Appendix A
Baseline Noise Data

2013 hourly results of the baseline sound measurements for the three supplemental receptors
2011 Stantec Noise Assessment

Table A1: Baseline Noise Monitoring results for DCL-01, 134 Dartmouth Road, NS.

Record	Time	Measurment Time	LAeq	LAE	LAmax	LAmin	LA05	LA10	LA50	LA90	LA95	Lppeak
1	11/4/2013 12:31	1:00:00	66.7	102.3	76.8	55.3	70.6	69.3	65.6	61.4	60	110.1
2	11/4/2013 13:31	1:00:00	70.1	105.7	99	56.2	71.1	69.7	66.1	62.2	60.8	111.4
3	11/4/2013 14:31	1:00:00	67.4	103	79.1	54.4	71.5	70.3	66.2	61.4	60.1	108.2
4	11/4/2013 15:31	1:00:00	68.1	103.7	82.3	57.4	71.9	70.7	67	63.2	62.3	106.5
5	11/4/2013 16:31	1:00:00	69	104.6	79.3	58.2	72.5	71.2	68.1	65.3	64.3	106.7
6	11/4/2013 17:31	1:00:00	69.1	104.7	77.3	61	72.1	71.1	68.5	66	65.4	102.6
7	11/4/2013 18:31	1:00:00	67.3	102.9	76.2	54.7	71.1	69.9	66.4	62.4	61.4	99.9
8	11/4/2013 19:31	1:00:00	65.5	101.1	76.4	52.9	69.6	68.4	64.2	59.6	58.4	99.1
9	11/4/2013 20:31	1:00:00	64.1	99.7	76.6	49.2	68.3	67.1	62.4	57	55.7	99.4
10	11/4/2013 21:31	1:00:00	63.1	98.7	77.2	46.1	67.4	66.2	61.3	56	54.2	99.6
11	11/4/2013 22:31	1:00:00	62	97.6	76.3	41.1	66.8	65.4	59.8	53.3	50.9	97
12	11/4/2013 23:31	1:00:00	60.6	96.2	75.5	40.9	65.7	64	57.8	49.5	48.2	98.4
13	11/5/2013 0:31	1:00:00	59.1	94.7	74.9	36.4	64.5	62.7	55.8	45	43.4	99.1
14	11/5/2013 1:31	1:00:00	57.2	92.8	74.2	33.2	62.8	60.5	51.7	38.5	37.2	84.1
15	11/5/2013 2:31	1:00:00	57.3	92.9	78.8	35.5	62.7	60	49.2	39.9	38	99.8
16	11/5/2013 3:31	1:00:00	56.6	92.2	77	32.9	62.3	59.6	47	36	36.9	89.4
17	11/5/2013 4:31	1:00:00	58.2	93.8	75	32.7	64.5	62	50	40.6	38.7	99.7
18	11/5/2013 5:31	1:00:00	63	97.6	77.7	37.7	67.5	65.6	58.3	48.6	45.5	96
19	11/5/2013 6:31	1:00:00	67.7	102.3	76.9	54.1	71.9	70.9	66.6	60.9	59	100.3
20	11/5/2013 7:31	1:00:00	68.9	104.5	78.2	55.6	73.1	72.3	67.4	61.7	60.3	103.2
21	11/5/2013 8:31	1:00:00	66	101.6	84.1	56.1	70.5	69.1	64.3	59.6	58.6	104.1
22	11/5/2013 9:31	1:00:00	68.9	104.5	79.6	53.8	73	71.8	67.8	63.2	61.5	101.4
23	11/5/2013 10:31	1:00:00	67.5	103.1	86	51.6	71.6	70.2	65.8	60.7	59.1	101.7
24	11/5/2013 11:31	1:00:00	66.7	102.3	76.9	51.7	71.1	69.5	65.3	60.5	58.6	101.6
25	11/5/2013 12:31	1:00:00	66.4	102	78.1	49.7	70.8	69.1	65.1	60.3	58.8	102.2
