

Redside Dace monitoring in the Greater Toronto Area (2014-2019): post-spill recovery and sampling best practices evaluation

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by

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ABSTRACT

LeBaron, A., Reid, S.M., Parna, M. Moore, D, and Moryk, J. 2021. Redside Dace monitoring in the Greater Toronto Area (2014-2019): post-spill recovery and sampling best practices evaluation. Can. Data Rep. Fish. Aquat. Sci. 1337: vi + 85 p.

Fish sampling of Greater Toronto Area (GTA) streams was performed between 2014 and 2019. Surveys were conducted to monitor the status of the Endangered Redside Dace (*Clinostomus elongatus*) and its habitats, improve understanding of threats facing the species, and evaluate the effects of timing, gear type, and water temperature on mortality associated with scientific sampling. Fishes were collected by backpack electrofisher and / or bag seine from 48 sites across the GTA, including 12 sites that were impacted by an agricultural spill in July 2014. Sampling sites were generally located along reaches of historical and currently occupied Redside Dace habitat. Forty-three species were detected, including Redside Dace (8 individuals from 4 sites), 10 recreationally-important species, and the invasive Round Goby (*Neogobius melanostomus*). Increases in fish abundance and species diversity were observed at post agricultural spill monitoring sites from 2014 to 2019. Time of year and gear type influenced the number of individuals collected and number of species detected, with fall electrofishing resulting in the highest species richness and total fish abundance, and lowest observed mortality rates.

RÉSUMÉ

LeBaron, A., Reid, S.M., Parna, M. Moore, D, and Moryk, J. 2021. Redside Dace monitoring in the Greater Toronto Area (2014-2019): post-spill recovery and sampling best practices evaluation. Can. Data Rep. Fish. Aquat. Sci. 1337: vi + 85 p.

Un échantillonnage des poissons dans les cours d'eau dans la région du Grand Toronto (RGT) a été effectué entre 2014 et 2019. Des relevés ont été réalisés en vue de surveiller la situation et l'habitat du méné long (*Clinostomus elongatus*), une espèce en voie de disparition, d'améliorer la compréhension des menaces qui pèsent sur l'espèce et d'évaluer les effets de la période, du type d'engin et de la température de l'eau sur la mortalité associée à l'échantillonnage scientifique. On a recueilli les poissons au moyen d'un appareil portatif de pêche à l'électricité ou d'une senne dans 48 sites répartis dans la RGT, y compris 12 sites qui ont été touchés par un déversement agricole en juillet 2014. Les sites d'échantillonnage étaient généralement situés le long de tronçons de l'habitat passé et actuel du méné long. On a détecté 43 espèces, y compris le méné long (8 individus provenant de 4 sites différents), 10 espèces importantes sur le plan récréatif et le gobie à taches noires (*Neogobius melanostomus*), une espèce envahissante. Une augmentation de l'abondance des poissons et de la diversité des espèces a été observée entre 2014 et 2019 dans les sites de surveillance établis à la suite du déversement agricole. La période de l'année et le type d'engin ont influencé le nombre d'individus recueillis et le nombre d'espèces détectées; la pêche à l'électricité réalisée en automne a permis d'observer la richesse des espèces et l'abondance totale de poissons les plus élevées et les taux de mortalité les plus bas.

INTRODUCTION

Fisheries and Oceans Canada (DFO) data reports are published to support the Species at Risk Program by providing an overview of field activities and a medium for archiving data associated with the sampling of *Species at Risk Act* (SARA) listed fishes and their habitat. This report presents the methods and results of fish community sampling at Greater Toronto Area (GTA) stream sites between 2014 and 2019. Sampling was performed as part of priority research actions supporting the recovery of Redside Dace (*Clinostomus elongatus*).

Redside Dace is a small, colourful cyprinid found in the pools and slow-flowing sections of small streams with a mixture of overhanging grasses and shrubs (McKee and Parker 1982; Novinger and Coon 2000). The species prefers mid-water positions in the deepest parts of pools (Novinger and Coon 2000). Redside Dace has a disjunct distribution across North America, including throughout the upper Mississippi River Drainage, Great Lakes Basin, Ohio River, and upper Susquehanna River (Page and Burr 1991). There are currently 17 known locations in Canada where Redside Dace is found and 9 locations where Redside Dace is thought to be extirpated. Extant Redside Dace populations in Canada are primarily located in the Greater Toronto Area (GTA), but are also found farther north in the vicinity of St. Joseph's Island (Lake Huron) and west in tributaries of Lake Erie and Lake Huron [Redside Dace Recovery Team (RDRT) 2010]. As a result of continued declines in abundance and distribution, and threats to remaining populations, the governments of Ontario and Canada have both listed Redside Dace as *Endangered* [Committee on the Status of Endangered Wildlife in Canada (COSEWIC) 2017].

Long-term monitoring to characterize changes in the abundance and distribution of Redside Dace and its habitats is a key action to support the recovery of the species (RDRT 2010). Such monitoring programs inform management activities including the review of development and instream work proposals, population status assessments, and the planning of restoration projects. Two research projects related to Redside Dace monitoring were undertaken by the Ontario Ministry of Natural Resources and Forestry (OMNRF) between 2014 and 2019: (i) post agricultural spill monitoring in Lynde Creek; and (ii) evaluation of best management practices for stream fish monitoring in regulated Redside Dace habitat.

Sampling for both projects supported the following research and monitoring objectives as outlined in the Recovery Strategy for Redside Dace in Ontario (RDRT 2010):

- Determine distribution and abundance of extant populations;
- Establish a long-term monitoring program to assess the status of Redside Dace and its habitats;
- Improve understanding of the threats facing Redside Dace;
- Identify the key factors associated with agricultural activities that cause declines in Redside Dace populations; and,
- Evaluate the effects of timing, gear type and water temperature on mortality associated with scientific sampling.

POST AGRICULTURAL SPILL FISH MONITORING IN LYNDE CREEK

Lynde Creek is a tributary of Lake Ontario located in the Durham Region of the GTA. The creek consists of an east and west branch, which converge in D'Hillier Park, Whitby, Ontario. Redside Dace historically occurred in both branches; however, sampling conducted between 1999 and 2001 indicated range contraction in the east branch (COSEWIC 2007), and subsequent

sampling between 2009 and 2014 only captured specimens in the west branch, in and near Heber Down Conservation Area (COSEWIC 2017).

On July 16, 2014, a major agricultural spill (a mixture of manure and acidic material) occurred in the upper reaches of the west branch of Lynde Creek affecting 21 km of the stream, including much of the Heber Down Conservation Area (COSEWIC 2017). Consequences of the spill included ammonia levels in water samples high enough to create acutely toxic conditions for aquatic life [Ministry of the Environment and Climate Change (MOECC) 2015], extensive fish and crayfish mortalities observed by OMNRF and Central Lake Ontario Conservation Authority (CLOCA) staff along the affected reach, and a decline in fish abundance, biomass and diversity along the affected reach. There has been limited research published on the impacts of toxic manure spills on Ontario stream fishes. In response, a 6-year study was initiated to assess the impacts of the July 2014 spill, monitor the recovery of the Lynde Creek fish community, and assess the likelihood of population recovery for Redside Dace (COSEWIC 2017). Research was conducted in partnership with CLOCA and carried out at long-term monitoring sites, which allows for a Before-After-Control-Impact (BACI) analysis (not presented in this report).

EVALUATION OF BEST MANAGEMENT PRACTICES FOR STREAM FISH MONITORING IN REGULATED REDSIDE DACE HABITAT

Stream fish community sampling by Conservation Authorities and other government agencies provide important information on watershed health and the status of species of conservation and management concern. In the past, restrictions on sampling gear have been designated as part of fish collection permits issued by OMNRF in areas of protected Redside Dace habitat (Government of Ontario 2007). The goal of these constraints on sampling is to avoid mortality or harm to fishes. For Redside Dace, this has generally meant a limited or restricted use of electrofishing when sampling; seining and/or underwater cameras have been identified as preferred methods (depending on sampling objective and conditions of the habitat). Additionally, preferred timing windows for sampling (fall vs. summer) have been proposed to avoid heat-related stress and increased oxygen demand (Wilson and Dextrase 2008).

Single-pass backpack electrofishing during summer months is a standard technique for watershed health monitoring used by Conservation Authorities in southern Ontario (Reid et al. 2009). However, it is unknown whether fish community data collected using alternative methods (i.e. seine) are comparable to electrofishing data, and what range of stream habitat conditions can be effectively sampled by seines. Research is therefore required to demonstrate the effectiveness of seining and electrofishing to minimize harm, and to support ongoing efforts to report on watershed health (and delineate regulated Redside Dace habitat) using fish community data. This knowledge gap was identified during the recovery potential assessment meeting for Redside Dace held 21-22 February 2018 in Burlington, Ontario (DFO 2019)

METHODS

POST AGRICULTURAL SPILL FISH MONITORING

The data that will be used to characterize Lynde Creek post-spill recovery includes: (i) pre-spill fish community survey data collected by CLOCA in 2004 and 2009; (ii) pre-spill data collected by CLOCA as part of fish community monitoring (but that was interrupted by the spill) in 2014 and, (iii) post-spill data collected by OMNRF and CLOCA from 2014 to 2019. Sampling details and data collected in 2004 and 2009 are archived in the Flowing Waters Information System (FWIS) (URL: <https://www.comap.ca/fwis>).

From July 2 to 16 2014, backpack electrofishing surveys were done at 8 Lynde Creek sites: 7 east branch sites and 1 west branch site (LC04). Over a 2 week period after the spill, backpack electrofishing surveys were conducted at 19 sites along the spill-impacted west branch (impact sites: $n = 11$, including resampling of LC04) and the unaffected east branch (control sites: $n = 8$) of Lynde Creek. In the fall of 2014, two sites were added to the east branch, for a total of 21 sites (11 impact; 10 control). From 2015-2019, 22 sites were sampled (12 impact; 10 control) each summer. Figure 1 shows the extent of the study area with impact and control sites identified. All sites along the western branch were located downstream of the spill.

Sampling was performed to replicate CLOCA's single-pass electrofishing-based fish community assessments of Lynde Creek, following guidance provided in the Ontario Stream Assessment Protocol (OSAP). At each site, electrofishing was conducted using a Smith-Root Model 12-B electrofisher within the site boundaries previously established by CLOCA. The voltage of pulsed DC electrofishing output was set at 200 or 300V based on prior experience sampling fishes in GTA streams (Reid et al. 2009). Fishes were held in buckets of clean water (or flow-through bins) after capture. All individuals were identified to species, counted, and batch-weighted before being released. When large numbers of fishes were captured, multiple buckets were used to prevent overcrowding, and water was replaced periodically. Digital photographs of individuals with uncertain species identity were taken as vouchers for later identification.

Across all study years, the earliest summer sampling date was June 28, and the latest was August 30. Water temperatures ranged from 14.4 to 26.5°C (median: 19.3°C), and conductivity ranged from 281 to 915 $\mu\text{S}/\text{cm}$ (median: 638 $\mu\text{S}/\text{cm}$). Fall 2014 sampling occurred between September 23 and October 7, when water temperatures ranged from 10.9 to 15.3°C (median: 13.5°C), and conductivity ranged from 591 to 941 $\mu\text{S}/\text{cm}$ (median: 723 $\mu\text{S}/\text{cm}$). Channel widths were measured at the top, middle, and bottom of each site, and ranged from 0.2 to 12.0 m. Channel width for each site is presented in this report as the mean of the three measurements; median of mean values is 5.2 m. A summary of site details and sampling effort are provided in Table 1. Complete site details and sampling effort can be found in Appendix 1.

SAMPLING BEST PRACTICES EVALUATION

In 2018 and 2019, a paired-gear study was performed at 39 sites that represent a gradient of watershed health across the GTA. The study was designed to allow for comparisons between summer and fall electrofishing, and between summer electrofishing and summer seining. Fish sampling was done at established CLOCA and Toronto and Region Conservation Authority (TRCA) monitoring sites, and followed guidance provided by OSAP. In addition to Lynde Creek, sites were located in the Bowmanville Creek, Duffins Creek, Oshawa Creek, Rouge River, and Soper Creek watersheds. Sampling site locations were randomly selected by Conservation Authorities and satisfied the condition of not requiring private landowner permission to access. Complete site details and sampling effort can be found in Appendix 2.

During the summer, sites were sampled by single-pass backpack electrofishing, with pulsed DC output set from 100 to 300 V. Median sampling intensity was 3.4 seconds per m^2 . After a minimum of one week, the same area was resampled with a bag seine (dimensions: 9.1 m long and 1.2 m deep with a 1.2 m x 1.2 m x 1.2 m bag, 3.2 mm diameter mesh). Seine hauls were completed across the entire site, and notes were made where seining was not possible or where difficulties were encountered (Appendix 3). In the fall, the same habitats at each of the sites were resampled using the backpack electrofishing method. Median sampling intensity was 4.0 seconds per m^2 .

Fishes were processed using the methods previously described for the Lynde Creek study. In addition, the number of observed species-specific sampling-related mortalities were recorded.

Mortality counts were based on the number of moribund individuals observed in the processing bins and along the streambed. Imperfect detection of sampling-related mortalities in the field and longer-term mortality related to sampling injuries or handling stress was not assessed. Future estimates of sampling-related mortality could be improved by installing a block-net at the downstream end of the site to capture moribund individuals floating downstream, or by holding captured individuals in enclosures over several days to monitor survival (Cooke et al. 1998).

Summer sampling occurred between June 28 and September 28. Water temperatures ranged from 13.3 to 26.5 °C (median: 19.5 °C), and conductivity ranged from 281 to 1540 µS/cm (median: 704 µS/cm). Fall sampling occurred between October 9 and 21. Water temperatures ranged from 4.9 to 19.0 °C (median: 10.3), and conductivity ranged from 261 to 1505 µS/cm (median: 680 µS/cm). Channel widths ranged from 1.2 to 15.2 m (median: 5.0 m). Mean values presented in this report are calculated from measurements taken across all sampling events at a site. A summary of site details and sampling effort is provided in Table 2.

RESULTS

Common and scientific names for all fishes captured in these studies are provided in Appendix 4. Data collected during summer electrofishing for the Lynde Creek study were also used in the gear comparison study: this data is presented twice (once for each study).

POST AGRICULTURAL SPILL FISH MONITORING

A total of 16,462 individuals were captured across all sample events, representing 35 species (Tables 3 and 4). Following the spill in 2014, summer backpack electrofishing collected on average (median) 1 individual per site (median number of species captured: 1.0 per site) from the affected branch, compared to 99 individuals per site (median number of species captured: 10.0 per site) from the unaffected branch. By the end of the study in 2019, an average of 154 individuals were captured per site (median number of species captured: 10.0 per site) from the affected branch, compared to 91 individuals per site (median number of species captured: 9.5 per site) from the unaffected branch.

Redside Dace was not captured during any of the post agricultural spill surveys in Lynde Creek. Recreationally-important species captured included Brook Trout, Largemouth Bass, Northern Pike, Rainbow Trout, Smallmouth Bass, and Yellow Perch. Except for Brook Trout and Rainbow Trout, collections of these species were limited to the lower reaches. Individual counts and biomass per site are presented in Appendices 5 (a – g) and 6 (a – g).

SAMPLING BEST PRACTICES EVALUATION

In 2018 and 2019, 39 GTA stream sites were sampled by backpack electrofisher in the summer and fall, and by seine in the summer. Collection sites included the following 13 Lynde Creek study sites: LA01, LA04, LA07, LA15, LC01, LC02, LC06, LC07, LC08, LC10, LC23, LDUR, and LES1.

A total of 23,762 individuals were captured across all sample events, representing 40 species. Redside Dace was captured from Duffins Creek (2 sites) and the Rouge River (2 sites) (Figure 2). Recreationally-important species captured included Atlantic Salmon, Brook Trout, Brown Trout, Chinook Salmon, Coho Salmon, Largemouth Bass, Northern Pike, Rainbow Trout, Smallmouth Bass, and Yellow Perch. Table 5 presents catch by site summaries for each sampling gear-timing combination. Species counts and biomass per site are provided in Appendices 7 (a – c) and 8 (a – c).

Fall electrofishing captured the highest numbers of individuals (median catch per site: 181 individuals), followed by summer seining (median catch: 124) and summer electrofishing (median catch: 117). Median species detection was consistent across the three sampling scenarios (9 species per site). It was observed that seining collected more young-of-year (YOY) fishes than electrofishing, resulting in higher abundances; however, median biomass per site for summer seining (329.7 g) was lower than for electrofishing in summer (625.8 g) or fall (910.6 g). During summer seining at URU3, approximately 1,500 YOY cyprinids were released without weighing to mitigate mortality.

Of the 23,762 individuals captured, a total of 2,371 mortalities were recorded resulting in a 10% overall mortality rate for this study (Appendix 9, a – c). Ninety-four percent of these mortalities occurred during summer seining, the majority of which (75%) happened during two major mortality events at LA04 (1023 individuals) and URU3 (633 individuals). Young-of-year represented 32% of overall mortalities. The median rate of sampling-related mortality at each site was 1.0% for fall electrofishing, 2.0% for summer electrofishing, and 3.0% for summer seining. Blacknose Dace, Johnny Darter, Longnose Dace, Mottled Sculpin, and Rainbow Darter mortalities were most frequently observed during the summer electrofishing sampling period. Fall electrofishing-related mortalities included predominately Longnose Dace, Rainbow Darter, and Rainbow Trout. Seining-related mortalities were largely comprised of young-of-year cyprinids and Common Shiner. No Redside Dace mortalities were observed.

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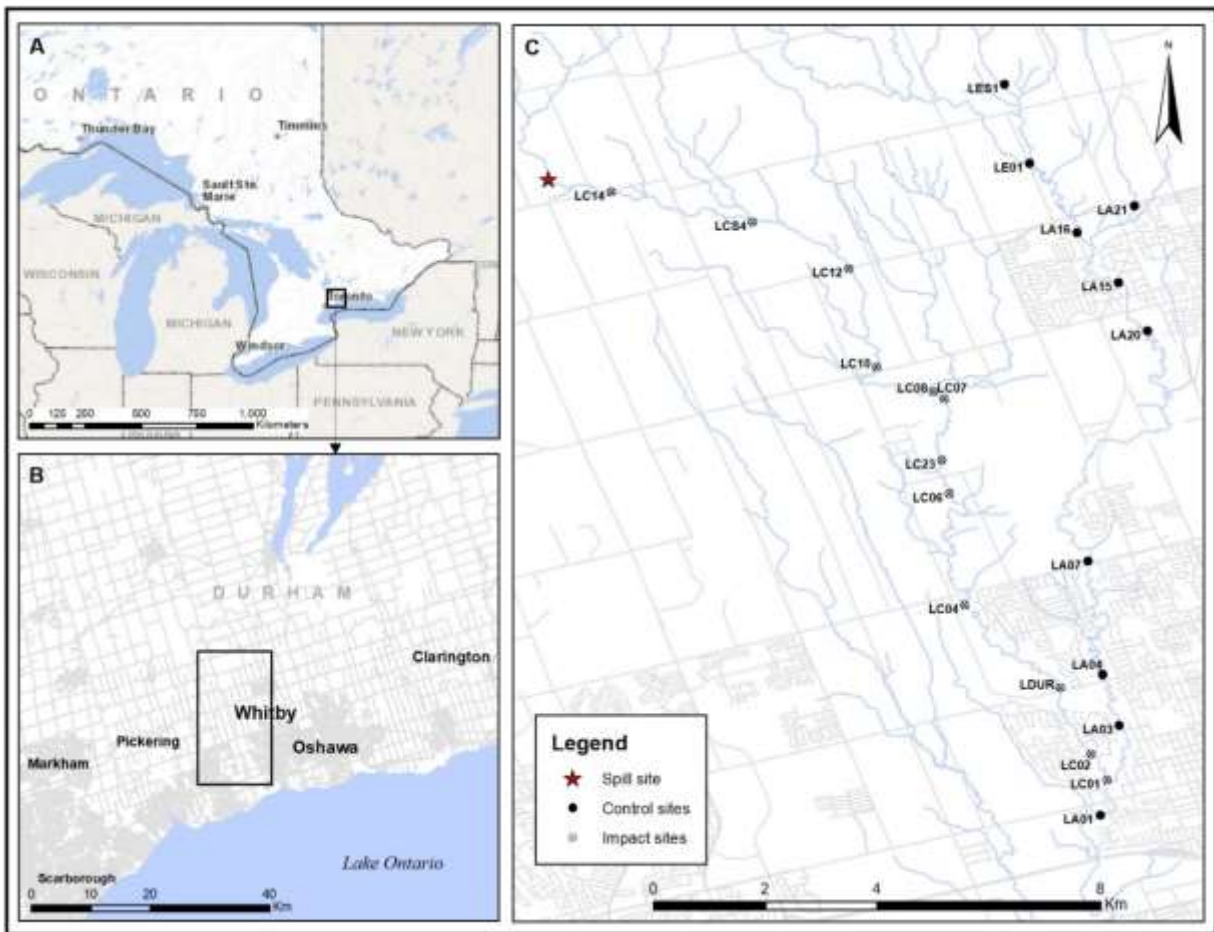


Figure 1. a) Location of study area within Ontario; b) extent of study area within the Durham Region, and c) locations of 22 Lynde Creek monitoring sites sampled by backpack electrofisher between 2014 and 2019.

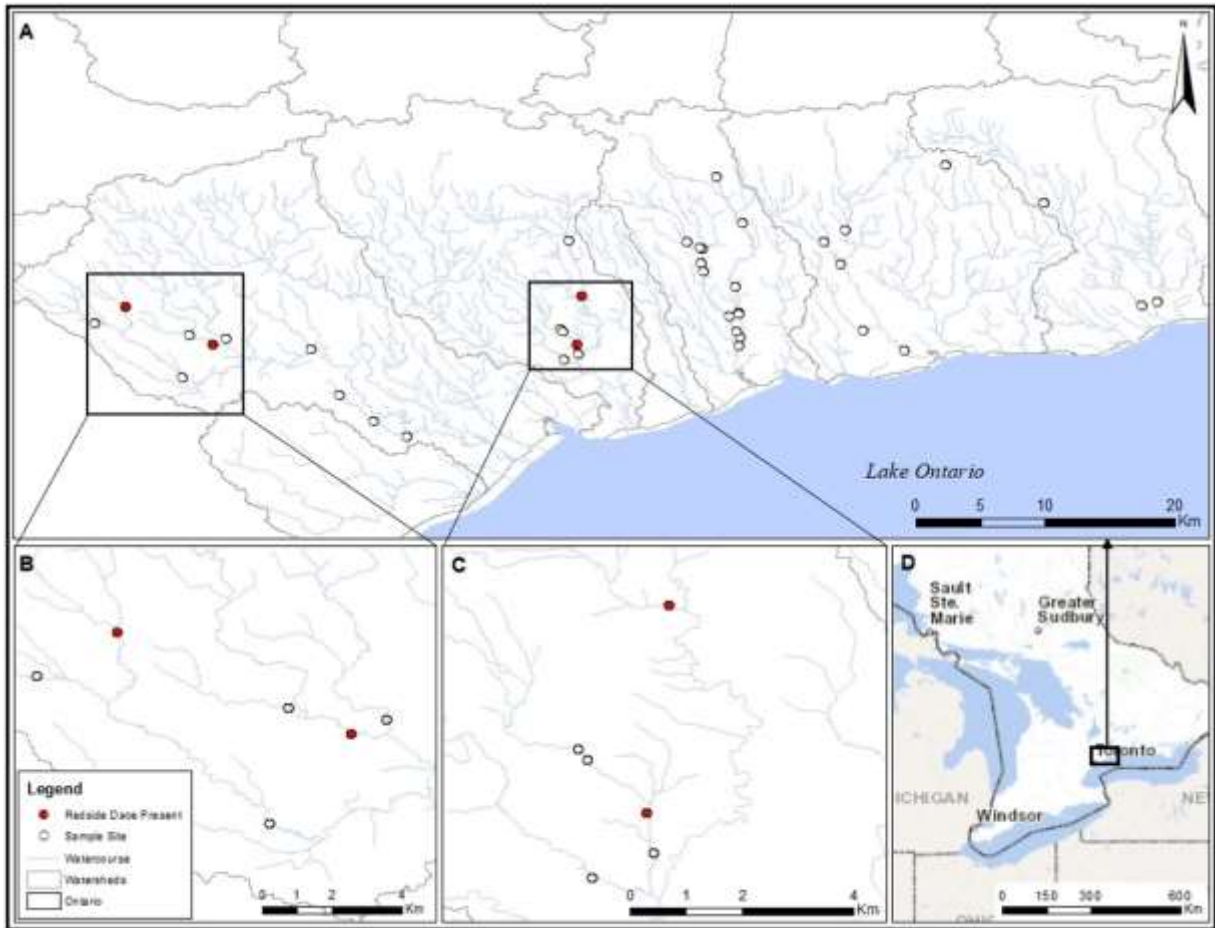


Figure 2. a) Map of 39 stream sites sampled in the Greater Toronto Area by backpack electrofisher in the summer and fall, and by seine in the summer, with filled circles representing Redside Dace capture sites. b) Close-up of Redside Dace capture sites in the Rouge River watershed. c) Close-up of Redside Dace capture sites in the Duffins Creek watershed. d) Location of study area within Ontario.

Table 1. Summary of Lynde Creek post fish-kill monitoring site details and sampling effort. Mean and standard deviation (SD) are calculated from pooled measurements (all sample events) for each site. C/I: C = control site, I = impact site.

Site code	C/I	Latitude	Longitude	Site length (m)	Area sampled (m ²)		Effort (seconds per m ²)	
					Mean	SD	Mean	SD
LA01	C	43.8733	-78.9625	49	402	33	2.7	0.6
LA03	C	43.8878	-78.9594	60	425	57	3.2	0.4
LA04	C	43.8959	-78.9621	78	381	48	3.8	0.4
LA07	C	43.9141	-78.9645	44	255	22	5.6	0.6
LA15	C	43.9903	-78.9579	40	237	19	4.3	0.6
LA16	C	43.9668	-78.9660	78	423	93	3.2	0.8
LA20	C	43.9511	-78.9549	63	373	52	3.9	0.7
LA21	C	43.9711	-78.9571	60	49	30	10.9	4.5
LE01	C	43.9781	-78.9738	46	171	34	5.8	1.1
LES1	C	43.9908	-78.9779	55	192	15	6.0	1.0
LC01	I	43.8790	-78.9614	60	327	33	3.2	0.3
LC02	I	43.8834	-78.9646	70	347	52	4.2	0.7
LC04	I	43.9071	-78.9844	60	349	110	3.8	0.9
LC06	I	43.9250	-78.9868	78	407	32	2.7	0.3
LC07	I	43.9403	-78.9876	60	404	75	3.9	0.8
LC08	I	43.9415	-78.9893	46	276	54	3.6	0.5
LC10	I	43.9453	-78.9985	53	231	44	3.9	0.6
LC12	I	43.9611	-79.0029	46	260	83	3.6	0.5
LC14	I	43.9735	-79.0413	40	80	11	7.0	1.5
LC23	I	43.9304	-78.9880	60	228	37	3.6	0.8
LCS4	I	43.9693	-79.0186	45	212	92	4.3	1.2
LDUR	I	43.8938	-78.9689	50	278	41	3.9	0.5

Table 2. Summary of sampling best practices evaluation site details and sampling effort. Mean channel width is calculated from measurements taken across all sampling events at each site.

Site	Latitude	Longitude	Site length (m)	Channel width (m)		Shocking seconds		Seine hauls
				Mean	SD	Summer	Fall	
Central11	43.8841	-78.8757	43	2.4	0.3	536	491	not recorded
Central3	43.9457	-78.9031	42	4.4	1.0	703	753	4
Central4	43.9535	-78.8882	44	6.6	1.5	747	688	not recorded
Central5	43.9299	-78.8911	41	10.2	0.9	1066	1071	7
Central6	43.8697	-78.8470	56	11.6	2.3	1436	1400	8
DF004WM	43.8635	-79.0837	53	3.8	0.5	1692	937	not recorded
DF005WM	43.8677	-79.0737	59	3.3	0.2	1868	1162	not recorded
DF007WM	43.8844	-79.0859	51	3.8	1.1	2045	564	not recorded
DF018WM	43.9076	-79.0712	46	4.0	0.4	1572	917	not recorded
DF019WM	43.9465	-79.0807	53	7.6	0.7	1666	1821	not recorded
East5	43.9014	-78.6823	76	7.2	1.0	2228	2096	not recorded
East6(BB02)	43.9724	-78.7507	50	6.3	1.4	949	906	not recorded
East8(BB04)	43.9989	-78.8186	48	4.8	0.9	903	664	4
East9	43.9033	-78.6712	73	7.7	1.7	1454	1406	not recorded
LA01	43.8732	-78.9625	49	9.0	1.2	1123	1013	4
LA04	43.8959	-78.9621	78	4.9	1.2	1271	1275	not recorded
LA07	43.9141	-78.9645	44	5.5	0.5	1389	1433	not recorded
LA15	43.9586	-78.9589	40	5.3	1.0	869	1035	not recorded
LC01	43.8790	-78.9614	60	5.8	0.6	1020	1096	not recorded
LC02	43.8834	-78.9645	70	5.4	0.7	1400	1332	not recorded
LC06	43.9250	-78.9868	78	4.8	1.1	1134	1183	4
LC07	43.9403	-78.9876	60	6.0	1.1	1305	1523	not recorded
LC08	43.9415	-78.9893	46	5.4	0.4	1063	1072	not recorded
LC10	43.9453	-78.9985	53	4.1	0.9	931	916	not recorded
LC23	43.9304	-78.9880	60	5.1	1.1	907	911	4
LDUR	43.8938	-78.9689	50	6.1	0.9	1094	1081	not recorded
LES1	43.9908	-78.9779	55	3.5	0.8	910	928	5
LT	43.9005	-79.3885	40	1.9	0.8	766	799	not recorded
RG003WM	43.8101	-79.1928	69	5.6	1.5	2145	1187	not recorded
RG004WM	43.8205	-79.2162	42	3.4	0.9	3835	591	not recorded
RG005WM	43.8392	-79.2394	45	2.3	0.5	1670	820	not recorded
RG010WM	43.8708	-79.2595	55	3.7	0.6	1636	573	not recorded
RG015WM	43.8781	-79.3188	66	4.1	0.7	2703	1253	not recorded
RG016WM	43.8744	-79.3278	87	4.8	0.6	1022	162.5	not recorded
RG017WM	43.8810	-79.3439	51	3.1	0.4	802	719	not recorded
RG021WM	43.8512	-79.3488	42	5.5	0.6	2128	1049	not recorded
RG024WM	43.8892	-79.4091	46	3.0	0.5	1079	881	not recorded
URDT	43.8828	-79.0844	58	4.1	0.9	3700	661	not recorded
URU3	43.8741	-79.0748	68	2.5	0.6	1229	1003	not recorded

Table 3. Number of individuals caught from 22 Lynde Creek sites from 2014 – 2019. C/I: C = control site, I = impact site.

