i>Viola nephrophylla</i>	northern bog violet	VIONEP	native	8	-3

Appendix 2.17. East Huron Island Granite Lakeshore Cliff FQA.

Conservatism-Based Metrics:

Total Mean C:	5.2
Native Mean C:	5.4
Total FQI:	45
Native FQI:	45.8
Adjusted FQI:	52.9
% C value 0:	4
% C value 1-3:	17.3
% C value 4-6:	52
% C value 7-10:	26.7
Native Tree Mean C:	3.8
Native Shrub Mean C:	5.4
Native Herbaceous Mean C:	5.9

Species Richness:

Total Species:	75	
Native Species:	72	96%
Non-native Species:	3	4%

Species Wetness:

Mean Wetness:	0.2
Native Mean Wetness:	0.2

Physiognomy Metrics:

Tree:	11	14.70%
Shrub:	20	26.70%
Vine:	1	1.30%
Forb:	22	29.30%
Grass:	5	6.70%
Sedge:	8	10.70%
Rush:	1	1.30%
Fern:	7	9.30%
Bryophyte:	0	0%

Duration Metrics:

Annual:	2	2.70%
Perennial:	70	93.30%
Biennial:	3	4%
Native Annual:	2	2.70%
Native Perennial:	68	90.70%
Native Biennial:	2	2.70%

Appendix 2.17. East Huron Island Granite Lakeshore Cliff FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Abies balsamea</i>	balsam fir	ABIBAL	native	3	0
<i>Acer saccharum</i>	sugar maple	ACESAU	native	5	3
<i>Amelanchier interior</i>	serviceberry	AMEINT	native	4	5
<i>Amelanchier sanguinea</i>	round-leaved serviceberry	AMESAN	native	5	5
<i>Antennaria howellii</i>	small pussytoes	ANTHOW	native	2	5
<i>Arabidopsis lyrata</i>	sand cress	ARALYR	native	7	3
<i>Aralia nudicaulis</i>	wild sarsaparilla	ARANUD	native	5	3
<i>Arctostaphylos uva-ursi</i>	bearberry	ARCUVA	native	8	5
<i>Asplenium trichomanes</i>	maidenhair spleenwort	ASPTRI	native	10	5
<i>Athyrium filix-femina</i>	lady fern	ATHFIL	native	4	0
<i>Avenella flexuosa</i>	hair grass	AVEFLE	native	6	5
<i>Betula papyrifera</i>	paper birch	BETPAP	native	2	3
<i>Calamagrostis canadensis</i>	blue-joint	CALCAN	native	3	-5
<i>Campanula rotundifolia</i>	harebell	CAMROT	native	6	3
<i>Capnoides sempervirens</i>	pink or pale corydalis	CAPSEM	native	5	5
<i>Carex aquatilis</i>	sedge	CXAQUA	native	7	-5
<i>Carex buxbaumii</i>	sedge	CXBUXB	native	10	-5
<i>Carex canescens</i>	sedge	CXCANE	native	8	-5
<i>Carex eburnea</i>	sedge	CXE BUR	native	7	3
<i>Carex magellanica</i> =	sedge	CXMAGE	native	8	-5
<i>Carex viridula</i>	sedge	CXVIRU	native	4	-5
<i>Chamaedaphne calyculata</i>	leatherleaf	CHACAL	native	8	-5
<i>Chamerion angustifolium</i>	fireweed	CHAANG	native	3	0
<i>Cirsium palustre</i>	marsh thistle	CIRPAL	non-native	0	-3
<i>Cornus canadensis</i>	bunchberry	CORCAA	native	6	0
<i>Cornus rugosa</i>	round-leaved dogwood	CORRUG	native	6	5
<i>Danthonia spicata</i>	poverty grass; oatgrass	DANSPI	native	4	5
<i>Deschampsia cespitosa</i>	hair grass	DESCES	native	9	-3
<i>Dichanthelium implicatum</i>	panic grass	DICIMP	native	3	0
<i>Diervilla lonicera</i>	bush-honeysuckle	DIELON	native	4	5
<i>Drosera rotundifolia</i>	round-leaved sundew	DROROT	native	6	-5
<i>Eleocharis intermedia</i>	spike-rush	ELEINT	native	7	-5
<i>Euthamia graminifolia</i>	grass-leaved goldenrod	EUTGRA	native	3	0
<i>Gaultheria hispidula</i>	creeping-snowberry	GAUHis	native	8	-3
<i>Gaultheria procumbens</i>	wintergreen	GAUPRO	native	5	3
<i>Hieracium caespitosum</i>	king devil	HIECAE	non-native	0	5
<i>Hypericum majus</i>	larger canada st. johns-wort	HYPMAJ	native	4	-3
<i>Juncus brevicaudatus</i>	rush	JUNBRE	native	8	-5
<i>Juniperus communis</i>	common or ground juniper	JUNCOI	native	4	3
<i>Juniperus horizontalis</i>	creeping juniper	JUNHOR	native	10	3
<i>Lobelia kalmii</i>	bog lobelia	LOBKAL	native	10	-5
<i>Lonicera dioica</i>	red honeysuckle	LONDIO	native	5	3
<i>Maianthemum canadense</i>	canada mayflower	MAICAN	native	4	3
<i>Melampyrum lineare</i>	cow-wheat	MELLIN	native	6	3
<i>Menyanthes trifoliata</i>	buckbean	MENTRI	native	8	-5
<i>Myrica gale</i>	sweet gale	MYRGAL	native	6	-5

Appendix 2.17. East Huron Island Granite Lakeshore Cliff FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Onoclea sensibilis</i>	sensitive fern	ONOSEN	native	2	-3
<i>Osmunda claytoniana</i>	interrupted fern	OSMCLN	native	6	0
<i>Osmunda regalis</i>	royal fern	OSMREG	native	5	-5
<i>Phegopteris connectilis</i>	northern beech-fern	PHECON	native	5	3
<i>Physocarpus opulifolius</i>	ninebark	PHYOPU	native	4	-3
<i>Picea glauca</i>	white spruce	PICGLA	native	3	3
<i>Picea mariana</i>	black spruce	PICMAR	native	6	-3
<i>Pinus resinosa</i>	red pine	PINRES	native	6	3
<i>Pinus strobus</i>	white pine	PINSTR	native	3	3
<i>Polypodium virginianum</i>	common polypody	POLVIR	native	8	5
<i>Populus tremuloides</i>	quaking aspen	POPTRE	native	1	0
<i>Prenanthes alba</i>	white lettuce	PREALB	native	5	3
<i>Quercus rubra</i>	red oak	QUERUB	native	5	3
<i>Rhododendron groenlandicum</i>	labrador-tea	RHOGRO	native	8	-5
<i>Ribes glandulosum</i>	skunk currant	RIBGLA	native	5	-3
<i>Rosa acicularis</i>	wild rose	ROSACI	native	4	3
<i>Rubus pubescens</i>	dwarf raspberry	RUBPUB	native	4	-3
<i>Rumex acetosella</i>	sheep sorrel	RUMACL	non-native	0	3
<i>Salix bebbiana</i>	bebbs willow	SALBEB	native	1	-3
<i>Scirpus cyperinus</i>	wool-grass	SCICYP	native	5	-5
<i>Sibbaldiopsis tridentata</i>	three-toothed cinquefoil	SIBTRI	native	10	3
<i>Solidago hispida</i>	hairy goldenrod	SOLHIS	native	3	5
<i>Solidago ptarmicoides</i>	upland white goldenrod	SOLPTA	native	6	3
<i>Sorbus decora</i>	mountain-ash	SORDEC	native	4	3
<i>Spiraea alba</i>	meadowsweet	SPIALB	native	4	-3
<i>Spiranthes romanzoffiana</i>	hooded ladies-tresses	SPIROM	native	8	-5
<i>Thuja occidentalis</i>	arbor vitae	THUOCC	native	4	-3
<i>Trientalis borealis</i>	star-flower	TRIBOR	native	5	0
<i>Vaccinium angustifolium</i>	low sweet blueberry	VACANG	native	4	3

Appendix 2.18. East Huron Island Granite Cliff FQA.

Conservatism-Based Metrics:

Total Mean C:	5
Native Mean C:	5
Total FQI:	26.9
Native FQI:	26.9
Adjusted FQI:	50
% C value 0:	0
% C value 1-3:	20.7
% C value 4-6:	62.1
% C value 7-10:	17.2
Native Tree Mean C:	3.7
Native Shrub Mean C:	5
Native Herbaceous Mean C:	5.8

Species Richness:

Total Species:	29	
Native Species:	29	100%
Non-native Species:	0	0%

Species Wetness:

Mean Wetness:	1.3
Native Mean Wetness:	1.3

Physiognomy Metrics:

Tree:	9	31%
Shrub:	7	24.10%
Vine:	2	6.90%
Forb:	3	10.30%
Grass:	3	10.30%
Sedge:	1	3.40%
Rush:	0	0%
Fern:	4	13.80%
Bryophyte:	0	0%

Duration Metrics:

Annual:	0	0%
Perennial:	28	96.60%
Biennial:	1	3.40%
Native Annual:	0	0%
Native Perennial:	28	96.60%
Native Biennial:	1	3.40%