26	11/5/2013 13:31	1:00:00	66.5	102.1	76.9	49.1	70.8	69.3	65.1	60.4	59	100.6
27	11/5/2013 14:31	1:00:00	67.4	103	82.6	52	71.5	70	65.7	61.3	59.9	105.3
28	11/5/2013 15:31	1:00:00	67.4	103	77.7	51.9	71.4	70.2	66.4	62	60.7	101.2
29	11/5/2013 16:31	1:00:00	68.4	104	78.5	51.9	72.1	70.8	67.5	64.2	63	103.5
30	11/5/2013 17:31	1:00:00	68.3	103.9	76.8	59.3	71.5	70.4	67.6	65	64.3	105.3
31	11/5/2013 18:31	1:00:00	67.6	103.2	75.9	56.3	71	69.9	66.9	63.5	62.4	102.9
32	11/5/2013 19:31	1:00:00	66.5	102.1	78.8	55.8	69.9	68.7	65.5	61.8	60.5	101.1
33	11/5/2013 20:31	1:00:00	65.9	101.5	84.1	52.8	69.2	68	64.2	60.2	58.8	102.4
34	11/5/2013 21:31	1:00:00	65.1	100.7	79.1	51.8	68.8	67.6	64.2	60.1	59	98.5
35	11/5/2013 22:31	1:00:00	63.3	98.9	74.1	48	67.4	66.3	61.9	56.3	54.4	99
36	11/5/2013 23:31	1:00:00	61	96.6	74.9	42.3	66.3	64.9	58.5	50.4	48.3	100
37	11/6/2013 0:31	1:00:00	59.1	94.7	74.6	37.9	64.3	62.6	56.4	45.2	41.6	96.1
38	11/6/2013 1:31	1:00:00	54.7	90.3	75.8	31.3	60.5	58.1	45.8	33.9	33	94.4
39	11/6/2013 2:31	1:00:00	53.4	89	70.9	30.4	59.5	56.8	43.5	32.9	32	94
40	11/6/2013 3:31	1:00:00	55.3	90.9	74.3	30.8	61.4	58.8	46	35	33.9	91.5
41	11/6/2013 4:31	1:00:00	57.3	93.1	75.4	31.7	63.7	60.9	49.5	35.9	34.4	101.7
42	11/6/2013 5:31	1:00:00	60.3	96.1	76.1	32.7	66.5	64.8	55.7	41.1	38.5	103.7
43	11/6/2013 6:31	1:00:00	62.7	98.3	77.1	48.8	67.8	67	60.4	53.1	52.1	102.9
44	11/6/2013 7:31	1:00:00	70.8	106.4	78.9	56.7	73.5	72.8	70.5	66.6	65.2	101.7
45	11/6/2013 8:31	1:00:00	66.9	102.5	79.1	53.5	70.9	70	65.9	59.8	58.1	106.6
46	11/6/2013 9:31	1:00:00	68.7	104.3	84.5	55	72.5	71.4	67.6	63.4	62	105.5
47	11/6/2013 10:31	1:00:00	67.4	103	79.2	53.5	71.8	70.4	65.9	61.5	60.2	102.3
48	11/6/2013 11:31	1:00:00	67.1	102.7	80	50.9	71.5	70	65.6	60.7	59.1	102.7
49	11/6/2013 12:31	1:00:00	66.6	102.2	81.5	50.8	70.6	69.2	65.4	61	59.4	104.7
50	11/6/2013 13:31	1:00:00	67.3	102.9	83.4	54.4	71.5	70	66.1	62.1	60.7	101.6
51	11/6/2013 14:31	0:00:50	68.4	85.4	75	64.2	72.1	70.7	67.2	65.3	65	100.5

Time Period	Max:	Min:	geo mean	Lp90
Daytime (7am - 7pm)	70.8	66.0	67.8	62.4
Evening (7pm-11pm)	66.5	62.0	64.4	58.0
Nighttime (11pm - 7am)	67.7	63.4	65.1	48.2

Table A2: Baseline Noise Monitoring results for DCL-02, 397 Rocky Lake Drive, NS.

