Lake Windermere
Aquatic Invasive Plant Species Inventory
2018

Prepared for the Lake Windermere Ambassadors
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goldeneye
ECOLOGICAL SERVICES

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1. Introduction/Background

An invasive species is a plant, animal, or fungus species that is deliberately or unintentionally introduced into an area that is outside of their natural habitat (ISCBC, 2017). It is widely accepted that invasive species are one of the largest known threats contributing to widespread extinctions and habitat destruction (Gurevitch & Padilla, 2004; Mooney & Cleland, 2001). Alongside other major threats such as climate change and habitat loss, these invaders can wreak havoc on native plants, animals and ecosystems. In 2007, the Canadian Wildlife Service determined that there were three possible ecosystem level threats to the Columbia Wetlands; invasive species, pollution events, and severe erosion (Hammond, 2007). Invasive plant and animals species were determined to be the most likely to occur in the Columbia Wetlands and if introduced, would pose the "greatest potential consequence" (Hammond, 2007).

One established, aquatic invasive plant species [e.g. Eurasian Watermilfoil (*Myriophyllum spicatum*), Brazilian Elodea (*Egeria densa*), Curlyleaf Pondweed (*Potamogeton crispus*)] can be challenging or impossible to eliminate. If aquatic invasive plants are introduced and become established in Lake Windermere or in the Columbia River marshes, there will be severe ecological, economic and social consequences. These invaders can take over native ecosystem and destroy wildlife habitat (Blossey, Skinner & Taylor, 2001; Gibbons et al., 2000), they reduce invertebrate productivity that fish and other animals use for food (Keast, 1984), alter natural wetland processes, reduce water flow and quality, disrupt recreational activities, cause socio-economic problems, and reduce overall biodiversity of native plants and animals.

Purple Loosestrife is an invasive, herbaceous wetland perennial that was first detected in the Columbia Wetlands in 2017, within Burges James Gadsden Provincial Park located north of Golden, British Columbia. This infestation was detected early in its growth; it is an isolated patch and relatively small in spatial scale. It is being treated on an annual basis by BC Parks. Purple loosestrife is known to alter nutrient cycling and decomposition rates, it also leads to reductions in wetland plant diversity. This invasive plant can also reduce the habitat suitability for wetland habitat specialists such as birds like the Pied-billed Grebe (*Podilymbus podiceps*) and Marsh Wren (*Cistothorus palustris*), which become excluded from breeding habitat by encroachment (Blossey, Skinner & Taylor, 2001). This is the only aquatic invasive plant that is known to occur in the Columbia Wetlands ecosystem (including Lake Windermere and Columbia Lake).

In 2008, Wildsight implemented the Columbia Headwaters Invasive Plant Species Project (CHIPSP) in order to collect baseline data on invasive plants in the Columbia Wetlands and higher elevation lakes of the Columbia Valley. The CHIPSP operated as an effective inventory and management project for the Columbia Wetlands and surrounding region from 2008-2012. Aquatic invasive plant species inventories on Lake Windermere have continued to operate annually, with the exception of 2013. The major goal of the aquatic invasive plant inventories is to determine if any aquatic invasive plant species are present in the Lake Windermere ecosystem, and no aquatic invaders have been detected to-date. The growing popularity of boating in Lake Windermere poses a high greatest risk for the introduction and spread of aquatic invasive plant species in the lake and into the Columbia Wetlands ecosystem as a whole. Motor and non-motorized watercrafts are common vectors for transmitting aquatic invasive species. We must be diligent to ensure that this and other aquatic invaders are not present in the ecosystem. This project remains diligent in its annual efforts of early detection so that a rapid management response can be implemented if an aquatic invasive plant is detected.

2. Study Area

Lake Windermere (UTM: 571182; 5590080) is located within the Regional District of East Kootenay (RDEK) in the Columbia River Valley within southeastern BC. The village of Windermere (pop: 1,259) is located along the east side of the lake (Wikipedia, 2017). The community of Invermere (pop: 4000 permanent residents) sits at the northwest shore and has a population that grows substantially during summer month, especially on weekends. Lake Windermere is located near the headwaters of the mighty Columbia River, which begins in Canal Flats located approximately 30kms south of the most southerly end of Lake Windermere. The first 180 kilometers of the Columbia River are known as the Columbia Wetlands, a Ramsar site recognized for its international significance. However, while Lake Windermere is considered to be a part of the continuous Columbia Wetlands ecosystem, the Ramsar designation excludes both Lake Windermere and Columbia Lake.