Appendix 2.18. East Huron Island Granite Cliff FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Abies balsamea</i>	balsam fir	ABIBAL	native	3	0
<i>Acer saccharum</i>	sugar maple	ACESAU	native	5	3
<i>Amelanchier interior</i>	serviceberry	AMEINT	native	4	5
<i>Amelanchier sanguinea</i>	round-leaved serviceberry	AMESAN	native	5	5
<i>Antennaria howellii</i>	small pussytoes	ANTHOW	native	2	5
<i>Arabidopsis lyrata</i>	sand cress	ARALYR	native	7	3
<i>Aralia nudicaulis</i>	wild sarsaparilla	ARANUD	native	5	3
<i>Arctostaphylos uva-ursi</i>	bearberry	ARCUVA	native	8	5
<i>Asplenium trichomanes</i>	maidenhair spleenwort	ASPTRI	native	10	5
<i>Athyrium filix-femina</i>	lady fern	ATHFIL	native	4	0
<i>Avenella flexuosa</i>	hair grass	AVEFLE	native	6	5
<i>Betula papyrifera</i>	paper birch	BETPAP	native	2	3
<i>Calamagrostis canadensis</i>	blue-joint	CALCAN	native	3	-5
<i>Campanula rotundifolia</i>	harebell	CAMROT	native	6	3
<i>Capnoides sempervirens</i>	pink or pale corydalis	CAPSEM	native	5	5
<i>Carex aquatilis</i>	sedge	CXAQUA	native	7	-5
<i>Carex buxbaumii</i>	sedge	CXBUXB	native	10	-5
<i>Carex canescens</i>	sedge	CXCANE	native	8	-5
<i>Carex eburnea</i>	sedge	CXE BUR	native	7	3
<i>Carex magellanica</i> =	sedge	CXMAGE	native	8	-5
<i>Carex viridula</i>	sedge	CXVIRU	native	4	-5
<i>Chamaedaphne calyculata</i>	leatherleaf	CHACAL	native	8	-5
<i>Chamerion angustifolium</i>	fireweed	CHAANG	native	3	0
<i>Cirsium palustre</i>	marsh thistle	CIRPAL	non-native	0	-3
<i>Cornus canadensis</i>	bunchberry	CORCAA	native	6	0
<i>Cornus rugosa</i>	round-leaved dogwood	CORRUG	native	6	5
<i>Danthonia spicata</i>	poverty grass; oatgrass	DANSPI	native	4	5
<i>Deschampsia cespitosa</i>	hair grass	DESCES	native	9	-3
<i>Dichanthelium implicatum</i>	panic grass	DICIMP	native	3	0
<i>Diervilla lonicera</i>	bush-honeysuckle	DIELON	native	4	5
<i>Drosera rotundifolia</i>	round-leaved sundew	DROROT	native	6	-5
<i>Eleocharis intermedia</i>	spike-rush	ELEINT	native	7	-5
<i>Euthamia graminifolia</i>	grass-leaved goldenrod	EUTGRA	native	3	0
<i>Gaultheria hispidula</i>	creeping-snowberry	GAUHis	native	8	-3
<i>Gaultheria procumbens</i>	wintergreen	GAUPRO	native	5	3
<i>Hieracium caespitosum</i>	king devil	HIECAE	non-native	0	5
<i>Hypericum majus</i>	larger canada st. johns-wort	HYPMAJ	native	4	-3
<i>Juncus brevicaudatus</i>	rush	JUNBRE	native	8	-5
<i>Juniperus communis</i>	common or ground juniper	JUNCOI	native	4	3
<i>Juniperus horizontalis</i>	creeping juniper	JUNHOR	native	10	3
<i>Lobelia kalmii</i>	bog lobelia	LOBKAL	native	10	-5
<i>Lonicera dioica</i>	red honeysuckle	LONDIO	native	5	3
<i>Maianthemum canadense</i>	canada mayflower	MAICAN	native	4	3
<i>Melampyrum lineare</i>	cow-wheat	MELLIN	native	6	3
<i>Menyanthes trifoliata</i>	buckbean	MENTRI	native	8	-5
<i>Myrica gale</i>	sweet gale	MYRGAL	native	6	-5

Appendix 2.18. East Huron Island Granite Cliff FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Onoclea sensibilis</i>	sensitive fern	ONOSEN	native	2	-3
<i>Osmunda claytoniana</i>	interrupted fern	OSMCLN	native	6	0
<i>Osmunda regalis</i>	royal fern	OSMREG	native	5	-5
<i>Phegopteris connectilis</i>	northern beech-fern	PHECON	native	5	3
<i>Physocarpus opulifolius</i>	ninebark	PHYOPU	native	4	-3
<i>Picea glauca</i>	white spruce	PICGLA	native	3	3
<i>Picea mariana</i>	black spruce	PICMAR	native	6	-3
<i>Pinus resinosa</i>	red pine	PINRES	native	6	3
<i>Pinus strobus</i>	white pine	PINSTR	native	3	3
<i>Polypodium virginianum</i>	common polypody	POLVIR	native	8	5
<i>Populus tremuloides</i>	quaking aspen	POPTRE	native	1	0
<i>Prenanthes alba</i>	white lettuce	PREALB	native	5	3
<i>Quercus rubra</i>	red oak	QUERUB	native	5	3
<i>Rhododendron groenlandicum</i>	labrador-tea	RHOGRO	native	8	-5
<i>Ribes glandulosum</i>	skunk currant	RIBGLA	native	5	-3
<i>Rosa acicularis</i>	wild rose	ROSACI	native	4	3
<i>Rubus pubescens</i>	dwarf raspberry	RUBPUB	native	4	-3
<i>Rumex acetosella</i>	sheep sorrel	RUMACL	non-native	0	3
<i>Salix bebbiana</i>	bebbs willow	SALBEB	native	1	-3
<i>Scirpus cyperinus</i>	wool-grass	SCICYP	native	5	-5
<i>Sibbaldiopsis tridentata</i>	three-toothed cinquefoil	SIBTRI	native	10	3
<i>Solidago hispida</i>	hairy goldenrod	SOLHIS	native	3	5
<i>Solidago ptarmicoides</i>	upland white goldenrod	SOLPTA	native	6	3
<i>Sorbus decora</i>	mountain-ash	SORDEC	native	4	3
<i>Spiraea alba</i>	meadowsweet	SPIALB	native	4	-3
<i>Spiranthes romanzoffiana</i>	hooded ladies-tresses	SPIROM	native	8	-5
<i>Thuja occidentalis</i>	arbor vitae	THUOCC	native	4	-3
<i>Trientalis borealis</i>	star-flower	TRIBOR	native	5	0
<i>Vaccinium angustifolium</i>	low sweet blueberry	VACANG	native	4	3

Appendix 2.19. Gull Island FQA.

Conservatism-Based Metrics:

Total Mean C:	3.5
Native Mean C:	4.2
Total FQI:	35.9
Native FQI:	39.6
Adjusted FQI:	38.7
% C value 0:	18.1
% C value 1-3:	33.3
% C value 4-6:	36.2
% C value 7-10:	12.4
Native Tree Mean C:	3.1
Native Shrub Mean C:	3.9
Native Herbaceous Mean C:	4.6

Species Richness:

Total Species:	105	
Native Species:	89	84.80%
Non-native Species:	16	15.20%

Species Wetness:

Mean Wetness:	0.4
Native Mean Wetness:	-0.2

Physiognomy Metrics:

Tree:	14	13.30%
Shrub:	22	21%
Vine:	2	1.90%
Forb:	36	34.30%
Grass:	9	8.60%
Sedge:	15	14.30%
Rush:	2	1.90%
Fern:	5	4.80%
Bryophyte:	0	0%

Duration Metrics:

Annual:	4	3.80%
Perennial:	98	93.30%
Biennial:	3	2.90%
Native Annual:	3	2.90%
Native Perennial:	85	81%
Native Biennial:	1	1%

Appendix 2.19. Gull Island FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Abies balsamea</i>	balsam fir	ABIBAL	native	3	0
<i>Acer pensylvanicum</i>	striped maple	ACEPEN	native	5	3
<i>Acer rubrum</i>	red maple	ACERUB	native	1	0
<i>Acer spicatum</i>	mountain maple	ACESPI	native	5	3
<i>Achillea millefolium</i>	yarrow	ACHMIL	native	1	3
<i>Agrostis scabra</i>	tickleggrass	AGRSCA	native	4	0
<i>Amelanchier interior</i>	serviceberry	AMEINT	native	4	5
<i>Amelanchier sanguinea</i>	round-leaved serviceberry	AMESAN	native	5	5
<i>Aralia hispida</i>	bristly sarsaparilla	ARAHIS	native	3	5
<i>Aronia prunifolia</i>	chokeberry	AROPRU	native	5	-3
<i>Athyrium filix-femina</i>	lady fern	ATHFIL	native	4	0
<i>Avenella flexuosa</i>	hair grass	AVEFLE	native	6	5
<i>Barbarea vulgaris</i>	yellow rocket	BARVUL	non-native	0	0
<i>Betula papyrifera</i>	paper birch	BETPAP	native	2	3
<i>Calamagrostis canadensis</i>	blue-joint	CALCAN	native	3	-5
<i>Campanula rotundifolia</i>	harebell	CAMROT	native	6	3
<i>Capnoides sempervirens</i>	pink or pale corydalis	CAPSEM	native	5	5
<i>Carex arctata</i>	sedge	CXARTT	native	3	5
<i>Carex brunnescens</i>	sedge	CXBRUN	native	5	-3
<i>Carex buxbaumii</i>	sedge	CXBUXB	native	10	-5
<i>Carex canescens</i>	sedge	CXCANE	native	8	-5
<i>Carex communis</i>	sedge	CXCOMM	native	2	5
<i>Carex crinita</i>	sedge	CXCRIN	native	4	-5
<i>Carex echinata</i>	sedge	CXECHA	native	6	-5
<i>Carex foenea</i>	sedge	CXFOEN	native	3	5
<i>Carex merritt-fernaldii</i>	sedge	CXMERR	native	4	5
<i>Carex pedunculata</i>	sedge	CXPEDU	native	5	3
<i>Carex scoparia</i>	sedge	CXSCOP	native	4	-3
<i>Carex stricta</i>	sedge	CXSTRI	native	4	-5
<i>Carex vesicaria</i>	sedge	CXVESI	native	7	-5
<i>Cerastium fontanum</i>	mouse-ear chickweed	CERFON	non-native	0	3
<i>Chamerion angustifolium</i>	fireweed	CHAANG	native	3	0
<i>Chelone glabra</i>	turtlehead	CHEGLB	native	7	-5
<i>Conyza canadensis</i>	horseweed	CONCAN	native	0	3
<i>Cornus rugosa</i>	round-leaved dogwood	CORRUG	native	6	5
<i>Deschampsia cespitosa</i>	hair grass	DESCES	native	9	-3
<i>Drymocallis arguta</i>	tall or prairie cinquefoil	DRYARG	native	8	3
<i>Dryopteris carthusiana</i>	spinulose woodfern	DRYCAR	native	5	-3
<i>Dryopteris intermedia</i>	evergreen woodfern	DRYINT	native	5	0
<i>Elymus repens</i>	quack grass	ELYREP	non-native	0	3
<i>Epilobium ciliatum</i>	willow-herb	EPICIL	native	3	-3
<i>Eupatorium perfoliatum</i>	boneset	EUPPER	native	4	-3
<i>Euthamia graminifolia</i>	grass-leaved goldenrod	EUTGRA	native	3	0
<i>Fallopia cilinodis</i>	fringed false buckwheat	FALCIL	native	3	5
<i>Fraxinus pennsylvanica</i>	red ash	FRAPEN	native	2	-3
<i>Galium tinctorium</i>	stiff bedstraw	GALTIN	native	5	-5