Record	Time	Measurment Time	LAeq	LAE	LAmax	LAmin	LA05	LA10	LA50	LA90	LA95	Lppeak
1	10/24/2013 16:36	1:00:00	63.2	98.8	86.9	54.5	64.1	63.1	60.7	58.5	57.8	112.8
2	10/24/2013 17:36	1:00:00	59.9	95.5	71.6	50.3	62.8	62	59.1	56.6	55.8	102.7
3	10/24/2013 18:36	1:00:00	57.2	92.8	70	49	60.3	59.4	56.3	53.4	52.6	93.9
4	10/24/2013 19:36	1:00:00	55.9	91.5	70	48	59.5	58.4	54.7	51.5	50.8	91.1
5	10/24/2013 20:36	1:00:00	66.5	102.1	91.6	47.8	67.1	60.8	54.6	51.6	50.9	113.7
6	10/24/2013 21:36	1:00:00	53.1	88.7	63.5	43.5	57.3	55.9	51.8	48.7	47.9	84.5
7	10/24/2013 22:36	1:00:00	51.1	86.7	62.3	41.3	55.2	53.9	50	46	44.7	87.4
8	10/24/2013 23:36	1:00:00	55.1	100.7	91.3	36.4	55.8	53.2	47.1	41.9	40.8	111.5
9	10/25/2013 0:36	1:00:00	46.6	82.2	60.2	34.1	51.7	50.1	43.7	38	36.9	85.3
10	10/25/2013 1:36	1:00:00	48.5	82.1	59.5	35.8	52	50	47.8	39.3	38.3	90.2
11	10/25/2013 2:36	1:00:00	44.8	80.4	59.9	32.2	50.3	47.7	41.3	35.7	34.9	85.3
12	10/25/2013 3:36	1:00:00	51.5	87.1	71.8	34.8	52.9	50.5	44.2	39.1	37.7	102.1
13	10/25/2013 4:36	1:00:00	49.8	85.4	65.3	35.6	54.5	52.2	47.7	43	41.6	85.7
14	10/25/2013 5:36	1:00:00	56.3	91.9	71.1	45.4	59.7	58.6	55	51.4	50.6	90.7
15	10/25/2013 6:36	1:00:00	58.9	93.5	77	54.5	61.4	60.6	58.3	56.5	56	92.7
16	10/25/2013 7:36	1:00:00	59.1	94.7	72.2	54.4	61.9	60.9	58.3	56.6	56.3	92.1
17	10/25/2013 8:36	1:00:00	62.3	97.9	79.2	51	68.1	61.3	57.3	54.9	54.2	107
18	10/25/2013 9:36	1:00:00	57.5	93.1	72.1	49.4	60.9	59.8	56.5	53.3	52.6	91.3
19	10/25/2013 10:36	1:00:00	57.5	93.1	70.4	50	60.8	59.8	56.6	53.5	52.7	93.9
20	10/25/2013 11:36	1:00:00	57.9	93.5	69	49.7	61	60.1	57.1	54.2	53.4	97.9
21	10/25/2013 12:36	1:00:00	62	97.6	88	50.1	61.7	60.7	57.6	54.6	53.9	109.7
22	10/25/2013 13:36	1:00:00	57.9	93.5	68.9	49.7	61.4	60.3	57	53.7	52.9	105.3
23	10/25/2013 14:36	1:00:00	57.3	92.9	69.8	47.8	60.5	59.5	56.6	53.7	53	101.3
24	10/25/2013 15:36	1:00:00	58.6	94.2	74.8	50.6	61.3	60.6	57.7	54.8	54	97.7
25	10/25/2013 16:36	1:00:00	58.2	93.8	69.2	50.4	61.3	60.4	57.5	54.8	54	97.2
26	10/25/2013 17:36	1:00:00	57.1	92.7	71.7	49.5	60.5	59.6	55.8	53.2	52.5	95