Lake Windermere extends for approximately 17.7 kilometers and is 0.7 to 2 kilometers wide. Much of Lake Windermere is classified as a shallow open water wetland, a transition zone between lakes and marshes where the depth of water is often less than 2 meters (Alberta Wetland Policy, 2017). However there are deeper sections in the lake, with the deepest area located near the northwest end measuring approximately 5.5 meters deep. Lake Windermere is important to humans for a variety of purposes including freshwater provisioning, but also for its significant cultural ecosystem services such as aesthetic views, fishing, birding, recreational boating, and cross-country skiing. There is a high diversity and abundance of migratory waterbirds that use Lake Windermere as stopover grounds during both the spring and fall

migration; several at-risk bird species use this lake as migration staging area for resting and for feeding (Darvill, 2017a). Some of the at-risk birds that utilize Lake Windermere during migration periods are as follows: Western Grebe (*Aechmophorus occidentalis*), Eared Grebe (*Podiceps nigricollis*), Horned Grebe (*Podiceps auritus*), Double-crested Cormorant (*Phalacrocorax auritus*), American White Pelican (*Pelecanus erythrorhynchos*) (Darvill, 2017a).

3. Methods

3.1. Shoreline surveys

Shoreline surveys for aquatic invasive plant species were conducted over a seven hour period on September 13, 2018. Survey methodology adhered to the protocol outlined in the 'Canadian Columbia Basin Regional Framework for an Aquatic Invasive Species Program: 2015 to 2020' (Inter-Ministry Invasive Species Working Group (IMISWG), 2015). As in previous years of survey effort (Darvill 2016; Darvill 2017) on Lake Windermere, shoreline sampling occurred at six established survey stations. The pre-established surveys stations were selected because the sites pose a higher risk of invasion compared to other shoreline locations, due to higher levels of use. High-risk sites include locations that are known to have higher amounts of trailered boat traffic (boats coming in from other areas that are potentially affected by aquatic invasive species), public boat launches, or boat marinas with multiple boat docking slips.

A crew of two people (R. Darvill, volunteer) conducted the aquatic invasive plant sampling at each station. A thatched rake with a 9.7 meter long rope was use for sampling aquatic plants in the water. The rake was tossed into the water as far as possible and pulled back to the shoreline. This enabled the rake to collect plants below the surface of the water at the specific location where it was thrown. All aquatic plants collected on the rake were recorded to the family level; where possible the species level was identified. Rake pulls occurred at the initial feature (e.g. public boat launch) as well as at three sites located 100 meters upstream of the initial feature, and at three sites located 100 meters downstream of the initial feature. All upstream and downstream sampling sites were separated by 25 meters. Two rake throws were conducted at each of the seven sites. In total, seven sites were sampled at each of the six survey station locations. However, at two of the survey sites (i.e. Fairmont Side Channel, End of Ruault Road), it was not possible to sample at seven sites per survey station due to obstructions such as private property (i.e. Fairmont Side Channel), or bushy riparian vegetation. The six shoreline survey stations were as follows: Baltac Beach, Fairmont Side Channel, Rushmere Community Docks, end of Ruault Road, Unofficial boat launch near Bayshore Condos and Althalmer/Pete's Marina.

3.2. Offshore surveys

Offshore sampling for aquatic invasive plants was completed with the use of an aluminum boat and outboard motor (provided by the District of Invermere), and a crew of two people (R. Darvill, T. Rodgers). All offshore sampling occurred on September 17, 2018 at 11 locations considered to be at high-risk for introduction of aquatic invasive plant species. As with shoreline surveys, high risk locations were considered to be those areas with an increased incidence of trailered boat traffic (boats coming from other waterbodies), public boat launches, and boat marina's. The locations sampled were: Rushmere, Lakeshore Resort, Ruault Road, Indian Beach, Tretheway Docks, Akiskinook Resort, end of Coy Road, Baltac Beach, Lakeview Meadows, Althalmer/Pete's Marina, and the unofficial boat launch near the Bayshore Condos.