Appendix 2.19. Gull Island FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
Hieracium caespitosum	king devil	HIECAE	non-native	0	5
Hypericum perforatum	common st. johns-wort	HYPPER	non-native	0	5
Ilex verticillata	michigan holly	ILEVER	native	5	-3
Juncus dudleyi	dudleys rush	JUNDUD	native	1	-3
Juncus effusus	soft-stemmed rush	JUNEFF	native	3	-5
Lathyrus japonicus	beach pea	LATJAP	native	10	3
Leucanthemum vulgare	ox-eye daisy	LEUVUL	non-native	0	5
Lobelia kalmii	bog lobelia	LOBKAL	native	10	-5
Lycopus uniflorus	northern bugle weed	LYCUNI	native	2	-5
Lysimachia terrestris	swamp-candles	LYSTER	native	6	-5
Maianthemum canadense	canada mayflower	MAICAN	native	4	3
Myrica gale	sweet gale	MYRGAL	native	6	-5
Persicaria hydropiper	water-pepper	PERHYR	native	1	-5
Persicaria maculosa	ladys-thumb	PERMAC	non-native	0	0
Physocarpus opulifolius	ninebark	PHYOPU	native	4	-3
Picea glauca	white spruce	PICGLA	native	3	3
Pinus strobus	white pine	PINSTR	native	3	3
Poa compressa	canada bluegrass	POACOM	non-native	0	3
Poa glauca	bluegrass	POAGLA	native	10	5
Poa palustris	fowl meadow grass	POAPAS	native	3	-3
Poa pratensis	kentucky bluegrass	POAPRA	non-native	0	3
Polypodium virginianum	common polypody	POLVIR	native	8	5
Populus tremuloides	quaking aspen	POPTRE	native	1	0
Potentilla norvegica	rough cinquefoil	POTNOR	native	0	0
Potentilla recta	rough-fruited cinquefoil	POTREC	non-native	0	5
Prunus pensylvanica	pin cherry	PRUPEN	native	3	3
Prunus serotina	wild black cherry	PRUSER	native	2	3
Prunus virginiana	choke cherry	PRUVIR	native	2	3
Pteridium aquilinum	bracken fern	PTEAQU	native	0	3
Ribes glandulosum	skunk currant	RIBGLA	native	5	-3
Rosa acicularis	wild rose	ROSACI	native	4	3
Rubus allegheniensis	common blackberry	RUBALL	native	1	3
Rubus pubescens	dwarf raspberry	RUBPUB	native	4	-3
Rubus setosus	bristly blackberry	RUBSET	native	3	-3
Rubus strigosus	wild red raspberry	RUBSTR	native	2	0
Rumex acetosella	sheep sorrel	RUMACL	non-native	0	3
Salix bebbiana	bebbs willow	SALBEB	native	1	-3
Salix exigua	sandbar willow	SALEXI	native	1	-3
Salix myricoides	blueleaf willow	SALMYR	native	9	-3
Sambucus racemosa	red-berried elder	SAMRAC	native	3	3
Scirpus atrovirens	bulrush	SCIATV	native	3	-5
Scirpus cyperinus	wool-grass	SCICYP	native	5	-5
Sibbaldiopsis tridentata	three-toothed cinquefoil	SIBTRI	native	10	3
Solidago altissima	tall goldenrod	SOLALT	native	1	3
Sorbus decora	mountain-ash	SORDEC	native	4	3
Spiraea alba	meadowsweet	SPIALB	native	4	-3

Appendix 2.19. Gull Island FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Stellaria graminea</i>	starwort	STEGRE	non-native	0	5
<i>Symphotrichum firmum</i>	smooth swamp aster	SYMFIR	native	4	-3
<i>Taraxacum officinale</i>	common dandelion	TAROFF	non-native	0	3
<i>Taxus canadensis</i>	yew	TAXCAN	native	5	3
<i>Thalictrum dasycarpum</i>	purple meadow-rue	THADAS	native	3	-3
<i>Thuja occidentalis</i>	arbor vitae	THUOCC	native	4	-3
<i>Trifolium repens</i>	white clover	TRIREP	non-native	0	3
<i>Tsuga canadensis</i>	hemlock	TSUCAN	native	5	3
<i>Urtica dioica</i>	stinging nettle	URTDIO	native	1	0
<i>Vaccinium angustifolium</i>	low sweet blueberry	VACANG	native	4	3
<i>Verbascum thapsus</i>	common mullein	VERTHA	non-native	0	5
<i>Veronica officinalis</i>	common speedwell	VEROOF	non-native	0	3
<i>Viola nephrophylla</i>	northern bog violet	VIONEP	native	8	-3

Appendix 2.20. Gull Island Granite Bedrock Glade FQA.

Conservatism-Based Metrics:

Total Mean C:	3.6
Native Mean C:	4
Total FQI:	27.7
Native FQI:	29.1
Adjusted FQI:	37.9
% C value 0:	13.6
% C value 1-3:	37.3
% C value 4-6:	42.4
% C value 7-10:	6.8
Native Tree Mean C:	3.2
Native Shrub Mean C:	3.8
Native Herbaceous Mean C:	4.3

Species Richness:

Total Species:	59	
Native Species:	53	89.80%
Non-native Species:	6	10.20%

Species Wetness:

Mean Wetness:	1
Native Mean Wetness:	0.7

Physiognomy Metrics:

Tree:	9	15.30%
Shrub:	12	20.30%
Vine:	1	1.70%
Forb:	14	23.70%
Grass:	8	13.60%
Sedge:	10	16.90%
Rush:	1	1.70%
Fern:	4	6.80%
Bryophyte:	0	0%

Duration Metrics:

Annual:	2	3.40%
Perennial:	55	93.20%
Biennial:	2	3.40%
Native Annual:	2	3.40%
Native Perennial:	50	84.70%
Native Biennial:	1	1.70%

Appendix 2.20. Gull Island Granite Bedrock Glade FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Abies balsamea</i>	balsam fir	ABIBAL	native	3	0
<i>Acer spicatum</i>	mountain maple	ACESPI	native	5	3
<i>Achillea millefolium</i>	yarrow	ACHMIL	native	1	3
<i>Agrostis scabra</i>	ticklegrass	AGRSCA	native	4	0
<i>Amelanchier interior</i>	serviceberry	AMEINT	native	4	5
<i>Amelanchier sanguinea</i>	round-leaved serviceberry	AMESAN	native	5	5
<i>Aralia hispida</i>	bristly sarsaparilla	ARAHIS	native	3	5
<i>Aronia prunifolia</i>	chokeberry	AROPRU	native	5	-3
<i>Athyrium filix-femina</i>	lady fern	ATHFIL	native	4	0
<i>Avenella flexuosa</i>	hair grass	AVEFLE	native	6	5
<i>Betula papyrifera</i>	paper birch	BETPAP	native	2	3
<i>Calamagrostis canadensis</i>	blue-joint	CALCAN	native	3	-5
<i>Campanula rotundifolia</i>	harebell	CAMROT	native	6	3
<i>Capnoides sempervirens</i>	pink or pale corydalis	CAPSEM	native	5	5
<i>Carex arctata</i>	sedge	CXARTT	native	3	5
<i>Carex brunnescens</i>	sedge	CXBRUN	native	5	-3
<i>Carex canescens</i>	sedge	CXCANE	native	8	-5
<i>Carex communis</i>	sedge	CXCOMM	native	2	5
<i>Carex echinata</i>	sedge	CXECHA	native	6	-5
<i>Carex foenea</i>	sedge	CXFOEN	native	3	5
<i>Carex merritt-fernaldii</i>	sedge	CXMERR	native	4	5
<i>Carex scoparia</i>	sedge	CXSCOP	native	4	-3
<i>Carex stricta</i>	sedge	CXSTRI	native	4	-5
<i>Chamerion angustifolium</i>	fireweed	CHAANG	native	3	0
<i>Deschampsia cespitosa</i>	hair grass	DESCES	native	9	-3
<i>Dryopteris carthusiana</i>	spinulose woodfern	DRYCAR	native	5	-3
<i>Dryopteris intermedia</i>	evergreen woodfern	DRYINT	native	5	0
<i>Euthamia graminifolia</i>	grass-leaved goldenrod	EUTGRA	native	3	0
<i>Fallopia cilinodis</i>	fringed false buckwheat	FALCIL	native	3	5
<i>Hieracium caespitosum</i>	king devil	HIECAE	non-native	0	5
<i>Hypericum perforatum</i>	common st. johns-wort	HYPPER	non-native	0	5
<i>Ilex verticillata</i>	michigan holly	ILEVER	native	5	-3
<i>Juncus effusus</i>	soft-stemmed rush	JUNEFF	native	3	-5
<i>Lysimachia terrestris</i>	swamp-candles	LYSTER	native	6	-5
<i>Maianthemum canadense</i>	canada mayflower	MAICAN	native	4	3
<i>Persicaria hydropiper</i>	water-pepper	PERHYR	native	1	-5
<i>Picea glauca</i>	white spruce	PICGLA	native	3	3
<i>Pinus strobus</i>	white pine	PINSTR	native	3	3
<i>Poa compressa</i>	canada bluegrass	POACOM	non-native	0	3
<i>Poa glauca</i>	bluegrass	POAGLA	native	10	5
<i>Poa palustris</i>	fowl meadow grass	POAPAS	native	3	-3
<i>Poa pratensis</i>	kentucky bluegrass	POAPRA	non-native	0	3
<i>Populus tremuloides</i>	quaking aspen	POPTRE	native	1	0
<i>Potentilla norvegica</i>	rough cinquefoil	POTNOR	native	0	0
<i>Prunus pensylvanica</i>	pin cherry	PRUPEN	native	3	3
<i>Prunus virginiana</i>	choke cherry	PRUVIR	native	2	3

Appendix 2.20. Gull Island Granite Bedrock Glade FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Pteridium aquilinum</i>	bracken fern	PTEAQU	native	0	3
<i>Ribes glandulosum</i>	skunk currant	RIBGLA	native	5	-3
<i>Rubus setosus</i>	bristly blackberry	RUBSET	native	3	-3
<i>Rubus strigosus</i>	wild red raspberry	RUBSTR	native	2	0
<i>Rumex acetosella</i>	sheep sorrel	RUMACL	non-native	0	3
<i>Sambucus racemosa</i>	red-berried elder	SAMRAC	native	3	3
<i>Scirpus cyperinus</i>	wool-grass	SCICYP	native	5	-5
<i>Sibbaldiopsis tridentata</i>	three-toothed cinquefoil	SIBTRI	native	10	3
<i>Sorbus decora</i>	mountain-ash	SORDEC	native	4	3
<i>Taxus canadensis</i>	yew	TAXCAN	native	5	3
<i>Tsuga canadensis</i>	hemlock	TSUCAN	native	5	3
<i>Vaccinium angustifolium</i>	low sweet blueberry	VACANG	native	4	3
<i>Verbascum thapsus</i>	common mullein	VERTHA	non-native	0	5

Appendix 2.21. Gull Island Granite Bedrock Lakeshore FQA.