27	10/25/2013 18:36	1:00:00	57	92.6	66.7	50.7	60.3	59.4	56.1	53.6	52.9	92.3
28	10/25/2013 19:36	1:00:00	56.4	92	70.1	49.2	59.9	58.8	55.3	52.5	51.8	92.1
29	10/25/2013 20:36	1:00:00	69.2	104.8	95.7	48.2	67.2	59.5	54	51	50.4	113.6
30	10/25/2013 21:36	1:00:00	51.6	87.2	71.6	39.6	56.7	54.5	48.6	45.2	44.2	97.8
31	10/25/2013 22:36	1:00:00	56.3	91.9	85.7	37.8	56.3	53.9	47.7	42.5	41.2	104.2
32	10/25/2013 23:36	1:00:00	48.3	83.9	63.8	35.7	53.1	50.1	45.5	40.9	39.7	89.6
33	10/26/2013 0:36	1:00:00	45.1	80.7	61.7	34.3	49.1	47.6	42.8	38.7	37.8	83.3
34	10/26/2013 1:36	1:00:00	46.7	82.3	66.7	32.7	49.9	48.4	43	36.8	35.9	88.3
35	10/26/2013 2:36	1:00:00	42.5	78.1	64.2	29.2	46.1	44.5	38.7	33.9	32.7	84.5
36	10/26/2013 3:36	1:00:00	43.3	78.9	61.2	31.4	48	45.9	40.1	35.8	34.7	85.2
37	10/26/2013 4:36	1:00:00	45.3	80.9	80.6	34.4	49.8	48.2	44.2	38.6	37.1	81
38	10/26/2013 5:36	1:00:00	49.4	85	63.3	40.1	53.3	51.7	48	44.2	43.3	87.3
39	10/26/2013 6:36	1:00:00	52.4	88	87.7	48	55.8	54.1	51.3	49.1	48.4	86.6
40	10/26/2013 7:36	1:00:00	55.3	90.9	65.7	49.8	58.8	57.7	54.2	52.1	51.6	98.5
41	10/26/2013 8:36	1:00:00	56.1	91.7	67.3	46.8	60.3	58.9	54.7	52.3	51.4	91.7
42	10/26/2013 9:36	1:00:00	63.9	99.5	81.4	47.2	67.4	61	55.6	51.8	51	104.5
43	10/26/2013 10:36	1:00:00	57.8	93.4	73.5	49.2	61	60.1	56.9	53.9	53.1	101.5
44	10/26/2013 11:36	1:00:00	58.6	94.2	77	49.6	61.7	60.8	57.6	54.2	53.3	99.6
45	10/26/2013 12:36	1:00:00	58	93.6	69.1	49.7	61.2	60.4	57.2	53.7	52.9	100.7
46	10/26/2013 13:36	1:00:00	59.4	95	83.4	51.3	61.5	60.6	57.6	54.4	53.7	105.5
47	10/26/2013 14:36	1:00:00	58.3	93.9	73.2	49.7	61.7	60.6	57.3	54	53.2	97.9
48	10/26/2013 15:36	1:00:00	57.1	92.7	72.6	45.9	60.6	59.6	55.9	52.4	51.5	97.1
49	10/26/2013 16:36	1:00:00	58.7	94.3	81.2	47.4	60.2	59	54.6	50.9	50	112.1
50	10/26/2013 17:36	1:00:00	64.7	100.3	91.5	47.6	59.8	58.5	53.9	51.3	50.7	111.6
51	10/26/2013 18:36	1:00:00	60	95.6	88.7	46.9	59.3	57.8	53.6	50.7	49.9	104.9
52	10/26/2013 19:36	1:00:00	54.4	90	66.2	45.9	58	57	53.2	50.2	49.5	92.2