Site Code	C/I	2014		2015	2016	2017	2018	2019
		Summer	Fall	Summer	Summer	Summer	Summer	Summer
LA01	C	97	174	50	82	29	95	80
LA03	C	101	147	93	122	158	175	136
LA04	C	162	267	194	425	88	311	423
LA07	C	185	173	116	148	113	117	133
LA15	C	-	101	99	139	107	147	164
LA16	C	-	68	75	49	120	61	102
LA20	C	204	217	159	104	161	67	42
LA21	C	30	90	29	Dry	45	82	11
LE01	C	54	57	37	39	39	52	76
LES1	C	53	73	64	114	50	59	72
LC01	I	0	86	62	107	60	53	81
LC02	I	9	101	85	244	129	188	149
LC04 (pre-spill)	I	206	-	-	-	-	-	-
LC04 (post-spill)	I	12	35	63	188	75	174	466
LC06	I	0	15	40	87	131	253	429
LC07	I	2	23	49	176	99	199	219
LC08	I	-	-	61	180	73	171	204
LC10	I	1	6	38	42	87	99	100
LC12	I	0	12	107	134	86	61	71
LC14	I	0	8	26	430	188	183	206
LC23	I	1	6	20	88	74	130	149
LCS4	I	2	15	186	140	139	205	158
LDUR	I	17	34	68	111	71	180	93

Table 4. Number of species detected at 22 Lynde Creek sites from 2014 – 2019. C/I: C = control site, I = impact site.

Site Code	C/I	2014		2015	2016	2017	2018	2019
		Summer	Fall	Summer	Summer	Summer	Summer	Summer
LA01	C	10	10	12	10	8	10	11
LA03	C	10	11	6	7	13	11	11
LA04	C	11	13	8	12	9	11	11
LA07	C	11	10	11	9	9	10	11
LA15	C	-	5	6	6	6	7	10
LA16	C	-	7	7	7	10	10	9
LA20	C	10	10	8	9	8	10	9
LA21	C	4	6	1	Dry	4	3	2
LE01	C	4	5	3	5	5	4	4
LES1	C	6	4	4	5	4	4	6
LC01	I	0	11	9	11	10	9	10
LC02	I	2	12	7	8	12	11	13
LC04 (pre-spill)	I	10	-	-	-	-	-	-
LC04 (post-spill)	I	2	8	11	7	7	9	10
LC06	I	0	6	9	11	10	11	13
LC07	I	1	8	9	6	9	9	9
LC08	I	-	-	7	7	8	9	10
LC10	I	1	4	6	7	7	8	10
LC12	I	0	3	9	4	7	7	7
LC14	I	0	2	4	4	8	7	5
LC23	I	1	1	4	6	8	11	11
LCS4	I	2	5	9	6	7	8	8
LDUR	I	6	9	13	8	10	10	13

Table 5. Number of individuals caught, number of species detected, and mortality rates for fishes captured from summer and fall backpack electrofishing, and summer seining at 39 sites in the Greater Toronto Area.

Site	# of Individuals			# of Species			Mortality rate (% of all individuals captured)		
	Summer e-fish	Fall e-fish	Seine	Summer e-fish	Fall e-fish	Seine	Summer e-fish	Fall e-fish	Seine
Central11	318	360	267	6	7	9	0.0	0.6	1.1
Central3	136	331	73	9	8	8	0.0	0.3	1.4
Central4	25	74	26	5	5	3	8.0	0.0	3.8
Central5	329	354	87	10	11	9	0.0	0.6	2.3
Central6	121	423	122	7	9	6	0.0	2.4	0.0
DF004WM	39	108	21	9	8	5	0.0	0.0	0.0
DF005WM	128	194	486	9	10	11	1.6	0.0	5.1
DF007WM	83	219	141	4	5	5	0.0	0.5	2.8
DF018WM	65	131	175	9	10	11	3.1	0.0	0.6
DF019WM	234	196	47	8	8	4	2.1	0.5	0.0
East5	327	496	17	12	12	7	0.0	2.8	11.8
East6(BB02)	40	36	22	3	5	3	0.0	0.0	0.0
East8(BB04)	28	32	15	4	5	4	0.0	0.0	6.7
East9	82	188	116	10	12	8	0.0	3.2	2.6
LA01	95	75	648	10	12	12	2.1	0.0	26.1
LA04	311	420	1718	11	11	9	3.5	0.5	59.5
LA07	117	174	45	10	11	9	1.7	0.0	4.4
LA15	147	188	158	7	8	10	8.2	0.5	1.3
LC01	53	94	98	9	15	8	3.8	2.1	3.1
LC02	188	181	82	11	14	10	5.3	0.0	1.2
LC06	253	531	601	11	11	11	1.2	0.8	14.0
LC07	199	216	203	9	9	10	0.0	0.5	0.5
LC08	171	166	163	9	10	10	2.9	0.0	6.1
LC10	99	111	233	8	8	10	2.0	0.0	6.0
LC23	130	141	598	11	10	11	3.1	0.0	6.0
LDUR	180	175	129	12	14	8	1.7	0.0	61.2
LES1	59	90	27	5	5	3	0.0	0.0	7.4
LT	200	201	281	12	14	11	0.5	0.5	0.7
RG003WM	101	86	27	5	4	3	3.0	0.0	3.7
RG004WM	85	157	124	7	6	5	1.2	0.6	0.0
RG005WM	113	564	61	8	8	7	-	0.0	1.6
RG010WM	235	124	199	10	9	13	-	1.6	2.5
RG015WM	158	183	81	10	11	10	3.2	1.6	4.9
RG016WM	31	274	231	9	13	11	0.0	0.7	12.6
RG017WM	31	73	249	6	8	7	0.0	1.4	13.3
RG021WM	89	140	105	9	8	9	6.7	0.0	8.6
RG024WM	42	97	65	6	5	7	4.8	0.0	4.6
URDT	101	335	255	4	6	4	5.0	0.0	11.0
URU3	304	292	2089*	12	11	12	2.0	0.3	30.3

*This number includes approximately 1,500 YOY cyprinids released without weighing to mitigate mortality

APPENDICES

Appendix 1. Site details and sampling effort for Lynde Creek post agricultural spill monitoring surveys at 22 sites from 2014 – 2019. Dash (-) indicates no measurement recorded. C/I: C = control site, I = impact site.

Site code	C/I	Date	Latitude	Longitude	Site length (m)	Channel width (m)		Area sampled (m ²)	Water temperature (°C)	Conductivity (µS/cm)	Shocking seconds	Effort (seconds per m ²)
						Mean	SD					
LA01	C	9-Jul-14	43.8733	-78.9625	49	7.9	0.9	388	-	-	691	1.8
LA01	C	25-Sep-14	43.8733	-78.9625	49	7.0	0.0	344	14.0	819	1337	3.9
LA01	C	6-Jul-15	43.8733	-78.9625	49	9.2	1.2	451	21.0	828	1337	3.0
LA01	C	8-Jul-16	43.8733	-78.9625	49	7.9	1.7	385	23.0	784	1080	2.8
LA01	C	7-Jul-17	43.8733	-78.9625	49	8.8	1.2	433	21.0	791	1007	2.3
LA01	C	6-Jul-18	43.8733	-78.9625	49	8.6	1.1	421	21.2	791	1123	2.7
LA01	C	15-Jul-19	43.8733	-78.9625	49	7.9	1.2	389	22.1	873	1000	2.6
LA03	C	4-Jul-14	43.8877	-78.9594	60	8.0	0.3	479	-	-	1610	3.4
LA03	C	3-Oct-14	43.8877	-78.9594	60	7.2	0.0	434	14.3	941	1458	3.4
LA03	C	6-Jul-15	43.8877	-78.9594	60	8.6	1.2	514	23.2	900	1458	2.8
LA03	C	8-Jul-16	43.8877	-78.9594	60	6.9	0.8	414	23.1	915	1002	2.4
LA03	C	12-Jul-17	43.8877	-78.9594	60	7.2	0.5	430	19.4	847	1451	3.4
LA03	C	20-Jul-18	43.8877	-78.9594	60	5.5	0.4	330	22.5	840	1215	3.7
LA03	C	23-Jul-19	43.8877	-78.9594	60	6.3	1.7	376	20.0	896	1233	3.3
LA04	C	8-Jul-14	43.8958	-78.9621	78	5.3	0.2	412	19.9	-	1465	3.6
LA04	C	24-Sep-14	43.8958	-78.9621	78	4.7	0.0	363	13.1	854	1478	4.1
LA04	C	7-Jul-15	43.8958	-78.9621	78	4.3	0.2	335	19.8	893	1478	4.4
LA04	C	12-Jul-16	43.8958	-78.9621	78	5.0	0.7	387	20.3	769	1400	3.6
LA04	C	12-Jul-17	43.8958	-78.9621	78	5.9	0.7	458	21.9	830	1420	3.1
LA04	C	20-Jul-18	43.8958	-78.9621	78	3.9	0.9	304	20.1	864	1271	4.2
LA04	C	23-Jul-19	43.8958	-78.9621	78	5.2	0.6	408	19.1	914	1478	3.6
LA07	C	10-Jul-14	43.9141	-78.9645	44	6.4	0.4	279	-	-	1325	4.7
LA07	C	29-Sep-14	43.9141	-78.9645	44	6.0	0.0	265	15.1	882	1428	5.4
LA07	C	8-Jul-15	43.9141	-78.9645	44	5.7	0.5	249	18.4	790	1488	6.0
LA07	C	12-Jul-16	43.9141	-78.9645	44	6.4	0.6	283	20.8	699	1420	5.0
LA07	C	12-Jul-17	43.9141	-78.9645	44	5.9	0.4	257	21.6	774	1390	5.4
LA07	C	6-Jul-18	43.9141	-78.9645	44	5.2	0.3	227	21.5	788	1389	6.1
LA07	C	15-Jul-19	43.9141	-78.9645	44	5.0	1.0	220	19.2	855	1414	6.4

Appendix 1. continued

Site code	C/I	Date	Latitude	Longitude	Site length (m)	Channel width (m)		Area sampled (m ²)	Water temperature (°C)	Conductivity (µS/cm)	Shocking seconds	Effort (seconds per m ²)
						Mean	SD					
LA15	C	29-Sep-14	43.9589	-78.9596	45	5.6	0.0	253	14.2	708	1096	4.3
LA15	C	10-Jul-15	43.9589	-78.9596	45	5.6	0.7	254	16.2	650	1096	4.3
LA15	C	13-Jul-16	43.9589	-78.9596	45	4.5	1.2	203	20.0	587	1103	5.4
LA15	C	13-Jul-17	43.9589	-78.9596	40	5.9	0.6	235	17.3	676	1069	4.6
LA15	C	23-Jul-18	43.9589	-78.9596	40	6.4	0.7	255	18.6	670	869	3.4
LA15	C	23-Jul-19	43.9589	-78.9596	40	5.6	0.9	224	19.6	693	872	3.9
LA16	C	7-Oct-14	43.9669	-78.9663	75	4.8	0.0	362	11.1	723	1446	4.0
LA16	C	10-Jul-15	43.9669	-78.9663	75	4.8	1.2	363	15.2	592	1451	4.0
LA16	C	12-Jul-16	43.9669	-78.9663	75	4.1	0.4	310	19.8	542	1176	3.8
LA16	C	13-Jul-17	43.9669	-78.9663	78	7.5	3.2	585	16.6	649	1206	2.1
LA16	C	23-Jul-18	43.9669	-78.9663	78	6.4	1.1	497	18.9	661	1142	2.3
LA16	C	18-Jul-19	43.9669	-78.9663	78	5.4	0.9	421	19.2	656	1278	3.0
LA20	C	10-Jul-14	43.9512	-78.9549	63	7.7	1.7	484	-	-	1613	3.3
LA20	C	24-Sep-14	43.9512	-78.9549	63	5.0	0.0	312	14.2	753	1658	5.3
LA20	C	10-Jul-15	43.9512	-78.9549	63	6.3	2.1	396	19.2	656	1655	4.2
LA20	C	12-Jul-16	43.9512	-78.9549	63	5.3	0.6	336	21.3	622	1400	4.2
LA20	C	19-Jul-17	43.9512	-78.9549	63	5.9	0.7	370	18.7	692	1599	4.3
LA20	C	20-Jul-18	43.9512	-78.9549	63	5.4	0.7	342	18.5	715	1115	3.3
LA20	C	22-Jul-19	43.9512	-78.9549	63	5.9	1.0	374	22.5	720	1138	3.0
LA21	C	9-Jul-14	43.9713	-78.9570	60	-	-	-	-	-	333	-
LA21	C	25-Sep-14	43.9713	-78.9570	60	1.4	0.0	85	15.3	708	680	8.0
LA21	C	10-Jul-15	43.9713	-78.9570	60	1.1	0.6	66	17.5	625	650	9.8
LA21	C	13-Jul-16	43.9713	-78.9570	60	-	-	-	-	-	-	-
LA21	C	6-Jul-17	43.9713	-78.9570	60	1.2	0.4	69	21.0	605	537	7.7
LA21	C	28-Jun-18	43.9713	-78.9570	60	0.9	0.1	56	18.5	660	516	9.2
LA21	C	12-Jul-19	43.9713	-78.9570	60	0.3	0.0	16	18.7	745	318	19.9
LE01	C	16-Jul-14	43.9781	-78.9740	46	3.7	0.3	168	14.4	-	992	5.9
LE01	C	26-Sep-14	43.9781	-78.9740	46	3.9	0.0	178	10.9	676	1052	5.9
LE01	C	13-Jul-15	43.9781	-78.9740	46	4.9	1.3	226	15.3	554	1044	4.6
LE01	C	13-Jul-16	43.9781	-78.9740	46	2.3	0.2	108	17.4	543	866	8.0
LE01	C	6-Jul-17	43.9781	-78.9740	46	4.2	0.6	195	14.5	602	961	4.9
LE01	C	19-Jul-18	43.9781	-78.9740	46	3.8	0.6	175	15.8	590	854	4.9
LE01	C	16-Jul-19	43.9781	-78.9740	46	3.2	0.3	147	17.2	617	976	6.6

Appendix 1. continued

Site code	C/I	Date	Latitude	Longitude	Site length (m)	Channel width (m)		Area sampled (m ²)	Water temperature (°C)	Conductivity (µS/cm)	Shocking seconds	Effort (seconds per m ²)
						Mean	SD					
LES1	C	2-Jul-14	43.9908	-78.9779	55	3.9	0.8	212	17.7	-	1312	6.2
LES1	C	25-Sep-14	43.9908	-78.9779	55	3.5	0.0	194	10.9	647	1468	7.6
LES1	C	13-Jul-15	43.9908	-78.9779	55	3.3	0.5	179	14.9	523	1305	7.3
LES1	C	7-Jul-16	43.9908	-78.9779	55	3.5	0.7	191	17.8	498	1080	5.7
LES1	C	5-Jul-17	43.9908	-78.9779	55	3.7	0.9	204	15.7	554	1123	5.5
LES1	C	28-Jun-18	43.9908	-78.9779	55	3.7	0.6	202	15.5	584	910	4.5
LES1	C	12-Jul-19	43.9908	-78.9779	55	3.0	0.4	165	16.2	616	926	5.6
LC01	I	18-Jul-14	43.87897	-78.96137	59	4.9	0.3	289	17.8	-	974	3.4
LC01	I	23-Sep-14	43.87897	-78.96137	59	6.1	0.0	360	13.1	757	1037	2.9
LC01	I	06-Jul-15	43.87897	-78.96137	59	5.5	0.8	323	18.5	700	1037	3.2
LC01	I	05-Jul-16	43.87897	-78.96137	59	4.6	0.4	269	19.5	598	1040	3.9
LC01	I	07-Jul-17	43.87897	-78.96137	60	5.7	0.6	344	19.3	710	1091	3.2
LC01	I	05-Jul-18	43.87897	-78.96137	60	5.9	0.6	356	26.5	740	1020	2.9
LC01	I	12-Jul-19	43.87897	-78.96137	60	5.8	0.6	348	20.7	682	1100	3.2
LC02	I	27-Jul-14	43.88316	-78.96391	60	5.1	0.9	306	22.9	606	1486	4.9
LC02	I	03-Oct-14	43.88316	-78.96391	70	4.1	0.0	286	14.6	694	1531	5.4
LC02	I	06-Jul-15	43.88316	-78.96391	70	6.1	0.1	429	19.3	688	1517	3.5
LC02	I	05-Jul-16	43.88316	-78.96391	70	4.2	0.3	294	19.3	608	1341	4.6
LC02	I	07-Jul-17	43.88316	-78.96391	70	5.7	0.5	399	19.7	701	1334	3.3
LC02	I	06-Jul-18	43.88316	-78.96391	70	5.4	0.6	380	23.8	702	1400	3.7
LC02	I	22-Jul-19	43.88316	-78.96391	70	4.7	0.7	331	21.1	766	1422	4.3
LC04	I	02-Jul-14	43.90708	-78.98431	60	7.5	1.3	449	22.1	-	1279	2.8
LC04	I	23-Jul-14	43.90708	-78.98431	60	4.4	0.4	262	21	580	1279	4.9
LC04	I	23-Sep-14	43.90708	-78.98431	60	9.5	0.0	570	14.3	723	1286	2.3
LC04	I	07-Jul-15	43.90708	-78.98431	60	5.7	2.2	340	20	610	1281	3.8
LC04	I	06-Jul-16	43.90708	-78.98431	60	4.4	0.6	264	24	510	1100	4.2
LC04	I	05-Jul-17	43.90708	-78.98431	60	5.0	0.9	302	18.6	630	1100	3.6
LC04	I	05-Jul-18	43.90708	-78.98431	60	4.3	0.6	256	23.5	665	1233	4.8
LC04	I	15-Jul-19	43.90708	-78.98431	60	-	-	-	18.8	694	1365	-

Appendix 1. continued

Site code	C/I	Date	Latitude	Longitude	Site length (m)	Channel width (m)		Area sampled (m ²)	Water temperature (°C)	Conductivity (µS/cm)	Shocking seconds	Effort (seconds per m ²)
						Mean	SD					
LC06	I	22-Jul-14	43.92499	-78.98685	73	5.0	0.3	363	22.4	-	901	2.5
LC06	I	24-Sep-14	43.92499	-78.98685	73	5.9	0.0	429	13.4	738	1059	2.5
LC06	I	08-Jul-15	43.92499	-78.98685	73	5.9	0.5	430	17.1	603	1088	2.5
LC06	I	08-Jul-16	43.92499	-78.98685	73	5.3	1.0	387	20.5	552	1073	2.8
LC06	I	19-Jul-17	43.92499	-78.98685	78	4.7	0.6	367	18.3	665	1243	3.4
LC06	I	18-Jul-18	43.92499	-78.98685	78	5.7	0.5	447	22.6	767	1134	2.5
LC06	I	23-Jul-19	43.92499	-78.98685	78	5.5	0.7	429	21.5	654	1159	2.7
LC07	I	23-Jul-14	43.94025	-78.98760	60	-	-	-	19.7	587	2046	-
LC07	I	29-Sep-14	43.94025	-78.98760	60	7.1	0.0	426	13.4	591	1691	4.0
LC07	I	09-Jul-15	43.94025	-78.98760	60	7.6	0.3	455	15.7	615	1693	3.7
LC07	I	06-Jul-16	43.94025	-78.98760	60	4.7	1.7	280	18	518	1508	5.4
LC07	I	18-Jul-17	43.94025	-78.98760	60	8.6	1.7	518	17.6	656	1507	2.9
LC07	I	18-Jul-18	43.94025	-78.98760	60	6.4	1.3	384	21	705	1305	3.4
LC07	I	22-Jul-19	43.94025	-78.98760	60	6.1	0.7	364	21.2	618	1410	3.9
LC08	I	09-Jul-15	43.94145	-78.98933	46	5.5	0.4	255	16.2	566	820	3.2
LC08	I	06-Jul-16	43.94145	-78.98933	46	4.7	0.2	216	19	484	890	4.1
LC08	I	18-Jul-17	43.94145	-78.98933	46	8.2	1.9	376	18.3	638	1062	2.8
LC08	I	18-Jul-18	43.94145	-78.98933	46	5.5	0.4	253	19.8	730	1063	4.2
LC08	I	22-Jul-19	43.94145	-78.98933	46	6.0	0.2	278	20.1	592	1056	3.8
LC10	I	22-Jul-14	43.94540	-78.99847	53	3.6	0.4	193	17.9	-	709	3.7
LC10	I	29-Sep-14	43.94540	-78.99847	53	4.5	0.0	240	13.6	627	896	3.7
LC10	I	09-Jul-15	43.94540	-78.99847	53	6.3	0.3	333	16.6	540	895	2.7
LC10	I	12-Jul-16	43.94540	-78.99847	53	3.9	0.4	207	19.9	496	850	4.1
LC10	I	13-Jul-17	43.94540	-78.99847	53	4.2	0.7	223	17.1	597	916	4.1
LC10	I	23-Jul-18	43.94540	-78.99847	53	4.1	0.8	216	20	281	931	4.3
LC10	I	18-Jul-19	43.94540	-78.99847	53	3.8	0.7	203	21.3	554	920	4.5
LC12	I	24-Jul-14	43.96119	-79.00298	46	6.4	0.4	294	15.4	-	988	3.4
LC12	I	26-Sep-14	43.96119	-79.00298	46	6.2	0.0	285	11.7	655	1118	3.9
LC12	I	09-Jul-15	43.96119	-79.00298	46	9.3	2.1	428	17.1	560	1120	2.6
LC12	I	07-Jul-16	43.96119	-79.00298	46	4.1	0.5	189	19.5	480	831	4.4
LC12	I	06-Jul-17	43.96119	-79.00298	46	5.4	2.0	248	18.6	559	826	3.3
LC12	I	20-Jul-18	43.96119	-79.00298	46	3.4	0.8	155	21	493	523	3.4
LC12	I	18-Jul-19	43.96119	-79.00298	46	4.8	0.8	219	19.8	287	880	4.0

Appendix 1. continued

Site code	C/I	Date	Latitude	Longitude	Site length (m)	Channel width (m)		Area sampled (m ²)	Water temperature (°C)	Conductivity (µS/cm)	Shocking seconds	Effort (seconds per m ²)
						Mean	SD					
LC14	I	18-Jul-14	43.97352	-79.04132	40	1.8	0.7	73	16.8	-	451	6.2
LC14	I	07-Oct-14	43.97352	-79.04132	40	2.1	0.0	85	11.3	761	433	5.1
LC14	I	08-Jul-15	43.97352	-79.04132	40	1.8	0.4	71	22.8	644	500	7.1
LC14	I	07-Jul-16	43.97352	-79.04132	40	1.5	0.3	61	20	403	639	10.4
LC14	I	13-Jul-17	43.97352	-79.04132	40	2.1	0.1	84	17.4	644	543	6.5
LC14	I	19-Jul-18	43.97352	-79.04132	40	2.3	0.2	92	18	565	658	7.2
LC14	I	16-Jul-19	43.97352	-79.04132	45	2.1	0.3	93	19.7	515	637	6.8
LC23	I	30-Jul-14	43.93040	-78.98800	46	4.5	0.8	208	15.7	-	588	2.8
LC23	I	24-Sep-14	43.93040	-78.98800	46	6.4	0.0	292	14.5	726	697	2.4
LC23	I	07-Jul-15	43.93040	-78.98800	46	4.6	0.3	212	20.6	586	696	3.3
LC23	I	06-Jul-16	43.93040	-78.98800	46	3.9	0.9	179	18	528	852	4.7
LC23	I	18-Jul-17	43.93040	-78.98800	50	4.3	1.2	217	17.5	658	857	4.0
LC23	I	05-Jul-18	43.93040	-78.98800	50	4.3	0.6	217	22.5	680	907	4.2
LC23	I	10-Jul-19	43.93040	-78.98800	60	4.5	0.0	272	18.3	336	961	3.5
LCS4	I	24-Jul-14	43.96870	-79.01850	45	3.5	0.4	159	15.8	-	728	4.6
LCS4	I	26-Sep-14	43.96870	-79.01850	45	9.4	0.0	421	11.2	658	853	2.0
LCS4	I	08-Jul-15	43.96870	-79.01850	45	3.5	0.3	157	18.4	555	862	5.5
LCS4	I	07-Jul-16	43.96870	-79.01850	45	4.0	0.2	180	19.8	484	862	4.8
LCS4	I	06-Jul-17	43.96870	-79.01850	45	5.8	0.6	263	16.3	561	776	3.0
LCS4	I	19-Jul-18	43.96870	-79.01850	45	3.3	0.7	150	17.2	535	825	5.5
LCS4	I	16-Jul-19	43.96870	-79.01850	45	3.5	0.6	158	17.7	557	803	5.1
LDUR	I	23-Jul-14	43.89380	-78.96890	-	6.6	0.5	-	21.6	561	908	-
LDUR	I	03-Oct-14	43.89380	-78.96890	50	4.6	0.0	232	-	-	1077	4.6
LDUR	I	06-Jul-15	43.89380	-78.96890	50	6.1	0.9	305	17.6	690	1078	3.5
LDUR	I	05-Jul-16	43.89380	-78.96890	40	5.7	0.9	229	22	553	1000	4.4
LDUR	I	05-Jul-17	43.89380	-78.96890	50	6.8	2.3	338	16.9	658	1078	3.2
LDUR	I	28-Jun-18	43.89380	-78.96890	50	6.1	0.6	306	18.8	745	1094	3.6
LDUR	I	10-Jul-19	43.89380	-78.96890	50	5.1	0.7	255	20	357	1065	4.2

Appendix 2. Sampling dates, site dimensions and water temperature for best sampling practices evaluation at 39 Greater Toronto Area stream sites. Dash (-) indicates no measurement recorded.