Conservatism-Based Metrics:

Total Mean C:	3.5
Native Mean C:	4.2
Total FQI:	30.1
Native FQI:	32.8
Adjusted FQI:	38.1
% C value 0:	20.3
% C value 1-3:	33.8
% C value 4-6:	32.4
% C value 7-10:	13.5
Native Tree Mean C:	2.7
Native Shrub Mean C:	4.1
Native Herbaceous Mean C:	4.7

Species Richness:

Total Species:	74	
Native Species:	61	82.40%
Non-native Species:	13	17.60%

Species Wetness:

Mean Wetness:	-0.1
Native Mean Wetness:	-0.8

Physiognomy Metrics:

Tree:	10	13.50%
Shrub:	15	20.30%
Vine:	2	2.70%
Forb:	32	43.20%
Grass:	5	6.80%
Sedge:	6	8.10%
Rush:	2	2.70%
Fern:	2	2.70%
Bryophyte:	0	0%

Duration Metrics:

Annual:	3	4.10%
Perennial:	69	93.20%
Biennial:	2	2.70%
Native Annual:	2	2.70%
Native Perennial:	58	78.40%
Native Biennial:	1	1.40%

Appendix 2.21. Gull Island Granite Bedrock Lakeshore FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Acer pensylvanicum</i>	striped maple	ACEPEN	native	5	3
<i>Acer rubrum</i>	red maple	ACERUB	native	1	0
<i>Achillea millefolium</i>	yarrow	ACHMIL	native	1	3
<i>Agrostis scabra</i>	ticklegrass	AGRSCA	native	4	0
<i>Amelanchier sanguinea</i>	round-leaved serviceberry	AMESAN	native	5	5
<i>Avenella flexuosa</i>	hair grass	AVEFLE	native	6	5
<i>Barbarea vulgaris</i>	yellow rocket	BARVUL	non-native	0	0
<i>Betula papyrifera</i>	paper birch	BETPAP	native	2	3
<i>Calamagrostis canadensis</i>	blue-joint	CALCAN	native	3	-5
<i>Campanula rotundifolia</i>	harebell	CAMROT	native	6	3
<i>Capnoides sempervirens</i>	pink or pale corydalis	CAPSEM	native	5	5
<i>Carex buxbaumii</i>	sedge	CXBUXB	native	10	-5
<i>Carex crinita</i>	sedge	CXCRIN	native	4	-5
<i>Carex echinata</i>	sedge	CXECHA	native	6	-5
<i>Carex vesicaria</i>	sedge	CXVESI	native	7	-5
<i>Cerastium fontanum</i>	mouse-ear chickweed	CERFON	non-native	0	3
<i>Chamerion angustifolium</i>	fireweed	CHAANG	native	3	0
<i>Chelone glabra</i>	turtlehead	CHEGLB	native	7	-5
<i>Conyza canadensis</i>	horseweed	CONCAN	native	0	3
<i>Cornus rugosa</i>	round-leaved dogwood	CORRUG	native	6	5
<i>Drymocallis arguta</i>	tall or prairie cinquefoil	DRYARG	native	8	3
<i>Dryopteris carthusiana</i>	spinulose woodfern	DRYCAR	native	5	-3
<i>Elymus repens</i>	quack grass	ELYREP	non-native	0	3
<i>Epilobium ciliatum</i>	willow-herb	EPICIL	native	3	-3
<i>Eupatorium perfoliatum</i>	boneset	EUPPER	native	4	-3
<i>Euthamia graminifolia</i>	grass-leaved goldenrod	EUTGRA	native	3	0
<i>Fallopia cilinodis</i>	fringed false buckwheat	FALCIL	native	3	5
<i>Fraxinus pennsylvanica</i>	red ash	FRAPEN	native	2	-3
<i>Galium tinctorium</i>	stiff bedstraw	GALTIN	native	5	-5
<i>Hieracium caespitosum</i>	king devil	HIECAE	non-native	0	5
<i>Hypericum perforatum</i>	common st. johns-wort	HYPPER	non-native	0	5
<i>Ilex verticillata</i>	michigan holly	ILEVER	native	5	-3
<i>Juncus dudleyi</i>	dudleys rush	JUNDUD	native	1	-3
<i>Juncus effusus</i>	soft-stemmed rush	JUNEFF	native	3	-5
<i>Lathyrus japonicus</i>	beach pea	LATJAP	native	10	3
<i>Leucanthemum vulgare</i>	ox-eye daisy	LEUVUL	non-native	0	5
<i>Lobelia kalmii</i>	bog lobelia	LOBKAL	native	10	-5
<i>Lycopus uniflorus</i>	northern bugle weed	LYCUNI	native	2	-5
<i>Lysimachia terrestris</i>	swamp-candles	LYSTER	native	6	-5
<i>Myrica gale</i>	sweet gale	MYRGAL	native	6	-5
<i>Persicaria maculosa</i>	ladys-thumb	PERMAC	non-native	0	0
<i>Physocarpus opulifolius</i>	ninebark	PHYOPU	native	4	-3
<i>Pinus strobus</i>	white pine	PINSTR	native	3	3
<i>Poa glauca</i>	bluegrass	POAGLA	native	10	5
<i>Polypodium virginianum</i>	common polypody	POLVIR	native	8	5
<i>Populus tremuloides</i>	quaking aspen	POPTRE	native	1	0

Appendix 2.21. Gull Island Granite Bedrock Lakeshore FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
Potentilla norvegica	rough cinquefoil	POTNOR	native	0	0
Potentilla recta	rough-fruited cinquefoil	POTREC	non-native	0	5
Prunus pensylvanica	pin cherry	PRUPEN	native	3	3
Prunus serotina	wild black cherry	PRUSER	native	2	3
Prunus virginiana	choke cherry	PRUVIR	native	2	3
Ribes glandulosum	skunk currant	RIBGLA	native	5	-3
Rubus pubescens	dwarf raspberry	RUBPUB	native	4	-3
Rubus setosus	bristly blackberry	RUBSET	native	3	-3
Rubus strigosus	wild red raspberry	RUBSTR	native	2	0
Rumex acetosella	sheep sorrel	RUMACL	non-native	0	3
Salix bebbiana	bebb's willow	SALBEB	native	1	-3
Salix exigua	sandbar willow	SALEXI	native	1	-3
Salix myricoides	blueleaf willow	SALMYR	native	9	-3
Scirpus atrovirens	bulrush	SCIATV	native	3	-5
Scirpus cyperinus	wool-grass	SCICYP	native	5	-5
Solidago altissima	tall goldenrod	SOLALT	native	1	3
Sorbus decora	mountain-ash	SORDEC	native	4	3
Spiraea alba	meadowsweet	SPIALB	native	4	-3
Stellaria graminea	starwort	STEGRE	non-native	0	5
Symphotrichum firmum	smooth swamp aster	SYMFIR	native	4	-3
Taraxacum officinale	common dandelion	TAROFF	non-native	0	3
Thalictrum dasycarpum	purple meadow-rue	THADAS	native	3	-3
Thuja occidentalis	arbor vitae	THUOCC	native	4	-3
Trifolium repens	white clover	TRIREP	non-native	0	3
Urtica dioica	stinging nettle	URTDIO	native	1	0
Vaccinium angustifolium	low sweet blueberry	VACANG	native	4	3
Veronica officinalis	common speedwell	VEROOF	non-native	0	3
Viola nephrophylla	northern bog violet	VIONEP	native	8	-3

Appendix 2.22. Gull Island Granite Lakeshore Cliff FQA.

Conservatism-Based Metrics:

Total Mean C:	4
Native Mean C:	4.5
Total FQI:	22.3
Native FQI:	23.8
Adjusted FQI:	42.8
% C value 0:	12.9
% C value 1-3:	32.3
% C value 4-6:	41.9
% C value 7-10:	12.9
Native Tree Mean C:	3.5
Native Shrub Mean C:	4.5
Native Herbaceous Mean C:	4.9

Species Richness:

Total Species:	31	
Native Species:	28	90.30%
Non-native Species:	3	9.70%

Species Wetness:

Mean Wetness:	2.2
Native Mean Wetness:	2

Physiognomy Metrics:

Tree:	6	19.40%
Shrub:	10	32.30%
Vine:	0	0%
Forb:	9	29%
Grass:	5	16.10%
Sedge:	0	0%
Rush:	0	0%
Fern:	1	3.20%
Bryophyte:	0	0%

Duration Metrics:

Annual:	1	3.20%
Perennial:	29	93.50%
Biennial:	1	3.20%
Native Annual:	1	3.20%
Native Perennial:	26	83.90%
Native Biennial:	1	3.20%

Appendix 2.22. Gull Island Granite Lakeshore Cliff FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Acer spicatum</i>	mountain maple	ACESPI	native	5	3
<i>Achillea millefolium</i>	yarrow	ACHMIL	native	1	3
<i>Agrostis scabra</i>	ticklegass	AGRSCA	native	4	0
<i>Amelanchier interior</i>	serviceberry	AMEINT	native	4	5
<i>Amelanchier sanguinea</i>	round-leaved serviceberry	AMESAN	native	5	5
<i>Aralia hispida</i>	bristly sarsaparilla	ARAHIS	native	3	5
<i>Avenella flexuosa</i>	hair grass	AVEFLE	native	6	5
<i>Betula papyrifera</i>	paper birch	BETPAP	native	2	3
<i>Calamagrostis canadensis</i>	blue-joint	CALCAN	native	3	-5
<i>Campanula rotundifolia</i>	harebell	CAMROT	native	6	3
<i>Capnoides sempervirens</i>	pink or pale corydalis	CAPSEM	native	5	5
<i>Chamerion angustifolium</i>	fireweed	CHAANG	native	3	0
<i>Euthamia graminifolia</i>	grass-leaved goldenrod	EUTGRA	native	3	0
<i>Hypericum perforatum</i>	common st. johns-wort	HYPPER	non-native	0	5
<i>Juniperus horizontalis</i>	creeping juniper	JUNHOR	native	10	3
<i>Physocarpus opulifolius</i>	ninebark	PHYOPU	native	4	-3
<i>Pinus strobus</i>	white pine	PINSTR	native	3	3
<i>Poa glauca</i>	bluegrass	POAGLA	native	10	5
<i>Poa pratensis</i>	kentucky bluegrass	POAPRA	non-native	0	3
<i>Polypodium virginianum</i>	common polypody	POLVIR	native	8	5
<i>Potentilla norvegica</i>	rough cinquefoil	POTNOR	native	0	0
<i>Prunus pensylvanica</i>	pin cherry	PRUPEN	native	3	3
<i>Ribes glandulosum</i>	skunk currant	RIBGLA	native	5	-3
<i>Rosa acicularis</i>	wild rose	ROSACI	native	4	3
<i>Rubus strigosus</i>	wild red raspberry	RUBSTR	native	2	0
<i>Rumex acetosella</i>	sheep sorrel	RUMACL	non-native	0	3
<i>Sambucus racemosa</i>	red-berried elder	SAMRAC	native	3	3
<i>Sibbaldiopsis tridentata</i>	three-toothed cinquefoil	SIBTRI	native	10	3
<i>Sorbus decora</i>	mountain-ash	SORDEC	native	4	3
<i>Taxus canadensis</i>	yew	TAXCAN	native	5	3
<i>Thuja occidentalis</i>	arbor vitae	THUOCC	native	4	-3

Appendix 2.23. Gull Island Disturbed Habitat FQA.