53	10/26/2013 20:36	1:00:00	68	103.6	92.9	40.1	67.6	59.2	51.3	47	45.9	113.1
54	10/26/2013 21:36	1:00:00	51.8	87.4	63	43.1	56.2	54.7	50.4	47.1	46.1	84
55	10/26/2013 22:36	1:00:00	54.3	89.9	81.5	42.1	55.7	54.3	50.7	47	45.9	100.9
56	10/26/2013 23:36	1:00:00	51.5	87.1	63.3	42.4	55.7	54.2	50.3	46.2	45.4	102.4
57	10/27/2013 0:36	1:00:00	50.7	86.3	67	38.6	54.6	53.3	49.1	45.6	44.7	102.1
58	10/27/2013 1:36	1:00:00	60.5	96.1	74.5	43.7	56.6	54.1	47	44	42.2	103.3
59	10/27/2013 2:36	1:00:00	51	86.6	64.4	35.2	57.9	54.1	47.5	41.6	40.6	95.9
60	10/27/2013 3:36	1:00:00	49.6	85.2	65.2	36.8	54.5	52.7	47.2	41.5	40.6	101.4
61	10/27/2013 4:36	1:00:00	48.1	83.7	68.4	34.4	55.4	50.7	44	39.5	38.4	92.3
62	10/27/2013 5:36	1:00:00	47.3	82.9	69.2	33.6	50.7	48.7	44.6	41.6	40.3	81.3
63	10/27/2013 6:36	1:00:00	49.3	85.1	80.1	36.3	54.6	51.8	46.6	43.1	42.2	90.2
64	10/27/2013 7:36	1:00:00	52.3	87.9	70.9	40	57.9	55.3	49	44.8	44	96.9
65	10/27/2013 8:36	1:00:00	62	97.6	85.3	44.9	63.2	60.1	53.3	49.6	48.8	109.4
66	10/27/2013 9:36	1:00:00	60	95.6	68.6	51.3	64.6	63.2	58.5	54.6	53.7	104.6

Record	Time	Measurment Time	LAeq	LAE	LAmax	LAmin	LA05	LA10	LA50	LA90	LA95	Lppeak
67	10/27/2013 10:36	1:00:00	60.7	96.3	71.9	51.5	65	63.8	59.3	54.6	53.9	101.5
68	11/4/2013 11:06	1:00:00	57.4	93	75.5	46.3	61.9	60.4	55.2	51.2	50.2	109.1
69	11/4/2013 12:06	1:00:00	61	96.6	74.9	45.4	64.8	64.1	58.4	52.8	51.7	107.9
70	11/4/2013 13:06	1:00:00	59.3	94.9	75.7	47.4	63.7	63.1	56.6	51.7	50.5	105.3
71	11/4/2013 14:06	1:00:00	64.5	100.1	75.9	45.6	72.7	70.4	55.7	50.3	49.5	109.2
72	11/4/2013 15:06	1:00:00	60.4	96	89.5	46.3	61.6	60.1	55.8	51.4	50.4	108.5
73	11/4/2013 16:06	1:00:00	57.9	93.5	71.9	46.7	61.8	60.4	56.3	53	52.2	102.2
74	11/4/2013 17:06	1:00:00	63.3	98.9	91.4	49.8	62.1	61.1	57.2	54.2	53.4	115.1
75	11/4/2013 18:06	1:00:00	57.4	93	78.4	47.2	60.9	59.8	55.5	52.3	51.5	97.6
76	11/4/2013 19:06	1:00:00	56.6	92.2	71.5	43.1	60.9	59.7	54.1	49.3	48.2	96.6
77	11/4/2013 20:06	1:00:00	54.6	90.2	65.7	41.6	59.9	58.5	51.7	46.5	45.4	86
78	11/4/2013 21:06	1:00:00	65.5	101.1	91.7	41.9	64.6	59.3	50.3	45.8	44.9	112.1