The 2018 offshore surveys utilized the IMISWG (2015) methods for AIS sampling on a lake with a boat. This ensures that surveys can be repeatable over time to maintain consistency with previous years of survey effort. However, given the relatively large spatial scale of Lake Windermere and given limited resources, a modification was made to the IMISWG protocol. The IMISWG protocol recommends that continuous surveys be conducted every 100 meters. However, this project's scaled-down survey effort focused at 11 high-risk locations, which was also done during the 2015-2017 years of survey effort.

At each of the 11 locations, two rake pulls were conducted (one off the right and left side of boat). The rake was tossed into the water as far as possible and pulled back to the boat, enabling the rake to collect plants present on the lake bottom. An additional two rake toss/pulls were conducted at the end of a 100 meter transect, off the right and left hand side of boat. All aquatic plants collected on the thatched rake were recorded to the family level and where possible to the species level. During the 100 meter transect between the two rake toss sites, when possible a single observer would record all of the additional plant species seen with the naked eye from the boat. For all 100 meter transects, the boat travelled 100 meters northward, parallel to the shoreline.

4. Results

4.1. Shoreline surveys

No aquatic invasive plant species were detected during shoreline surveys. Aquatic invasive plant species detection is the primary focus on this study. However, all native plant species that were collected through rake pulls are listed in Appendix 1. All watermilfoil species (*Myriophyllum sp*.) detected during surveys had nine (or less) leaflet pairs per leaf. Native

watermilfoil species have 5-10 leaflet pairs, whereas invasive Eurasian Watermilfoil (*Myriophyllum spicatum*) has leaves with 12-21 leaflet pairs (Minnesota Sea Grant, 2016). Therefore, all watermilfoil species detected in 2017 were assumed to be native aquatic plan species.

4.2. Offshore surveys

All offshore sampling resulted in no aquatic invasive plant species being detected. As with previous years of survey effort, dense areas of native aquatic plants were observed in locations such as Ruault Road and Althalmer/Pete's Marina. While aquatic invasive plant detection was the primary focus of this study, all native aquatic plants were identified to the species level where possible, and are listed in Appendix 2.

Figure 1. Image of native aquatic plants that were retrieved through a thatched rake pull at Althalmer/Pete's Marina.

5. Discussion/Recommendations

As with previous years of inventory effort, Lake Windermere appears to have good diversity and abundance of native aquatic plant species, which is a critical component of a healthy aquatic ecosystem. With the exception of four non-indigenous fish species (i.e. Northern Pike, Smallmouth Bass, Largemouth Bass, Pumpkinseed Fish) (Craig, 2015) along with Purple Loosestrife, no other aquatic invaders are known to occur within the entire Columbia Wetlands ecosystem, including Lake Windermere and Columbia Lake.

The importance of native or indigenous aquatic plants is often misunderstood. While some consider them to be a nuisance (e.g. they can become entangled in boat engines or impede swimming), they hold significant value in wetland ecosystems. They are an important food source for many animals and are a critical dietary component for migrating waterfowl. Indigenous aquatic plants provide habitat for fish and many small animals such as frogs, snails and turtles (Parsons, 2012). Numerous animals use aquatic plants as cover from predatory fish and birds; they become nurseries for fish, invertebrates and amphibians, and aquatic plants provide housing supplies for animals (Parsons, 2012). Some birds such as grebe species utilize aquatic plant material to build floating nests that can accommodate fluctuating water levels. Pied-billed grebe nests, located within the nearby Columbia National Wildlife Area, were composed of aquatic plants including *Potamogeton sp.*, *Utricularia sp., and Myriophyllum sp.* (Dawe at al., 2012). All of these plants have been detected in Lake Windermere. Native plants can also improve water clarity and quality by stabilizing sediments and absorbing excess nutrients (James & Barko, 1990). Indigenous aquatic plants also prevent the introduction of invasive plants through competitive exclusion and they reduce rates of shoreline erosion (Smart, 1995). Several aquatic plant species also hold cultural significant to First Nations people. Unquestionably, maintaining indigenous freshwater aquatic plant species is important in any lake or wetland ecosystem.