Conservatism-Based Metrics:

Total Mean C:	3.5
Native Mean C:	3.5
Total FQI:	14.4
Native FQI:	14.4
Adjusted FQI:	35
% C value 0:	0
% C value 1-3:	58.8
% C value 4-6:	41.2
% C value 7-10:	0
Native Tree Mean C:	3.7
Native Shrub Mean C:	3
Native Herbaceous Mean C:	3.5

Species Richness:

Total Species:	17	
Native Species:	17	100%
Non-native Species:	0	0%

Species Wetness:

Mean Wetness:	1.1
Native Mean Wetness:	1.1

Physiognomy Metrics:

Tree:	6	35.30%
Shrub:	3	17.60%
Vine:	1	5.90%
Forb:	2	11.80%
Grass:	1	5.90%
Sedge:	3	17.60%
Rush:	0	0%
Fern:	1	5.90%
Bryophyte:	0	0%

Duration Metrics:

Annual:	0	0%
Perennial:	17	100%
Biennial:	0	0%
Native Annual:	0	0%
Native Perennial:	17	100%
Native Biennial:	0	0%

Appendix 2.23. Gull Island Disturbed Habitat FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W
<i>Abies balsamea</i>	balsam fir	ABIBAL	native	3	0
<i>Acer pensylvanicum</i>	striped maple	ACEPEN	native	5	3
<i>Acer spicatum</i>	mountain maple	ACESPI	native	5	3
<i>Betula papyrifera</i>	paper birch	BETPAP	native	2	3
<i>Calamagrostis canadensis</i>	blue-joint	CALCAN	native	3	-5
<i>Carex foenea</i>	sedge	CXFOEN	native	3	5
<i>Carex pedunculata</i>	sedge	CXPEDU	native	5	3
<i>Chamerion angustifolium</i>	fireweed	CHAANG	native	3	0
<i>Dryopteris carthusiana</i>	spinulose woodfern	DRYCAR	native	5	-3
<i>Fallopia cilinodis</i>	fringed false buckwheat	FALCIL	native	3	5
<i>Pinus strobus</i>	white pine	PINSTR	native	3	3
<i>Rubus allegheniensis</i>	common blackberry	RUBALL	native	1	3
<i>Rubus setosus</i>	bristly blackberry	RUBSET	native	3	-3
<i>Scirpus cyperinus</i>	wool-grass	SCICYP	native	5	-5
<i>Sorbus decora</i>	mountain-ash	SORDEC	native	4	3
<i>Taxus canadensis</i>	yew	TAXCAN	native	5	3
<i>Urtica dioica</i>	stinging nettle	URTDIO	native	1	0

Appendix 2.24. Unnamed Islands FQA.

Conservatism-Based Metrics:

Total Mean C:	3.2
Native Mean C:	3.8
Total FQI:	16.9
Native FQI:	18.6
Adjusted FQI:	35.2
% C value 0:	17.9
% C value 1-3:	39.3
% C value 4-6:	35.7
% C value 7-10:	7.1
Native Tree Mean C:	2.5
Native Shrub Mean C:	3.4
Native Herbaceous Mean C:	4.2

Species Richness:

Total Species:	28	
Native Species:	24	85.70%
Non-native Species:	4	14.30%

Species Wetness:

Mean Wetness:	0.6
Native Mean Wetness:	0.4

Physiognomy Metrics:

Tree:	4	14.30%
Shrub:	5	17.90%
Vine:	1	3.60%
Forb:	9	32.10%
Grass:	6	21.40%
Sedge:	2	7.10%
Rush:	1	3.60%
Fern:	0	0%
Bryophyte:	0	0%

Duration Metrics:

Annual:	5	17.90%
Perennial:	23	82.10%
Biennial:	0	0%
Native Annual:	2	7.10%
Native Perennial:	22	78.60%
Native Biennial:	0	0%

Appendix 2.24. Unnamed Islands FQA, continued.

Scientific Name	Common Name	Acronym	Native?	C	W	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
<i>Achillea millefolium</i>	yarrow	ACHMIL	native	1	3	X		X		X
<i>Agrostis scabra</i>	ticklegass	AGRSCA	native	4	0	X	X			X
<i>Amelanchier interior</i>	serviceberry	AMEINT	native	4	5	X				
<i>Avenella flexuosa</i>	hair grass	AVEFLE	native	6	5			X		
<i>Betula papyrifera</i>	paper birch	BETPAP	native	2	3				X	
<i>Bidens cernua</i>	nodding beggar-ticks	BIDCER	native	3	-5		X	X		
<i>Calamagrostis canadensis</i>	blue-joint	CALCAN	native	3	-5	X		X	X	
<i>Campanula rotundifolia</i>	harebell	CAMROT	native	6	3	X	X	X	X	
<i>Carex scoparia</i>	sedge	CXSCOP	native	4	-3	X				
<i>Deschampsia cespitosa</i>	hair grass	DESCES	native	9	-3	X	X	X		X
<i>Erucastrum gallicum</i>	dog mustard	ERUGAL	non-native	0	3	X			X	X
<i>Euthamia graminifolia</i>	grass-leaved goldenrod	EUTGRA	native	3	0	X		X		X
<i>Fallopia cilinodis</i>	fringed false buckwheat	FALCIL	native	3	5	X				
<i>Juncus dudleyi</i>	dudleys rush	JUNDUD	native	1	-3	X			X	
<i>Lemna minor</i>	common duckweed	LEMMIN	native	5	-5	X				
<i>Persicaria maculosa</i>	lady's-thumb	PERMAC	non-native	0	0	X		X	X	
<i>Poa annua</i>	annual bluegrass	POAANN	non-native	0	3				X	X
<i>Poa glauca</i>	bluegrass	POAGLA	native	10	5	X		X		X
<i>Populus tremuloides</i>	quaking aspen	POPTRE	native	1	0	X				
<i>Potentilla norvegica</i>	rough cinquefoil	POTNOR	native	0	0	X		X		X
<i>Prunus pensylvanica</i>	pin cherry	PRUPEN	native	3	3	X			X	
<i>Rosa acicularis</i>	wild rose	ROSACI	native	4	3	X				
<i>Rubus strigosus</i>	wild red raspberry	RUBSTR	native	2	0	X				
<i>Rumex acetosella</i>	sheep sorrel	RUMACL	non-native	0	3	X			X	
<i>Sambucus racemosa</i>	red-berried elder	SAMRAC	native	3	3	X			X	
<i>Scirpus cyperinus</i>	wool-grass	SCICYP	native	5	-5	X			X	
<i>Sorbus decora</i>	mountain-ash	SORDEC	native	4	3	X				
<i>Spiraea alba</i>	meadowsweet	SPIALB	native	4	-3	X			X	
1: 46.951341, -87.956876;										
2: 46.950814, -87.956058;										
3: 46.947179, -87.951511;										
A small island to the east of 3 = no veg;										
4: 46.947644, -87.954674;										
5: 46.947137, -87.954594										

Appendix 3. Ojibwe names for plants observed on the Huron Islands

This appendix includes a crosswalk between Ojibwe names, scientific names, and common English names for all species observed on Gull Island that are listed in “Plants used by the Great Lakes Ojibwa” (Meeker et al. 1993). The crosswalk constitutes Appendix 3.1. In addition, in Appendix 3.2 we list the observed plants by their Ojibwe names indexed by the natural community types where they were recorded on Gull Island.

Within the crosswalk, when multiple Ojibwe names are known for the same plant, the Ojibwe names are separated by a semi-colon. Many names were originally documented by non-Ojibwe speakers and the spellings of some of the names were not restored by Ojibwe speakers so are reproduced here phonetically (29; 27%). We indicate whether or not a plant has been restored. Note that we do not reproduce accents (diacritical marks) for names included only under a phonetic name in Meeker et al. (1993) and this may affect pronunciation (for example, some “s” = “zh”). Multiple scientific names separated by semi-colons indicate closely related species we have crosswalked to a single Ojibwe name. The first scientific name listed is the species listed in Meeker et al. (1993). If Meeker et al. (1993) lists a synonym or only includes a closely related species, then the scientific name used in Meeker et al. (1993) is listed in parentheses (*different but closely related species). Page numbers within the crosswalk indicate the page in Meeker et al. (1993) where the plant is referenced.

Appendix 3.1. Crosswalk between Ojibwe names and scientific and English names.

Ojibwe Name	Restored	Page	Scientific Name	English Name
(g)odotaagaans	Yes	318	<i>Clintonia borealis</i>	bluebead-lily; corn-lily
(g)odotaagaans; ?ziiginise; ziiginish(e)	Yes	35	<i>Campanula rotundifolia</i>	harebell
(gi)chigamiiwashk, -oon	Yes	112	<i>Juncus tenuis</i>	path rush
(gi)chi-mazaan; wiisagibag, -oon; wiisagijiibik	Yes	96	<i>Arctium minus</i>	common burdock
(gi)chi-mazaanashk	Yes	103	<i>Cirsium vulgare</i>	bull thistle
?bebaamaabiig; okaadaak; waaboozojiibik	Yes	235	<i>Aralia nudicaulis</i>	wild sarsaparilla
a 'sawan; ana 'ganuck; nokomi 'skinun	No	238	<i>Athyrium filix-femina</i>	lady fern
aagimaak	Yes	358	<i>Fraxinus pennsylvanica</i>	red ash
aandegobagoons; namepin; namewashkoons	Yes	343	<i>Mentha canadensis (M. arvensis)</i>	field mint
aandegopin	Yes	174	<i>Lycopus americanus;</i> <i>Lycopus uniflorus (*L. asper)</i>	common water horehound
agongosimin, -ag	Yes	217	<i>Melampyrum lineare</i>	cow-wheat
agongosimin, -an, -ag	Yes	326	<i>Maianthemum canadense</i>	canada mayflower
ah-o-je-mahg (adjimag)	No	333	<i>Sorbus americana; Sorbus decora</i>	american mountain-ash
ajidamoowaanow; giiziso-mashkiki	Yes	349	<i>Solidago canadensis; S. altissima</i>	canada goldenrod
ajidamoowaanow; waabigwan	Yes	93	<i>Achillea millefolium</i>	yarrow
animoshi-min, -an; awenisiibag	Yes	194	<i>Ilex verticillata</i>	michigan holly
animozid	Yes	323	<i>Hepatica americana</i>	round-lobed hepatica
aninaandag, -oog; ininaandag, -oog; bigiwaandag, -oog; zhinbog, --g; zhingobaaandag, -oog; zhingob bigiwaandag	Yes	313	<i>Abies balsamea</i>	balsam fir
aninaatig, -oog	Yes	270	<i>Acer saccharum</i>	sugar maple
apaakozigan; miskwaabiimag	Yes	18	<i>Arctostaphylos uva-ursi</i>	bearberry
apakwanagemag; bapakwanagemag; zhingobiins; zhingwaak	Yes	219	<i>Pinus resinosa</i>	red pine
apakway; apakweshk; apakweshkway; nabagashk	Yes	152	<i>Typha latifolia</i>	broad-leaved cat-tail
asa/isaweminagaawanzh (plant); asa/isawemin (berry)	Yes	256	<i>Prunus virginiana</i>	choke cherry
azaadi(i)	Yes	252	<i>Populus grandidentata</i>	big-tooth aspen
azaadi(i); azaadiins	Yes	253	<i>Populus tremuloides</i>	quaking aspen
azaadi(i); maanzaadi(i)	Yes	328	<i>Populus balsamifera</i>	balsam poplar
baasibagak; nameswashk; namewashkoons	Yes	120	<i>Prunella vulgaris</i>	self-heal
bagaan, -ag; bagaanens; bagaanimizh; bagaanak	Yes	243	<i>Corylus cornuta</i>	beaked hazelnut
bawa'iminaan; gozigwaakomin, -ag	Yes	329	<i>Prunus pensylvanica</i>	pin cherry
beemsquandawish	No	58	<i>Spiranthes romanzoffiana</i>	hooded ladies-tresses

Appendix 3.1. Crosswalk between Ojibwe names and scientific and English names, continued.