Site	Date	Gear type	Site length (m)	Channel width (m)		Water temperature (°C)
				Mean	SD	
Central11	18-Jul-18	E-Fisher	43.0	2.2	0.3	-
Central11	11-Oct-18	E-Fisher	43.0	2.7	0.2	18.5
Central11	22-Jul-19	Seine	43.0	2.1	0.1	21.9
Central3	19-Jul-18	E-Fisher	42.0	4.0	0.8	18.7
Central3	10-Oct-18	E-Fisher	42.0	4.5	1.1	15.5
Central3	9-Aug-18	Seine	42.0	4.6	0.8	21.5
Central4	27-Jul-18	E-Fisher	44.0	6.1	0.8	18.5
Central4	10-Oct-18	E-Fisher	44.0	6.5	1.9	13.4
Central4	11-Jul-19	Seine	44.0	7.1	1.6	18.4
Central5	19-Jul-18	E-Fisher	41.0	9.5	0.7	17.4
Central5	10-Oct-18	E-Fisher	41.0	10.6	0.9	16.4
Central5	10-Aug-18	Seine	41.0	10.6	0.4	21.4
Central6	18-Jul-18	E-Fisher	56.0	9.8	1.9	-
Central6	11-Oct-18	E-Fisher	56.0	13.0	1.5	17.4
Central6	10-Aug-18	Seine	56.0	12.0	2.3	21.5
DF004WM	18-Jul-18	E-Fisher	53.1	-	-	18.8
DF004WM	19-Oct-18	E-Fisher	53.1	4.0	0.2	4.9
DF004WM	16-Jul-19	Seine	53.1	3.5	0.5	18.2
DF005WM	19-Jul-18	E-Fisher	58.9	-	-	22.2
DF005WM	16-Oct-18	E-Fisher	58.9	3.2	0.1	8.7
DF005WM	16-Jul-19	Seine	58.9	3.4	0.1	21.6
DF007WM	19-Jul-18	E-Fisher	51.2	-	-	21.6
DF007WM	19-Oct-18	E-Fisher	51.2	4.5	0.8	8.0
DF007WM	16-Jul-19	Seine	51.2	3.1	1.0	19.5
DF018WM	25-Jul-18	E-Fisher	45.5	-	-	20.0
DF018WM	16-Oct-18	E-Fisher	45.5	3.9	0.1	7.4
DF018WM	16-Jul-19	Seine	45.5	4.0	0.6	18.6
DF019WM	23-Aug-18	E-Fisher	52.5	-	-	16.6
DF019WM	17-Oct-18	E-Fisher	52.5	7.6	0.6	8.0
DF019WM	12-Jul-19	Seine	52.5	7.6	0.8	17.0
East5(BA01)	9-Jul-18	E-Fisher	76.0	6.8	0.9	19.2
East5(BA01)	11-Oct-18	E-Fisher	76.0	7.6	0.7	19.0
East5(BA01)	22-Jul-19	Seine	76.0	7.1	1.1	20.4
East6(BB02)	26-Jul-18	E-Fisher	50.0	6.3	1.9	18.0
East6(BB02)	12-Oct-18	E-fisher	50.0	6.9	0.7	10.3
East6(BB02)	9-Aug-18	Seine	50.0	5.6	1.0	16.6
East8(BB04)	20-Jul-18	E-fisher	48.0	4.6	1.0	15.7
East8(BB04)	12-Oct-18	E-Fisher	48.0	4.8	0.7	10.2
East8(BB04)	9-Aug-18	Seine	48.0	5.0	0.9	17.1
East9	9-Jul-18	E-Fisher	73.0	6.5	0.7	19.1
East9	11-Oct-18	E-Fisher	73.0	8.6	2.2	18.5
East9	22-Jul-19	Seine	73.0	8.0	1.1	19.5

Appendix 2. continued

Site	Date	Gear type	Site length (m)	Channel width (m)		Water temperature (°C)
				Mean	SD	
LA01	6-Jul-18	E-Fisher	49.0	8.6	1.1	21.2
LA01	10-Oct-18	E-Fisher	49.0	9.3	1.3	14.8
LA01	8-Aug-18	Seine	49.0	-	-	22.7
LA04	20-Jul-18	E-Fisher	78.0	3.9	0.9	20.1
LA04	10-Aug-18	Seine	78.0	5.8	1.1	20.8
LA04	4-Oct-19	Seine	78.0	5.0	0.8	11.3
LA07	6-Jul-18	E-Fisher	44.0	5.2	0.3	21.5
LA07	12-Oct-18	E-Fisher	44.0	6.0	0.3	12.1
LA07	7-Aug-18	Seine	44.0	5.2	0.5	23.8
LA15	23-Jul-18	E-Fisher	40.0	6.4	0.7	18.6
LA15	9-Oct-18	E-Fisher	40.0	4.3	0.5	15.8
LA15	10-Jul-19	Seine	40.0	5.2	0.5	18.2
LC01	5-Jul-18	E-Fisher	60.0	5.9	0.6	26.5
LC01	10-Oct-18	E-Fisher	60.0	5.5	0.4	15.4
LC01	10-Jul-19	Seine	60.0	5.8	0.7	18.7
LC02	6-Jul-18	E-Fisher	70.0	5.4	0.6	23.8
LC02	19-Oct-18	E-Fisher	70.0	5.8	0.7	6.7
LC02	10-Jul-19	Seine	70.0	5.0	0.5	19.2
LC06	18-Jul-18	E-Fisher	78.0	5.7	0.5	22.6
LC06	7-Aug-18	Seine	78.0	4.6	1.0	21.9
LC06	21-Oct-19	Seine	78.0	4.2	1.2	11.1
LC07	18-Jul-18	E-Fisher	60.0	6.4	1.3	21.0
LC07	18-Oct-18	E-Fisher	60.0	5.8	0.7	5.1
LC07	11-Jul-19	Seine	60.0	5.7	0.8	19.2
LC08	18-Jul-18	E-Fisher	46.0	5.5	0.4	19.8
LC08	18-Oct-18	E-Fisher	46.0	5.5	0.4	5.2
LC08	11-Jul-19	Seine	46.0	5.3	0.4	19.1
LC10	23-Jul-18	E-Fisher	53.0	4.1	0.8	20.0
LC10	9-Oct-18	E-Fisher	53.0	4.9	0.3	15.6
LC10	11-Jul-19	Seine	53.0	3.3	0.5	19.4
LC23	5-Jul-18	E-Fisher	60.0	4.3	0.6	22.5
LC23	10-Oct-18	E-Fisher	60.0	5.0	0.8	16.0
LC23	7-Aug-18	Seine	60.0	6.1	1.0	21.1
LDUR	28-Jun-18	E-Fisher	50.0	6.1	0.6	18.8
LDUR	12-Oct-18	E-Fisher	50.0	6.3	0.9	12.3
LDUR	12-Jul-19	Seine	50.0	6.0	1.0	20.5
LES1	28-Jun-18	E-Fisher	54.5	3.7	0.6	15.5
LES1	9-Oct-18	E-Fisher	54.5	3.7	0.9	13.4
LES1	8-Aug-18	Seine	54.5	3.3	0.7	16.6
LT	1-Aug-19	Seine	40.0	1.7	0.3	18.6
LT	21-Aug-19	Seine	40.0	1.5	0.4	19.1
LT	4-Oct-19	Seine	40.0	2.5	1.0	10.7

Appendix 2. continued

Site	Date	Gear type	Site length (m)	Channel width (m)		Water temperature (°C)
				Mean	SD	
RG003WM	27-Sep-18	E-Fisher	68.5	-	-	15.5
RG003WM	18-Oct-18	E-Fisher	68.5	5.5	1.4	8.9
RG003WM	24-Jul-19	Seine	68.5	5.6	1.6	20.8
RG004WM	6-Sep-18	E-Fisher	41.5	-	-	24.4
RG004WM	16-Oct-18	E-Fisher	41.5	3.6	1.2	9.9
RG004WM	23-Jul-19	Seine	41.5	3.3	0.4	23.4
RG005WM	28-Aug-18	E-Fisher	44.7	-	-	22.0
RG005WM	16-Oct-18	E-Fisher	44.7	1.9	0.3	13.9
RG005WM	23-Jul-19	Seine	44.7	2.6	0.2	22.8
RG010WM	28-Aug-18	E-Fisher	54.7	-	-	-
RG010WM	19-Oct-18	E-Fisher	54.7	3.6	0.4	8.0
RG010WM	23-Jul-19	Seine	54.7	3.8	0.8	19.1
RG015WM	28-Aug-18	E-Fisher	65.9	-	-	21.1
RG015WM	17-Oct-18	E-Fisher	65.9	4.3	0.4	9.1
RG015WM	24-Jul-19	Seine	65.9	3.9	0.9	18.7
RG016WM	28-Sep-18	E-Fisher	87.0	-	-	13.3
RG016WM	17-Oct-18	E-Fisher	87.0	5.1	0.6	8.6
RG016WM	15-Jul-19	Seine	87.0	4.5	0.5	18.5
RG017WM	12-Sep-18	E-Fisher	51.3	-	-	17.2
RG017WM	18-Oct-18	E-Fisher	51.3	3.4	0.4	7.4
RG017WM	15-Jul-19	Seine	51.3	2.7	0.1	20.3
RG021WM	6-Sep-18	E-Fisher	42.0	-	-	23.3
RG021WM	18-Oct-18	E-Fisher	42.0	6.1	0.4	7.2
RG021WM	15-Jul-19	Seine	42.0	4.9	0.2	13.3
RG024WM	29-Aug-18	E-Fisher	46.3	-	-	-
RG024WM	18-Oct-18	E-Fisher	46.3	3.1	0.2	8.2
RG024WM	15-Jul-19	Seine	46.3	2.8	0.6	16.8
URDT	25-Jul-18	E-Fisher	57.6	-	-	20.5
URDT	19-Oct-18	E-Fisher	57.6	4.3	1.1	8.7
URDT	22-Jul-19	Seine	57.6	3.9	0.6	17.2
URU3	16-Aug-18	E-Fisher	68.5	-	-	24.4
URU3	17-Oct-18	E-Fisher	68.5	2.5	0.7	9.7
URU3	24-Jul-19	Seine	68.5	2.6	0.4	25.7

Appendix 3. Sampler notes detailing difficulties encountered during seining as part of best sampling practices evaluation in 2018 and 2019. Sites with no sampler notes have been excluded.

Site Code	Notes
Central3	Small amount of large boulders and fallen branches - few snags, easy to seine.
Central4	Blow downs made for skipped sections of creek, fast current with sticks caused bag to flip or get twisted.
Central5	Site has lots of snags (branches, rocks/cobble, trash, metal) which makes it difficult to seine. Saw fish but some likely lost due to snags. Otherwise open and no downed trees.
Central6	Quite fast at downstream end with boulders and cobble, lots of snags, current tended to lift the lead line. Wide channel - had to do two passes to cover full width.
DF004WM	Very shallow system, not much water to seine in, not an ideal site. Good pool downstream of site.
DF007WM	20 m could not be seined due to low water and dense boulders/cobble.
East5(BA01)	Fast current, difficult to keep lead line down.
East6(BB02)	Lots of woody debris, seine got snagged, hard to seine close to the bank. ~5 m of habitat not seinable (log jam).
East8(BB04)	Bottom 3 – 4 m of site unsampleable due to downed trees. Difficult site to seine - could see trout juveniles swimming but with snags in trees and branches they either were missed or escaped while removing snags.
East9	Skipped 15 m of trees down
LA01	Upstream end had downed branch that prevented sampling there.
LA07	10 m upstream was riffle area and very hard to seine - few fish caught. Large boulders and tree branches in river caused snags, also making it hard to seine downstream. Also, downstream there was a large gate. Difficult site to seine.
LC02	A few boulders we had to work around of lift the lead line over.
LC06	~5 m on d/s end was not seinable due to a beaver dam. Some snags occurred on cobble and boulders (assume some fish escaped). Hard to seine top end due to low overhanging branches.
LC07	Downed trees in creek, had to seine around them - some snags.
LC08	Top 10 m of site is large cobble and boulder that made it hard to seine. Only a portion of site was suitable for seining (deeper run/pool area ~15 m) and this was the only area fish were caught.
LC10	Riffle under bridge was slightly tricky to seine.
LC23	Gravel and cobble substrate; some tree branches down but otherwise clear channel; caught some boulders, cobble and sticks in seines
LES1	~450 m fallen tree and brush - did not sample in this area – 6 m long. A lot of large boulders - net got caught. Shallow - hard to seine.
RG003WM	Very fast moving current and large rubble substrate in riffles making seining difficult. Many snags.
RG005WM	Lots of snags.
RG021WM	Lots of snags (metal T-bars, trees, shopping cart). Not many fish caught due to snags. Very hard to seine.
RG024WM	Not ideal for seining - snags and lots of down trees.
URDT	Skipped first 5 m, first 5 m haul got nothing in pool, fish escaped under fallen tree. Skipped another 15 m because of debris and narrow channel.

Appendix 4. List of common and scientific names of fishes collected from Lynde Creek and sampling best practices evaluation studies.

Common Name	Scientific Name
American Brook Lamprey	<i>Lethenteron appendix</i>
Atlantic Salmon	<i>Salmo salar</i>
Blacknose Dace	<i>Rhinichthys atratulus</i>
Bluegill	<i>Lepomis macrochirus</i>
Bluntnose Minnow	<i>Pimephales notatus</i>
Brassy Minnow	<i>Hybognathus hankinsoni</i>
Brook Stickleback	<i>Culaea inconstans</i>
Brook Trout	<i>Salvelinus fontinalis</i>
Brown Bullhead	<i>Ameiurus nebulosus</i>
Brown Trout	<i>Salmo trutta</i>
Central Stoneroller	<i>Campostoma anomalum</i>
Chinook Salmon	<i>Oncorhynchus tshawytscha</i>
Coho Salmon	<i>Oncorhynchus kisutch</i>
Common Carp	<i>Cyprinus carpio</i>
Common Shiner	<i>Luxilus cornutus</i>
Creek Chub	<i>Semotilus atromaculatus</i>
Fathead Minnow	<i>Pimephales promelas</i>
Finescale Dace	<i>Phoxinus neogaeus</i>
Golden Shiner	<i>Notemigonus crysoleucas</i>
Goldfish	<i>Carassius auratus</i>
Johnny Darter	<i>Etheostoma nigrum</i>
Largemouth Bass	<i>Micropterus salmoides</i>
Logperch	<i>Percina caprodes</i>
Longnose Dace	<i>Rhinichthys cataractae</i>
Mimic Shiner	<i>Notropis volucellus</i>
Mottled Sculpin	<i>Cottus bairdii</i>
Northern Pike	<i>Esox lucius</i>
Northern Redbelly Dace	<i>Chrosomus eos</i>
Pumpkinseed	<i>Lepomis gibbosus</i>
Rainbow Darter	<i>Etheostoma caeruleum</i>
Rainbow Trout	<i>Oncorhynchus mykiss</i>
Redside Dace	<i>Clinostomus elongatus</i>
Rock Bass	<i>Ambloplites rupestris</i>
Rosyface Shiner	<i>Notropis rubellus</i>
Round Goby	<i>Neogobius melanostomus</i>
Sea Lamprey	<i>Petromyzon marinus</i>
Silver Lamprey	<i>Ichthyomyzon unicuspis</i>
Slimy Sculpin	<i>Cottus cognatus</i>
Smallmouth Bass	<i>Micropterus dolomieu</i>
Spotfin Shiner	<i>Cyprinella spiloptera</i>
Stonecat	<i>Noturus flavus</i>
White Sucker	<i>Catostomus commersonii</i>
Yellow Perch	<i>Perca flavescens</i>

Appendix 5a. Summary of fishes caught from 19 Lynde Creek sites during the summer of 2014, including moribund individuals. C/I: C = control site, I = impact site.

Site Code	C/I	Date	American Brook Lamprey	American Brook Lamprey (Ammocoete)	Ammocoete	Blacknose Dace	Bluntnose Minnow	Brook Stickleback	Brook Trout	Brown Bullhead	Central Stoneroller	Chinook Salmon	Common Shiner	Creek Chub	Cyprinid spp.	Esox spp.	Fathead Minnow	Finescale Dace	Golden Shiner	Goldfish	Johnny Darter	Largemouth Bass	Logperch
LA01	C	09-Jul-14	0	0	0	2	14	0	0	0	0	0	0	20	0	0	0	0	0	0	16	0	0
LA03	C	04-Jul-14	0	0	0	16	1	0	0	0	0	0	0	22	0	0	6	0	0	0	3	0	0
LA04	C	08-Jul-14	0	0	0	14	2	11	0	0	0	0	3	44	0	0	2	0	0	0	43	0	0
LA07	C	10-Jul-14	0	0	0	26	0	4	0	0	0	0	4	46	0	0	3	0	0	0	19	0	0
LA20	C	10-Jul-14	0	0	0	53	0	1	0	0	0	0	0	69	0	0	4	0	0	0	29	0	0
LA21	C	09-Jul-14	0	0	0	10	0	4	0	0	0	0	0	15	0	0	1	0	0	0	0	0	0
LE01	C	16-Jul-14	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LES1	C	02-Jul-14	1	0	0	2	0	0	28	0	0	0	0	0	0	0	1	0	0	0	0	0	0
LC01	I	18-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC02	I	27-Jul-14	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0
LC04 (pre-spill)	I	02-Jul-14	0	0	0	25	3	1	0	0	0	0	1	1	0	0	0	0	0	0	25	0	0
LC04 (post-spill)	I	23-Jul-14	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC06	I	22-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC07	I	23-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC10	I	22-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC12	I	24-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC14	I	18-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC23	I	30-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LCS4	I	24-Jul-14	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LDUR	I	23-Jul-14	0	0	0	0	1	0	0	1	0	0	0	8	0	0	0	0	0	0	0	0	0

Appendix 5a. continued

Site Code	C/I	Date	Longnose Dace	Mimic Shiner	Mottled Sculpin	Northern Pike	Northern Redbelly Dace	Pumpkinseed	Rainbow Darter	Rainbow Trout	Rock Bass	Rosyface Shiner	Round Goby	Salmonid spp.	Sea Lamprey	Silver Lamprey	Smallmouth Bass	Spotfin Shiner	Stonecat	Sucker spp.	White Sucker	Yellow Perch
LA01	C	09-Jul-14	15	0	0	0	0	0	15	0	1	0	0	0	1	0	0	0	1	0	12	0
LA03	C	04-Jul-14	18	0	0	0	0	1	25	0	0	0	0	0	0	0	0	0	2	0	7	0
LA04	C	08-Jul-14	25	0	1	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	11	0
LA07	C	10-Jul-14	53	0	8	0	0	0	3	4	0	0	0	0	0	0	0	0	0	0	15	0
LA20	C	10-Jul-14	1	0	13	0	0	0	2	7	0	0	0	0	0	0	0	0	0	0	25	0
LA21	C	09-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LE01	C	16-Jul-14	0	0	9	0	0	0	0	33	0	0	0	0	0	0	0	0	0	0	2	0
LES1	C	02-Jul-14	0	0	9	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0
LC01	I	18-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC02	I	27-Jul-14	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
LC04 (pre-spill)	I	02-Jul-14	59	0	0	0	0	0	67	14	0	0	0	0	0	0	0	0	0	0	10	0
LC04 (post-spill)	I	23-Jul-14	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC06	I	22-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC07	I	23-Jul-14	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC10	I	22-Jul-14	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
LC12	I	24-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC14	I	18-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC23	I	30-Jul-14	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LCS4	I	24-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
LDUR	I	23-Jul-14	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	5	0

Appendix 6b. Summary of fishes caught from 21 Lynde Creek sites during the fall of 2014, including moribund individuals. C/I: C = control site, I = impact site.

Site Code	C/I	Date	American Brook Lamprey	American Brook Lamprey (Ammocoete)	Ammocoete	Blacknose Dace	Bluntnose Minnow	Brook Stickleback	Brook Trout	Brown Bullhead	Central Stoneroller	Chinook Salmon	Common Shiner	Creek Chub	Cyprinid spp.	Esox spp.	Fathead Minnow	Finescale Dace	Golden Shiner	Goldfish	Johnny Darter	Largemouth Bass	Logperch
LA01	C	25-Sep-14	0	0	0	2	28	0	0	0	0	0	6	76	0	0	16	0	0	0	0	0	0
LA03	C	03-Oct-14	0	0	0	22	2	0	0	0	0	0	1	22	0	0	2	0	0	0	20	0	0
LA04	C	24-Sep-14	0	0	0	13	10	1	0	0	0	0	0	77	0	0	3	0	0	1	53	0	0
LA07	C	29-Sep-14	0	0	0	29	0	0	0	0	0	0	9	48	0	0	6	0	0	0	6	0	0
LA15	C	29-Sep-14	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LA16	C	07-Oct-14	0	0	0	20	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
LA20	C	24-Sep-14	1	0	0	29	0	0	0	0	0	0	2	54	0	0	0	0	0	0	56	0	0
LA21	C	25-Sep-14	0	0	0	53	0	2	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0
LES1	C	25-Sep-14	0	0	0	2	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LE01	C	26-Sep-14	1	0	0	5	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC01	I	23-Sep-14	0	0	0	0	5	1	0	0	0	0	6	6	0	0	1	0	0	0	18	0	0
LC02	I	03-Oct-14	0	0	0	2	20	0	0	0	0	0	11	17	0	0	3	0	0	0	7	1	0
LC04	I	23-Sep-14	0	0	1	3	0	0	0	0	0	0	0	2	0	0	3	0	0	0	1	0	0
LC06	I	24-Sep-14	0	0	0	1	0	1	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0
LC07	I	29-Sep-14	0	0	0	2	0	0	0	0	0	0	0	10	0	0	1	0	0	0	0	0	0
LC10	I	29-Sep-14	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
LC12	I	26-Sep-14	0	0	0	8	0	0	0	0	0	0	0	1	0	0	3	0	0	0	0	0	0
LC14	I	07-Oct-14	0	0	0	0	0	0	2	0	0	0	0	6	0	0	0	0	0	0	0	0	0
LC23	I	24-Sep-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LCS4	I	26-Sep-14	0	0	0	1	0	0	8	0	0	0	0	3	0	0	0	0	0	0	0	0	0
LDUR	I	03-Oct-14	0	0	0	0	4	0	0	0	0	0	1	1	0	0	3	0	0	0	1	0	0

Appendix 5b. continued

Site Code	C/I	Date	Longnose Dace	Mimic Shiner	Mottled Sculpin	Northern Pike	Northern Redbelly Dace	Pumpkinseed	Rainbow Darter	Rainbow Trout	Rock Bass	Rosyface Shiner	Round Goby	Salmonid spp.	Sea Lamprey	Silver Lamprey	Smallmouth Bass	Spotfin Shiner	Stonecat	Sucker spp.	White Sucker	Yellow Perch
LA01	C	25-Sep-14	19	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	24	0
LA03	C	03-Oct-14	48	0	0	0	0	1	23	1	0	0	0	0	0	0	0	0	0	0	5	0
LA04	C	24-Sep-14	41	0	1	0	0	1	4	1	0	0	0	0	0	0	0	0	0	0	61	0
LA07	C	29-Sep-14	48	0	4	0	0	0	2	5	0	0	0	0	0	0	0	0	0	0	16	0
LA15	C	29-Sep-14	51	0	32	0	0	0	5	8	0	0	0	0	0	0	0	0	0	0	0	0
LA16	C	07-Oct-14	2	0	25	0	0	0	5	11	0	0	0	0	0	0	0	0	0	0	3	0
LA20	C	24-Sep-14	8	0	23	0	0	0	9	6	0	0	0	0	0	0	0	0	0	0	29	0
LA21	C	25-Sep-14	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	4	0
LES1	C	25-Sep-14	0	0	17	0	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0
LE01	C	26-Sep-14	0	0	16	0	0	0	0	29	0	0	0	0	0	0	0	0	0	0	0	0
LC01	I	23-Sep-14	34	0	0	0	0	2	6	2	0	0	0	0	0	0	0	0	0	0	5	0
LC02	I	03-Oct-14	15	0	0	0	0	0	1	0	0	2	0	0	0	0	0	2	0	0	20	0
LC04	I	23-Sep-14	12	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	11	0
LC06	I	24-Sep-14	1	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	5	0
LC07	I	29-Sep-14	2	0	3	0	0	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0
LC10	I	29-Sep-14	0	0	1	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0
LC12	I	26-Sep-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC14	I	07-Oct-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC23	I	24-Sep-14	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LCS4	I	26-Sep-14	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0
LDUR	I	03-Oct-14	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	21	0

Appendix 7c. Summary of fishes caught from 22 Lynde Creek sites during the summer of 2015, including moribund individuals. C/I: C = control site, I = impact site.

Site Code	C/I	Date	American Brook Lamprey	American Brook Lamprey (Ammocoete)	Ammocoete	Blacknose Dace	Bluntnose Minnow	Brook Stickleback	Brook Trout	Brown Bullhead	Central Stoneroller	Chinook Salmon	Common Shiner	Creek Chub	Cyprinid spp.	Esox spp.	Fathead Minnow	Finescale Dace	Golden Shiner	Goldfish	Johnny Darter	Largemouth Bass	Logperch
LA01	C	06-Jul-15	0	0	0	0	1	9	0	0	0	0	1	15	1	0	0	0	1	0	3	0	0
LA03	C	06-Jul-15	0	0	0	5	0	0	0	0	0	0	0	17	0	0	0	0	0	0	10	0	0
LA04	C	07-Jul-15	0	0	0	19	0	0	0	0	0	0	1	79	0	0	0	0	0	0	51	1	0
LA07	C	08-Jul-15	0	0	0	17	0	0	0	0	0	0	0	15	0	0	7	0	0	0	9	5	0
LA15	C	10-Jul-15	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
LA16	C	10-Jul-15	0	0	0	14	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
LA20	C	10-Jul-15	0	0	0	54	0	0	0	0	0	0	0	32	0	0	0	0	0	0	33	0	0
LA21	C	10-Jul-15	0	0	0	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LE01	C	13-Jul-15	0	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LES1	C	13-Jul-15	0	0	0	4	0	0	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC01	I	06-Jul-15	0	0	0	3	0	0	0	0	0	0	0	12	0	0	0	0	0	0	13	2	1
LC02	I	06-Jul-15	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0
LC04	I	07-Jul-15	0	0	0	11	1	0	0	0	0	0	0	4	0	0	1	0	0	0	4	2	0
LC06	I	08-Jul-15	0	0	0	7	0	1	0	0	0	0	0	2	0	0	4	0	2	0	0	0	0
LC07	I	09-Jul-15	0	0	0	17	0	0	0	1	0	0	0	10	0	0	4	0	0	0	0	2	0
LC08	I	09-Jul-15	0	0	0	29	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	7	0
LC10	I	09-Jul-15	0	0	0	9	0	0	1	0	0	0	0	11	0	0	0	0	0	0	0	0	0
LC12	I	09-Jul-15	0	0	1	26	0	0	0	0	0	0	0	50	0	0	2	0	0	0	2	1	0
LC14	I	08-Jul-15	0	0	0	2	0	0	0	0	0	0	0	19	0	0	4	0	0	0	0	0	0
LC23	I	07-Jul-15	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LCS4	I	08-Jul-15	0	0	0	16	0	0	37	0	0	0	0	46	0	0	53	0	0	0	0	5	0
LDUR	I	06-Jul-15	0	0	0	5	1	1	0	3	0	0	1	14	0	0	3	0	0	0	0	4	1

Appendix 5c. continued

Site Code	C/I	Date	Longnose Dace	Mimic Shiner	Mottled Sculpin	Northern Pike	Northern Redbelly Dace	Pumpkinseed	Rainbow Darter	Rainbow Trout	Rock Bass	Rosyface Shiner	Round Goby	Salmonid spp.	Sea Lamprey	Silver Lamprey	Smallmouth Bass	Spotfin Shiner	Stonecat	Sucker spp.	White Sucker	Yellow Perch
LA01	C	06-Jul-15	5	0	0	0	0	2	2	0	0	0	1	0	0	0	0	0	0	0	9	0
LA03	C	06-Jul-15	30	0	0	0	0	6	25	0	0	0	0	0	0	0	0	0	0	0	0	0
LA04	C	07-Jul-15	32	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	7	0
LA07	C	08-Jul-15	46	0	4	0	0	1	8	3	0	0	0	0	0	0	0	0	0	0	1	0
LA15	C	10-Jul-15	42	0	36	0	0	0	12	3	0	0	0	0	0	0	0	0	0	0	0	0
LA16	C	10-Jul-15	2	0	27	0	0	0	4	16	0	0	0	0	0	0	0	0	0	0	9	0
LA20	C	10-Jul-15	5	0	13	0	0	0	2	5	0	0	0	0	0	0	0	0	0	0	15	0
LA21	C	10-Jul-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LE01	C	13-Jul-15	0	0	14	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0
LES1	C	13-Jul-15	0	0	7	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0
LC01	I	06-Jul-15	25	0	0	0	0	0	4	1	0	0	0	0	0	0	0	0	0	0	1	0
LC02	I	06-Jul-15	65	0	0	0	0	0	4	2	0	0	0	0	0	0	0	0	0	0	3	0
LC04	I	07-Jul-15	18	0	0	0	0	7	1	9	0	0	0	0	0	0	0	0	0	0	5	0
LC06	I	08-Jul-15	1	0	0	0	0	4	0	1	0	0	0	0	0	0	0	0	0	0	18	0
LC07	I	09-Jul-15	5	0	0	0	0	4	2	4	0	0	0	0	0	0	0	0	0	0	0	0
LC08	I	09-Jul-15	6	0	0	0	0	2	1	12	0	0	0	0	0	0	0	0	0	0	0	0
LC10	I	09-Jul-15	0	0	2	0	0	6	0	9	0	0	0	0	0	0	0	0	0	0	0	0
LC12	I	09-Jul-15	0	0	0	0	0	8	0	15	0	0	0	0	0	0	0	0	0	0	2	0
LC14	I	08-Jul-15	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC23	I	07-Jul-15	5	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0
LCS4	I	08-Jul-15	0	0	4	0	0	4	0	10	0	0	0	0	0	0	0	0	0	0	11	0
LDUR	I	06-Jul-15	8	0	0	0	0	10	6	0	0	0	0	0	0	0	0	0	0	0	11	0

Appendix 8d. Summary of fishes caught from 22 Lynde Creek sites during the summer of 2016, including moribund individuals. C/I: C = control site, I = impact site.