The Lake Windermere Ambassadors continue to hear from residents and tourists about the increasing amount of ‘weeds’ in the lake. Hawthorn (1973) reported that *Potamogeton natans* is the species that interferes the most with recreational opportunities in the lake. However, aquatic plants such as native milfoil species (*Myriophyllum sp.)* have often been reported as ‘nuisance weeds’ by Lake Windermere recreational users. It is recommended that the Lake Windermere Ambassadors continue to work to educate the people whom utilize Lake Windermere Lake for recreational purposes, specifically about the importance of native aquatic plant species and the many benefits that they provide. It is advised that the Lake Windermere Ambassador continue to develop and promote education materials (e.g. pamphlet, e-newsletter) that highlight the ecological values of aquatic plants. These could be used in

community community such as Farmers Markets and other public events as well as by the Columbia Wetlands Stewardship Partners.

Lastly, due to Lake Windermere's high environmental, economic and societal significance it is recommended that aquatic invasive plant species inventories continue on an annual basis. This would allow for a rapid management response to follow if any aquatic invasive plant species were detected. The high level of recreational use that Lake Windermere receives puts it at a high level of risk for introducing new AIS into the ecologically significant Columbia Wetlands ecosystem.

6. Acknowledgements

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8. Appendices

Appendix 1. Results from the Lake Windermere shoreline surveys for aquatic invasive plants on September 13, 2018.

Site	AIS sampling location	Aquatic Plants Identified (ranked in order of % in the pull)	Observations/Notes
1. Baltac Beach	Launch (Public Boat Launch) UTM: 0570748; 5593608	**Pull 1:** No plants **Pull 2:** No plants	
	South 1 (25m) UTM: 0570750; 5593583	**Pull 1**: No plants **Pull 2:** No plants	Chara sp. washed up on shoreline.
	South 2 (50m) UTM: 0570760; 5593559	**Pull 1**: *Chara sp.* (1 fragment) **Pull 2**: *Chara sp.* (2 fragments)	Directly beside small private dock.
	South 3 (75m) UTM: 0570779; 5593544	**Pull 1:** No plants. **Pull 2**: No plants	
	North 1 (25m) UTM: 0570739; 5593631	**Pull 1**: *Chara sp, Potamogeton sp. (*likely *Potamogeton zosteriformis)* **Pull 2:** Chara sp, *Potamogeton sp.* (likely *Potamogeton zosteriformis*)	
	North 2 (50m) UTM: 0570728; 5593656	**Pull 1:** *Chara sp.* **Pull 2**: *Chara sp.*, P*otamogeton sp*. (likely *Potamogeton zosteriformis*)	
	North 3 (75m) UTM: 0570714; 5593672	**Pull 1:** *Chara sp., Potamogeton sp. (*likely *Potamogeton zosteriformis)***Pull 2:** *Chara sp.*	
2. Rushmere Community Docks	Launch (centre of private docks) UTM: 0574650; 5585352	**Pull 1:** *Potamogeton sp.*(likely *P. vaginatus).* **Pull 2**: No plants	
	South 1 (25m) UTM: 0574659; 5585334	**Pull 1**: *Chara sp., Utricularia sp, Myriophyllum sp., Najas sp.* **Pull 2**: *Chara sp., Utlricularia sp.*	Rake pulls conducted from a small dock.
	South 2 (50m) UTM: 0574666; 5585311	**Pull 1:** *Chara sp.* **Pull 2:** *Najas sp., Chara sp.*	
	South 3 (75m) UTM: 0574674; 5585287	**Pull 1:** *Utricularia sp., Chara sp., Potamogeton robbinsii, Elodea canadensis* **Pull 2:** *Utricularia sp., Chara sp***.**	*Myriophyllum sp, Utricularia sp., Potamogeton praelongus, Elodea canadensis, Megalodonta beckii* species were all found washed up on shoreline.
	North 1 (25m) UTM: 0574637; 5585375	**Pull 1**: *Utricularia sp., Myriophyllum sp., Chara sp*. **Pull 2**: *Utricularia sp., Myriophyllum sp., Chara sp., Elodea canadensis, Ranunculus aquatilis*	
	North 2 (50m) UTM: 0574623; 5585394	**Pull 1:** *Utricularia sp., Chara sp., Potamogeton robbinsii, Ranunculus aquatilis* **Pull 2:** *Chara sp.,* aquatic moss	
	North 3 (75m) UTM: 0574611; 5585417	**Pull 1:** *Utricularia sp., Potamogeton richardsonii, Chara sp.* **Pull 2:** *Chara sp, Najas sp.,* aquatic moss	
3. Fairmont Side Channel	Boat launch UTM: 0580441; 5577289	**Pull 1:** *Potamogeton sp.*(likely *P. vaginatus), Chara sp.* **Pull 2:** *Chara sp, Potamogeton sp. (likely P. vaginatus).*	Outhouse, picnic tables, garbage cans.
	South 1 (25m) UTM: 0580421; 5577269	**Pull 1:** *Chara sp., Potamogeton sp.* (likely *P. vaginatus*). **Pull 2**: *Chara sp., Potamogeton sp.* (likely *P. vaginatus*), *Potamogeton richardsonii*	Could not go further south due to private property. Did not sample further south here in 2015, 2016, 2017 or 2018.