Ojibwe Name	Restored	Page	Scientific Name	English Name
bibigwewanashk, -oon	Yes	167	<i>Heracleum maximum</i> (<i>H. lanatum</i>)	cow-parsnip
bine(wi)bag	Yes	223	<i>Pyrola americana</i> (<i>P. rotundifolia</i>)	round-leaved pyrola
cigona ' gan	No	250	<i>Dendrolycopodium obscurum</i> ; <i>D. dendroideum</i> (* <i>Lycopodium o.</i>)	ground-pine
doodooshaabonjiibik; zhiishiigwebik	Yes	254	<i>Prenanthes alba</i>	white lettuce
doodooshaaboo	Yes	361	<i>Lactuca biennis</i>	tall blue lettuce
doodooshaaboojiibik; mindimooyenh	Yes	134	<i>Taraxacum officinale</i>	common dandelion
gaagaagimizh; gaagaagiwa/inzh	Yes	309	<i>Tsuga canadensis</i>	hemlock
gaagaagiwanzh; zesegaandag; zhingob; zhingob gaawaandag	Yes	382	<i>Picea mariana</i>	black spruce
gaagigebag	Yes	15	<i>Antennaria howellii</i> (* <i>A. neglecta</i>)	small pussytoes
gaagigebag	Yes	209	<i>Chimaphila umbellata</i>	pipsissewa
gaawaandag; gaawaandagwaatig; mina'ig; wadab; zesegaandag	Yes	327	<i>Picea glauca</i>	white spruce
gaie 'wuckuk	No	150	<i>Scirpus cyperinus</i>	wool-grass
giboodiyegwaazon	Yes	37	<i>Corydalis aurea</i>	golden corydalis
gichi-ode'iminijiibik	Yes	49	<i>Potentilla norvegica</i>	rough cinquefoil
gichi-ode'iminijiibik	Yes	25	<i>Drymocallis arguta</i> (<i>Potentilla a.</i>)	Rosaceae
giizhigaandagizi; ogaawa/inzh	Yes	43	<i>Juniperus communis</i>	common or ground juniper
giizhik, -ag; gizhikens, -ag; giizhikenh	Yes	387	<i>Thuja occidentalis</i>	arbor vitae
ginebigowashk; ginebegwashk; omakakiibag	Yes	119	<i>Plantago rugelii</i> (* <i>P. major</i>)	red-stalked plantain
ginoozhewashk; ozawijiibik; zhiiwibag	Yes	127	<i>Rumex crispus</i>	curly dock
gozgwgaakominagaawanzh (plant); gozigwaakomin, -ag (berry); ozagadigom; zazigaakominagaawamzh	Yes	231	<i>Amelanchier arborea</i> ; <i>A. interior</i> ; <i>A. sanguinea</i> (* <i>A. laevis</i>)	juneberry
jasibonskok; aiankosing; gezibnusk; giji ' binusk	No	107	<i>Equisetum arvense</i>	common horsetail
kokbenognik keya; sasgob-mins	No	54	<i>Salix exigua</i>	sandbar willow
maananoons, -ag	Yes	297	<i>Ostrya virginiana</i>	ironwood; hop-hornbeam
main 'gamuna 'tig; anigomiji ' minaga 'wunj	No	59	<i>Symphoricarpos albus</i> var. <i>albus</i>	snowberry
makade-miskomin; makade-miskwimin; makade-miin, -an;				
odatagaagominagaawanzh	Yes	30	<i>Rubus occidentalis</i>	black raspberry
manwe ' gons; manwe 'gons	No	51	<i>Ranunculus pensylvanicus</i>	bristly crowfoot
mashkiigobag; mashkiikaang niibish; waabashkikiibag	Yes	196	<i>Rhododendron groenlandicum</i> (<i>Ledum g.</i>)	labrador-tea

Appendix 3.1. Crosswalk between Ojibwe names and scientific and English names, continued.

Ojibwe Name	Restored	Page	Scientific Name	English Name
mashkode-miizhimizh; mitigomizh; wiisagi-mitigomizh	Yes	304	<i>Quercus rubra</i>	red oak
mauwidaekwaegozeediwushk	No	139	<i>Lemna minor</i> ; <i>L. turionifera</i>	common or red duckweed
mazaan; mazaanaatig	Yes	373	<i>Urtica dioica</i>	stinging nettle
mazaanashk	Yes	102	<i>Cirsium arvense</i>	canada thistle
me -skwana 'kuk bu ' giso ' win; maeskwanakukbugisowin	No	162	<i>Eutrochium maculatum</i> (<i>Eupatorium m.</i>)	joe-pye-weed
mickiminu ' nimic	No	198	<i>Ilex mucronata</i> (<i>Nemopanthus mucronatus</i>)	mountain holly
migizibag; migiziwibag; naemgosibag	Yes	237	<i>Eurybia macrophylla</i> (<i>Aster macrophyllus</i>)	big-leaved aster
miinagaawanzh (plant); miin, -an (berry)	Yes	227	<i>Vaccinium angustifolium</i>	low sweet blueberry
miskominagaawanzh; miskwiminagaawanzh; miskomin, -ag; miskimin, -ag	Yes	125	<i>Rubus strigosus</i> (<i>R. idaeus</i>)	wild red raspberry
miskoobimizh; miskwaabiimizh	Yes	340	<i>Cornus sericea</i>	red-osier
miskwazi-wusk	No	47	<i>Physocarpus opulifolius</i>	Rosaceae
misudidjeebik	No	234	<i>Aquilegia canadensis</i>	wild columbine
moni swa	No	264	<i>Triosteum aurantiacum</i> (* <i>T. perfoliatum</i>)	horse-gentian
moozomizh	Yes	314	<i>Acer pensylvanicum</i>	striped maple
naaniibide'oodegin	Yes	303	<i>Polygonatum pubescens</i>	downy solomon seal
nabagashk; wiikenh; zhaabozigan	Yes	170	<i>Iris versicolor</i>	wild blue flag
naubishkawkoot	No	129	<i>Sisyrinchium montanum</i>	mountain blue-eyed-grass
nawo 'buguk; wunukibugauh	No	336	<i>Trientalis borealis</i>	star-flower
ne 'bagandag '; pebamabid-singup	No	335	<i>Taxus canadensis</i>	yew
ne 'bone ' ankwe 'ak	No	341	<i>Geum aleppicum</i>	yellow avens
neezhodaeyun	No	325	<i>Linnaea borealis</i>	twinflower
niya 'wibukuk '; siabuksing, sasabwaksing; piskagamisag	No	163	<i>Eupatorium perfoliatum</i>	boneset
odatagaagominagaawanzh (plant); odatagaagomin (berry)	Yes	29	<i>Rubus allegheniensis</i>	common blackberry
ode'imin	Yes	379	<i>Fragaria vesca</i>	woodland strawberry
ode'imin, -an; ode'iminijiibik	Yes	109	<i>Fragaria virginiana</i>	wild strawberry
ode'iminijiibik; zhakaagomin; zhaashaagomin; zhaashaagominens	Yes	319	<i>Cornus canadensis</i>	bunchberry
odjici ' gomin	No	362	<i>Lactuca canadensis</i>	tall lettuce
oginiiminagaawanzh	Yes	82	<i>Rosa acicularis</i>	wild rose
ogitebag	Yes	158	<i>Caltha palustris</i>	marsh-marigold
okikaandag	Yes	218	<i>Pinus banksiana</i>	jack pine
ookwemizh (plant); ookwemin (berry)	Yes	255	<i>Prunus serotina</i>	wild black cherry
ozaawaajiibik; ozaawijiibik	Yes	375	<i>Coptis trifolia</i>	goldthread
ozaawashkojiibik	Yes	360	<i>Impatiens capensis</i>	spotted touch-me-not
ozagadigom	Yes	295	<i>Osmorhiza claytonii</i>	hairy sweet-cicely

Appendix 3.1. Crosswalk between Ojibwe names and scientific and English names, continued.

Ojibwe Name	Restored	Page	Scientific Name	English Name
ozhaashijiibik; ozhaashijiibikens; zhooshkijiibik	Yes	106	<i>Chamerion angustifolium</i> (<i>Epilobium a.</i>)	fireweed
papshkisiganak; papskatciksi ' gana 'tig	Yes	305	<i>Sambucus racemosa</i>	red-berried elder
pis-naknishkuns	No	171	<i>Juncus effusus</i>	soft-stemmed rush
sabankuk	No	215	<i>Lonicera dioica</i>	red honeysuckle
skizgu-min	No	331	<i>Rubus pubescens</i>	dwarf raspberry
tcatcabonu ' ksik; zheebaunkudohse	No	182	<i>Scutellaria galericulata</i>	marsh skullcap
wa 'sawasni 'mike	No	175	<i>Myrica gale</i>	sweet gale
waabashkikiibag	Yes	350	<i>Spiraea alba</i>	meadowsweet
waabashkikiibag; mashkiigobagoons	Yes	191	<i>Chamaedaphne calyculata</i>	leatherleaf
waabigwan	Yes	104	<i>Conyza canadensis</i>	horseweed
waabigwan; baasibagak	Yes	14	<i>Anaphalis margaritacea</i>	pearly everlasting
waabigwan; memisku 'nakuk	No	20	<i>Hieracium kalmii</i>	kalms hawkweed
waaboozobagoons; waaboozobanzh	Yes	42	<i>Gaultheria hispidula</i>	creeping-snowberry
waaboozijiibik	Yes	330	<i>Ribes glandulosum</i>	skunk currant
waboskiki ' minun	No	164	<i>Galium tinctorium</i>	stiff bedstraw
wadoop, -iin	Yes	339	<i>Alnus incana</i>	speckled alder
wanukons'; apagwasi ' gons; abagwasi ' gans	No	160	<i>Cicuta bulbifera</i> (* <i>C. maculata</i>)	water hemlock
wawiaeneegaeguhns	No	192	<i>Drosera rotundifolia</i>	round-leaved sundew
wewai ' bugug	Yes	338	<i>Viola labradorica</i> (<i>V. conspersa</i>)	dog violet
wezaawaaskoneg	Yes	41	<i>Euthamia graminifolia</i>	flat-topped goldenrod
wezauskwagmik; osawa ' skanet	No	245	<i>Diervilla lonicera</i>	bush-honeysuckle
wiigwaas, -an, -ag; wiigwaasaatig; wiigwaasi-mitig; wiigwaasimizh	Yes	239	<i>Betula papyrifera</i>	paper birch
wiinisiibag; wiinisiibagoons; wiinisiibagad	Yes	213	<i>Gaultheria procumbens</i>	wintergreen
wiiniziikens	Yes	157	<i>Symphotrichum puniceum</i> ; <i>S. firmum</i> (<i>Aster puniceus</i>)	swamp aster
wiinizik	Yes	277	<i>Betula alleghaniensis</i>	yellow birch
zeewunubugushk	No	298	<i>Oxalis acetosella</i>	northern wood-sorrel
zhaashaagobiimag	Yes	315	<i>Acer spicatum</i>	mountain maple
zhiishiiginewanzh, iig; zhiishiigimiiwanzh, -iig	Yes	229	<i>Acer rubrum</i>	red maple
zhingwaak	Yes	220	<i>Pinus strobus</i>	white pine
No name given (<i>C. rugosa</i>)	No	242	<i>Cornus rugosa</i>	round-leaved dogwood
No name given (<i>H. lucidula</i>)	No	292	<i>Huperzia lucidula</i> (<i>Lycopodium lucidulum</i>)	shining clubmoss
No name given (<i>O. biennis</i>)	No	116	<i>Oenothera biennis</i>	common evening-primrose
No name given (<i>P. maculosa</i>)	No	48	<i>Persicaria maculosa</i> (<i>Polygonum persicaria</i>)	ladys thumb
No name given (<i>T. dasycarpum</i>)	No	185	<i>Thalictrum dasycarpum</i>	purple meadow-rue
No name given (<i>V. myrtilloides</i>)	No	228	<i>Vaccinium myrtilloides</i>	canada blueberry

Appendix 3.2. Ojibwe plant names indexed by natural community type and island (a = West Huron, b = Cattle, c = East Huron, d = Gull, and e = Unnamed).