Site Code	C/I	Date	American Brook Lamprey	American Brook Lamprey (Ammocoete)	Ammocoete	Blacknose Dace	Bluntnose Minnow	Brook Stickleback	Brook Trout	Brown Bullhead	Central Stoneroller	Chinook Salmon	Common Shiner	Creek Chub	Cyprinid spp.	Esox spp.	Fathead Minnow	Finescale Dace	Golden Shiner	Goldfish	Johnny Darter	Largemouth Bass	Logperch
LA01	C	08-Jul-16	0	0	0	9	5	10	0	0	0	0	1	28	0	0	0	0	0	0	12	0	0
LA03	C	08-Jul-16	0	0	0	13	0	0	0	0	0	0	0	8	0	0	1	0	0	0	3	0	0
LA04	C	12-Jul-16	0	0	0	15	2	3	0	0	0	0	0	92	0	0	4	0	0	0	222	1	0
LA07	C	12-Jul-16	0	0	0	30	0	0	0	0	0	0	1	37	0	0	1	0	0	0	0	0	0
LA15	C	13-Jul-16	0	0	0	7	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0
LA16	C	12-Jul-16	0	0	0	6	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
LA20	C	12-Jul-16	0	0	0	11	0	0	0	0	0	0	1	26	0	0	0	0	0	0	30	0	0
LE01	C	13-Jul-16	0	1	0	1	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LES1	C	07-Jul-16	0	6	0	9	0	0	72	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC01	I	05-Jul-16	0	0	0	20	2	1	0	0	0	0	0	13	0	0	0	0	0	0	26	0	0
LC02	I	05-Jul-16	0	0	0	27	10	0	0	0	0	0	0	71	0	0	1	0	0	0	13	0	0
LC04	I	06-Jul-16	0	0	0	33	0	0	0	0	0	0	0	1	0	0	0	0	0	0	14	0	0
LC06	I	08-Jul-16	0	0	0	3	0	3	0	0	0	0	0	11	0	0	1	0	0	0	28	0	0
LC07	I	06-Jul-16	0	0	0	16	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0	0	0
LC08	I	06-Jul-16	0	0	0	59	0	0	0	0	0	0	0	15	0	0	2	0	0	0	0	0	0
LC10	I	12-Jul-16	0	0	0	4	0	0	1	0	0	0	0	6	0	0	0	0	0	0	0	0	0
LC12	I	07-Jul-16	0	0	0	6	0	0	0	0	0	0	0	70	0	0	0	0	0	0	0	0	0
LC14	I	07-Jul-16	0	0	0	7	0	0	0	0	0	0	0	390	0	0	0	0	0	0	2	0	0
LC23	I	06-Jul-16	0	0	0	15	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0
LCS4	I	07-Jul-16	0	0	0	13	0	0	69	0	0	0	0	19	0	0	0	0	0	0	0	0	0
LDUR	I	05-Jul-16	0	0	0	5	0	0	0	0	0	0	0	6	0	0	0	0	0	0	18	0	0

Appendix 5d. continued

Site Code	C/I	Date	Longnose Dace	Mimic Shiner	Mottled Sculpin	Northern Pike	Northern Redbelly Dace	Pumpkinseed	Rainbow Darter	Rainbow Trout	Rock Bass	Rosyface Shiner	Round Goby	Salmonid spp.	Sea Lamprey	Silver Lamprey	Smallmouth Bass	Spotfin Shiner	Stonecat	Sucker spp.	White Sucker	Yellow Perch
LA01	C	08-Jul-16	7	0	0	0	0	0	4	0	0	0	3	0	0	0	0	0	0	0	3	0
LA03	C	08-Jul-16	54	0	0	0	0	0	41	0	0	0	0	0	0	0	0	0	0	0	2	0
LA04	C	12-Jul-16	43	0	2	0	0	0	12	2	0	0	0	0	0	0	0	0	0	0	27	0
LA07	C	12-Jul-16	46	0	3	0	0	0	10	8	0	0	0	0	0	0	0	0	0	0	12	0
LA15	C	13-Jul-16	58	0	33	0	0	0	10	15	0	0	0	0	0	0	0	0	0	0	0	0
LA16	C	12-Jul-16	11	0	10	0	0	0	3	17	0	0	0	0	0	0	0	0	0	0	1	0
LA20	C	12-Jul-16	6	0	12	0	0	0	8	1	0	0	0	0	0	0	0	0	0	0	9	0
LE01	C	13-Jul-16	0	0	14	0	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0
LES1	C	07-Jul-16	0	0	18	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0
LC01	I	05-Jul-16	2	0	0	0	0	1	28	0	1	0	2	0	0	0	0	0	0	0	11	0
LC02	I	05-Jul-16	66	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	45	0
LC04	I	06-Jul-16	45	0	0	0	0	0	56	22	0	0	0	0	0	0	0	0	0	0	17	0
LC06	I	08-Jul-16	0	0	1	0	0	1	4	3	1	0	0	0	0	0	0	0	0	0	31	0
LC07	I	06-Jul-16	28	0	3	0	0	0	0	89	0	0	0	0	0	0	0	0	0	0	20	0
LC08	I	06-Jul-16	17	0	0	0	0	0	6	76	0	0	0	0	0	0	0	0	0	0	5	0
LC10	I	12-Jul-16	8	0	2	0	0	0	0	20	0	0	0	0	0	0	0	0	0	0	1	0
LC12	I	07-Jul-16	0	0	0	0	0	0	0	36	0	0	0	0	0	0	0	0	0	0	22	0
LC14	I	07-Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	0
LC23	I	06-Jul-16	24	0	0	0	0	0	1	26	0	0	0	0	0	0	0	0	0	0	16	0
LCS4	I	07-Jul-16	0	0	6	0	0	0	0	23	0	0	0	0	0	0	0	0	0	0	10	0
LDUR	I	05-Jul-16	32	0	0	0	0	5	27	1	0	0	0	0	0	0	0	0	0	0	17	0

Appendix 9e. Summary of fishes caught from 22 Lynde Creek sites during the summer of 2017, including moribund individuals. C/I: C = control site, I = impact site.

Site Code	C/I	Date	American Brook Lamprey	American Brook Lamprey (Ammocoete)	Ammocoete	Blacknose Dace	Bluntnose Minnow	Brook Stickleback	Brook Trout	Brown Bullhead	Central Stoneroller	Chinook Salmon	Common Shiner	Creek Chub	Cyprinid spp.	Esox spp.	Fathead Minnow	Finescale Dace	Golden Shiner	Goldfish	Johnny Darter	Largemouth Bass	Logperch
LA01	C	07-Jul-17	0	0	0	4	0	0	0	0	0	0	0	8	0	0	0	0	0	0	1	0	1
LA03	C	12-Jul-17	0	0	0	14	6	0	0	0	0	0	44	28	0	0	3	0	0	0	4	1	1
LA04	C	12-Jul-17	0	0	0	5	0	0	0	0	0	0	1	28	0	0	3	0	0	0	29	1	0
LA07	C	12-Jul-17	0	0	0	17	0	0	0	0	0	0	2	7	0	0	5	0	0	0	1	0	0
LA15	C	13-Jul-17	0	0	0	20	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0
LA16	C	13-Jul-17	1	0	0	23	0	0	3	0	0	0	0	16	0	0	3	0	0	0	0	0	0
LA20	C	19-Jul-17	0	0	0	15	0	0	0	0	0	0	0	24	0	0	10	0	0	0	71	0	0
LA21	C	06-Jul-17	0	0	0	38	0	1	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0
LE01	C	06-Jul-17	0	0	0	4	0	0	12	0	0	0	0	1	0	0	0	0	0	0	0	0	0
LES1	C	05-Jul-17	0	0	1	0	0	0	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC01	I	07-Jul-17	0	0	0	2	1	0	0	0	0	0	4	6	0	0	0	0	0	0	13	0	0
LC02	I	07-Jul-17	0	0	0	17	0	0	0	0	0	0	3	31	0	1	1	0	0	0	25	0	0
LC04	I	05-Jul-17	0	0	0	14	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0
LC06	I	19-Jul-17	0	0	0	24	0	0	0	0	0	0	1	6	0	0	2	0	0	0	58	0	0
LC07	I	18-Jul-17	0	0	0	18	0	0	0	0	0	0	0	12	0	0	2	0	0	0	3	0	0
LC08	I	18-Jul-17	0	0	0	12	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0
LC10	I	13-Jul-17	0	0	0	18	0	0	0	0	0	0	0	18	0	0	0	0	0	0	0	0	0
LC12	I	06-Jul-17	0	0	0	29	0	0	1	0	0	0	0	38	0	0	0	0	0	0	0	0	0
LC14	I	13-Jul-17	0	0	0	37	0	0	0	0	0	0	0	120	0	0	12	0	0	0	4	2	0
LC23	I	18-Jul-17	0	0	0	18	0	0	0	0	0	0	0	3	0	0	0	0	0	0	6	1	0
LCS4	I	06-Jul-17	0	0	1	23	0	0	16	0	0	0	0	40	0	0	0	0	0	0	0	0	0
LDUR	I	05-Jul-17	0	0	0	1	5	0	0	1	0	0	3	16	0	0	0	0	0	0	12	0	0

Appendix 5e. continued

Site Code	C/I	Date	Longnose Dace	Mimic Shiner	Mottled Sculpin	Northern Pike	Northern Redbelly Dace	Pumpkinseed	Rainbow Darter	Rainbow Trout	Rock Bass	Rosyface Shiner	Round Goby	Salmonid spp.	Sea Lamprey	Silver Lamprey	Smallmouth Bass	Spotfin Shiner	Stonecat	Sucker spp.	White Sucker	Yellow Perch
LA01	C	07-Jul-17	3	0	0	0	0	7	4	0	0	0	0	0	0	0	0	0	0	0	1	0
LA03	C	12-Jul-17	29	0	0	0	0	5	13	0	0	0	7	0	0	0	0	0	0	1	2	0
LA04	C	12-Jul-17	1	0	0	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	1	0
LA07	C	12-Jul-17	47	0	1	0	0	0	27	6	0	0	0	0	0	0	0	0	0	0	0	0
LA15	C	13-Jul-17	11	0	24	0	0	0	19	28	0	0	0	0	0	0	0	0	0	0	0	0
LA16	C	13-Jul-17	7	0	9	0	0	0	18	38	0	0	0	0	0	0	0	0	0	0	2	0
LA20	C	19-Jul-17	8	0	5	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	8	0
LA21	C	06-Jul-17	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
LE01	C	06-Jul-17	0	0	10	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0
LES1	C	05-Jul-17	0	0	8	0	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0
LC01	I	07-Jul-17	14	0	0	0	0	1	14	0	0	0	3	0	0	0	0	0	0	0	2	0
LC02	I	07-Jul-17	18	0	0	0	0	5	17	1	0	0	1	0	0	0	0	0	0	0	9	0
LC04	I	05-Jul-17	18	0	0	0	0	2	19	11	0	0	0	0	0	0	0	0	0	0	2	0
LC06	I	19-Jul-17	23	0	0	0	0	1	2	13	0	0	0	0	0	0	0	0	0	0	1	0
LC07	I	18-Jul-17	19	0	6	0	0	0	14	24	0	0	0	0	0	0	0	0	0	0	1	0
LC08	I	18-Jul-17	14	0	5	0	0	11	6	22	0	0	0	0	0	0	0	0	0	0	0	0
LC10	I	13-Jul-17	10	0	6	0	0	2	0	32	0	0	0	0	0	0	0	0	0	0	1	0
LC12	I	06-Jul-17	0	0	2	0	0	1	0	13	0	0	0	0	0	0	0	0	0	0	2	0
LC14	I	13-Jul-17	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	11	0
LC23	I	18-Jul-17	27	0	0	0	0	1	10	8	0	0	0	0	0	0	0	0	0	0	0	0
LCS4	I	06-Jul-17	0	0	36	0	0	0	0	15	0	0	0	0	0	0	0	0	0	0	8	0
LDUR	I	05-Jul-17	5	0	0	0	0	1	16	0	0	0	0	0	0	0	0	0	0	0	11	0

Appendix 10f. Summary of fishes caught from 22 Lynde Creek sites during the summer of 2018, including moribund individuals. C/I: C = control site, I = impact site.

Site Code	C/I	Date	American Brook Lamprey	American Brook Lamprey (Ammocoete)	Ammocoete	Blacknose Dace	Bluntnose Minnow	Brook Stickleback	Brook Trout	Brown Bullhead	Central Stoneroller	Chinook Salmon	Common Shiner	Creek Chub	Cyprinid spp.	Esox spp.	Fathead Minnow	Finescale Dace	Golden Shiner	Goldfish	Johnny Darter	Largemouth Bass	Logperch
LA01	C	06-Jul-18	0	0	0	9	7	0	0	0	0	0	4	33	0	0	0	0	0	0	0	0	0
LA03	C	20-Jul-18	0	0	0	26	1	1	0	0	0	0	2	39	0	0	0	0	0	0	0	0	1
LA04	C	20-Jul-18	0	0	0	53	0	1	0	0	0	0	2	42	0	0	4	0	0	0	39	1	0
LA07	C	06-Jul-18	0	0	0	31	0	0	0	0	0	0	1	4	0	0	4	0	0	0	9	0	0
LA15	C	23-Jul-18	0	0	0	24	0	0	0	0	0	0	0	28	0	0	0	0	0	0	0	0	0
LA16	C	23-Jul-18	0	0	0	8	0	1	0	0	0	0	0	8	0	0	1	0	0	0	0	0	0
LA20	C	20-Jul-18	0	0	0	13	0	0	0	1	0	0	0	10	0	0	10	1	0	0	7	0	0
LA21	C	28-Jun-18	0	0	0	62	0	2	0	0	0	0	0	18	0	0	0	0	0	0	0	0	0
LE01	C	19-Jul-18	0	0	0	3	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LES1	C	28-Jun-18	0	0	4	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC01	I	05-Jul-18	0	0	0	7	0	0	0	0	0	0	0	8	0	0	0	0	0	0	3	0	0
LC02	I	06-Jul-18	0	0	0	55	2	0	0	0	0	0	7	32	0	0	1	0	0	0	10	0	1
LC04	I	05-Jul-18	0	0	0	65	2	0	0	0	0	0	0	12	0	0	2	0	0	0	27	0	0
LC06	I	18-Jul-18	0	0	0	54	0	0	0	0	0	0	2	39	0	0	2	0	0	0	64	0	0
LC07	I	18-Jul-18	0	0	0	51	0	0	0	0	0	0	0	39	0	0	7	0	0	0	6	0	0
LC08	I	18-Jul-18	0	0	0	51	0	0	0	0	0	0	0	14	0	0	1	0	0	0	2	0	0
LC10	I	23-Jul-18	0	0	0	15	0	0	20	0	0	0	0	19	0	0	0	0	0	0	0	0	0
LC12	I	20-Jul-18	0	0	0	22	0	0	6	0	0	0	0	5	0	0	1	0	0	0	0	2	0
LC14	I	19-Jul-18	0	0	0	26	0	0	0	0	0	0	0	115	0	0	7	0	0	0	23	0	0
LC23	I	05-Jul-18	0	0	0	55	1	0	0	0	0	0	4	4	0	0	3	0	0	0	12	0	0
LCS4	I	19-Jul-18	4	0	0	52	0	0	17	0	0	0	0	56	0	0	0	0	0	0	0	1	0
LDUR	I	28-Jun-18	0	0	0	30	6	0	0	0	0	0	18	29	0	0	2	0	0	0	31	0	1

Appendix 5f. continued

Site Code	C/I	Date	Longnose Dace	Mimic Shiner	Mottled Sculpin	Northern Pike	Northern Redbelly Dace	Pumpkinseed	Rainbow Darter	Rainbow Trout	Rock Bass	Rosyface Shiner	Round Goby	Salmonid spp.	Sea Lamprey	Silver Lamprey	Smallmouth Bass	Spotfin Shiner	Stonecat	Sucker spp.	White Sucker	Yellow Perch
LA01	C	06-Jul-18	26	0	0	0	0	1	6	0	0	0	1	0	0	0	0	0	0	0	7	1
LA03	C	20-Jul-18	58	0	0	0	0	0	39	2	0	0	1	0	0	0	0	0	0	0	5	0
LA04	C	20-Jul-18	97	0	0	0	0	0	53	1	0	0	0	0	0	0	0	0	0	0	18	0
LA07	C	06-Jul-18	44	0	2	0	0	0	14	4	0	0	0	0	0	0	0	0	0	0	4	0
LA15	C	23-Jul-18	41	0	28	0	0	0	11	12	0	0	0	0	0	0	0	0	0	0	3	0
LA16	C	23-Jul-18	3	0	14	0	1	0	10	14	0	0	0	0	0	0	0	0	0	0	1	0
LA20	C	20-Jul-18	0	0	6	0	0	0	2	3	0	0	0	0	0	0	0	0	0	0	14	0
LA21	C	28-Jun-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LE01	C	19-Jul-18	0	0	11	0	0	0	0	27	0	0	0	0	0	0	0	0	0	0	0	0
LES1	C	28-Jun-18	0	0	7	0	0	0	0	10	0	0	0	19	0	0	0	0	0	0	0	0
LC01	I	05-Jul-18	16	1	0	0	0	1	9	0	0	0	1	0	0	0	0	0	0	0	7	0
LC02	I	06-Jul-18	40	0	0	0	0	0	31	0	0	0	1	0	0	0	0	0	0	0	8	0
LC04	I	05-Jul-18	24	0	0	0	0	0	34	4	0	0	0	0	0	0	0	0	0	0	4	0
LC06	I	18-Jul-18	31	0	2	0	0	4	21	8	0	0	0	0	0	0	0	0	0	0	26	0
LC07	I	18-Jul-18	34	0	12	0	0	0	17	25	0	0	0	0	0	0	0	0	0	0	8	0
LC08	I	18-Jul-18	31	0	5	0	0	0	20	45	0	0	0	0	0	0	0	0	0	0	2	0
LC10	I	23-Jul-18	14	0	25	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	2	0
LC12	I	20-Jul-18	0	0	0	0	0	0	1	24	0	0	0	0	0	0	0	0	0	0	0	0
LC14	I	19-Jul-18	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0
LC23	I	05-Jul-18	21	0	7	0	0	0	11	11	0	0	0	0	0	0	0	0	0	0	1	0
LCS4	I	19-Jul-18	0	0	52	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	10	0
LDUR	I	28-Jun-18	21	0	0	0	0	0	33	2	0	0	0	0	0	0	0	0	0	0	7	0

Appendix 11g. Summary of fishes caught from 22 Lynde Creek sites during the summer of 2019, including moribund individuals. C/I: C = control site, I = impact site.

Site Code	C/I	Date	American Brook Lamprey	American Brook Lamprey (Ammocoete)	Ammocoete spp.	Blacknose Dace	Bluntnose Minnow	Brook Stickleback	Brook Trout	Brown Bullhead	Central Stoneroller	Chinook Salmon	Common Shiner	Creek Chub	Cyprinid spp.	Esox spp.	Fathead Minnow	Finescale Dace	Golden Shiner	Goldfish	Johnny Darter	Largemouth Bass	Logperch
LA01	C	15-Jul-19	0	0	0	3	0	0	0	0	0	0	0	16	0	0	0	0	0	0	11	0	1
LA03	C	23-Jul-19	0	0	0	3	2	0	0	0	0	0	1	5	0	0	1	0	0	0	17	0	0
LA04	C	23-Jul-19	0	0	0	114	1	0	0	0	0	0	31	60	0	0	3	0	0	0	59	4	0
LA07	C	15-Jul-19	0	0	0	34	0	0	0	0	0	0	3	14	0	0	3	0	0	0	11	1	0
LA15	C	23-Jul-19	0	0	0	31	0	0	0	0	0	0	0	17	0	0	1	0	0	0	4	0	0
LA16	C	18-Jul-19	0	0	0	26	0	0	1	0	0	0	0	9	0	0	0	0	0	0	4	0	0
LA20	C	22-Jul-19	0	0	0	1	0	0	0	3	0	0	1	4	0	0	7	0	0	0	19	0	0
LA21	C	12-Jul-19	0	0	0	9	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LE01	C	16-Jul-19	0	0	0	3	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LES1	C	12-Jul-19	0	0	1	6	0	0	9	0	0	0	0	1	0	0	0	0	0	0	0	0	0
LC01	I	12-Jul-19	0	0	0	1	0	0	0	0	0	0	2	17	0	0	0	0	0	0	0	0	0
LC02	I	22-Jul-19	0	0	0	8	0	0	0	0	0	0	6	27	0	0	0	0	0	0	3	0	0
LC04	I	15-Jul-19	0	0	0	144	17	0	0	0	0	0	26	17	0	0	1	0	0	0	64	0	0
LC06	I	23-Jul-19	0	0	0	53	1	0	0	2	0	0	8	39	0	0	12	0	0	0	221	0	0
LC07	I	22-Jul-19	0	0	0	39	0	0	0	0	0	0	0	33	0	0	2	0	0	0	17	0	0
LC08	I	22-Jul-19	0	0	0	65	0	0	0	0	0	0	0	20	0	0	3	0	0	0	9	0	0
LC10	I	18-Jul-19	0	0	0	23	0	0	2	0	0	0	2	20	0	0	0	0	0	0	1	0	0
LC12	I	18-Jul-19	0	0	0	21	0	0	3	0	0	0	0	18	0	0	0	0	0	0	0	0	0
LC14	I	16-Jul-19	0	0	0	45	0	0	0	0	0	0	0	94	0	0	18	0	0	0	26	0	0
LC23	I	10-Jul-19	0	0	0	23	1	0	0	0	0	0	1	8	0	0	0	0	0	0	26	0	0
LCS4	I	16-Jul-19	0	0	0	13	0	0	26	0	0	0	0	26	0	0	13	0	0	0	0	0	0
LDUR	I	10-Jul-19	0	0	0	6	1	0	0	1	0	0	3	4	0	0	0	0	0	0	16	0	1

Appendix 5g. continued

Site Code	C/I	Date	Longnose Dace	Mimic Shiner	Mottled Sculpin	Northern Pike	Northern Redbelly Dace	Pumpkinseed	Rainbow Darter	Rainbow Trout	Rock Bass	Rosyface Shiner	Round Goby	Salmonid spp.	Sea Lamprey	Silver Lamprey	Smallmouth Bass	Spotfin Shiner	Stonecat	Sucker spp.	White Sucker	Yellow Perch
LA01	C	15-Jul-19	8	0	0	6	0	1	19	0	1	0	13	0	0	0	0	0	0	0	1	0
LA03	C	23-Jul-19	49	0	0	3	0	2	37	0	0	0	16	0	0	0	0	0	0	0	0	0
LA04	C	23-Jul-19	99	0	0	0	0	11	24	0	0	0	0	0	0	0	0	0	0	0	17	0
LA07	C	15-Jul-19	35	0	0	0	0	0	27	3	0	0	1	0	0	0	0	0	0	0	1	0
LA15	C	23-Jul-19	38	0	26	0	0	3	18	23	0	0	0	0	0	0	0	0	0	0	3	0
LA16	C	18-Jul-19	2	0	32	0	0	0	8	16	0	0	0	0	0	0	0	0	0	0	4	0
LA20	C	22-Jul-19	0	0	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
LA21	C	12-Jul-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LE01	C	16-Jul-19	0	0	29	0	0	0	0	33	0	0	0	0	0	0	0	0	0	0	0	0
LES1	C	12-Jul-19	0	0	21	0	0	0	0	34	0	0	0	0	0	0	0	0	0	0	0	0
LC01	I	12-Jul-19	25	1	0	2	0	0	23	1	0	0	6	0	0	0	0	0	0	0	3	0
LC02	I	22-Jul-19	20	0	0	2	0	1	26	2	2	0	1	0	0	0	0	0	1	0	50	0
LC04	I	15-Jul-19	78	0	0	0	0	0	79	31	0	0	0	0	0	0	0	0	0	0	9	0
LC06	I	23-Jul-19	8	0	2	0	0	1	50	14	0	0	0	0	0	0	0	0	0	0	18	0
LC07	I	22-Jul-19	24	0	34	0	0	3	43	24	0	0	0	0	0	0	0	0	0	0	0	0
LC08	I	22-Jul-19	27	0	15	0	0	5	36	22	0	0	0	0	0	0	0	0	0	0	2	0
LC10	I	18-Jul-19	7	0	27	0	0	0	4	11	0	0	0	0	0	0	0	0	0	0	3	0
LC12	I	18-Jul-19	0	0	2	0	0	0	1	24	0	0	0	0	0	0	0	0	0	0	2	0
LC14	I	16-Jul-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	0
LC23	I	10-Jul-19	28	0	16	0	2	2	36	6	0	0	0	0	0	0	0	0	0	0	0	0
LCS4	I	16-Jul-19	0	0	46	0	0	3	0	8	0	0	0	0	0	0	0	0	0	0	23	0
LDUR	I	10-Jul-19	17	0	0	3	0	7	24	0	1	0	0	0	0	0	0	0	0	0	9	0

Appendix 12a. Summary of biomass (g) collected from 19 Lynde Creek sites during the summer of 2014, including moribund individuals. C/I: C = control site, I = impact site.

Site Code	C/I	Date	American Brook Lamprey	American Brook Lamprey (Ammocoete)	Ammocoete	Blacknose Dace	Bluntnose Minnow	Brook Stickleback	Brook Trout	Brown Bullhead	Central Stoneroller	Chinook Salmon	Common Shiner	Creek Chub	Cyprinid spp.	Esox spp.
LA01	C	09-Jul-14	0	0	0	1.0	23.0	0	0	0	0	0	0	53.5	0	0
LA03	C	04-Jul-14	0	0	0	31.5	0.5	0	0	0	0	0	0	115.5	0	0
LA04	C	08-Jul-14	0	0	0	16.5	6.5	5.0	0	0	0	0	52.0	252.5	0	0
LA07	C	10-Jul-14	0	0	0	42.5	0	2.0	0	0	0	0	54.0	173.5	0	0
LA20	C	10-Jul-14	0	0	0	44.5	0	1.0	0	0	0	0	0	91.5	0	0
LA21	C	09-Jul-14	0	0	0	1.5	0	3.5	0	0	0	0	0	1.5	0	0
LE01	C	16-Jul-14	0	0	0	0	0	0	425.0	0	0	0	0	0	0	0
LES1	C	02-Jul-14	4.0	0	0	5.5	0	0	653.5	0	0	0	0	0	0	0
LC01	I	18-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC02	I	27-Jul-14	0	0	0	0	0	0	0	0	0	0	0	49.7	0	0
LC04 (pre-spill)	I	02-Jul-14	0	0	0	84.0	10.0	0.5	0	0	0	0	2.0	10.0	0	0
LC04 (post-spill)	I	23-Jul-14	0	0	0	40.6	0	0	0	0	0	0	0	0	0	0
LC06	I	22-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC07	I	23-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC10	I	22-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC12	I	24-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC14	I	18-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC23	I	30-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LCS4	I	24-Jul-14	7.0	0	0	0	0	0	0	0	0	0	0	0	0	0
LDUR	I	23-Jul-14	0	0	0	0	3.0	0	0	192.0	0	0	0	154.9	0	0

Appendix 6a. continued

Site Code	C/I	Date	Fathead Minnow	Finescale Dace	Golden Shiner	Goldfish	Johnny Darter	Largemouth Bass	Loggerhead	Longnose Dace	Mimic Shiner	Mottled Sculpin	Northern Pike	Northern Redbelly Dace	Pumpkinseed	Rainbow Darter
LA01	C	09-Jul-14	0	0	0	0	7.5	0	0	15.5	0	0	0	0	0	19.0
LA03	C	04-Jul-14	8.0	0	0	0	1.5	0	0	73.0	0	0	0	0	6.0	29.5
LA04	C	08-Jul-14	4.0	0	0	0	39.5	0	0	99.5	0	0.5	0	0	0	15.0
LA07	C	10-Jul-14	3.0	0	0	0	24.5	0	0	271.0	0	4.0	0	0	0	3.0
LA20	C	10-Jul-14	7.5	0	0	0	33.5	0	0	6.0	0	9.5	0	0	0	1.5
LA21	C	09-Jul-14	1.0	0	0	0	0	0	0	0	0	0	0	0	0	0
LE01	C	16-Jul-14	0	0	0	0	0	0	0	0	0	43.0	0	0	0	0
LES1	C	02-Jul-14	2.0	0	0	0	0	0	0	0	0	20.5	0	0	0	0
LC01	I	18-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC02	I	27-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0	2.9
LC04 (pre-spill)	I	02-Jul-14	0	0	0	0	30.0	0	0	320.5	0	0	0	0	0	118.5
LC04 (post-spill)	I	23-Jul-14	0	0	0	0	0	0	0	3.3	0	0	0	0	0	0
LC06	I	22-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC07	I	23-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	17.0	0
LC10	I	22-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC12	I	24-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC14	I	18-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC23	I	30-Jul-14	0	0	0	0	0	0	0	0.5	0	0	0	0	0	0
LCS4	I	24-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LDUR	I	23-Jul-14	0	0	0	0	0	0	0	4.9	0	0	0	0	0	1.8

Appendix 6a. continued

Site Code	C/I	Date	Rainbow Trout	Rock Bass	Rosyface Shiner	Round Goby	Salmonid spp.	Sea Lamprey	Silver Lamprey	Smallmouth Bass	Spotfin Shiner	Stonecat	Sucker spp.	White Sucker	Yellow Perch
LA01	C	09-Jul-14	0	34.0	0	0	0	3.0	0	0	0	3.0	0	71.5	0
LA03	C	04-Jul-14	0	0	0	0	0	0	0	0	0	7.0	0	35.5	0
LA04	C	08-Jul-14	0	0	0	0	0	0	0	0	0	0	0	52.5	0
LA07	C	10-Jul-14	32.0	0	0	0	0	0	0	0	0	0	0	2.0	0
LA20	C	10-Jul-14	27.5	0	0	0	0	0	0	0	0	0	0	88.0	0
LA21	C	09-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0
LE01	C	16-Jul-14	117.5	0	0	0	0	0	0	0	0	0	0	139.0	0
LES1	C	02-Jul-14	181.5	0	0	0	0	0	0	0	0	0	0	0	0
LC01	I	18-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0
LC02	I	27-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0
LC04 (pre-spill)	I	02-Jul-14	302.5	0	0	0	0	0	0	0	0	0	0	15.5	0
LC04 (post-spill)	I	23-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0
LC06	I	22-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0
LC07	I	23-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0
LC10	I	22-Jul-14	0.5	0	0	0	0	0	0	0	0	0	0	0	0
LC12	I	24-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0
LC14	I	18-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0
LC23	I	30-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0
LCS4	I	24-Jul-14	0	0	0	0	0	0	0	0	0	0	0	16.0	0
LDUR	I	23-Jul-14	0	0	0	0	0	0	0	0	0	0	0	70.7	0

Appendix 13b. Summary of biomass (g) collected from 21 Lynde Creek sites during the fall of 2014, including moribund individuals. C/I: C = control site, I = impact site.

Site Code	C/I	Date	American Brook Lamprey	American Brook Lamprey (Ammocoete)	Ammocoete	Blacknose Dace	Bluntnose Minnow	Brook Stickleback	Brook Trout	Brown Bullhead	Central Stoneroller	Chinook Salmon	Common Shiner	Creek Chub	Cyprinid spp.	Esox spp.
LA01	C	25-Sep-14	0	0	0	2.2	44.3	0	0	0	0	0	6.1	139.2	0	0
LA03	C	03-Oct-14	0	0	0	58.1	3.0	0	0	0	0	0	1.3	49.6	0	0
LA04	C	24-Sep-14	0	0	0	45.8	36.9	0.5	0	0	0	0	0	536.5	0	0
LA07	C	29-Sep-14	0	0	0	98.3	0	0	0	0	0	0	107.7	258.0	0	0
LA15	C	29-Sep-14	0	0	0	21.2	0	0	0	0	0	0	0	0	0	0
LA16	C	07-Oct-14	0	0	0	99.3	0	0	0	0	0	0	0	33.3	0	0
LA20	C	24-Sep-14	9.8	0	0	62.1	0	0	0	0	0	0	29.9	379.7	0	0
LA21	C	25-Sep-14	0	0	0	70.7	0	1.6	0	0	0	0	0	68.8	0	0
LE01	C	26-Sep-14	8.7	0	0	19.0	0	0	189.7	0	0	0	0	0	0	0
LES1	C	25-Sep-14	0	0	0	6.6	0	0	683.1	0	0	0	0	0	0	0
LC01	I	23-Sep-14	0	0	0	0	17.8	1.0	0	0	0	0	65.0	41.5	0	0
LC02	I	03-Oct-14	0	0	0	2.3	70.0	0	0	0	0	0	189.6	332.0	0	0
LC04	I	23-Sep-14	0	0	2.5	11.0	0	0	0	0	0	0	0	5.2	0	0
LC06	I	24-Sep-14	0	0	0	0.5	0	1.1	0	0	0	0	0	0	0	0
LC07	I	29-Sep-14	0	0	0	1.2	0	0	0	0	0	0	0	9.9	0	0
LC10	I	29-Sep-14	0	0	0	0.2	0	0	0	0	0	0	0	2.1	0	0
LC12	I	26-Sep-14	0	0	0	2.0	0	0	0	0	0	0	0	69.0	0	0
LC14	I	07-Oct-14	0	0	0	0	0	0	45.0	0	0	0	0	12.4	0	0
LC23	I	24-Sep-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LCS4	I	26-Sep-14	0	0	0	0.4	0	0	192.0	0	0	0	0	2.3	0	0
LDUR	I	03-Oct-14	0	0	0	0	18.9	0	0	0	0	0	21.7	2.5	0	0

Appendix 6b. continued.