	North 1 (25m) UTM: 0580450; 5577309	**Pull 1:** *Potamogeton sp. (likely P. vaginatus), Chara sp., Potomogeton richardsonii* **Pull 2:** *Potamogeton sp. (likely P. vaginatus), Potomogeton richardsonii, Chara sp.*	
	North 2 (50m) UTM: 0580451; 5577332	**Pull 1:** *Potamogeton sp.*(likely *P. vaginatus), Potamogeton richardsonii, Chara sp.* (1 fragment) **Pull 2:** *Potamogeton sp. (*likely *P. vaginatus), Potamogeton richardsonii, Chara sp., Myriophyllum sp.*	
	Additional Notes: It was not possible to sample at more than three locations at Fairmont Side Channel due to private property.		
4. End of Ruault Road	Boat Launch UTM: 0572641; 5587665	**Pull 1:** *Chara sp., Myriophyllum sp.* **Pull 2:** *Chara sp., Potamogeton robbinsii, Potamogeton sp.* (short/narrow leaves)	
	North 1 (25m) UTM: 0572619; 5587674	**Pull 1:** *Chara sp., Myriophyllum sp., Potamogeton richardsonii* **Pull 2:** *Chara sp., Myriopphyllum sp., Potamogeton sp.* (short/narrow leaves), *Elodea canadensis*	Bulrushes located north of 25 m did not enable for pulls further north. Did not sample here in 2015, 2016 or 2017.
	South 1 (25m) UTM: 0572664; 5587657	**Pull 1**: *Chara sp., Potamogeton sp.* (short/narrow leaves) **Pull 2:** *Chara sp., Potamogeton sp.* (short/narrow leaves)	
	South 2 (50m) UTM: 0572687; 5587647	**Pull 1**: *Chara sp., Potamogeton sp.* (short/narrow leaves), *Najas sp.* **Pull 2:** *Chara sp., Potamogeton sp.* (short/narrow leaves)	
	South 3 (75m) UTM: 0572711; 5587639	**Pull 1**: *Myriophyllum sp., Potamogeton praelongus, Utricularia sp., Elodea canadensis, Chara sp., Potamogeton sp.* (short/narrow leaves) **Pull 2**: *Myriophyllum sp., Potamogeton praelongus, Potamogeton richardsonii, Elodea canadensis, Chara sp.*	Small amounts of *Chara sp*. coming up with rake pulls.
	Additional Notes: Could not sample northwards beyond the 25m north survey station due to extensive shoreline plants.		
5. Unofficial boat launch near Bayshore Condos	Launch UTM: 0569389; 5595010	**Pull 1:** No plants **Pull 2:** *Chara sp.* (1 fragment)	
	North 1 (25m) UTM: 0569390; 5595037	**Pull 1**: No plants **Pull 2:** No plants	
	North 2 (50m) UTM: 0569380; 5595059	**Pull 1:** *Chara sp., Myriophyllum sp., Potamogeton sp.* (short/narrow leaves) **Pull 2:** *Chara sp., Potamogeton sp.* (short/narrow leaves)	
	North 3 (75m) UTM: 0569363; 5595076	**Pull 1:** C*hara sp., Najas sp., Potamogeton sp.* (short/narrow leaves) **Pull 2***: Chara sp., Najas sp., Potamogeton sp.* (short/narrow leaves)	
	South 1 (25m) UTM: 0569390; 5594986	**Pull 1:** No plants **Pull 2:** No plants	
	South 2 (50m) UTM: 0569389; 5594972	**Pull 1**: *Chara sp., Najas sp.* **Pull 2**: *Utricularia sp., Myriophyllum, Chara sp.*	
	South 3 (75m) UTM: 0569401; 5594942	**Pull 1:** *Chara sp., Potamogeton sp. (possibly P.Gramineus).* **Pull 2:** *Chara sp., Najas sp. (1 fragment)*	
6. Althalmer/ Pete's Marina	Boat Launch UTM: 0569527; 5596336	**Pull 1:** No Plants **Pull 2***:* No plants	Most heavily used public boat launch access point on Lake Windermere.
	South 1 (25m) UTM: 0569536; 5596313	**Pull 1:** *Elodea canadensis, Utricularia sp., Chara sp., Najas sp., Myriophyllum sp., Potamogeton richardsonii* **Pull 2:** *Chara sp., Najas sp., Elodea canadensis, Myriophyllum sp., Potomogeton richardsonii*	
	South 2 (50m) UTM: 0569543; 5596290	**Pull 1:** *Chara sp., Najas sp., Potamogeton sp., Potamogeton richardsonii, Myriophyllum sp.,* **Pull 2:** *Chara sp., Najas sp., Potamogeton richardsonii, Myriophyllum sp., Elodea canadensis*	