Ojibwe Name	Scientific Name	English Name	Boreal Forest	Bedrock Glade	Bedrock Lakeshore	Lakeshore Cliff	Lakeshore Other	West Huron	Cattle	East Huron	Gull	Un-named
(g)odotaagaans	<i>Clintonia borealis</i>	bluebead-lily; corn-lily	a	a, b				X	X			
(g)odotaagaans; ?ziiginise; ziiginish(e)	<i>Campanula rotundifolia</i>	harebell		a, b, c, d	a, b, c, d, e	a, b, c		X	X	X	X	X
(gi)chigamiwashk, -oon	<i>Juncus tenuis</i>	path rush				b			X			
(gi)chi-mazaan; wiisagibag, -oon; wiisagijiibik	<i>Arctium minus</i>	common burdock					a	X				
(gi)chi-mazaanashk	<i>Cirsium vulgare</i>	bull thistle					a	X				
?bebaamaabiig; okaaadaak; waaboozijiibik	<i>Aralia nudicaulis</i>	wild sarsaparilla	a, b, c	a, b, c	a, c	c		X	X	X		
a 'sawan; ana ' ganuck; nokomi ' skinun	<i>Athyrium filix-femina</i>	lady fern	a	d	a, c	a, b, c		X	X	X	X	
aagimaak	<i>Fraxinus pennsylvanica</i>	red ash			a, b, c, d			X	X	X	X	
aandegobagoons; namepin; namewashkoons	<i>Mentha canadensis</i> (<i>M. arvensis</i>)	field mint			b				X			
aandegopin	<i>Lycopus americanus</i> ; <i>Lycopus uniflorus</i> (* <i>L. asper</i>)	common water horehound			a, b, c, d	a		X	X	X	X	
agongosimin, -ag	<i>Melampyrum lineare</i> <i>Maianthemum canadense</i>	cow-wheat	a	a, b, c		c	a	X	X	X		
agongosimin, -an, -ag	<i>Sorbus americana</i> ; <i>Sorbus americana</i>	canada mayflower american mountain-ash	a, b, c	a, b, c, d	c	b, c		X	X	X	X	
ah-o-je-mahg (adjimag)	<i>Sorbus decora</i>	ash	a, c	a, b, c, d	a, c, d, e	a, b, c	c, d	X	X	X	X	X
ajidamoowaanow; giiziso-mashkiki	<i>Solidago canadensis</i> ; <i>S. altissima</i>	canada goldenrod		a	c, d			X		X	X	
ajidamoowaanow; waabigwan	<i>Achillea millefolium</i>	yarrow		b, c, d	a, b, c, d, e	a, b		X	X	X	X	X
animoshi-min, -an; awenisiibag	<i>Ilex verticillata</i>	michigan holly	a, c	c, d	b, c, d	a, b, c		X	X	X	X	
animozid	<i>Hepatica americana</i>	round-lobed hepatica	a	b				X	X			
aninaandag, -oog; ininaandag, -oog; bigiwaandag, -oog; zhinbog, --g; zhingobaaandag, -oog; zhingob bigiwaandag	<i>Abies balsamea</i>	balsam fir	a, b, c	a, b, c, d	a, b, c	a, b, c	c, d	X	X	X	X	
aninaatig, -oog	<i>Acer saccharum</i> <i>Arctostaphylos uva-ursi</i>	sugar maple bearberry	a, c	a	c	c	c	X	X	X		
apaakoizigan; miskwaabiimag; apakwanagemag; bapakwanagemag; zhingobiins; zhingwaak	<i>Pinus resinosa</i>	red pine	c	a, b, c	c	a, b	c	X	X	X		
apakway; apakweshk; apakweshkway; nabagashk	<i>Typha latifolia</i>	broad-leaved cat-tail				a, b		X	X			
asa/isaweminagaawanzh (plant); asa/isawemin (berry)	<i>Prunus virginiana</i> <i>Populus grandidentata</i>	choke cherry big-tooth aspen	a, c	a, b, c	a, b, c, d	a, b	c	X	X	X	X	
azaadi(i)	<i>Populus tremuloides</i>	quaking aspen	a, b, c	a, b, c, d	a, b, c, d, e	a, b, c		X	X	X	X	X
azaadi(i); azaadiins	<i>Populus balsamifera</i>	balsam poplar			a	a		X				
azaadi(i); maanzaadi(i)	<i>Prunella vulgaris</i>	self-heal			c					X		
baasibagak; nameswashk; namewashkoons	<i>Prunella vulgaris</i>	self-heal			c					X		
bagaan, -ag; bagaanens; bagaanimizh; bagaanak	<i>Corylus cornuta</i>	beaked hazelnut			a			X				
bawa'iminaan; gozigwaakomin, -ag	<i>Prunus pensylvanica</i>	pin cherry	a, b, c	a, b, c, d	a, c, d, e	a	a, c	X	X	X	X	X

Appendix 3.2. Ojibwe plant names indexed by natural community type and island (a = West Huron, b = Cattle, c = East Huron, d = Gull, and e = Unnamed) (continued).

Ojibwe Name	Scientific Name	English Name	Granite				West		East		Un-named
			Boreal Forest	Bedrock Glade	Bedrock Lakeshore	Granite Lakeshore Cliff	Other	Huron	Cattle	Huron	
beemsquandawish	<i>Spiranthes romanzoffiana</i>	hooded ladies-tresses								X	
bibigwewanashk, -oon	<i>Heracleum maximum</i> (<i>H. lanatum</i>)	cow-parsnip	a	c	c			X		X	
bine(wi)bag	<i>Pyrola americana</i> (<i>P. rotundifolia</i>)	round-leaved pyrola	a	b				X	X		
cigona ' gan	<i>Dendrolycopodium obscurum</i> ; <i>D. dendroideum</i> (<i>*Lycopodium o.</i>)	ground-pine	b, c	b, c		a, b		X	X	X	
doodooshaabonjiibik; zhiishiigwebik	<i>Prenanthes alba</i>	white lettuce		a, b	a, b, c	a, b, c		X	X	X	
doodooshaaboo	<i>Lactuca biennis</i>	tall blue lettuce			c					X	
doodooshaaboojiibik; mindimooyenh	<i>Taraxacum officinale</i>	common dandelion			d	a, b		X	X		X
gaagaagimizh; gaagaagiwa/inzh	<i>Tsuga canadensis</i>	hemlock		c, d						X	X
gaagaagiwanzh; zesegaandag; zhingob; zhingob gaawaandag	<i>Picea mariana</i>	black spruce	a, b, c	a, b, c	c	a, b, c		X	X	X	
gaagigebag	<i>Antennaria howellii</i> (<i>*A. neglecta</i>)	small pussytoes	a			c		X		X	
gaagigebag	<i>Chimaphila umbellata</i>	pipsissewa				a		X			
gaawaandag; gaawaandagwaatig; mina'ig; wadab; zesegaandag	<i>Picea glauca</i>	white spruce	a, b, c	b, c, d	c	a, b, c		X	X	X	X
gaie 'wuckuk	<i>Scirpus cyperinus</i>	wool-grass		d	a, c, d, e	a, b, c	d	X	X	X	X
giboodyegwaazon	<i>Corydalis aurea</i>	golden corydalis		a				X			
gichi-ode'iminiijiibik	<i>Potentilla norvegica</i>	rough cinquefoil		b, d	b, c, d, e	b		X	X	X	X
gichi-ode'iminiijiibik	<i>Dryocallis arguta</i> (<i>Potentilla a.</i>)	Rosaceae			a, d	a, b		X	X	X	X
giizhigaandagizi; ogaawa/inzh	<i>Juniperus communis</i>	common or ground juniper			c	a, c		X		X	
giizhik, -ag; gizhikens, -ag; giizhikenh	<i>Thuja occidentalis</i>	arbor vitae	a, b, c	a, b, c	a, b, c, d	a, b, c	a, c	X	X	X	X
ginebigowashk; ginebegwashk; omakakiibag	<i>Plantago rugelii</i> (<i>*P. major</i>)	red-stalked plantain				b				X	
ginoozhewashk; ozawijiibik; zhiiwibag	<i>Rumex crispus</i>	curly dock					a	X			
gozwwaakominagaawanzh (plant); gozigwaakomin, -ag (berry); ozagadigom; zazigaakominagaawamzh	<i>Amelanchier arborea</i> ; <i>A. interior</i> ; <i>A. sanguinea</i> (<i>*A. laevis</i>)	juneberry	a, c	a, b, c, d	a, d, e	c		X	X	X	X
jasibonskok; aiankosing; gezibnusk; giji ' binusk	<i>Equisetum arvense</i>	common horsetail			b, c	a		X	X	X	
kokbenognik keya; sasgob-mins	<i>Salix exigua</i>	sandbar willow			d						X
maananoons, -ag	<i>Ostrya virginiana</i>	ironwood; hop-hornbeam	b							X	
main 'gamuna 'tig; anigomiji ' minaga 'wunj	<i>Symphoricarpos albus</i> var. <i>albus</i>	snowberry	a	a	b	a, b		X	X		
makade-miskomin; makade-miskwimin; makade-miin, -an; odatagaagominagaawanzh	<i>Rubus occidentalis</i>	black raspberry	a					X			
manwe ' gons; manwe ' gons	<i>Ranunculus pensylvanicus</i>	bristly crowfoot			c					X	

Appendix 3.2. Ojibwe plant names indexed by natural community type and island (a = West Huron, b = Cattle, c = East Huron, d = Gull, and e = Unnamed) (continued).