Site Code	C/I	Date	Fathead Minnow	Finescale Dace	Golden Shiner	Goldfish	Johnny Darter	Largemouth Bass	Logperch	Longnose Dace	Mimic Shiner	Mottled Sculpin	Northern Pike	Northern Redbelly Dace	Pumpkinseed	Rainbow Darter
LA01	C	25-Sep-14	10.1	0	0	0	0	0	0	40.7	0	0	0	0	14.5	0.8
LA03	C	03-Oct-14	2.4	0	0	0	16.4	0	0	91.1	0	0	0	0	13.5	33.8
LA04	C	24-Sep-14	4.5	0	0	99.0	36.4	0	0	128.6	0	3.2	0	0	29.2	6.3
LA07	C	29-Sep-14	129.9	0	0	0	12.2	0	0	209.7	0	9.2	0	0	0	3.1
LA15	C	29-Sep-14	0	0	0	0	0	0	0	352.6	0	122.9	0	0	0	9.7
LA16	C	07-Oct-14	0	0	0	0	0	0	0	3.0	0	54.8	0	0	0	8.8
LA20	C	24-Sep-14	0	0	0	0	89.5	0	0	11.5	0	52.5	0	0	0	3.7
LA21	C	25-Sep-14	0	0	0	0	0	0	0	0	0	0	0	5.7	0	0
LE01	C	26-Sep-14	0	0	0	0	0	0	0	0	0	42.2	0	0	0	0
LES1	C	25-Sep-14	0	0	0	0	0	0	0	0	0	59.1	0	0	0	0
LC01	I	23-Sep-14	0.5	0	0	0	16.6	0	0	125.9	0	0	0	0	37.7	6.1
LC02	I	03-Oct-14	2.5	0	0	0	8.4	3.6	0	31.5	0	0	0	0	0	2.4
LC04	I	23-Sep-14	5.4	0	0	0	1.7	0	0	36.3	0	0	0	0	0	1.9
LC06	I	24-Sep-14	10.6	0	0	0	0	0	0	1.0	0	0	0	0	5.2	0
LC07	I	29-Sep-14	1.8	0	0	0	0	0	0	5.0	0	10.2	0	0	0.9	4.2
LC10	I	29-Sep-14	0	0	0	0	0	0	0	0	0	1.8	0	0	0	0
LC12	I	26-Sep-14	3.6	0	0	0	0	0	0	0	0	0	0	0	0	0
LC14	I	07-Oct-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC23	I	24-Sep-14	0	0	0	0	0	0	0	14.7	0	0	0	0	0	0
LCS4	I	26-Sep-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LDUR	I	03-Oct-14	3.7	0	0	0	3.1	0	0	3.2	0	0	0	0	0.7	2.5

Appendix 6b. continued.

Site Code	C/I	Date	Rainbow Trout	Rock Bass	Rosyface Shiner	Round Goby	Salmonid spp.	Sea Lamprey	Silver Lamprey	Smallmouth Bass	Spotfin Shiner	Stonecat	Sucker spp.	White Sucker	Yellow Perch
LA01	C	25-Sep-14	0	0	0	0	0	0	0	0	4.5	0	0	59.0	0
LA03	C	03-Oct-14	22.8	0	0	0	0	0	0	0	0	0	0	7.9	0
LA04	C	24-Sep-14	36.5	0	0	0	0	0	0	0	0	0	0	187.0	0
LA07	C	29-Sep-14	111.2	0	0	0	0	0	0	0	0	0	0	43.9	0
LA15	C	29-Sep-14	76.1	0	0	0	0	0	0	0	0	0	0	0	0
LA16	C	07-Oct-14	41.8	0	0	0	0	0	0	0	0	0	0	8.2	0
LA20	C	24-Sep-14	19.5	0	0	0	0	0	0	0	0	0	0	342.9	0
LA21	C	25-Sep-14	11.8	0	0	0	0	0	0	0	0	0	0	9.3	0
LE01	C	26-Sep-14	263.9	0	0	0	0	0	0	0	0	0	0	0	0
LES1	C	25-Sep-14	357.1	0	0	0	0	0	0	0	0	0	0	0	0
LC01	I	23-Sep-14	25.7	0	0	0	0	0	0	0	0	0	0	10.1	0
LC02	I	03-Oct-14	0	0	6.4	0	0	0	0	0	11.1	0	0	216.7	0
LC04	I	23-Sep-14	0	0	0	0	0	0	0	0	0	0	0	79.6	0
LC06	I	24-Sep-14	0	0	0	0	0	0	0	0	0	0	0	27.1	0
LC07	I	29-Sep-14	94.0	0	0	0	0	0	0	0	0	0	0	0	0
LC10	I	29-Sep-14	43.5	0	0	0	0	0	0	0	0	0	0	0	0
LC12	I	26-Sep-14	0	0	0	0	0	0	0	0	0	0	0	0	0
LC14	I	07-Oct-14	0	0	0	0	0	0	0	0	0	0	0	0	0
LC23	I	24-Sep-14	0	0	0	0	0	0	0	0	0	0	0	0	0
LCS4	I	26-Sep-14	4.7	0	0	0	0	0	0	0	0	0	0	0.9	0
LDUR	I	03-Oct-14	0	0	0	0	0	0	0	0	0	0	0	69.8	0

Appendix 14c. Summary of biomass (g) collected from 22 Lynde Creek sites during the summer of 2015, including moribund individuals. C/I: C = control site, I = impact site.

Site Code	C/I	Date	American Brook Lamprey	American Brook Lamprey (Ammocoete)	Ammocoete	Blacknose Dace	Bluntnose Minnow	Brook Stickleback	Brook Trout	Brown Bullhead	Central Stoneroller	Chinook Salmon	Common Shiner	Creek Chub	Cyprinid spp.	Esox spp.
LA01	C	06-Jul-15	0	0	0	0	2.5	4.4	0	0	0	0	10.0	161.9	0.1	0
LA03	C	06-Jul-15	0	0	0	16.5	0	0	0	0	0	0	0	76.1	0	0
LA04	C	07-Jul-15	0	0	0	77.5	0	0	0	0	0	0	14.7	1067.3	0	0
LA07	C	08-Jul-15	0	0	0	60.0	0	0	0	0	0	0	0	47.8	0	0
LA15	C	10-Jul-15	0	0	0	22.6	0	0	0	0	0	0	0	0	0	0
LA16	C	10-Jul-15	0	0	0	46.6	0	0	0	0	0	0	0	41.0	0	0
LA20	C	10-Jul-15	0	0	0	137.9	0	0	0	0	0	0	0	187.2	0	0
LA21	C	10-Jul-15	0	0	0	45.2	0	0	0	0	0	0	0	0	0	0
LE01	C	13-Jul-15	0	0	0	0	0	0	388.8	0	0	0	0	0	0	0
LES1	C	13-Jul-15	0	0	0	15.3	0	0	853.0	0	0	0	0	0	0	0
LC01	I	06-Jul-15	0	0	0	11.3	0	0	0	0	0	0	0	141.7	0	0
LC02	I	06-Jul-15	0	0	0	36.5	0	0	0	0	0	0	0	0	0	0
LC04	I	07-Jul-15	0	0	0	59.1	6.9	0	0	0	0	0	0	31.1	0	0
LC06	I	08-Jul-15	0	0	0	14.7	0	0.6	0	0	0	0	0	9.1	0	0
LC07	I	09-Jul-15	0	0	0	41.1	0	0	0	9.0	0	0	0	27.7	0	0
LC08	I	09-Jul-15	0	0	0	59.5	0	0	0	0	0	0	0	7.9	0	0
LC10	I	09-Jul-15	0	0	0	23.3	0	0	51.2	0	0	0	0	40.4	0	0
LC12	I	09-Jul-15	0	0	12.0	33.8	0	0	0	0	0	0	0	139.6	0	0
LC14	I	08-Jul-15	0	0	0	4.0	0	0	0	0	0	0	0	91.7	0	0
LC23	I	07-Jul-15	0	0	0	15.5	0	0	0	0	0	0	0	0	0	0
LCS4	I	08-Jul-15	0	0	0	15.9	0	0	1475.7	0	0	0	0	38.6	0	0
LDUR	I	06-Jul-15	0	0	0	17.5	5.6	1.2	0	34.8	0	0	7.0	119.7	0	0

Appendix 6c. continued

Site Code	C/I	Date	Fathead Minnow	Finescale Dace	Golden Shiner	Goldfish	Johnny Darter	Largemouth Bass	Loggerhead	Longnose Dace	Mimic Shiner	Mottled Sculpin	Northern Pike	Northern Redbelly Dace	Pumpkinseed	Rainbow Darter
LA01	C	06-Jul-15	0	0	2.4	0	3.4	0	0	13.9	0	0	0	0	8.1	2.9
LA03	C	06-Jul-15	0	0	0	0	12.8	0	0	82.3	0	0	0	0	21.1	34.9
LA04	C	07-Jul-15	0	0	0	0	51.5	1.9	0	113.3	0	0	0	0	0	6.8
LA07	C	08-Jul-15	7.9	0	0	0	12.1	5.8	0	204.7	0	21.7	0	0	18.1	18.6
LA15	C	10-Jul-15	0	0	0	0	1.4	0	0	194.3	0	150.3	0	0	0	18.0
LA16	C	10-Jul-15	0	0	0	0	0	0	0	11.5	0	99.0	0	0	0	6.8
LA20	C	10-Jul-15	0	0	0	0	56.9	0	0	9.2	0	69.7	0	0	0	1.6
LA21	C	10-Jul-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LE01	C	13-Jul-15	0	0	0	0	0	0	0	0	0	53.1	0	0	0	0
LES1	C	13-Jul-15	0	0	0	0	0	0	0	0	0	41.1	0	0	0	0
LC01	I	06-Jul-15	0	0	0	0	21.4	1.4	2.8	100.4	0	0	0	0	0	6.5
LC02	I	06-Jul-15	0	0	0	0	1.7	1.1	0	384.3	0	0	0	0	0	6.0
LC04	I	07-Jul-15	1.6	0	0	0	6.6	1.3	0	117.0	0	0	0	0	27.1	1.4
LC06	I	08-Jul-15	11.4	0	4.8	0	0	0	0	3.3	0	0	0	0	20.7	0
LC07	I	09-Jul-15	6.2	0	0	0	0	0.7	0	23.1	0	0	0	0	15.8	5.4
LC08	I	09-Jul-15	0	0	0	0	0	29.4	0	43.5	0	0	0	0	10.9	1.5
LC10	I	09-Jul-15	0	0	0	0	0	0	0	0	0	20.9	0	0	25.7	0
LC12	I	09-Jul-15	1.7	0	0	0	3.7	1.0	0	0	0	0	0	0	31.8	0
LC14	I	08-Jul-15	9.5	0	0	0	0	0	0	0	0	0	0	0	5.8	0
LC23	I	07-Jul-15	0	0	0	0	0	0	0	20.7	0	0	0	0	0	0
LCS4	I	08-Jul-15	24.8	0	0	0	0	7.5	0	0	0	15.1	0	0	15.2	0
LDUR	I	06-Jul-15	7.2	0	0	0	0	22.1	5.5	19.9	0	0	0	0	30.5	15.9

Appendix 6c. continued

Site Code	C/I	Date	Rainbow Trout	Rock Bass	Rosyface Shiner	Round Goby	Salmonid spp.	Sea Lamprey	Silver Lamprey	Smallmouth Bass	Spotfin Shiner	Stonecat	Sucker spp.	White Sucker	Yellow Perch
LA01	C	06-Jul-15	0	0	0	5.3	0	0	0	0	0	0	0	128.9	0
LA03	C	06-Jul-15	0	0	0	0	0	0	0	0	0	0	0	0	0
LA04	C	07-Jul-15	0	0	0	0	0	0	0	0	0	0	0	104.9	0
LA07	C	08-Jul-15	229.8	0	0	0	0	0	0	0	0	0	0	6.7	0
LA15	C	10-Jul-15	14.3	0	0	0	0	0	0	0	0	0	0	0	0
LA16	C	10-Jul-15	173.4	0	0	0	0	0	0	0	0	0	0	171.6	0
LA20	C	10-Jul-15	139.0	0	0	0	0	0	0	0	0	0	0	56.1	0
LA21	C	10-Jul-15	0	0	0	0	0	0	0	0	0	0	0	0	0
LE01	C	13-Jul-15	107.8	0	0	0	0	0	0	0	0	0	0	0	0
LES1	C	13-Jul-15	124.4	0	0	0	0	0	0	0	0	0	0	0	0
LC01	I	06-Jul-15	24.5	0	0	0	0	0	0	0	0	0	0	0.6	0
LC02	I	06-Jul-15	113.3	0	0	0	0	0	0	0	0	0	0	399.1	0
LC04	I	07-Jul-15	21.7	0	0	0	0	0	0	0	0	0	0	75.9	0
LC06	I	08-Jul-15	1.6	0	0	0	0	0	0	0	0	0	0	167.6	0
LC07	I	09-Jul-15	5.6	0	0	0	0	0	0	0	0	0	0	0	0
LC08	I	09-Jul-15	33.7	0	0	0	0	0	0	0	0	0	0	0	0
LC10	I	09-Jul-15	16.5	0	0	0	0	0	0	0	0	0	0	0	0
LC12	I	09-Jul-15	85.6	0	0	0	0	0	0	0	0	0	0	25.5	0
LC14	I	08-Jul-15	0	0	0	0	0	0	0	0	0	0	0	0	0
LC23	I	07-Jul-15	2.5	0	0	0	0	0	0	0	0	0	0	0.4	0
LCS4	I	08-Jul-15	94.8	0	0	0	0	0	0	0	0	0	0	203.0	0
LDUR	I	06-Jul-15	0	0	0	0	0	0	0	0	0	0	0	18.8	0

Appendix 15d. Summary of biomass (g) collected from 22 Lynde Creek sites during the summer of 2016, including moribund individuals. C/I: C = control site, I = impact site.

Site Code	C/I	Date	American Brook Lamprey	American Brook Lamprey (Ammocoete)	Ammocoete	Blacknose Dace	Bluntnose Minnow	Brook Stickleback	Brook Trout	Brown Bullhead	Central Stoneroller	Chinook Salmon	Common Shiner	Creek Chub	Cyprinid spp.	Esox spp.
LA01	C	08-Jul-16	0	0	0	30.7	9.4	7.1	0	0	0	0	5.4	263.3	0	0
LA03	C	08-Jul-16	0	0	0	13.1	0	0	0	0	0	0	0	41.0	0	0
LA04	C	12-Jul-16	0	0	0	33.3	1.6	0.6	0	0	0	0	0	424.7	0	0
LA07	C	12-Jul-16	0	0	0	38.8	0	0	0	0	0	0	14.1	139.7	0	0
LA15	C	13-Jul-16	0	0	0	31.5	0	0	0	0	0	0	0	7.2	0	0
LA16	C	12-Jul-16	0	0	0	6.9	0	0	0	0	0	0	0	36.4	0	0
LA20	C	12-Jul-16	0	0	0	17.3	0	0	0	0	0	0	9.0	162.8	0	0
LE01	C	13-Jul-16	0	1.8	0	4.3	0	0	380.8	0	0	0	0	0	0	0
LES1	C	07-Jul-16	0	22.5	0	29.1	0	0	785.9	0	0	0	0	0	0	0
LC01	I	05-Jul-16	0	0	0	12.4	3.4	0.4	0	0	0	0	0	141.0	0	0
LC02	I	05-Jul-16	0	0	0	90.8	25.5	0	0	0	0	0	0	435.9	0	0
LC04	I	06-Jul-16	0	0	0	184.0	0	0	0	0	0	0	0	8.8	0	0
LC06	I	08-Jul-16	0	0	0	9.2	0	0.9	0	0	0	0	0	210.8	0	0
LC07	I	06-Jul-16	0	0	0	67.1	0	0	0	0	0	0	0	152.1	0	0
LC08	I	06-Jul-16	0	0	0	232.8	0	0	0	0	0	0	0	82.3	0	0
LC10	I	12-Jul-16	0	0	0	9.3	0	0	45.6	0	0	0	0	44.2	0	0
LC12	I	07-Jul-16	0	0	0	38.2	0	0	0	0	0	0	0	191.2	0	0
LC14	I	07-Jul-16	0	0	0	111.7	0	0	0	0	0	0	0	626.7	0	0
LC23	I	06-Jul-16	0	0	0	34.4	0	0	0	0	0	0	0	132.4	0	0
LCS4	I	07-Jul-16	0	0	0	45.5	0	0	2724.8	0	0	0	0	100.5	0	0
LDUR	I	05-Jul-16	0	0	0	14.2	0	0	0	0	0	0	0	57.3	0	0

Appendix 6d. continued

Site Code	C/I	Date	Fathead Minnow	Finescale Dace	Golden Shiner	Goldfish	Johnny Darter	Largemouth Bass	Logperch	Longnose Dace	Mimic Shiner	Mottled Sculpin	Northern Pike	Northern Redbelly Dace	Pumpkinseed	Rainbow Darter
LA01	C	08-Jul-16	0	0	0	0	16.5	0	0	31.2	0	0	0	0	0	3.8
LA03	C	08-Jul-16	1.2	0	0	0	0.7	0	0	117.9	0	0	0	0	0	59.5
LA04	C	12-Jul-16	3.7	0	0	0	54.9	1.9	0	25.7	0	0.3	0	0	0	6.4
LA07	C	12-Jul-16	0.6	0	0	0	0	0	0	182.2	0	0.6	0	0	0	12.1
LA15	C	13-Jul-16	0	0	0	0	0	0	0	251.9	0	146.4	0	0	0	18.5
LA16	C	12-Jul-16	0	0	0	0	0	0	0	53.7	0	28.2	0	0	0	4.1
LA20	C	12-Jul-16	0	0	0	0	28.6	0	0	2.0	0	26.3	0	0	0	2.5
LE01	C	13-Jul-16	0	0	0	0	0	0	0	0	0	59.7	0	0	0	0
LES1	C	07-Jul-16	0	0	0	0	0	0	0	0	0	69.2	0	0	0	0
LC01	I	05-Jul-16	0	0	0	0	23.9	0	0	4.7	0	0	0	0	2.9	29.5
LC02	I	05-Jul-16	1.3	0	0	0	29.5	0	0	254.6	0	0	0	0	0	32.6
LC04	I	06-Jul-16	0	0	0	0	25.1	0	0	245.0	0	0	0	0	0	106.2
LC06	I	08-Jul-16	3.1	0	0	0	59.7	0	0	0	0	6.6	0	0	10.5	3.2
LC07	I	06-Jul-16	0	0	0	0	0	0	0	135.5	0	18.0	0	0	0	0
LC08	I	06-Jul-16	4.4	0	0	0	0	0	0	76.0	0	0	0	0	0	9.3
LC10	I	12-Jul-16	0	0	0	0	0	0	0	54.2	0	26.3	0	0	0	0
LC12	I	07-Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC14	I	07-Jul-16	0	0	0	0	2.1	0	0	0	0	0	0	0	0	0
LC23	I	06-Jul-16	0	0	0	0	0	0	0	132.4	0	0	0	0	0	0.1
LCS4	I	07-Jul-16	0	0	0	0	0	0	0	0	0	49.2	0	0	0	0
LDUR	I	05-Jul-16	0	0	0	0	29.1	0	0	71.6	0	0	0	0	45.8	36.1

Appendix 6d. continued

Site Code	C/I	Date	Rainbow Trout	Rock Bass	Rosyface Shiner	Round Goby	Salmonid spp.	Sea Lamprey	Silver Lamprey	Smallmouth Bass	Spotfin Shiner	Stonecat	Sucker spp.	White Sucker	Yellow Perch
LA01	C	08-Jul-16	0	0	0	22.1	0	0	0	0	0	0	0	1.1	0
LA03	C	08-Jul-16	0	0	0	0	0	0	0	0	0	0	0	0.9	0
LA04	C	12-Jul-16	158.3	0	0	0	0	0	0	0	0	0	0	8.5	0
LA07	C	12-Jul-16	1300.7	0	0	0	0	0	0	0	0	0	0	83.7	0
LA15	C	13-Jul-16	30.1	0	0	0	0	0	0	0	0	0	0	0	0
LA16	C	12-Jul-16	1492.7	0	0	0	0	0	0	0	0	0	0	59.5	0
LA20	C	12-Jul-16	0.5	0	0	0	0	0	0	0	0	0	0	15.0	0
LE01	C	13-Jul-16	197.5	0	0	0	0	0	0	0	0	0	0	0	0
LES1	C	07-Jul-16	138.9	0	0	0	0	0	0	0	0	0	0	0	0
LC01	I	05-Jul-16	0	11.6	0	7.8	0	0	0	0	0	0	0	20.8	0
LC02	I	05-Jul-16	0	0	0	0	0	0	0	0	0	0	0	581.1	0
LC04	I	06-Jul-16	63.3	0	0	0	0	0	0	0	0	0	0	45.7	0
LC06	I	08-Jul-16	99.6	10.4	0	0	0	0	0	0	0	0	0	337.2	0
LC07	I	06-Jul-16	133.8	0	0	0	0	0	0	0	0	0	0	5.3	0
LC08	I	06-Jul-16	136.0	0	0	0	0	0	0	0	0	0	0	1.1	0
LC10	I	12-Jul-16	49.3	0	0	0	0	0	0	0	0	0	0	0.4	0
LC12	I	07-Jul-16	172.7	0	0	0	0	0	0	0	0	0	0	5.9	0
LC14	I	07-Jul-16	0	0	0	0	0	0	0	0	0	0	0	374.9	0
LC23	I	06-Jul-16	337.8	0	0	0	0	0	0	0	0	0	0	75.8	0
LCS4	I	07-Jul-16	226.1	0	0	0	0	0	0	0	0	0	0	176.8	0
LDUR	I	05-Jul-16	0.7	0	0	0	0	0	0	0	0	0	0	87.6	0

Appendix 16e. Summary of biomass (g) collected from 22 Lynde Creek sites during the summer of 2017, including moribund individuals. C/I: C = control site, I = impact site.

Site Code	C/I	Date	American Brook Lamprey	American Brook Lamprey (Ammocoete)	Ammocoete	Blacknose Dace	Bluntnose Minnow	Brook Stickleback	Brook Trout	Brown Bullhead	Central Stoneroller	Chinook Salmon	Common Shiner	Creek Chub	Cyprinid spp.	Esox spp.
LA01	C	07-Jul-17	0	0	0	18.4	0	0	0	0	0	0	0	198.6	0	0
LA03	C	12-Jul-17	0	0	0	45.9	12.7	0	0	0	0	0	147.3	176.8	0	0
LA04	C	12-Jul-17	0	0	0	25.6	0	0	0	0	0	0	3.5	537.4	0	0
LA07	C	12-Jul-17	0	0	0	56.3	0	0	0	0	0	0	5.6	107.2	0	0
LA15	C	13-Jul-17	0	0	0	25.0	0	0	0	0	0	0	0	20.7	0	0
LA16	C	13-Jul-17	10.7	0	0	54.8	0	0	105.0	0	0	0	0	42.4	0	0
LA20	C	19-Jul-17	0	0	0	46.5	0	0	0	0	0	0	0	268.4	0	0
LA21	C	06-Jul-17	0	0	0	183.8	0	0.5	0	0	0	0	0	44.9	0	0
LE01	C	06-Jul-17	0	0	0	12.9	0	0	660.0	0	0	0	0	1.1	0	0
LES1	C	05-Jul-17	0	0	4.5	0	0	0	941.8	0	0	0	0	0	0	0
LC01	I	07-Jul-17	0	0	0	4.0	6.1	0	0	0	0	0	31.0	250.5	0	0
LC02	I	07-Jul-17	0	0	0	81.4	0	0	0	0	0	0	35.8	349.9	0	14.5
LC04	I	05-Jul-17	0	0	0	55.6	0	0	0	0	0	0	0	75.6	0	0
LC06	I	19-Jul-17	0	0	0	58.1	0	0	0	0	0	0	10.0	34.8	0	0
LC07	I	18-Jul-17	0	0	0	37.2	0	0	0	0	0	0	0	69.7	0	0
LC08	I	18-Jul-17	0	0	0	43.4	0	0	59.8	0	0	0	0	8.2	0	0
LC10	I	13-Jul-17	0	0	0	44.9	0	0	0	0	0	0	0	280.0	0	0
LC12	I	06-Jul-17	0	0	0	64.7	0	0	50.6	0	0	0	0	104.1	0	0
LC14	I	13-Jul-17	0	0	0	116.8	0	0	0	0	0	0	0	928.2	0	0
LC23	I	18-Jul-17	0	0	0	61.1	0	0	0	0	0	0	0	15.5	0	0
LCS4	I	06-Jul-17	0	0	6.6	53.0	0	0	572.9	0	0	0	0	189.5	0	0
LDUR	I	05-Jul-17	0	0	0	1.6	22.4	0	0	48.4	0	0	21.8	163.8	0	0

Appendix 6e. continued

Site Code	C/I	Date	Fathead Minnow	Finescale Dace	Golden Shiner	Goldfish	Johnny Darter	Largemouth Bass	Logperch	Longnose Dace	Mimic Shiner	Mottled Sculpin	Northern Pike	Northern Redbelly Dace	Pumpkinseed	Rainbow Darter
LA01	C	07-Jul-17	0	0	0	0	1.0	0	9.5	5.6	0	0	0	0	25.4	5.5
LA03	C	12-Jul-17	4.3	0	0	0	4.2	61.2	6.2	88.2	0	0	0	0	36.7	13.9
LA04	C	12-Jul-17	3.1	0	0	0	26.0	137.8	0	3.1	0	0	0	0	0	21.6
LA07	C	12-Jul-17	5.4	0	0	0	0.8	0	0	222.5	0	8.9	0	0	0	35.4
LA15	C	13-Jul-17	0	0	0	0	0	0	0	56.8	0	65.6	0	0	0	24.6
LA16	C	13-Jul-17	9.2	0	0	0	0	0	0	21.3	0	24.0	0	0	0	18.5
LA20	C	19-Jul-17	16.7	0	0	0	91.1	0	0	30.5	0	15.1	0	0	0	23.4
LA21	C	06-Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LE01	C	06-Jul-17	0	0	0	0	0	0	0	0	0	32.5	0	0	0	0
LES1	C	05-Jul-17	0	0	0	0	0	0	0	0	0	37.2	0	0	0	0
LC01	I	07-Jul-17	0	0	0	0	18.6	0	0	40.4	0	0	0	0	9.8	16.7
LC02	I	07-Jul-17	2.7	0	0	0	27.8	0	0	81.6	0	0	0	0	26.2	27.9
LC04	I	05-Jul-17	0	0	0	0	0	0	0	89.7	0	0	0	0	10.9	30.1
LC06	I	19-Jul-17	2.5	0	0	0	62.0	0	0	69.4	0	0	0	0	2.9	1.6
LC07	I	18-Jul-17	3.8	0	0	0	3.8	0	0	52.5	0	37.6	0	0	0	15.3
LC08	I	18-Jul-17	0	0	0	0	0	0	0	47.9	0	33.3	0	0	60.2	10.4
LC10	I	13-Jul-17	0	0	0	0	0	0	0	43.9	0	46.6	0	0	11.3	0
LC12	I	06-Jul-17	0	0	0	0	0	0	0	0	0	12.3	0	0	4.5	0
LC14	I	13-Jul-17	14.6	0	0	0	9.5	1.8	0	3.9	0	0	0	0	8.7	0
LC23	I	18-Jul-17	0	0	0	0	8.5	1.9	0	95.4	0	0	0	0	12.9	13.8
LCS4	I	06-Jul-17	0	0	0	0	0	0	0	0	0	214.0	0	0	0	0
LDUR	I	05-Jul-17	0	0	0	0	10.3	0	0	17.9	0	0	0	0	4.0	22.0

Appendix 6e. continued

Site Code	C/I	Date	Rainbow Trout	Rock Bass	Rosyface Shiner	Round Goby	Salmonid spp.	Sea Lamprey	Silver Lamprey	Smallmouth Bass	Spotfin Shiner	Stonecat	Sucker spp.	White Sucker	Yellow Perch
LA01	C	07-Jul-17	0	0	0	0	0	0	0	0	0	0	0	23.0	0
LA03	C	12-Jul-17	0	0	0	17.9	0	0	0	0	0	0	0.2	9.4	0
LA04	C	12-Jul-17	0	0	0	0	0	0	0	0	0	0	0	101.2	0
LA07	C	12-Jul-17	100.6	0	0	0	0	0	0	0	0	0	0	0	0
LA15	C	13-Jul-17	106.8	0	0	0	0	0	0	0	0	0	0	0	0
LA16	C	13-Jul-17	337.8	0	0	0	0	0	0	0	0	0	0	6.1	0
LA20	C	19-Jul-17	0	0	0	0	0	0	0	0	0	0	0	131.4	0
LA21	C	06-Jul-17	7.7	0	0	0	0	0	0	0	0	0	0	0	0
LE01	C	06-Jul-17	217.7	0	0	0	0	0	0	0	0	0	0	0	0
LES1	C	05-Jul-17	210.7	0	0	0	0	0	0	0	0	0	0	0	0
LC01	I	07-Jul-17	0	0	0	21.1	0	0	0	0	0	0	0	74.0	0
LC02	I	07-Jul-17	38.2	0	0	6.1	0	0	0	0	0	0	0	118.3	0
LC04	I	05-Jul-17	167.9	0	0	0	0	0	0	0	0	0	0	19.7	0
LC06	I	19-Jul-17	138.9	0	0	0	0	0	0	0	0	0	0	4.3	0
LC07	I	18-Jul-17	109.4	0	0	0	0	0	0	0	0	0	0	4.1	0
LC08	I	18-Jul-17	262.1	0	0	0	0	0	0	0	0	0	0	0	0
LC10	I	13-Jul-17	276.7	0	0	0	0	0	0	0	0	0	0	9.8	0
LC12	I	06-Jul-17	62.4	0	0	0	0	0	0	0	0	0	0	14.1	0
LC14	I	13-Jul-17	0	0	0	0	0	0	0	0	0	0	0	446.9	0
LC23	I	18-Jul-17	12.5	0	0	0	0	0	0	0	0	0	0	0	0
LCS4	I	06-Jul-17	224.3	0	0	0	0	0	0	0	0	0	0	375.1	0
LDUR	I	05-Jul-17	0	0	0	0	0	0	0	0	0	0	0	207.4	0

Appendix 17f. Summary of biomass (g) collected from 22 Lynde Creek sites during the summer of 2018, including moribund individuals. C/I: C = control site, I = impact site.