	South 3 (75m)	N/A	No survey; extensive riparian shrubs obstructing sampling location. Did not sample here in 2015, 2016, 2017, 2018
	North 1 (25m) UTM: 0569523; 5596361	**Pull 1**: *Chara sp., Najas sp., Potamogeton richardsonii, Potamogeton sp.* (short/narrow leaves), *Utricularia sp., Elodea canadensis* **Pull 2:** *Najas sp., Potamogeton pectinatus, Potamogeton richardsonii, Elodea canadensis, Chara sp.*	
	North 2 (50m) UTM: 0569515; 5596382	**Pull 1:** *Elodea canadensis, Potomogeton richardsonii , Myriophyllum sp., Najas sp., Potamogeton pectinatus* **Pull 2:** *Elodea canadensis, Potomogeton richardsonii, Myriopphyllum sp., Potamogeton pectinatus, Najas sp., Chara sp.*	
	North 3 (75m) UTM: 0569507; 5596414	**Pull 1:** *Chara sp., Elodea canadensis, Potamogeton richardsonii, Najas sp.* **Pull 2:** *Chara sp., Najas sp., Elodea canadensis, Potamogeton richardsonii, Myriophyllum sp.*	Althalmer Slough/Pete's Marina had the highest located biomass of aquatic plants seen during aquatic invasive plant surveys.

Appendix 2. Results from the rake pulls conducted during offshore aquatic invasive plant inventories at 11 survey stations on Lake Windermere, on September 17, 2018.