Ojibwe Name	Scientific Name	English Name	Granite		Granite		Granite		West		East		Un-named
			Boreal Forest	Bedrock Glade	Bedrock Lakeshore	Lakeshore Cliff	Other	Huron	Cattle	Huron	Gull		
mashkiigobag; mashkiikaang niibish; waabashkikiibag; mashkode-miizhimizh; mitigomizh; wiisagi-mitigomizh	<i>Rhododendron groenlandicum</i> (<i>Ledum g.</i>)	labrador-tea	a, b, c	a, b, c	a, c	c	c	c	X	X	X		
mauwidaekwaegozeediwushk	<i>Quercus rubra</i> <i>Lemna minor</i> ; <i>L. turionifera</i>	red oak common or red duckweed	c	c			c	c			X		X
mazaan; mazaanaatig	<i>Urtica dioica</i>	stinging nettle			c, d			d			X	X	
mazaanashk	<i>Cirsium arvense</i>	canada thistle		c	b, c					X	X		
me -skwana 'kuk bu ' giso ' win;	<i>Eutrochium maculatum</i>												
maeskwanakukbugisowin	(<i>Eupatorium m.</i>) <i>Ilex mucronata</i>	joe-pye-weed			c							X	
mickiminu ' nimic	(<i>Nemopanthus mucronatus</i>)	mountain holly	a				X						
migiziibag; migiziwibag; naemgosibag	<i>Eurybia macrophylla</i> (<i>Aster macrophyllus</i>)	big-leaved aster	a, c	a, b, c					X	X	X		
miinagaawanzh (plant); miinan (berry)	<i>Vaccinium angustifolium</i>	low sweet blueberry	a, c	a, b, c, d	a, b, c, d	a, b, c			X	X	X	X	
miskominagaawanzh; miskwiminagaawanzh; miskomin, -ag; miskimin, -ag	<i>Rubus strigosus</i> (<i>R. idaeus</i>)	wild red raspberry		a, b, d	c, d, e	a, b	a		X	X	X	X	X
miskoobimizh; miskwaabiimizh	<i>Cornus sericea</i> <i>Physocarpus opulifolius</i>	red-osier Rosaceae	a	a, b	a, c	a, b			X	X	X		
miskwazi-wusk				a, b	a, b, c, d	a, b			X	X	X	X	
misudidjeebik	<i>Aquilegia canadensis</i> <i>Triosteum aurantiacum</i> (*T. perfoliatum)	wild columbine horse-gentian	c	a, b	b	a, b	a		X	X	X		
moni swa					c							X	
moozomizh	<i>Acer pensylvanicum</i> <i>Polygonatum pubescens</i>	striped maple downy solomon seal	a, b, c	a	d			a, d	X	X	X	X	
naaniibide'oodegin			a	a					X				
nabagashk; wiikenh; zhaabozigan	<i>Iris versicolor</i> <i>Sisyrinchium montanum</i>	wild blue flag mountain blue-eyed-grass	c	b	b, c	a, c			X	X	X		
naubishkawkoot				a		a, b			X	X			
nawo 'buguk; wunukibugauh ne 'bagandag'; pebamabid-singup	<i>Trientalis borealis</i> <i>Taxus canadensis</i>	star-flower yew	a, c	a, b, c		c	a		X	X	X		
ne 'bone ' ankwe 'ak	<i>Geum aleppicum</i>	yellow avens		a					X				
neezhodaeyun	<i>Linnaea borealis</i>	twinflower	a, b, c	a, b, c				c	X	X	X		
niya 'wibukuk'; siabuksing, sasabwaksing; piskagamisag odatagaagominagaawanzh (plant); odatagaagomin (berry)	<i>Eupatorium perfoliatum</i> <i>Rubus allegheniensis</i>	boneset common blackberry			d			d				X	X
ode'immin	<i>Fragaria vesca</i>	woodland strawberry				b				X			
ode'immin, -an; ode'imminijiibik	<i>Fragaria virginiana</i>	wild strawberry		a, b	c	a			X	X	X		
ode'imminijiibik; zhakaagomin; zhaashaagomin;													
zhaashaagominens	<i>Cornus canadensis</i>	bunchberry	a, c	a, b, c	a	b, c	a		X	X	X		
odjici ' gomin	<i>Lactuca canadensis</i>	tall lettuce			c						X		
oginiiminagaawanzh	<i>Rosa acicularis</i>	wild rose	a, c	a, b, c	a, c, e	a, b, c			X	X	X	X	X

Appendix 3.2. Ojibwe plant names indexed by natural community type and island (a = West Huron, b = Cattle, c = East Huron, d = Gull, and e = Unnamed) (continued).

Ojibwe Name	Scientific Name	English Name	Boreal Forest	Granite Bedrock Glade	Granite Bedrock Lakeshore	Granite Lakeshore Cliff	West Other	West Huron	East Cattle	East Huron	Gull	Un-named
ogitebag	<i>Caltha palustris</i>	marsh-marigold			b, c				X	X		
okikaandag	<i>Pinus banksiana</i>	jack pine		c		c				X		
ookwemizh (plant); ookwemin (berry)	<i>Prunus serotina</i>	wild black cherry			d						X	
ozaawaajiiibik; ozaawijiibik	<i>Coptis trifolia</i>	goldthread	a	a, b		a		X	X			
ozaawashkojiiibik	<i>Impatiens capensis</i>	spotted touch-me-not			c					X		
ozagadigom	<i>Osmorhiza claytonii</i>	hairy sweet-cicely			a			X				
ozhaashijiibik; ozhaashijiibikens; zhooshkijiibik	<i>Chamerion angustifolium (Epilobium a.)</i>	fireweed	a	a, b, c, d	a, c, d	a, b, c	a, d	X	X	X	X	
papshkisiganak; papskatsiksi 'gana 'tig	<i>Sambucus racemosa</i>	red-berried elder	a, c	a, b, c, d	c, e	a	a, c	X	X	X	X	X
pis-naknishkuns	<i>Juncus effusus</i>	soft-stemmed rush		d	c, d			X	X	X	X	
sabankuk	<i>Lonicera dioica</i>	red honeysuckle	a, c	b, c		a, b, c	c	X	X	X		
skizgu-min	<i>Rubus pubescens</i>	dwarf raspberry		c	d	c				X	X	
tcatcabonu 'ksik; zheebaunkudohnse	<i>Scutellaria galericulata</i>	marsh skullcap			b				X			
wa 'sawasni 'mike	<i>Myrica gale</i>	sweet gale		c	b, c, d	c			X	X	X	
waabashkikiibag	<i>Spiraea alba</i>	meadowsweet		a, b	a, b, c, d, e	b, c		X	X	X	X	X
waabashkikiibag; mashkiigobagoons	<i>Chamaedaphne calyculata</i>	leatherleaf	a	a, c	a, c	a, c		X		X		
waabigwan	<i>Conyza canadensis Anaphalis margaritacea</i>	horseweed			a, c, d			X		X	X	
waabigwan; baasibagak		pearly everlasting	a	a	c	a		X		X		
waabigwan; memisku 'nakuk	<i>Hieracium kalmii</i>	kalms hawkweed		a		a		X				
waaboozobagoons; waaboozobanzh	<i>Gaultheria hispidula</i>	creeping-snowberry	a, c	a, b, c		b, c	c	X	X	X		
waaboozojiiibik	<i>Ribes glandulosum</i>	skunk currant	a, c	a, b, c, d	c, d	a, b, c	c	X	X	X	X	
waboskiki 'minun	<i>Galium tinctorium</i>	stiff bedstraw			d						X	
wadoop, -iin	<i>Alnus incana</i>	speckled alder	c		c	b			X	X		
wanukons'; apagwasi 'gons; abagwasi 'gans	<i>Cicuta bulbifera (*C. maculata)</i>	water hemlock			c					X		
wawiaeneegaeguhsh	<i>Drosera rotundifolia Viola labradorica (V. conspersa)</i>	round-leaved sundew		a, c	a, c	a, c		X		X		
wewai 'bugug		dog violet			a	a, c	a	X				
wezaawaaskoneg	<i>Euthamia graminifolia</i>	flat-topped goldenrod		a, b, c, d	b, c, d, e	a, b, c		X	X	X	X	X
wezauskwagmik; osawa 'skanet	<i>Diervilla lonicera</i>	bush-honeysuckle	a, b, c	a, b, c	a, c	a, b, c		X	X	X		
wiigwaas, -an, -ag; wiigwaasaatig; wiigwaasi-mitig; wiigwaasimizh	<i>Betula papyrifera</i>	paper birch	a, c	a, b, c, d	a, b, c, d, e	a, b, c	a, c, d	X	X	X	X	X
wiinisiibag; wiinisiibagoons; wiinisiibagad	<i>Gaultheria procumbens</i>	wintergreen			c	c				X		
wiiniziikens	<i>Symphyotrichum puniceum; S. firmum (Aster puniceus)</i>	swamp aster			d						X	
wiinizik	<i>Betula alleghaniensis</i>	yellow birch	c							X		
zeewunubugushk	<i>Oxalis acetosella</i>	northern wood-sorrel	c				c			X		
zhaashaagobiimag	<i>Acer spicatum</i>	mountain maple	a, b, c	a, b, c, d	a, c	a		X	X	X	X	
zhiishiiginewanzh, iig; zhiishiigimiiwanzh, -iig	<i>Acer rubrum</i>	red maple	a, b, c	a, b, c	a, b, c, d	a, c	a, c, d	X	X	X	X	
zhingwaak	<i>Pinus strobus</i>	white pine	a, c	a, b, c, d	a, b, c, d	a, b, c	d	X	X	X	X	

Appendix 3.2. Ojibwe plant names indexed by natural community type and island (a = West Huron, b = Cattle, c = East Huron, d = Gull, and e = Unnamed) (continued).

Ojibwe Name	Scientific Name	English Name	Boreal Forest	Granite	Granite	Granite	West Huron	Cattle	East Huron	Gull	Un-named
				Bedrock Glade	Bedrock Lakeshore	Lakeshore Cliff					
No name given (<i>C. rugosa</i>)	<i>Cornus rugosa</i>	round-leaved dogwood	a	a, b, c	c, d	c	X	X	X	X	
No name given (<i>H. lucidula</i>)	<i>Huperzia lucidula</i> (<i>Lycopodium lucidulum</i>)	shining clubmoss					c		X		
No name given (<i>O. biennis</i>)	<i>Oenothera biennis</i>	common evening-primrose			b			X			
No name given (<i>P. maculosa</i>)	<i>Persicaria maculosa</i> (<i>Polygonum persicaria</i>)	ladys thumb			d, e					X	X
No name given (<i>T. dasycarpum</i>)	<i>Thalictrum dasycarpum</i>	purple meadow-rue		b	b, c, d		X	X	X	X	
No name given (<i>V. myrtilloides</i>)	<i>Vaccinium myrtilloides</i>	canada blueberry	a, c	a, b, c	a, b	a, b, c	c	X	X	X	