Site Code	C/I	Date	American Brook Lamprey	American Brook Lamprey (Ammocoete)	Ammocoete	Blacknose Dace	Bluntnose Minnow	Brook Stickleback	Brook Trout	Brown Bullhead	Central Stoneroller	Chinook Salmon	Common Shiner	Creek Chub	Cyprinid spp.	Esox spp.
LA01	C	06-Jul-18	0	0	0	23.7	7.2	0	0	0	0	0	32.6	151.0	0	0
LA03	C	20-Jul-18	0	0	0	42.4	2.0	1.0	0	0	0	0	21.6	127.4	0	0
LA04	C	20-Jul-18	0	0	0	142.2	0	1.0	0	0	0	0	28.4	320.2	0	0
LA07	C	06-Jul-18	0	0	0	119.5	0	0	0	0	0	0	16.3	83.6	0	0
LA15	C	23-Jul-18	0	0	0	92.1	0	0	0	0	0	0	0	52.5	0	0
LA16	C	23-Jul-18	0	0	0	22.2	0	1.1	0	0	0	0	0	98.4	0	0
LA20	C	20-Jul-18	0	0	0	43.0	0	0	0	91.9	0	0	0	84.2	0	0
LA21	C	28-Jun-18	0	0	0	84.7	0	1.9	0	0	0	0	0	47.1	0	0
LE01	C	19-Jul-18	0	0	0	20.2	0	0	613.3	0	0	0	0	0	0	0
LES1	C	28-Jun-18	0	0	12.0	0	0	0	614.0	0	0	0	0	0	0	0
LC01	I	05-Jul-18	0	0	0	15.6	0	0	0	0	0	0	0	88.0	0	0
LC02	I	06-Jul-18	0	0	0	116.3	11.2	0	0	0	0	0	70.0	366.2	0	0
LC04	I	05-Jul-18	0	0	0	181.4	5.4	0	0	0	0	0	0	187.0	0	0
LC06	I	18-Jul-18	0	0	0	142.7	0	0	0	0	0	0	13.8	611.3	0	0
LC07	I	18-Jul-18	0	0	0	229.2	0	0	0	0	0	0	0	501.6	0	0
LC08	I	18-Jul-18	0	0	0	168.0	0	0	0	0	0	0	0	160.3	0	0
LC10	I	23-Jul-18	0	0	0	50.2	0	0	165.7	0	0	0	0	160.2	0	0
LC12	I	20-Jul-18	0	0	0	88.0	0	0	291.5	0	0	0	0	37.7	0	0
LC14	I	19-Jul-18	0	0	0	85.3	0	0	0	0	0	0	0	660.3	0	0
LC23	I	05-Jul-18	0	0	0	216.6	4.6	0	0	0	0	0	60.2	54.6	0	0
LCS4	I	19-Jul-18	31.3	0	0	180.5	0	0	375.7	0	0	0	0	643.0	0	0
LDUR	I	28-Jun-18	0	0	0	83.4	28.4	0	0	0	0	0	161.7	333.3	0	0

Appendix 6f. continued

Site Code	C/I	Date	Fathead Minnow	Finescale Dace	Golden Shiner	Goldfish	Johnny Darter	Largemouth Bass	Logperch	Longnose Dace	Mimic Shiner	Mottled Sculpin	Northern Pike	Northern Redbelly Dace	Pumpkinseed	Rainbow Darter
LA01	C	06-Jul-18	0	0	0	0	0	0	0	114.6	0	0	0	0	8.6	7.7
LA03	C	20-Jul-18	0	0	0	0	0	1.5	0	196.0	0	0	0	0	0	65.0
LA04	C	20-Jul-18	8.0	0	0	0	65.5	2.3	0	220.6	0	0	0	0	0	63.2
LA07	C	06-Jul-18	7.0	0	0	0	22.7	0	0	250.5	0	3.4	0	0	0	30.6
LA15	C	23-Jul-18	0	0	0	0	0	0	0	162.4	0	75.1	0	0	0	16.2
LA16	C	23-Jul-18	2.7	0	0	0	0	0	0	25.3	0	41.1	0	3.5	0	16.4
LA20	C	20-Jul-18	28.1	1.3	0	0	8.7	0	0	0	0	46.4	0	0	0	3.8
LA21	C	28-Jun-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LE01	C	19-Jul-18	0	0	0	0	0	0	0	0	0	37.0	0	0	0	0
LES1	C	28-Jun-18	0	0	0	0	0	0	0	0	0	26.0	0	0	0	0
LC01	I	05-Jul-18	0	0	0	0	4.5	0	0	50.5	1.0	0	0	0	5.5	13.2
LC02	I	06-Jul-18	2.5	0	0	0	24.2	0	15.2	153.8	0	0	0	0	0	67.8
LC04	I	05-Jul-18	5.9	0	0	0	58.9	0	0	129.8	0	0	0	0	0	97.0
LC06	I	18-Jul-18	3.2	0	0	0	94.0	0	0	28.8	0	20.2	0	0	44.6	43.3
LC07	I	18-Jul-18	17.3	0	0	0	15.8	0	0	174.5	0	38.2	0	0	0	39.1
LC08	I	18-Jul-18	1.5	0	0	0	5.0	0	0	158.2	0	25.5	0	0	0	34.9
LC10	I	23-Jul-18	0	0	0	0	0	0	0	72.5	0	166.7	0	0	0	7.1
LC12	I	20-Jul-18	2.1	0	0	0	0	3.2	0	0	0	0	0	0	0	0.5
LC14	I	19-Jul-18	12.6	0	0	0	13.7	0	0	5.9	0	0.2	0	0	0	0
LC23	I	05-Jul-18	9.5	0	0	0	24.3	0	0	129.9	0	48.2	0	0	0	24.3
LCS4	I	19-Jul-18	0	0	0	0	0	1.8	0	0	0	159.1	0	0	0	0
LDUR	I	28-Jun-18	3.7	0	0	0	47.5	0	8.4	73.2	0	0	0	0	0	53.7

Appendix 6f. continued

Site Code	C/I	Date	Rainbow Trout	Rock Bass	Rosyface Shiner	Round Goby	Salmonid spp.	Sea Lamprey	Silver Lamprey	Smallmouth Bass	Spotfin Shiner	Stonecat	Sucker spp.	White Sucker	Yellow Perch
LA01	C	06-Jul-18	0	0	0	6.2	0	0	0	0	0	0	0	52.4	1.4
LA03	C	20-Jul-18	6.0	0	0	4.3	0	0	0	0	0	0	0	5.6	0
LA04	C	20-Jul-18	20.6	0	0	0	0	0	0	0	0	0	0	32.7	0
LA07	C	06-Jul-18	106.2	0	0	0	0	0	0	0	0	0	0	91.0	0
LA15	C	23-Jul-18	176.2	0	0	0	0	0	0	0	0	0	0	0.8	0
LA16	C	23-Jul-18	135.8	0	0	0	0	0	0	0	0	0	0	10.3	0
LA20	C	20-Jul-18	66.4	0	0	0	0	0	0	0	0	0	0	396.3	0
LA21	C	28-Jun-18	0	0	0	0	0	0	0	0	0	0	0	0	0
LE01	C	19-Jul-18	176.3	0	0	0	0	0	0	0	0	0	0	0	0
LES1	C	28-Jun-18	171.2	0	0	0	6.3	0	0	0	0	0	0	0	0
LC01	I	05-Jul-18	0	0	0	10.6	0	0	0	0	0	0	0	3.9	0
LC02	I	06-Jul-18	0	0	0	4.4	0	0	0	0	0	0	0	237.0	0
LC04	I	05-Jul-18	4.2	0	0	0	0	0	0	0	0	0	0	7.0	0
LC06	I	18-Jul-18	133.8	0	0	0	0	0	0	0	0	0	0	1287.5	0
LC07	I	18-Jul-18	118.0	0	0	0	0	0	0	0	0	0	0	55.2	0
LC08	I	18-Jul-18	226.3	0	0	0	0	0	0	0	0	0	0	1.3	0
LC10	I	23-Jul-18	24.4	0	0	0	0	0	0	0	0	0	0	4.4	0
LC12	I	20-Jul-18	177.9	0	0	0	0	0	0	0	0	0	0	0	0
LC14	I	19-Jul-18	0	0	0	0	0	0	0	0	0	0	0	162.2	0
LC23	I	05-Jul-18	77.6	0	0	0	0	0	0	0	0	0	0	0.2	0
LCS4	I	19-Jul-18	117.3	0	0	0	0	0	0	0	0	0	0	252.0	0
LDUR	I	28-Jun-18	827.1	0	0	0	0	0	0	0	0	0	0	90.7	0

Appendix 18g. Summary of biomass (g) collected from 22 Lynde Creek sites during the summer of 2019, including moribund individuals. C/I: C = control site, I = impact site.

Site Code	C/I	Date	American Brook Lamprey	American Brook Lamprey (Ammocoete)	Ammocoete	Blacknose Dace	Bluntnose Minnow	Brook Stickleback	Brook Trout	Brown Bullhead	Central Stoneroller	Chinook Salmon	Common Shiner	Creek Chub	Cyprinid spp.	Esox spp.
LA01	C	15-Jul-19	0	0	0	18.4	0	0	0	0	0	0	0	175.0	0	0
LA03	C	23-Jul-19	0	0	0	8.2	2.0	0	0	0	0	0	1.1	76.3	0	0
LA04	C	23-Jul-19	0	0	0	290.4	2.1	0	0	0	0	0	95.6	444.3	0	0
LA07	C	15-Jul-19	0	0	0	134.0	0	0	0	0	0	0	13.1	82.0	0	0
LA15	C	23-Jul-19	0	0	0	117.8	0	0	0	0	0	0	0	74.0	0	0
LA16	C	18-Jul-19	0	0	0	83.7	0	0	35.0	0	0	0	0	186.2	0	0
LA20	C	22-Jul-19	0	0	0	4.5	0	0	0	47.2	0	0	28.0	52.1	0	0
LA21	C	12-Jul-19	0	0	0	20.6	0	2.0	0	0	0	0	0	0	0	0
LE01	C	16-Jul-19	0	0	0	16.7	0	0	454.0	0	0	0	0	0	0	0
LES1	C	12-Jul-19	0	0	0.7	15.8	0	0	348.2	0	0	0	0	41.1	0	0
LC01	I	12-Jul-19	0	0	0	1.4	0	0	0	0	0	0	21.6	329.3	0	0
LC02	I	22-Jul-19	0	0	0	21.7	0	0	0	0	0	0	113.6	793.9	0	0
LC04	I	15-Jul-19	0	0	0	392.3	46.0	0	0	0	0	0	88.0	62.0	0	0
LC06	I	23-Jul-19	0	0	0	135.6	3.0	0	0	13.0	0	0	27.7	266.9	0	0
LC07	I	22-Jul-19	0	0	0	106.6	0	0	0	0	0	0	0	206.1	0	0
LC08	I	22-Jul-19	0	0	0	160.1	0	0	0	0	0	0	0	119.8	0	0
LC10	I	18-Jul-19	0	0	0	78.2	0	0	53.1	0	0	0	6.1	207.0	0	0
LC12	I	18-Jul-19	0	0	0	95.6	0	0	58.7	0	0	0	0	83.2	0	0
LC14	I	16-Jul-19	0	0	0	114.2	0	0	0	0	0	0	0	627.5	0	0
LC23	I	10-Jul-19	0	0	0	81.7	4.9	0	0	0	0	0	3.8	68.4	0	0
LCS4	I	16-Jul-19	0	0	0	39.3	0	0	1802.1	0	0	0	0	184.9	0	0
LDUR	I	10-Jul-19	0	0	0	24.3	7.4	0	0	9.5	0	0	36.0	80.0	0	0

Appendix 6g. continued

Site Code	C/I	Date	Fathead Minnow	Finescale Dace	Golden Shiner	Goldfish	Johnny Darter	Largemouth Bass	Logperch	Longnose Dace	Mimic Shiner	Mottled Sculpin	Northern Pike	Northern Redbelly Dace	Pumpkinseed	Rainbow Darter
LA01	C	15-Jul-19	0	0	0	0	13.5	0	8.8	15.5	0	0	86.7	0	4.5	24.0
LA03	C	23-Jul-19	0.4	0	0	0	17.9	0	0	141.5	0	0	23.0	0	30.8	50.9
LA04	C	23-Jul-19	6.6	0	0	0	64.6	235.7	0	252.3	0	0	0	0	132.5	49.4
LA07	C	15-Jul-19	3.8	0	0	0	7.6	27.0	0	146.0	0	0	0	0	0	54.3
LA15	C	23-Jul-19	6.7	0	0	0	4.4	0	0	145.1	0	73.7	0	0	27.2	25.3
LA16	C	18-Jul-19	0	0	0	0	10.5	0	0	5.8	0	87.6	0	0	0	13.3
LA20	C	22-Jul-19	19.2	0	0	0	39.2	0	0	0	0	7.4	0	2.0	0	0
LA21	C	12-Jul-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LE01	C	16-Jul-19	0	0	0	0	0	0	0	0	0	56.9	0	0	0	0
LES1	C	12-Jul-19	0	0	0	0	0	0	0	0	0	41.3	0	0	0	0
LC01	I	12-Jul-19	0	0	0	0	0	0	0	66.0	0.6	0	18.8	0	0	33.3
LC02	I	22-Jul-19	0	0	0	0	9.6	0	0	121.8	0	0	24.4	0	28.7	46.7
LC04	I	15-Jul-19	3.2	0	0	0	67.0	0	0	275.9	0	0	0	0	0	111.0
LC06	I	23-Jul-19	43.9	0	0	0	306.7	0	0	21.3	0	9.0	0	0	6.5	65.1
LC07	I	22-Jul-19	3.0	0	0	0	25.3	0	0	106.4	0	105.7	0	0	14.7	61.4
LC08	I	22-Jul-19	6.5	0	0	0	14.6	0	0	111.0	0	34.6	0	0	19.0	53.5
LC10	I	18-Jul-19	0	0	0	0	1.8	0	0	34.2	0	126.9	0	0	0	8.6
LC12	I	18-Jul-19	0	0	0	0	0	0	0	0	0	5.3	0	0	0	1.9
LC14	I	16-Jul-19	36.1	0	0	0	31.7	0	0	0	0	0	0	0	0	0
LC23	I	10-Jul-19	0	0	0	0	33.7	0	0	106.4	0	50.7	0	3.2	7.5	46.1
LCS4	I	16-Jul-19	30.0	0	0	0	0	0	0	0	0	131.1	0	0	17.5	0
LDUR	I	10-Jul-19	0	0	0	0	19.6	0	8.6	59.9	0	0	31.8	0	105.0	34.8

Appendix 6g. continued

Site Code	C/I	Date	Rainbow Trout	Rock Bass	Rosyface Shiner	Round Goby	Salmonid spp.	Sea Lamprey	Silver Lamprey	Smallmouth Bass	Spotfin Shiner	Stonecat	Sucker spp.	White Sucker	Yellow Perch
LA01	C	15-Jul-19	0	10.2	0	45.2	0	0	0	0	0	0	0	7.7	0
LA03	C	23-Jul-19	0	0	0	68.6	0	0	0	0	0	0	0	0	0
LA04	C	23-Jul-19	0	0	0	0	0	0	0	0	0	0	0	260.9	0
LA07	C	15-Jul-19	37.9	0	0	3.1	0	0	0	0	0	0	0	6.4	0
LA15	C	23-Jul-19	60.9	0	0	0	0	0	0	0	0	0	0	19.6	0
LA16	C	18-Jul-19	125.1	0	0	0	0	0	0	0	0	0	0	78.6	0
LA20	C	22-Jul-19	0	0	0	0	0	0	0	0	0	0	0	36.0	0
LA21	C	12-Jul-19	0	0	0	0	0	0	0	0	0	0	0	0	0
LE01	C	16-Jul-19	217.6	0	0	0	0	0	0	0	0	0	0	0	0
LES1	C	12-Jul-19	159.5	0	0	0	0	0	0	0	0	0	0	0	0
LC01	I	12-Jul-19	24.4	0	0	27.3	0	0	0	0	0	0	0	24.3	0
LC02	I	22-Jul-19	39.9	33.6	0	0.5	0	0	0	0	0	7.8	0	885.5	0
LC04	I	15-Jul-19	128.4	0	0	0	0	0	0	0	0	0	0	66.0	0
LC06	I	23-Jul-19	21.0	0	0	0	0	0	0	0	0	0	0	412.9	0
LC07	I	22-Jul-19	104.4	0	0	0	0	0	0	0	0	0	0	0	0
LC08	I	22-Jul-19	62.7	0	0	0	0	0	0	0	0	0	0	14.1	0
LC10	I	18-Jul-19	11.6	0	0	0	0	0	0	0	0	0	0	41.7	0
LC12	I	18-Jul-19	75.3	0	0	0	0	0	0	0	0	0	0	16.6	0
LC14	I	16-Jul-19	0	0	0	0	0	0	0	0	0	0	0	259.3	0
LC23	I	10-Jul-19	74.7	0	0	0	0	0	0	0	0	0	0	0	0
LCS4	I	16-Jul-19	1711.1	0	0	0	0	0	0	0	0	0	0	874.0	0
LDUR	I	10-Jul-19	0	9.8	0	0	0	0	0	0	0	0	0	129.0	0

Appendix 19a. Summary of fishes caught by backpack electrofisher from 39 summer sampling sites in the Greater Toronto Area, including moribund individuals.

Site Code	American Brook Lamprey	Ammoeocyte	Atlantic Salmon	Blacknose Dace	Bluegill	Bluntnose Minnow	Brassy Minnow	Brook Stickleback	Brook Trout	Brown Bullhead	Brown Trout	Central Stoneroller	Chinook Salmon	Coho Salmon	Common Carp	Common Shiner	Creek Chub	Cyprinid sp.	Fathead Minnow	Johnny Darter	Largemouth Bass	Logperch
Central11	0	0	0	33	0	0	0	91	0	0	0	0	0	0	0	0	100	0	19	34	0	0
Central3	0	0	0	8	0	2	0	0	0	0	0	0	0	0	0	0	13	0	4	7	0	0
Central4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Central5	0	0	0	21	0	0	0	0	0	0	0	0	2	0	0	0	2	0	3	79	0	0
Central6	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0
DF004WM	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	1	5	0	0	3	0	0
DF005WM	0	0	1	45	0	0	0	0	0	0	0	0	0	0	0	2	42	5	0	11	0	0
DF007WM	0	0	0	47	0	0	0	1	0	0	0	0	0	0	0	0	33	0	0	0	0	0
DF018WM	0	0	0	23	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	4	1	0
DF019WM	5	0	10	31	0	0	0	0	6	0	0	0	0	0	0	0	3	0	0	0	0	0
East5(BA01)	0	0	0	35	0	0	0	2	2	1	0	0	1	0	0	0	2	0	0	0	0	0
East6(BB02)	0	0	0	15	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0
East8(BB04)	0	0	0	1	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0
East9	0	0	0	15	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	5	0	0
LA01	0	0	0	9	0	7	0	0	0	0	0	0	0	0	0	4	33	0	0	0	0	0
LA04	0	0	0	53	0	0	0	1	0	0	0	0	0	0	0	2	42	0	4	39	1	0
LA07	0	0	0	31	0	0	0	0	0	0	0	0	0	0	0	1	4	0	4	9	0	0
LA15	0	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	28	0	0	0	0	0
LC01	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	3	0	0
LC02	0	0	0	55	0	2	0	0	0	0	0	0	0	0	0	7	32	0	1	10	0	1
LC06	0	0	0	54	0	0	0	0	0	0	0	0	0	0	0	2	39	0	2	64	0	0
LC07	0	0	0	51	0	0	0	0	0	0	0	0	0	0	0	0	39	0	7	6	0	0
LC08	0	0	0	51	0	0	0	0	0	0	0	0	0	0	0	0	14	0	1	2	0	0
LC10	0	0	0	15	0	0	0	0	20	0	0	0	0	0	0	0	19	0	0	0	0	0
LC23	0	0	0	55	0	1	0	0	0	0	0	0	0	0	0	4	4	0	3	12	0	0

Appendix 7a. continued

Site Code	Longnose Dace	Mimic Shiner	Mottled Sculpin	Northern Pike	Northern Redbelly Dace	Petromyzontidae sp.	Pumpkinseed	Rainbow Darter	Rainbow Trout	Reside Dace	Rock Bass	Rosyface Shiner	Round Goby	Salmonid	Sculpin sp.	Silver Lamprey	Slimy Sculpin	Smallmouth Bass	Spotfin Shiner	Stonecat	White Sucker	Yellow Perch
Central11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	0
Central3	10	0	72	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	9	0
Central4	5	0	16	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0
Central5	58	0	151	0	0	0	0	0	6	0	0	0	0	0	0	0	0	1	0	0	6	0
Central6	82	0	15	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	7	0
DF004WM	1	0	5	0	0	0	0	2	9	0	0	0	0	0	0	0	0	0	0	0	2	0
DF005WM	0	0	0	0	0	1	0	15	1	0	0	0	0	0	0	0	0	0	0	0	5	0
DF007WM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
DF018WM	2	0	9	0	0	0	0	1	18	0	0	0	0	0	0	0	0	0	0	0	1	0
DF019WM	102	0	0	0	0	0	0	70	0	0	0	0	0	0	0	0	0	0	0	0	7	0
East5(BA01)	206	0	0	0	0	0	0	9	5	0	0	0	40	0	0	0	0	5	0	0	19	0
East6(BB02)	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
East8(BB04)	0	0	16	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
East9	29	0	5	0	0	0	0	3	15	0	0	0	3	0	0	0	0	0	0	0	4	0
LA01	26	0	0	0	0	0	1	6	0	0	0	0	1	0	0	0	0	0	0	0	7	1
LA04	97	0	0	0	0	0	0	53	1	0	0	0	0	0	0	0	0	0	0	0	18	0
LA07	44	0	2	0	0	0	0	14	4	0	0	0	0	0	0	0	0	0	0	0	4	0
LA15	41	0	28	0	0	0	0	11	12	0	0	0	0	0	0	0	0	0	0	0	3	0
LC01	16	1	0	0	0	0	1	9	0	0	0	0	1	0	0	0	0	0	0	0	7	0
LC02	40	0	0	0	0	0	0	31	0	0	0	0	1	0	0	0	0	0	0	0	8	0
LC06	31	0	2	0	0	0	4	21	8	0	0	0	0	0	0	0	0	0	0	0	26	0
LC07	34	0	12	0	0	0	0	17	25	0	0	0	0	0	0	0	0	0	0	0	8	0
LC08	31	0	5	0	0	0	0	20	45	0	0	0	0	0	0	0	0	0	0	0	2	0
LC10	14	0	25	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	2	0
LC23	21	0	7	0	0	0	0	11	11	0	0	0	0	0	0	0	0	0	0	0	1	0

Appendix 7a. continued

Site Code	American Brook Lamprey	Ammoecyte	Atlantic Salmon	Blacknose Dace	Bluegill	Bluntnose Minnow	Brassy Minnow	Brook Stickleback	Brook Trout	Brown Bullhead	Brown Trout	Central Stoneroller	Chinook Salmon	Coho Salmon	Common Carp	Common Shiner	Creek Chub	Cyprinid sp.	Fathead Minnow	Johnny Darter	Largemouth Bass	Logperch
LDUR	0	0	0	30	0	6	0	0	0	0	0	0	0	0	0	18	29	0	2	31	0	1
LES1	0	4	0	0	0	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0
LT	0	0	0	86	0	0	0	6	0	0	0	0	0	0	0	6	47	0	1	4	0	0
RG003WM	0	0	0	9	0	0	0	2	0	0	0	0	0	0	0	0	14	0	0	0	0	0
RG004WM	0	0	0	19	0	2	0	8	0	0	0	0	0	0	0	0	30	0	1	8	0	0
RG005WM	0	0	0	20	0	0	0	5	0	1	0	0	0	0	0	0	21	0	20	16	0	0
RG010WM	0	0	0	23	1	0	0	0	0	0	0	22	0	0	1	0	5	0	0	2	0	0
RG015WM	0	0	0	3	0	9	0	0	0	0	0	0	0	0	0	2	43	0	8	9	1	0
RG016WM	7	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	6	0	0	8	2	0
RG017WM	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	12	0	1	3	1	0
RG021WM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	9	2	19	0	0	12	0	0
RG024WM	0	0	0	12	0	0	0	0	0	0	1	0	0	0	0	0	6	0	0	0	0	0
URDT	0	0	0	50	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	4	0	0
URU3	0	0	0	35	0	10	0	1	0	0	0	0	0	0	0	33	115	0	7	38	0	0

Appendix 7a. continued

Site Code	Longnose Dace	Mimic Shiner	Mottled Sculpin	Northern Pike	Northern Redbelly Dace	Petromyzontidae sp.	Pumpkinseed	Rainbow Darter	Rainbow Trout	Redside Dace	Rock Bass	Rosyface Shiner	Round Goby	Salmonid	Sculpin sp.	Silver Lamprey	Slimy Sculpin	Smallmouth Bass	Spotfin Shiner	Stonecat	White Sucker	Yellow Perch	
LDUR	21	0	0	0	0	0	0	33	2	0	0	0	0	0	0	0	0	0	0	0	7	0	
LES1	0	0	7	0	0	0	0	0	10	0	0	0	0	19	0	0	0	0	0	0	0	0	0
LT	18	0	7	0	0	0	0	11	3	5	0	0	0	0	0	0	0	0	0	0	6	0	
RG003WM	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	
RG004WM	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
RG005WM	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	
RG010WM	148	0	0	0	0	0	0	30	1	0	0	0	0	0	0	0	0	2	0	0	0	0	
RG015WM	40	0	0	0	0	0	0	39	0	0	0	0	0	0	0	0	0	0	0	0	4	0	
RG016WM	0	0	0	0	0	0	1	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	
RG017WM	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
RG021WM	28	0	1	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	4	0	
RG024WM	17	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	
URDT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	
URU3	3	0	0	0	0	1	1	22	0	0	0	0	0	0	0	0	0	0	0	0	38	0	

Appendix 20b. Summary of fishes caught by bag seine from 39 summer sampling sites in the Greater Toronto Area, including moribund individuals.