Site Name	GPS coordinates (UTM)	Rake Pull # or transect survey	Aquatic Plant Species
Rushmere	0574777; 5585461	1	*Chara sp., Potamogeton natans*
Rushmere	0574777; 5585461	2	*Chara sp., Potamogeton natans*
Rushmere	N/A	100 m transect	*Chara sp., Potamogeton natans, Potamogeton praelongus*
Rushmere	0574687; 5585548	1	*Chara sp., Myriophyllum sp., Potamogeton natans, aquatic moss*
Rushmere	0574687; 5585548	2	Aquatic moss, *Chara sp. Potamogeton natans, Potamogeton sp.* (short/narrow leaves)*, Myriophullum sp.*
Lakeshore Resort	0574827; 5586534	1	*Chara sp., Najas sp., Potamogeton sp.* (thin/narrow leaves)
Lakeshore Resort	0574827; 5586534	2	*Chara sp.,* aquatic moss, *Potamogeton natans*
Lakeshore Resort	N/A	100m transect	Did not complete transect due to wave action.
Lakeshore Resort	0574757; 5586620	1	*Chara sp.*
Lakeshore Resort	0574757; 5586620	2	*Chara sp., Utlricularia sp., Elodea canadensis, Potamogeton sp.* (thin/narrow leaves)*, Potamogeton pectinatus, Myriophyllum sp.*
Ruault Road	0573130; 5587231	1	*Myriophyllum sp., Elodea canadensis, Potamogeton praelongus, Potamogeton richardsonii*
Ruault Road	0573130; 5587231	2	*Potamogeton richardsonii, Myriophyllum sp., Potamogeton praelongus, Elodea canadensis*
Ruault Road	N/A	100m transect	No additional plant species seen.
Ruault Road	0573083; 5587326	1	*Myriophyllum sp., Potamogeton natan*
Ruault Road	0573083; 5587326	2	*Myriophyllum sp., Potamogeton richardsonii, Potamogeton natans,* aquatic moss
Indian Beach	0572477; 5589072	1	*Chara sp., Potamogeton pectinatus, Potamogeton sp. (short/narrow leaves)*
Indian Beach	0572477; 5589072	2	*Chara sp., Potamogeton sp. (short/narrow leaves)*
Indian Beach	N/A	100m transect	Additional species seen during transect: *Potamogeton natans*
Indian Beach	0572390; 5589142	1	*Chara sp.*
Indian Beach	0572390; 5589142	2	*Chara sp.*
Tretheway Docks	0571755; 5589720	1	*Chara sp.*
Tretheway Docks	0571755; 5589720	2	*Chara sp., Potamogeton richardsonii*
Tretheway Docks	N/A	100m transect	Additional species seen during transect: *Potamogeton natans*
Tretheway Docks	0571661; 5589757	1	*Chara sp.*
Tretheway Docks	0571661; 5589757	2	*Chara sp.*
Akisknook Docks	0571277; 5591443	1	*Myriophyllum sp., Najas sp.*
Akisknook Docks	0571277; 5591443	2	*Myriophyllum sp., Najas sp., Potamogeton pectinatus*
Akisknook Docks	N/A	100m transect	Deep water, could not see lake bottom during transect.
Akisknook Docks	0571244; 5591545	1	*Elodea canadensis, Myriophyllum sp.*
Akisknook Docks	0571244; 5591545	2	*Elodea canadensis, Myriophyllum sp.*
End of Coy Road	0570188; 5590765	1	*Najas sp., Chara sp., Elodea canadensis, Potamogeton pectinatus*
End of Coy Road	0570188; 5590765	2	*Chara sp., Najas sp., Myriophyllum sp., Potamogeton natans, Potamogeton sp.* (short/narrow leaves)
End of Coy Road	N/A	100m transect	No additional plant species seen.
End of Coy Road	0570159; 5590875	1	*Chara sp., Potamogeton natans, Potamogeton sp.* (short/narrow leaves)
End of Coy Road	0570159; 5590875	2	*Chara sp., Potamogeton natans, Elodea canadensis, Myriophyllum sp., Potamogeton pectinatus*
Baltac Beach	0571117; 5593392	1	*Chara sp.*
Baltac Beach	0571117; 5593392	2	*Chara sp.*
Baltac Beach	N/A	100m transect	No additional plant species seen.
Baltac Beach	0571014; 5593430	1	*Chara sp.*
Baltac Beach	0571014; 5593430	2	*Chara sp.*

Lakeview Meadows	0570174; 5594069	1	*Potamogeton pictinatus, Chara sp.*
Lakeview Meadows	0570174; 5594069	2	*Chara sp., Elodea canadensis, Potamogeton sp. (short/narrow leaves), Myriophyllum sp., Potamogeton pictinatus*
Lakeview Meadows	N/A	100m transect	Additional species seen during transect: *Potamogeton praelongus*
Lakeview Meadows	0570193; 5594179	1	*Chara sp.*
Lakeview Meadows	0570193; 5594179	2	*Chara sp.*
Unofficial boat launch near Bayshore Condos	0569434; 5595021	1	*Chara sp., Myriophyllum sp.*
Unofficial boat launch near Bayshore Condos	0569434; 5595021	2	*Myriophyllum sp., Potamogeton richardsonii*
Unofficial boat launch near Bayshore Condos	N/A	100m transect	Deep water, could not see lake bottom during transect.
Unofficial boat launch near Bayshore Condos	0569383; 5595123	1	*Chara sp.*
Unofficial boat launch near Bayshore Condos	0569383; 5595123	2	*Chara sp.*
Althalmer/Pete's Marina	0569566; 5596306	1	*Chara sp., Elodea canadensis, Myriophyllum sp.*
Althalmer/Pete's Marina	0569566; 5596306	2	*No plants.*
Althalmer/Pete's Marina	N/A	100m transect	Additional plants seen during transect: *Potamogeton pictinatus, Potamogeton richardsonii,*
Althalmer/Pete's Marina	0569539; 5596405	1	*Chara sp.*
Althalmer/Pete's Marina	0569539; 5596405	2	*Chara sp., Myriophyllum sp., Potamogeton pictinatus*