Site Code	American Brook Lamprey	Ammoecyte	Atlantic Salmon	Blacknose Dace	Bluegill	Blutnose Minnow	Brassy Minnow	Brook Stickleback	Brook Trout	Brown Bullhead	Brown Trout	Central Stoneroller	Chinook Salmon	Coho Salmon	Common Carp	Common Shiner	Creek Chub	Cyprinid sp.	Fathead Minnow	Johnny Darter	Largemouth Bass	Logperch
Central11	0	0	0	85	0	0	0	11	0	0	0	0	0	0	0	1	72	0	72	23	0	0
Central3	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	18	0	11	1	0	0
Central4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Central5	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	4	0	2	7	0	0
Central6	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	6	0	0
DF004WM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0
DF005WM	0	0	0	39	0	2	18	0	0	0	0	0	0	0	0	65	222	0	35	36	0	0
DF007WM	0	0	0	33	0	0	0	0	0	0	0	0	0	0	0	1	91	0	0	3	0	0
DF018WM	0	0	0	27	0	0	0	0	0	0	0	0	0	7	0	0	41	0	8	23	0	0
DF019WM	0	0	7	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
East5(BA01)	0	0	0	7	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
East6(BB02)	0	0	0	5	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
East8(BB04)	0	0	0	5	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
East9	0	0	0	17	0	16	0	0	0	0	0	0	0	1	0	0	0	0	0	34	0	0
LA01	0	0	0	28	0	26	0	0	0	0	0	0	0	0	0	188	132	0	32	41	0	1
LA04	0	0	0	15	0	15	0	0	0	0	0	0	0	0	0	971	204	0	91	233	0	0
LA07	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	6	14	0	2	11	0	0
LA15	0	0	0	41	0	0	0	0	0	0	0	0	0	0	0	5	10	0	2	0	0	0
LC01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	32	0	0	6	0	0
LC02	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	31	13	0	0	11	0	0
LC06	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0	70	63	0	9	341	0	0
LC07	0	0	0	28	0	0	0	0	0	0	0	0	0	0	0	13	59	0	8	18	0	0
LC08	0	0	0	39	0	0	0	0	0	0	0	0	0	0	0	4	33	0	19	2	0	0
LC10	0	0	0	41	0	0	0	0	0	0	0	0	0	0	0	5	59	0	0	1	0	0
LC23	0	0	0	101	0	0	0	0	0	0	0	0	0	0	0	9	104	0	2	49	0	0

Appendix 7b. continued

Site Code	Longnose Dace	Mimic Shiner	Mottled Sculpin	Northern Pike	Northern Redbelly Dace	Petromyzontidae sp.	Pumpkinseed	Rainbow Darter	Rainbow Trout	Redside Dace	Rock Bass	Rosyface Shiner	Round Goby	Salmonid	Sculpin sp.	Silver Lamprey	Slimy Sculpin	Smallmouth Bass	Spotfin Shiner	Stonecat	White Sucker	Yellow Perch
Central11	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0
Central3	6	0	3	0	0	0	0	0	17	0	0	0	0	0	0	0	0	0	0	0	3	0
Central4	3	0	2	0	0	0	0	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0
Central5	46	0	10	0	0	0	0	0	3	0	0	0	0	0	0	0	0	1	0	0	11	0
Central6	80	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	17	0
DF004WM	0	0	2	0	0	0	0	1	10	0	0	0	0	0	0	0	0	0	0	0	0	0
DF005WM	0	0	0	0	3	0	0	14	3	0	0	0	0	0	0	0	0	0	0	0	49	0
DF007WM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0
DF018WM	1	0	0	0	1	0	0	0	64	1	0	0	0	0	1	0	0	0	0	0	1	0
DF019WM	26	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
East5(BA01)	3	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	1	0
East6(BB02)	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
East8(BB04)	0	0	8	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
East9	34	0	0	0	0	0	0	0	2	0	0	0	10	0	0	0	0	0	0	0	2	0
LA01	51	0	0	0	0	0	0	27	0	0	0	7	22	0	0	0	0	0	0	0	93	0
LA04	87	0	0	0	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	83	0
LA07	2	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	4	0
LA15	24	0	2	0	1	0	0	4	65	0	0	0	0	0	0	0	0	0	0	0	4	0
LC01	0	0	0	22	0	0	0	2	0	0	1	0	3	0	0	0	0	0	0	0	24	0
LC02	1	0	0	2	0	0	0	4	0	0	1	0	2	0	0	0	0	0	0	0	15	0
LC06	6	0	1	0	0	0	1	19	3	0	0	0	0	0	0	0	0	0	0	0	58	0
LC07	17	0	1	0	0	0	0	12	38	0	0	0	0	0	0	0	0	0	0	0	9	0
LC08	1	0	1	0	0	0	1	0	16	0	0	0	0	0	0	0	0	0	0	0	47	0
LC10	3	0	2	0	0	0	4	9	64	0	0	0	0	0	0	0	0	0	0	0	45	0
LC23	92	0	2	0	0	0	1	95	32	0	0	0	0	0	0	0	0	0	0	0	111	0

Appendix 7b. continued

Site Code	American Brook Lamprey	Ammoecyte	Atlantic Salmon	Blacknose Dace	Bluegill	Bluntnose Minnow	Brassy Minnow	Brook Stickleback	Brook Trout	Brown Bullhead	Brown Trout	Central Stoneroller	Chinook Salmon	Coho Salmon	Common Carp	Common Shiner	Creek Chub	Cyprinid sp.	Fathead Minnow	Johnny Darter	Largemouth Bass	Logperch
LDUR	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	57	13	0	0	13	0	0
LES1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
LT	0	0	0	102	0	0	0	16	0	0	0	0	0	0	0	2	82	0	2	10	0	0
RG003WM	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	0
RG004WM	0	0	0	81	0	1	0	0	0	0	0	0	0	0	0	0	40	0	0	0	0	0
RG005WM	0	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	21	0	22	9	0	0
RG010WM	0	0	0	44	0	1	1	0	0	0	0	7	0	0	0	6	29	0	22	8	0	0
RG015WM	0	0	0	1	0	3	0	2	0	0	0	0	0	0	0	2	6	0	2	0	0	0
RG016WM	0	0	0	17	0	1	0	2	0	0	0	0	0	1	0	35	49	0	3	75	0	0
RG017WM	0	0	0	11	0	0	0	1	0	0	0	0	0	0	0	23	79	0	21	58	0	0
RG021WM	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	2	45	0	1	18	0	0
RG024WM	0	0	0	43	0	0	0	2	0	0	0	0	0	0	0	0	7	0	0	1	0	0
URDT	0	0	0	37	0	0	0	0	0	0	0	0	0	0	0	0	181	4	0	6	0	0
URU3	0	0	0	39	0	2	0	0	0	0	0	0	0	0	0	130	138	1650*	22	53	0	0

*This number includes approximately 1,500 YOY cyprinids released without weighing to mitigate mortality.

Appendix 7b. continued

Site Code	Longnose Dace	Mimic Shiner	Mottled Sculpin	Northern Pike	Northern Redbelly Dace	Petromyzontidae sp.	Pumpkinseed	Rainbow Darter	Rainbow Trout	Redside Dace	Rock Bass	Rosyface Shiner	Round Goby	Salmonid	Sculpin sp.	Silver Lamprey	Slimy Sculpin	Smallmouth Bass	Spotfin Shiner	Stonecat	White Sucker	Yellow Perch
LDUR	19	0	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	18	0
LES1	0	0	3	0	0	0	0	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0
LT	7	0	14	0	0	0	0	13	0	16	0	0	0	0	0	0	0	0	0	0	17	0
RG003WM	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RG004WM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
RG005WM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
RG010WM	7	0	0	0	3	0	0	3	5	0	0	0	0	0	0	0	0	0	0	0	63	0
RG015WM	49	0	0	0	0	0	0	7	8	0	0	0	0	0	0	0	0	0	0	0	1	0
RG016WM	0	0	0	0	0	0	0	0	4	9	0	0	0	0	0	0	0	0	0	0	35	0
RG017WM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	56	0
RG021WM	2	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	28	0
RG024WM	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0
URDT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	0
URU3	3	0	0	0	4	0	0	22	2	2	0	0	0	0	0	0	0	0	0	0	22	0

Appendix 21c. Summary of fishes caught by backpack electrofisher from 39 fall sampling sites in the Greater Toronto Area, including moribund individuals.

Site Code	American Brook Lamprey	Ammoecyte	Atlantic Salmon	Blacknose Dace	Bluegill	Bluntnose Minnow	Brassy Minnow	Brook Stickleback	Brook Trout	Brown Bullhead	Brown Trout	Central Stoneroller	Chinook Salmon	Coho Salmon	Common Carp	Common Shiner	Creek Chub	Cyprinid sp.	Fathead Minnow	Johnny Darter	Largemouth Bass	Logperch
Central11	0	0	0	67	0	0	0	22	0	0	0	0	0	0	0	1	93	0	132	18	0	0
Central3	0	0	0	90	0	0	0	0	0	0	0	0	0	0	0	0	17	0	23	8	0	0
Central4	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Central5	0	0	0	59	0	0	0	0	0	0	0	0	1	0	0	0	50	0	8	68	0	0
Central6	0	0	0	136	0	0	0	0	0	0	0	0	0	0	0	0	8	0	3	5	0	0
DF004WM	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	67	0	0	2	0	0
DF005WM	0	2	0	32	0	4	0	0	0	0	0	0	0	0	0	21	85	1	0	8	0	0
DF007WM	0	0	0	98	0	0	0	0	0	0	0	0	0	0	0	14	101	0	0	1	0	0
DF018WM	0	0	0	31	0	0	0	0	0	0	0	0	2	0	0	1	20	0	0	14	2	0
DF019WM	0	1	56	55	0	0	0	0	9	0	0	0	0	0	0	0	6	0	0	0	0	0
East5(BA01)	0	0	0	37	0	1	0	0	0	0	1	0	2	0	0	2	0	0	0	0	0	0
East6(BB02)	0	0	0	8	0	0	0	0	0	0	19	0	0	0	0	0	1	0	0	0	0	0
East8(BB04)	0	0	0	1	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
East9	0	0	0	17	0	14	0	0	0	0	0	0	1	1	0	1	0	0	0	18	0	0
LA01	0	0	0	6	0	3	0	0	0	0	0	0	0	0	0	7	4	0	2	8	0	0
LA04	0	0	0	206	0	0	0	0	0	5	0	0	0	0	0	11	60	0	6	46	0	0
LA07	0	0	0	53	0	0	0	0	0	0	0	0	0	0	0	4	29	0	2	10	1	0
LA15	0	0	0	34	0	0	0	0	0	0	0	0	0	0	0	0	41	0	0	3	0	0
LC01	0	0	0	1	0	2	0	0	0	1	0	0	0	0	0	6	30	0	1	7	0	0
LC02	0	0	0	22	0	18	0	0	0	0	0	0	0	0	0	27	27	0	1	14	0	1
LC06	0	0	0	241	0	2	0	0	0	0	0	0	0	0	0	27	69	0	3	59	0	0
LC07	0	0	0	72	0	0	0	0	0	0	0	0	0	0	0	0	36	0	6	6	0	0
LC08	0	0	0	59	0	0	0	0	1	0	0	0	0	0	0	0	38	0	1	2	0	0
LC10	0	0	0	30	0	0	0	0	0	1	0	0	0	0	0	0	28	0	0	0	0	0
LC23	0	0	0	38	0	0	0	0	0	0	0	0	0	0	0	4	21	0	1	20	0	0

Appendix 7c. continued

Site Code	Longnose Dace	Mimic Shiner	Mottled Sculpin	Northern Pike	Northern Redbelly Dace	Petromyzontidae sp.	Pumpkinseed	Rainbow Darter	Rainbow Trout	Redside Dace	Rock Bass	Rosyface Shiner	Round Goby	Salmonid	Sculpin sp.	Silver Lamprey	Slimy Sculpin	Smallmouth Bass	Spotfin Shiner	Stonecat	White Sucker	Yellow Perch
Central11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	0
Central3	22	0	42	0	0	0	0	0	108	0	0	0	0	0	0	0	0	0	0	0	21	0
Central4	32	0	13	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	5	0
Central5	44	0	42	0	0	0	2	0	10	0	0	0	0	0	0	0	0	4	0	0	66	0
Central6	217	0	22	0	0	0	2	0	0	0	0	0	6	0	0	0	0	0	0	0	24	0
DF004WM	2	0	6	0	0	0	0	4	2	0	0	0	0	0	0	0	0	0	0	0	14	0
DF005WM	0	0	0	0	0	0	2	9	10	0	0	0	0	0	0	0	0	0	0	0	20	0
DF007WM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0
DF018WM	0	0	19	0	0	0	0	0	10	0	0	0	0	0	0	0	10	0	0	0	22	0
DF019WM	15	0	0	0	0	0	0	22	0	0	0	0	0	0	0	0	0	0	0	0	32	0
East5(BA01)	333	0	0	0	0	0	5	37	14	0	1	0	47	0	0	0	0	0	0	0	16	0
East6(BB02)	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
East8(BB04)	0	0	22	0	0	0	0	0	5	0	0	0	0	0	0	1	0	0	0	0	0	0
East9	63	0	3	0	0	0	0	2	18	0	0	0	22	0	0	0	0	0	0	0	28	0
LA01	11	0	0	0	0	0	10	13	0	0	1	0	5	0	0	0	0	0	0	0	5	0
LA04	49	0	0	0	0	0	1	19	0	0	0	0	0	0	0	0	0	0	1	0	16	0
LA07	26	0	6	0	0	0	0	28	5	0	0	0	0	0	0	0	0	0	0	0	10	0
LA15	40	0	47	0	0	0	0	13	9	0	0	0	0	0	0	0	0	0	0	0	1	0
LC01	9	0	0	0	0	0	2	15	0	0	4	0	5	0	0	0	0	1	0	0	9	1
LC02	13	0	0	0	0	0	0	15	0	0	1	0	2	0	0	0	0	3	0	0	34	3
LC06	31	0	3	0	0	0	0	47	32	0	0	0	0	0	0	0	0	0	0	0	17	0
LC07	18	0	23	0	0	0	0	19	13	0	0	0	0	0	0	0	0	0	0	0	23	0
LC08	10	0	7	0	0	0	0	11	27	0	0	0	0	0	0	0	0	0	0	0	10	0
LC10	10	0	12	0	0	0	0	6	15	0	0	0	0	0	0	0	0	0	0	0	9	0
LC23	13	0	4	0	0	0	0	32	3	0	0	0	0	0	0	0	0	0	0	0	5	0

Appendix 7c. continued

Site Code	American Brook Lamprey	Ammoecyte	Atlantic Salmon	Blacknose Dace	Bluegill	Blutnose Minnow	Brassy Minnow	Brook Stickleback	Brook Trout	Brown Bullhead	Brown Trout	Central Stoneroller	Chinook Salmon	Coho Salmon	Common Carp	Common Shiner	Creek Chub	Cyprinid sp.	Fathead Minnow	Johnny Darter	Largemouth Bass	Logperch
LDUR	0	0	0	11	0	6	0	0	0	0	0	2	2	0	0	25	33	0	5	20	0	4
LES1	0	0	0	2	0	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0
LT	1	0	0	76	0	6	0	3	0	1	0	0	0	0	0	2	52	0	6	3	0	0
RG003WM	0	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	9	0	1	0	0	0
RG004WM	0	0	0	60	0	4	0	2	0	0	0	0	0	0	0	0	51	0	0	31	0	0
RG005WM	0	0	0	60	0	0	0	8	0	0	0	0	0	0	0	0	182	0	243	45	0	0
RG010WM	0	0	0	27	0	0	0	0	0	0	0	8	0	0	0	7	13	0	0	9	0	0
RG015WM	0	0	0	14	0	15	0	0	0	0	0	0	0	0	0	2	20	0	1	41	2	0
RG016WM	0	0	0	16	0	53	0	0	0	0	0	0	0	0	0	20	72	0	0	50	5	0
RG017WM	0	0	0	29	0	0	0	0	0	0	0	0	0	0	1	0	21	0	1	8	3	0
RG021WM	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0	1	25	0	0	49	1	0
RG024WM	0	0	0	67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
URDT	0	0	0	114	0	0	0	0	0	0	0	0	0	0	0	13	194	0	1	4	0	0
URU3	0	0	0	34	0	21	15	0	0	0	0	0	0	0	0	61	71	0	9	11	0	0

Appendix 7c. continued

Site Code	Longnose Dace	Mimic Shiner	Mottled Sculpin	Northern Pike	Northern Redbelly Dace	Petromyzontidae sp.	Pumpkinseed	Rainbow Darter	Rainbow Trout	Redside Dace	Rock Bass	Rosyface Shiner	Round Goby	Salmonid	Sculpin sp.	Silver Lamprey	Slimy Sculpin	Smallmouth Bass	Spotfin Shiner	Stonecat	White Sucker	Yellow Perch
LDUR	13	0	0	0	0	0	25	14	0	0	0	0	0	0	0	0	0	2	0	0	13	0
LES1	0	0	8	0	0	0	0	0	46	0	0	0	0	0	0	2	0	0	0	0	0	0
LT	10	0	8	0	0	0	0	9	0	6	0	0	0	0	0	0	0	0	0	0	18	0
RG003WM	52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RG004WM	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RG005WM	5	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0
RG010WM	39	0	0	0	0	0	0	11	7	0	0	0	0	0	0	0	0	3	0	0	0	0
RG015WM	30	0	0	0	0	0	0	49	5	0	0	0	0	0	0	0	0	0	0	0	4	0
RG016WM	3	0	0	0	0	0	0	2	1	7	2	0	0	0	0	2	0	0	0	0	41	0
RG017WM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0
RG021WM	11	0	0	0	0	0	0	22	0	0	0	0	0	0	0	0	0	0	0	1	0	0
RG024WM	27	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
URDT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0
URU3	0	0	0	0	0	0	5	15	1	0	0	0	0	0	0	0	0	0	0	0	49	0

Appendix 22a. Summary of biomass (g) collected by backpack electrofisher from 39 Greater Toronto Area sites in the summer of 2018 and 2019, including moribund individuals.

Site Code	American Brook Lamprey	Ammoecyte	Atlantic Salmon	Blacknose Dace	Bluegill	Bluntnose Minnow	Brassy Minnow	Brook Stickleback	Brook Trout	Brown Bullhead	Brown Trout	Central Stoneroller	Chinook Salmon	Coho Salmon	Common Carp	Common Shiner	Creek Chub	Cyprinid sp.	Fathead Minnow	Johnny Darter	Largemouth Bass
Central11	0	0	0	88.5	0	0	0	29.7	0	0	0	0	0	0	0	0	262.5	0	6.3	10.5	0
Central3	0	0	0	20.0	0	1.0	0	0	0	0	0	0	0	0	0	0	20.5	0	1.1	10.5	0
Central4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.0	0	0
Central5	0	0	0	77.2	0	0	0	0	0	0	0	0	10.0	0	0	0	0.7	0	1.6	36.1	0
Central6	0	0	0	19.5	0	0	0	0	0	0	0	0	0	0	0	0	0.6	0	0	0.1	0
DF004WM	0	0	0	14.4	0	0	0	0	0	0	0	0	0	0	0	4.0	47.0	0	0	3.0	0
DF005WM	0	0	10.0	40.4	0	0	0	0	0	0	0	0	0	0	0	4.0	281.4	0.5	0	15.2	0
DF007WM	0	0	0	134.2	0	0	0	1.0	0	0	0	0	0	0	0	0	195.4	0	0	0	0
DF018WM	0	0	0	56.1	0	0	0	0	0	0	0	0	0	0	0	0	38.3	0	0	0.4	2.0
DF019WM	32.0	0	88.0	89.5	0	0	0	0	114.0	0	0	0	0	0	0	0	2.1	0	0	0	0
East5(BA01)	0	0	0	62.6	0	0	0	1.0	0.4	33.0	0	0	2.0	0	0	0	1.0	0	0	0	0
East6(BB02)	0	0	0	66.0	0	0	0	0	0	0	472.0	0	0	0	0	0	0	0	0	0	0
East8(BB04)	0	0	0	5.0	0	0	0	0	0	0	538.0	0	0	0	0	0	0	0	0	0	0
East9	0	0	0	11.5	0	0	0	0	0	0	360.0	0	0.5	0	0	0	0	0	0	1.5	0
LA01	0	0	0	23.7	0	7.2	0	0	0	0	0	0	0	0	0	32.6	151.0	0	0	0	0
LA04	0	0	0	142.2	0	0	0	1.0	0	0	0	0	0	0	0	28.4	320.2	0	8.0	65.5	2.3
LA07	0	0	0	119.5	0	0	0	0	0	0	0	0	0	0	0	16.3	83.6	0	7.0	22.7	0
LA15	0	0	0	92.1	0	0	0	0	0	0	0	0	0	0	0	0	52.5	0	0	0	0
LC01	0	0	0	15.6	0	0	0	0	0	0	0	0	0	0	0	0	88.0	0	0	4.5	0
LC02	0	0	0	116.3	0	11.2	0	0	0	0	0	0	0	0	0	70.0	366.2	0	2.5	24.2	0
LC06	0	0	0	142.7	0	0	0	0	0	0	0	0	0	0	0	13.8	611.3	0	3.2	94.0	0
LC07	0	0	0	229.2	0	0	0	0	0	0	0	0	0	0	0	0	501.6	0	17.3	15.8	0
LC08	0	0	0	168.0	0	0	0	0	0	0	0	0	0	0	0	0	160.3	0	1.5	5.0	0
LC10	0	0	0	50.2	0	0	0	0	165.7	0	0	0	0	0	0	0	160.2	0	0	0	0
LC23	0	0	0	216.6	0	4.6	0	0	0	0	0	0	0	0	0	60.2	54.6	0	9.5	24.3	0

Appendix 8a. continued

Site Code	Logperch	Longnose Dace	Mimic Shiner	Mottled Sculpin	Northern Pike	Northern Redbelly Dace	Petromyzontidae sp.	Pumpkinseed	Rainbow Darter	Rainbow Trout	Redside Dace	Rock Bass	Rosyface Shiner	Round Goby	Salmonid	Sculpin sp.	Silver Lamprey	Slimy Sculpin	Smallmouth Bass	Spotfin Shiner	Stonecat	White Sucker	Yellow Perch
Central11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32.5	0
Central3	0	22.5	0	24.1	0	0	0	0	0	13.2	0	0	0	0	0	0	0	0	0	0	0	4.1	0
Central4	0	18.0	0	30.5	0	0	0	0	0	1.0	0	0	0	0	0	0	0	0	0	0	0	1.0	0
Central5	0	64.8	0	110.2	0	0	0	0	0	96.5	0	0	0	0	0	0	0	0	0.5	0	0	1.3	0
Central6	0	239.2	0	17.2	0	0	0	0	0	0	0	0	0	1.1	0	0	0	0	0	0	0	7.5	0
DF004WM	0	9.0	0	12.1	0	0	0	0	3.0	3.6	0	0	0	0	0	0	0	0	0	0	0	1.1	0
DF005WM	0	0	0	0	0	0	3.0	0	27.1	1.0	0	0	0	0	0	0	0	0	0	0	0	59.0	0
DF007WM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	77.0	0
DF018WM	0	12.0	0	7.8	0	0	0	0	2.0	18.4	0	0	0	0	0	0	0	0	0	0	0	0.1	0
DF019WM	0	151.2	0	0	0	0	0	0	93.4	0	0	0	0	0	0	0	0	0	0	0	0	8.1	0
East5(BA01)	0	815.5	0	0	0	0	0	0	25.0	146.2	0	0	0	109.0	0	0	0	0	1.0	0	0	7.0	0
East6(BB02)	0	0	0	66.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
East8(BB04)	0	0	0	51.1	0	0	0	0	0	127.0	0	0	0	0	0	0	0	0	0	0	0	0	0
East9	0	106.5	0	1.2	0	0	0	0	4.5	145.0	0	0	0	13.0	0	0	0	0	0	0	0	2.0	0
LA01	0	114.6	0	0	0	0	0	8.6	7.7	0	0	0	0	6.2	0	0	0	0	0	0	0	52.4	1.4
LA04	0	220.6	0	0	0	0	0	0	63.2	20.6	0	0	0	0	0	0	0	0	0	0	0	32.7	0
LA07	0	250.5	0	3.4	0	0	0	0	30.6	106.2	0	0	0	0	0	0	0	0	0	0	0	91.0	0
LA15	0	162.4	0	75.1	0	0	0	0	16.2	176.2	0	0	0	0	0	0	0	0	0	0	0	0.8	0
LC01	0	50.5	1.0	0	0	0	0	5.5	13.2	0	0	0	0	10.6	0	0	0	0	0	0	0	3.9	0
LC02	15.2	153.8	0	0	0	0	0	0	67.8	0	0	0	0	4.4	0	0	0	0	0	0	0	237.0	0
LC06	0	28.8	0	20.2	0	0	0	44.6	43.3	133.8	0	0	0	0	0	0	0	0	0	0	0	1287.5	0
LC07	0	174.5	0	38.2	0	0	0	0	39.1	118.0	0	0	0	0	0	0	0	0	0	0	0	55.2	0
LC08	0	158.2	0	25.5	0	0	0	0	34.9	226.3	0	0	0	0	0	0	0	0	0	0	0	1.3	0
LC10	0	72.5	0	166.7	0	0	0	0	7.1	24.4	0	0	0	0	0	0	0	0	0	0	0	4.4	0
LC23	0	129.9	0	48.2	0	0	0	0	24.3	77.6	0	0	0	0	0	0	0	0	0	0	0	0.2	0

Appendix 8a. continued

Site Code	American Brook Lamprey	Ammoecyte	Atlantic Salmon	Blacknose Dace	Bluegill	Bluntnose Minnow	Brassy Minnow	Brook Stickleback	Brook Trout	Brown Bullhead	Brown Trout	Central Stoneroller	Chinook Salmon	Coho Salmon	Common Carp	Common Shiner	Creek Chub	Cyprinid sp.	Fathead Minnow	Johnny Darter	Largemouth Bass	
LDUR	0	0	0	83.4	0	28.4	0	0	0	0	0	0	0	0	0	161.7	333.3	0	3.7	47.5	0	
LES1	0	12.0	0	0	0	0	0	0	614.0	0	0	0	0	0	0	0	0	0	0	0	0	0
LT	0	0	0	187.8	0	0	0	4.0	0	0	0	0	0	0	0	44.6	472.2	0	3.2	4.2	0	
RG003WM	0	0	0	32.0	0	0	0	4.0	0	0	0	0	0	0	0	0	239.0	0	0	0	0	0
RG004WM	0	0	0	63.1	0	13.0	0	0.8	0	0	0	0	0	0	0	0	249.0	0	2.0	6.3	0	
RG005WM	0	0	0	83.4	0	0	0	5.1	0	7.0	0	0	0	0	0	0	82.1	0	15.2	20.1	0	
RG010WM	0	0	0	81.3	3.0	0	0	0	0	0	0	122.0	0	0	6.0	0	10.0	0	0	0.2	0	
RG015WM	0	0	0	12.0	0	34.0	0	0	0	0	0	0	0	0	0	4.0	124.2	0	14.1	4.7	10.0	
RG016WM	70.0	0	0	4.0	0	0	0	0	0	0	0	0	0	0	0	7.0	50.0	0	0	10.1	19.0	
RG017WM	0	0	0	35.0	0	0	0	0	0	0	0	0	0	0	0	0	124.0	0	4.0	0.3	2.0	
RG021WM	0	0	0	5.0	0	0	0	0	0	0	0	0	0	0	120.0	21.0	392.1	0	0	6.9	0	
RG024WM	0	0	0	50.0	0	0	0	0	0	0	549.0	0	0	0	0	0	153.0	0	0	0	0	
URDT	0	0	0	184.2	0	0	0	0	0	0	0	0	0	0	0	0	353.5	0	0	5.1	0	
URU3	0	0	0	32.4	0	36.0	0	0.1	0	0	0	0	0	0	0	82.5	594.4	0	20.0	34.5	0	

Appendix 8a. continued

Site Code	Logperch	Longnose Dace	Mimic Shiner	Mottled Sculpin	Northern Pike	Northern Redbelly Dace	Petromyzontidae sp.	Pumpkinseed	Rainbow Darter	Rainbow Trout	Redside Dace	Rock Bass	Rosyface Shiner	Round Goby	Salmonid	Sculpin sp.	Silver Lamprey	Slimy Sculpin	Smallmouth Bass	Spotfin Shiner	Stonecat	White Sucker	Yellow Perch
LDUR	8.4	73.2	0	0	0	0	0	0	53.7	28.5	0	0	0	0	0	0	0	0	0	0	0	90.7	0
LES1	0	0	0	26.0	0	0	0	0	0	171.2	0	0	0	0	6.3	0	0	0	0	0	0	0	0
LT	0	65.6	0	31.2	0	0	0	0	18.1	7.4	14.4	0	0	0	0	0	0	0	0	0	0	117.2	0
RG003WM	0	220.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31.0	0
RG004WM	0	43.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RG005WM	0	38.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	428.0	0
RG010WM	0	955.0	0	0	0	0	0	0	18.6	5.0	0	0	0	0	0	0	0	0	18.0	0	0	0	0
RG015WM	0	117.2	0	0	0	0	0	0	34.6	0	0	0	0	0	0	0	0	0	0	0	0	7.0	0
RG016WM	0	0	0	0	0	0	0	21.0	1.0	0	18.0	0	0	0	0	0	0	0	0	0	0	0	0
RG017WM	0	13.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RG021WM	0	118.0	0	1.0	0	0	0	0	9.7	0	0	0	0	0	0	0	0	0	0	0	0	92.0	0
RG024WM	0	61.1	0	22.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	232.0	0
URDT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	83.0	0
URU3	0	3.1	0	0	0	0	7.0	10.0	44.2	0	0	0	0	0	0	0	0	0	0	0	0	333.1	0

Appendix 23b. Summary of biomass (g) collected by seine from 39 Greater Toronto Area sites in the summer of 2018 and 2019, including moribund individuals.

Site Code	American Brook Lamprey	Ammocyte	Atlantic Salmon	Blacknose Dace	Bluegill	Bluntnose Minnow	Brassy Minnow	Brook Stickleback	Brook Trout	Brown Bullhead	Brown Trout	Central Stoneroller	Chinook Salmon	Coho Salmon	Common Carp	Common Shiner	Creek Chub	Cyprinid sp.	Fathead Minnow	Johnny Darter	Largemouth Bass
Central11	0	0	0	261.1	0	0	0	10.5	0	0	0	0	0	0	0	6.1	358.7	0	98.2	26.6	0
Central3	0	0	0	19.8	0	0	0	0	0	0	0	0	0	0	0	0	12.8	0	7.7	1.3	0
Central4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Central5	0	0	0	6.9	0	0	0	0	0	0	0	0	0	0	0	0	5.3	0	1.8	6.0	0
Central6	0	0	0	17.1	0	0	0	0	0	0	0	0	0	0	0	0	2.9	0	0	6.3	0
DF004WM	0	0	0	1.3	0	0	0	0	0	0	0	0	0	0	0	0	12.2	0	0	0	0
DF005WM	0	0	0	72.9	0	2.4	82.9	0	0	0	0	0	0	0	0	192.2	405.8	0	75.5	24.2	0
DF007WM	0	0	0	55.3	0	0	0	0	0	0	0	0	0	0	0	0.8	193.5	0	0	0.6	0
DF018WM	0	0	0	106.1	0	0	0	0	0	0	0	0	0	24.1	0	0	104.0	0	17.2	35.1	0
DF019WM	0	0	64.6	17.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
East5(BA01)	0	0	0	1.4	0	1.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0
East6(BB02)	0	0	0	6.7	0	0	0	0	0	0	4.0	0	0	0	0	0	0	0	0	0	0
East8(BB04)	0	0	0	0.8	0	0	0	0	0	0	3.0	0	0	0	0	0	0	0	0	0	0
East9	0	0	0	7.6	0	17.5	0	0	0	0	0	0	0	2.9	0	0	0	0	0	41.0	0
LA01	0	0	0	86.0	0	25.8	0	0	0	0	0	0	0	0	0	69.6	308.6	0	23.9	28.9	0
LA04	0	0	0	25.0	0	14.3	0	0	0	0	0	0	0	0	0	940.0	502.0	0	117.6	96.5	0
LA07	0	0	0	9.8	0	0	0	0	0	0	0	0	0	0	0	52.9	34.4	0	0.9	9.4	0
LA15	0	0	0	146.0	0	0	0	0	0	0	0	0	0	0	0	12.0	36.7	0	5.0	0	0
LC01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	76.3	461.7	0	0	7.3	0
LC02	0	0	0	4.4	0	0	0	0	0	0	0	0	0	0	0	280.0	70.8	0	0	10.0	0
LC06	0	0	0	36.5	0	0	0	0	0	0	0	0	0	0	0	128.0	147.0	0	22.4	193.7	0
LC07	0	0	0	35.1	0	0	0	0	0	0	0	0	0	0	0	27.7	287.5	0	12.3	23.9	0
LC08	0	0	0	37.4	0	0	0	0	0	0	0	0	0	0	0	9.3	67.9	0	27.0	2.2	0
LC10	0	0	0	108.5	0	0	0	0	0	0	0	0	0	0	0	12.2	377.7	0	0	1.5	0
LC23	0	0	0	120.1	0	0	0	0	0	0	0	0	0	0	0	84.0	193.3	0	8.1	35.8	0

Appendix 8b. continued

Site Code	Logperch	Longnose Dace	Mimic Shiner	Mottled Sculpin	Northern Pike	Northern Redbelly Dace	Petromyzontidae sp.	Pumpkinseed	Rainbow Darter	Rainbow Trout	Redside Dace	Rock Bass	Rosyface Shiner	Round Goby	Salmonid	Sculpin sp.	Silver Lamprey	Slimy Sculpin	Smallmouth Bass	Spotfin Shiner	Stonecat	White Sucker	Yellow Perch
Central11	0	0	0	0	0	0	0	9.1	0	2.2	0	0	0	0	0	0	0	0	0	0	0	11.2	0
Central3	0	5.9	0	1.0	0	0	0	0	0	28.8	0	0	0	0	0	0	0	0	0	0	0	2.5	0
Central4	0	16.7	0	2.4	0	0	0	0	0	18.9	0	0	0	0	0	0	0	0	0	0	0	0	0
Central5	0	51.6	0	4.5	0	0	0	0	0	10.8	0	0	0	0	0	0	0	0	2.2	0	0	16.3	0
Central6	0	109.2	0	0	0	0	0	0	0	0	0	0	0	2.5	0	0	0	0	0	0	0	41.3	0
DF004WM	0	0	0	1.8	0	0	0	0	0.7	6.5	0	0	0	0	0	0	0	0	0	0	0	0	0
DF005WM	0	0	0	0	0	4.8	0	0	7.6	4.6	0	0	0	0	0	0	0	0	0	0	0	90.3	0
DF007WM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15.6	0
DF018WM	0	12.0	0	0	0	2.0	0	0	0	73.6	2.4	0	0	0	0	0.1	0	0	0	0	0	0.2	0
DF019WM	0	51.0	0	0	0	0	0	0	2.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
East5(BA01)	0	2.4	0	0	0	0	0	0	2.1	0	0	0	0	0	0	0	0	0	0.5	0	0	0.5	0
East6(BB02)	0	0	0	4.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
East8(BB04)	0	0	0	1.5	0	0	0	0	0	1.6	0	0	0	0	0	0	0	0	0	0	0	0	0
East9	0	94.1	0	0	0	0	0	0	0	22.8	0	0	0	27.1	0	0	0	0	0	0	0	0.9	0
LA01	2.4	57.9	0	0	0	0	0	0	16.2	0	0	0	4.1	15.8	0	0	0	0	0	0	0	99.3	0
LA04	0	74.9	0	0	0	0	0	0	10.8	0	0	0	0	0	0	0	0	0	0	0	0	134.4	0
LA07	0	3.5	0	0	0	0	0	0	7.0	15.0	0	0	0	0	0	0	0	0	0	0	0	7.2	0
LA15	0	86.4	0	1.7	0	1.6	0	0	3.8	36.1	0	0	0	0	0	0	0	0	0	0	0	0.4	0
LC01	0	0	0	0	259.8	0	0	0	1.6	0	0	7.1	0	22.2	0	0	0	0	0	0	0	230.8	0
LC02	0	4.0	0	0	12.2	0	0	0	1.7	0	0	0.1	0	15.3	0	0	0	0	0	0	0	160.1	0
LC06	0	2.2	0	0.9	0	0	0	7.7	13.1	84.2	0	0	0	0	0	0	0	0	0	0	0	115.2	0
LC07	0	64.1	0	2.9	0	0	0	0	14.9	39.1	0	0	0	0	0	0	0	0	0	0	0	2.8	0
LC08	0	2.4	0	1.0	0	0	0	1.8	0	23.6	0	0	0	0	0	0	0	0	0	0	0	11.6	0
LC10	0	16.2	0	2.3	0	0	0	12.2	11.1	131.2	0	0	0	0	0	0	0	0	0	0	0	114.0	0
LC23	0	49.7	0	1.3	0	0	0	8.6	42.7	34.5	0	0	0	0	0	0	0	0	0	0	0	126.8	0

Appendix 8b. continued

Site Code	American Brook Lamprey	Ammoecyte	Atlantic Salmon	Blacknose Dace	Bluegill	Bluntnose Minnow	Brassy Minnow	Brook Stickleback	Brook Trout	Brown Bullhead	Brown Trout	Central Stoneroller	Chinook Salmon	Coho Salmon	Common Carp	Common Shiner	Creek Chub	Cyprinid sp.	Fathead Minnow	Johnny Darter	Largemouth Bass
LDUR	0	0	0	14.4	0	0	0	0	0	0	0	0	0	0	0	355.6	87.9	0	0	9.0	0
LES1	0	0	0	0	0	0	0	0	3.0	0	0	0	0	0	0	0	0	0	0	0	0
LT	0	0	0	269.8	0	0	0	17.9	0	0	0	0	0	0	0	5.6	241.0	0	4.5	11.7	0
RG003WM	0	0	0	8.1	0	0	0	0	0	0	0	0	0	0	0	0	23.3	0	0	0	0
RG004WM	0	0	0	243.2	0	1.2	0	0	0	0	0	0	0	0	0	0	93.5	0	0	0	0
RG005WM	0	0	0	10.6	0	0	0	5.3	0	0	0	0	0	0	0	0	92.8	0	29.7	12.0	0
RG010WM	0	0	0	10.6	0	3.8	2.6	0	0	0	0	17.1	0	0	0	73.7	44.9	0	44.7	18.9	0
RG015WM	0	0	0	3.1	0	8.6	0	0.9	0	0	0	0	0	0	0	18.9	120.5	0	3.5	0	0
RG016WM	0	0	0	28.6	0	0.9	0	1.5	0	0	0	0	0	4.1	0	138.6	205.1	0	5.6	38.7	0
RG017WM	0	0	0	34.9	0	0	0	0.5	0	0	0	0	0	0	0	52.5	679.9	0	36.7	71.5	0
RG021WM	0	0	0	2.7	0	0.8	0	0	0	0	0	0	0	0	0	11.7	9.5	0	2.4	7.5	0
RG024WM	0	0	0	96.2	0	0	0	0.2	0	0	0	0	0	0	0	0	88.9	0	0	1.9	0
URDT	0	0	0	33.9	0	0	0	0	0	0	0	0	0	0	0	0	255.4	0.4	0	5.8	0
URU3	0	0	0	105.4	0	10.1	0	0	0	0	0	0	0	0	0	401.0	771.3	47.6	61.6	26.0	0

Appendix 8b. continued

Site Code	Logperch	Longnose Dace	Mimic Shiner	Mottled Sculpin	Northern Pike	Northern Redbelly Dace	Petromyzontidae sp.	Pumpkinseed	Rainbow Darter	Rainbow Trout	Redside Dace	Rock Bass	Rosyface Shiner	Round Goby	Salmonid	Sculpin sp.	Silver Lamprey	Slimy Sculpin	Smallmouth Bass	Spotfin Shiner	Stonecat	White Sucker	Yellow Perch	
LDUR	0	69.4	0	0	37.8	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	194.7	0	
LES1	0	0	0	0.5	0	0	0	0	0	21.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LT	0	20.6	0	54.1	0	0	0	0	19.1	0	42.2	0	0	0	0	0	0	0	0	0	0	0	11.0	0
RG003WM	0	1.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RG004WM	0	2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.6	0
RG005WM	0	0	0	0	0	0	0	1.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29.1	0
RG010WM	0	21.6	0	0	0	5.2	0	0	2.8	9.3	0	0	0	0	0	0	0	0	0	0	0	0	101.7	0
RG015WM	0	109.5	0	0	0	0	0	0	4.9	9.7	0	0	0	0	0	0	0	0	0	0	0	0	140.4	0
RG016WM	0	0	0	0	0	0	0	0	0	3.9	45.2	0	0	0	0	0	0	0	0	0	0	0	25.2	0
RG017WM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	355.1	0
RG021WM	0	4.6	0	0	0	0	0	0	0.9	0	0	0	0	0	0	0	0	0	0	0	0	0	11.6	0
RG024WM	0	3.6	0	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.3	0
URDT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16.3	0
URU3	0	13.4	0	0	0	8.0	0	0	43.6	2.5	7.9	0	0	0	0	0	0	0	0	0	0	0	199.0	0

Appendix 24c. Summary of biomass (g) collected by backpack electrofisher from 39 Greater Toronto Area sites in the fall of 2018 and 2019, including moribund individuals.

Site Code	American Brook Lamprey	Ammoeocyte	Atlantic Salmon	Blacknose Dace	Bluegill	Bluntnose Minnow	Brassy Minnow	Brook Stickleback	Brook Trout	Brown Bullhead	Brown Trout	Central Stoneroller	Chinook Salmon	Coho Salmon	Common Carp	Common Shiner	Creek Chub	Cyprinid sp.	Fathead Minnow	Johnny Darter	Largemouth Bass
Central11	0	0	0	246.0	0	0	0	18.6	0	0	0	0	0	0	0	6.0	583.0	0	182.0	25.8	0
Central3	0	0	0	171.2	0	0	0	0	0	0	0	0	0	0	0	0	21.9	0	37.6	6.2	0
Central4	0	0	0	52.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Central5	0	0	0	241.0	0	0	0	0	0	0	0	0	8.2	0	0	0	598.5	0	18.3	68.5	0
Central6	0	0	0	408.8	0	0	0	0	0	0	0	0	0	0	0	0	13.8	0	5.5	7.5	0
DF004WM	0	0	0	23.1	0	0	0	0	0	0	0	0	0	0	0	0	349.0	0	0	2.2	0
DF005WM	0	9.4	0	73.3	0	26.9	0	0	0	0	0	0	0	0	0	46.3	510.2	0.5	0	11.2	0
DF007WM	0	0	0	174.9	0	0	0	0	0	0	0	0	0	0	0	5.8	443.4	0	0	3.2	0
DF018WM	0	0	0	132.0	0	0	0	0	0	0	0	0	300.0	0	0	1.0	502.7	0	0	11.5	11.5
DF019WM	0	10.0	665.3	155.9	0	0	0	0	197.8	0	0	0	0	0	0	0	24.0	0	0	0	0
East5(BA01)	0	0	0	214.4	0	3.2	0	0	0	0	108.9	0	13.2	0	0	5.3	0	0	0	0	0
East6(BB02)	0	0	0	22.3	0	0	0	0	0	0	1860.3	0	0	0	0	0	12.9	0	0	0	0
East8(BB04)	0	0	0	1.7	0	0	0	0	0	0	292.2	0	0	0	0	0	0	0	0	0	0
East9	0	0	0	36.0	0	32.3	0	0	0	0	0	0	6.0	300.0	0	1.0	0	0	0	15.2	0
LA01	0	0	0	25.8	0	0.9	0	0	0	0	0	0	0	0	0	20.8	31.2	0	2.7	10.0	0
LA04	0	0	0	462.9	0	0	0	0	0	37.0	0	0	0	0	0	21.7	321.8	0	13.5	50.1	0
LA07	0	0	0	216.7	0	0	0	0	0	0	0	0	0	0	0	34.6	281.0	0	5.7	17.8	18.3
LA15	0	0	0	78.2	0	0	0	0	0	0	0	0	0	0	0	0	62.6	0	0	7.8	0
LC01	0	0	0	4.6	0	8.0	0	0	0	3.6	0	0	0	0	0	13.4	322.4	0	2.0	10.1	0
LC02	0	0	0	54.0	0	90.0	0	0	0	0	0	0	0	0	0	197.0	140.0	0	2.0	15.0	0
LC06	0	0	0	507.0	0	8.5	0	0	0	0	0	0	0	0	0	212.0	453.1	0	14.8	99.5	0
LC07	0	0	0	222.1	0	0	0	0	0	0	0	0	0	0	0	0	346.5	0	22.7	5.7	0
LC08	0	0	0	129.3	0	0	0	0	33.3	0	0	0	0	0	0	0	122.8	0	2.7	1.8	0
LC10	0	0	0	87.2	0	0	0	0	0	17.3	0	0	0	0	0	0	414.0	0	0	0	0
LC23	0	0	0	130.0	0	0	0	0	0	0	0	0	0	0	0	63.7	305.3	0	5.3	21.0	0

Appendix 8c. continued

Site Code	Logperch	Longnose Dace	Mimic Shiner	Mottled Sculpin	Northern Pike	Northern Redbelly Dace	Petromyzontidae sp.	Pumpkinseed	Rainbow Darter	Rainbow Trout	Redside Dace	Rock Bass	Rosyface Shiner	Round Goby	Salmonid	Sculpin sp.	Silver Lamprey	Slimy Sculpin	Smallmouth Bass	Spotfin Shiner	Stonecat	White Sucker	Yellow Perch
Central11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	93.0	0
Central3	0	38.9	0	86.8	0	0	0	0	0	619.3	0	0	0	0	0	0	0	0	0	0	0	43.5	0
Central4	0	64.5	0	18.5	0	0	0	0	0	88.3	0	0	0	0	0	0	0	0	0	0	0	37.9	0
Central5	0	92.3	0	105.1	0	0	0	11.2	0	822.3	0	0	0	0	0	0	0	0	29.7	0	0	301.9	0
Central6	0	562.5	0	55.4	0	0	0	8.6	0	0	0	0	0	28.1	0	0	0	0	0	0	0	139.0	0
DF004WM	0	3.0	0	14.5	0	0	0	0	9.2	28.0	0	0	0	0	0	0	0	0	0	0	0	41.8	0
DF005WM	0	0	0	0	0	0	0	40.0	12.5	38.3	0	0	0	0	0	0	0	0	0	0	0	131.4	0
DF007WM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39.0	0
DF018WM	0	0	0	45.2	0	0	0	0	0	45.5	0	0	0	0	0	0	0	15.2	0	0	0	69.6	0
DF019WM	0	35.6	0	0	0	0	0	0	47.0	0	0	0	0	0	0	0	0	0	0	0	0	70.8	0
East5(BA01)	0	1242.9	0	0	0	0	0	15.2	45.8	419.3	0	2.0	0	122.6	0	0	0	0	0	0	0	76.5	0
East6(BB02)	0	0	0	18.4	0	0	0	0	0	0	0	0	0	0	0	0	10.2	0	0	0	0	0	0
East8(BB04)	0	0	0	44.9	0	0	0	0	0	99.3	0	0	0	0	0	0	4.0	0	0	0	0	0	0
East9	0	102.9	0	3.0	0	0	0	0	1.0	300.0	0	0	0	27.0	0	0	0	0	0	0	0	165.6	0
LA01	0	46.9	0	0	0	0	0	57.0	13.5	0	0	3.9	0	14.7	0	0	0	0	0	0	0	13.0	0
LA04	0	127.2	0	0	0	0	0	6.0	30.1	0	0	0	0	0	0	0	0	0	0	4.0	0	68.0	0
LA07	0	90.9	0	8.1	0	0	0	0	62.5	135.7	0	0	0	0	0	0	0	0	0	0	0	39.3	0
LA15	0	143.5	0	74.0	0	0	0	0	25.0	105.0	0	0	0	0	0	0	0	0	0	0	0	1.0	0
LC01	0	16.1	0	0	0	0	0	5.8	20.0	0	0	15.4	0	29.2	0	0	0	0	16.0	0	0	95.5	7.2
LC02	15.0	80.0	0	0	0	0	0	0	20.0	0	0	3.0	0	9.0	0	0	0	0	41.0	0	0	380.0	30.5
LC06	0	79.6	0	25.5	0	0	0	0	92.6	174.2	0	0	0	0	0	0	0	0	0	0	0	577.4	0
LC07	0	66.8	0	49.0	0	0	0	0	24.4	71.8	0	0	0	0	0	0	0	0	0	0	0	71.6	0
LC08	0	44.8	0	21.0	0	0	0	0	20.6	163.2	0	0	0	0	0	0	0	0	0	0	0	27.2	0
LC10	0	63.4	0	28.3	0	0	0	0	1.5	120.0	0	0	0	0	0	0	0	0	0	0	0	128.9	0
LC23	0	67.5	0	4.1	0	0	0	0	43.5	62.4	0	0	0	0	0	0	0	0	0	0	0	20.0	0

Appendix 8c. continued

Site Code	American Brook Lamprey	Ammoecyte	Atlantic Salmon	Blacknose Dace	Bluegill	Bluntnose Minnow	Brassy Minnow	Brook Stickleback	Brook Trout	Brown Bullhead	Brown Trout	Central Stoneroller	Chinook Salmon	Coho Salmon	Common Carp	Common Shiner	Creek Chub	Cyprinid sp.	Fathead Minnow	Johnny Darter	Largemouth Bass	
LDUR	0	0	0	50.0	0	25.0	0	0	0	0	0	28.0	5523.0	0	0	260.0	463.0	0	9.5	21.5	0	
LES1	0	0	0	8.8	0	0	0	0	1005.9	0	0	0	0	0	0	0	0	0	0	0	0	0
LT	10.4	0	0	157.5	0	27.0	0	3.0	0	35.7	0	0	0	0	0	7.1	460.9	0	27.0	3.9	0	
RG003WM	0	0	0	70.5	0	0	0	0	0	0	0	0	0	0	0	0	229.4	0	6.4	0	0	
RG004WM	0	0	0	148.0	0	11.1	0	1.7	0	0	0	0	0	0	0	0	116.5	0	0	32.5	0	
RG005WM	0	0	0	135.3	0	0	0	16.9	0	0	0	0	0	0	0	0	737.2	0	426.2	57.6	0	
RG010WM	0	0	0	130.1	0	0	0	0	0	0	0	81.0	0	0	0	18.0	67.5	0	0	12.0	0	
RG015WM	0	0	0	92.4	0	55.0	0	0	0	0	0	0	0	0	0	2.0	45.8	0	1.4	29.3	56.6	
RG016WM	0	0	0	48.4	0	263.3	0	0	0	0	0	0	0	0	0	133.3	978.4	0	0	86.0	41.3	
RG017WM	0	0	0	97.8	0	0	0	0	0	0	0	0	0	0	13.9	0	295.9	0	1.6	5.8	12.4	
RG021WM	0	0	0	134.4	0	0	0	0	0	0	0	0	0	0	0	10.2	223.4	0	0	59.0	53.4	
RG024WM	0	0	0	201.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.9	4.2	0	
URDT	0	0	0	300.6	0	0	0	0	0	0	0	0	0	0	0	3.6	916.3	0	0.7	3.2	0	
URU3	0	0	0	53.8	0	103.0	18.2	0	0	0	0	0	0	0	0	319.0	952.5	0	36.6	16.7	0	

Appendix 8c. continued

Site Code	Logperch	Longnose Dace	Mimic Shiner	Mottled Sculpin	Northern Pike	Northern Redbelly Dace	Petromyzontidae sp.	Pumpkinseed	Rainbow Darter	Rainbow Trout	Redside Dace	Rock Bass	Rosyface Shiner	Round Goby	Salmonid	Sculpin sp.	Silver Lamprey	Slimy Sculpin	Smallmouth Bass	Spotfin Shiner	Stonecat	White Sucker	Yellow Perch
LDUR	28.0	70.0	0	0	0	0	0	223.0	17.0	0	0	0	0	0	0	0	0	0	40.0	0	0	423.0	0
LES1	0	0	0	116.7	0	0	0	0	0	336.7	0	0	0	0	0	0	13.5	0	0	0	0	0	0
LT	0	38.6	0	21.1	0	0	0	0	16.5	0	16.0	0	0	0	0	0	0	0	0	0	0	424.7	0
RG003WM	0	132.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RG004WM	0	20.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RG005WM	0	12.8	0	0	0	0	0	42.0	0	0	0	0	0	0	0	0	0	0	0	0	0	206.1	0
RG010WM	0	249.5	0	0	0	0	0	0	10.2	56.0	0	0	0	0	0	0	0	0	52.3	0	0	0	0
RG015WM	0	92.2	0	0	0	0	0	0	61.3	65.2	0	0	0	0	0	0	0	0	0	0	0	12.7	0
RG016WM	0	4.0	0	0	0	0	0	0	4.8	48.9	27.2	115.6	0	0	0	0	25.9	0	0	0	0	1575.9	0
RG017WM	0	9.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	92.8	0
RG021WM	0	42.1	0	0	0	0	0	0	16.5	0	0	0	0	0	0	0	0	0	0	0	36.4	0	0
RG024WM	0	49.3	0	0	0	0	0	0	0	7.2	0	0	0	0	0	0	0	0	0	0	0	0	0
URDT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43.3	0
URU3	0	0	0	0	0	0	0	67.1	26.2	7.5	0	0	0	0	0	0	0	0	0	0	0	970.6	0

Appendix 25a. Summary of moribund individuals from electrofishing surveys at 39 Greater Toronto Area sites in the summer of 2018 and 2019.

Site Code	Blacknose Dace	Bluntnose Minnow	Common Shiner	Creek Chub	Creek Chub (YOY)	Johnny Darter	Johnny Darter (YOY)	Longnose Dace	Mottled Sculpin	Rainbow Darter	Rainbow Trout	Rainbow Trout (YOY)	White Sucker	White Sucker (YOY)
Central11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Central3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Central4	0	0	0	0	0	0	0	0	0	0	0	0	2	0
Central5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Central6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DF004WM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DF005WM	0	0	0	0	0	1	0	0	0	0	0	0	1	0
DF007WM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DF018WM	2	0	0	0	0	0	0	0	0	0	0	0	0	0
DF019WM	2	0	0	0	0	0	0	1	0	2	0	0	0	0
East5(BA01)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
East6(BB02)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
East8(BB04)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
East9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LA01	0	0	0	0	0	0	0	0	0	0	0	0	0	2
LA04	0	0	0	0	4	0	4	1	0	0	0	0	0	2
LA07	0	0	0	0	0	1	0	1	0	0	0	0	0	0
LA15	0	0	0	4	0	0	0	4	0	1	1	0	2	0
LC01	2	0	0	0	0	0	0	0	0	0	0	0	0	0
LC02	4	0	0	0	0	0	0	0	0	3	0	0	0	3
LC06	0	0	1	0	0	0	0	0	0	0	0	1	1	0
LC07	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC08	4	0	0	0	0	0	0	0	0	1	0	0	0	0
LC10	0	0	0	0	0	0	0	0	1	0	0	0	1	0
LC23	0	0	0	0	0	0	0	1	0	0	0	2	1	0
LDUR	0	0	0	0	0	0	0	1	0	1	0	0	0	1
LES1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LT	0	0	0	0	0	0	0	0	0	1	0	0	0	0
RG003WM	0	0	0	0	0	0	0	3	0	0	0	0	0	0
RG004WM	0	1	0	0	0	0	0	0	0	0	0	0	0	0
RG005WM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RG010WM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RG015WM	0	1	0	0	0	3	0	0	0	1	0	0	0	0
RG016WM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RG017WM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RG021WM	0	0	1	3	0	2	0	0	0	0	0	0	0	0
RG024WM	2	0	0	0	0	0	0	0	0	0	0	0	0	0
URDT	1	0	0	2	0	2	0	0	0	0	0	0	0	0
URU3	2	0	0	1	0	0	0	1	0	0	0	0	2	0

Appendix 26b. Summary of moribund individuals from seine-based surveys at 39 Greater Toronto Area sites in the summer of 2018 and 2019.

Site Code	Blacknose Dace	Blacknose Dace (YOY)	Bluntnose Minnow	Common Shiner	Creek Chub	Creek Chub (YOY)	Cyprinid sp. (YOY)	Fathead Minnow	Johnny Darter	Johnny Darter (YOY)	Longnose Dace	Longnose Dace (YOY)	Rainbow Darter	Rainbow Darter (YOY)	Rainbow Trout	Rosyface Shiner	Round Goby	Smallmouth Bass	Stickleback	White Sucker	White Sucker (YOY)
Central11	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Central3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Central4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Central5	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
Central6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DF004WM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DF005WM	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DF007WM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
DF018WM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
DF019WM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
East5(BA01)	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
East6(BB02)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
East8(BB04)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
East9	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LA01	0	0	19	137	1	0	0	0	3	0	0	0	0	0	0	4	0	0	0	5	0
LA04	15	0	11	795	13	0	0	7	163	0	14	0	5	0	0	0	0	0	0	0	0
LA07	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
LA15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
LC01	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
LC02	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LC06	3	0	0	54	0	0	0	0	8	0	1	0	0	0	0	0	0	0	0	18	0
LC07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
LC08	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
LC10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	12
LC23	16	0	0	3	4	0	0	0	0	0	0	0	6	0	0	0	0	0	0	7	0
LDUR	0	0	0	0	0	0	75	0	0	3	0	0	0	1	0	0	0	0	0	0	0
LES1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
LT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
RG003WM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
RG004WM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RG005WM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
RG010WM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
RG015WM	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0	0	0	0	0	0	0
RG016WM	0	7	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
RG017WM	3	0	0	0	0	7	0	0	0	7	0	0	0	0	0	0	0	0	1	0	15
RG021WM	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
RG024WM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
URDT	0	8	0	0	0	12	0	0	0	1	0	0	0	0	0	0	0	0	0	0	7
URU3	3	0	0	40	4	0	500	1	53	0	0	0	22	0	2	0	0	0	0	8	0

Appendix 27c. Summary of moribund individuals from electrofishing surveys at 39 Greater Toronto Area sites in the fall of 2018 and 2019.

Site Code	Atlantic Salmon	Blacknose Dace	Bluntnose Minnow	Common Shiner	Creek Chub	Fathead Minnow	Johnny Darter	Longnose Dace	Mottled Sculpin	Rainbow Darter	Rainbow Trout	Round Goby	White Sucker
Central11	0	1	0	0	0	1	0	0	0	0	0	0	0
Central3	0	0	0	0	0	0	0	0	0	0	0	0	1
Central4	0	0	0	0	0	0	0	0	0	0	0	0	0
Central5	0	0	0	0	0	0	0	0	0	0	2	0	0
Central6	0	1	0	0	0	0	0	8	1	0	0	0	0
DF004WM	0	0	0	0	0	0	0	0	0	0	0	0	0
DF005WM	0	0	0	0	0	0	0	0	0	0	0	0	0
DF007WM	0	0	0	0	0	0	0	0	0	0	0	0	1
DF018WM	0	0	0	0	0	0	0	0	0	0	0	0	0
DF019WM	1	0	0	0	0	0	0	0	0	0	0	0	0
East5(BA01)	0	1	0	0	0	0	0	12	0	0	1	0	0
East6(BB02)	0	0	0	0	0	0	0	0	0	0	0	0	0
East8(BB04)	0	0	0	0	0	0	0	0	0	0	0	0	0
East9	0	1	1	0	0	0	0	1	0	0	1	2	0
LA01	0	0	0	0	0	0	0	0	0	0	0	0	0
LA04	0	2	0	0	0	0	0	0	0	0	0	0	0
LA07	0	0	0	0	0	0	0	0	0	0	0	0	0
LA15	0	1	0	0	0	0	0	0	0	0	0	0	0
LC01	0	0	0	1	0	0	0	1	0	0	0	0	0
LC02	0	0	0	0	0	0	0	0	0	0	0	0	0
LC06	0	2	0	0	0	0	1	0	0	0	0	0	1
LC07	0	0	0	0	0	0	0	0	1	0	0	0	0
LC08	0	0	0	0	0	0	0	0	0	0	0	0	0
LC10	0	0	0	0	0	0	0	0	0	0	0	0	0
LC23	0	0	0	0	0	0	0	0	0	0	0	0	0
LDUR	0	0	0	0	0	0	0	0	0	0	0	0	0
LES1	0	0	0	0	0	0	0	0	0	0	0	0	0
LT	0	0	1	0	0	0	0	0	0	0	0	0	0
RG003WM	0	0	0	0	0	0	0	0	0	0	0	0	0
RG004WM	0	0	0	0	1	0	0	0	0	0	0	0	0
RG005WM	0	0	0	0	0	0	0	0	0	0	0	0	0
RG010WM	0	0	0	0	0	0	0	0	0	2	0	0	0
RG015WM	0	0	0	0	1	0	0	0	0	2	0	0	0
RG016WM	0	0	2	0	0	0	0	0	0	0	0	0	0
RG017WM	0	0	0	0	1	0	0	0	0	0	0	0	0
RG021WM	0	0	0	0	0	0	0	0	0	0	0	0	0
RG024WM	0	0	0	0	0	0	0	0	0	0	0	0	0
URDT	0	0	0	0	0	0	0	0	0	0	0	0	0
URU3	0	0	1	0	0	0	0	0	0	0	0	0	0