79	11/4/2013 22:06	1:00:00	52.2	87.8	66.2	39.2	58.3	56.1	48.2	44.3	43	93.1
80	11/4/2013 23:06	1:00:00	50.6	86.2	63.7	37.7	57.5	54.3	46.4	41.8	40.9	88.9
81	11/5/2013 0:06	1:00:00	49.5	85.1	67.8	35.1	54.7	53.5	43.9	39.6	38.7	85.9
82	11/5/2013 1:06	1:00:00	48.3	83.9	66.5	33.3	51.3	48.5	42.2	36.6	35.5	88.3
83	11/5/2013 2:06	1:00:00	47.3	82.9	67.9	35.8	49.2	47.2	42	38.5	37.8	84.7
84	11/5/2013 3:06	1:00:00	45.8	81.4	60.2	36.6	50.7	48.8	43.3	40	39.5	84.5
85	11/5/2013 4:06	1:00:00	46.1	81.7	61.4	36.7	49.5	48.3	44.3	40.9	40.1	84.8
86	11/5/2013 5:06	1:00:00	47.2	82.8	64.6	36.8	52.1	48.9	44.7	40.1	39.2	85.2
87	11/5/2013 6:06	1:00:00	52.7	88.3	66.7	38.6	55.1	55.3	50.5	44.8	43.5	88.5
88	11/5/2013 7:06	1:00:00	56.5	92.1	68.9	49.1	61	59.3	54.9	52.5	51.9	91.4
89	11/5/2013 8:06	1:00:00	63.2	98.8	83	46.7	62.8	60.8	55.7	51.9	50.4	104.8
90	11/5/2013 9:06	1:00:00	59.6	95.2	81.8	44	62.4	60.9	54.9	49.6	48.4	103.7
91	11/5/2013 10:06	1:00:00	55.9	91.5	73	38.5	61.2	59.5	52.3	46.1	44.6	92.8
92	11/5/2013 11:06	1:00:00	54.6	90.2	68.9	36.4	59.8	58.4	51.5	45.3	44	91.5
93	11/5/2013 12:06	1:00:00	56.3	91.9	81.1	37.8	60	58.8	52.6	46.3	44.8	98.1
94	11/5/2013 13:06	1:00:00	58.5	94.1	82.1	40.5	61.2	59.5	54.1	48	46.7	112.5
95	11/5/2013 14:06	1:00:00	55.8	91.4	69.9	41.1	60.2	59.1	53.5	48.1	46.6	96.8
96	11/5/2013 15:06	1:00:00	56.2	91.8	68.6	41.6	61	59.6	54.2	49.2	47.7	91.7
97	11/5/2013 16:06	1:00:00	56.8	92.4	68.3	43.6	60.9	59.8	55.5	50.8	49.7	99.1
98	11/5/2013 17:06	1:00:00	58.3	93.9	69.9	50.5	61.8	60.9	57.3	54.2	53.3	95.6
99	11/5/2013 18:06	1:00:00	59	94.6	72.4	49	62.1	61.3	58.2	55.4	54.3	104.7
100	11/5/2013 19:06	1:00:00	58.6	94.2	79.1	49.4	61.6	60.7	57.4	54.2	53.5	99.9
101	11/5/2013 20:06	1:00:00	57.8	93.4	67.1	46.5	61.7	60.7	56.8	52.4	51.2	94.8
102	11/5/2013 21:06	1:00:00	67.7	103.3	93.4	44.5	68.1	62	54.3	50.6	49.4	115
103	11/5/2013 22:06	1:00:00	65.7	101.3	92	45.7	60.1	58.1	53	49.9	49.1	112.6
104	11/5/2013 23:06	1:00:00	52.5	88.1	84.2	41.2	57.5	55.6	50.5	46.7	45.6	91.2
105	11/6/2013 0:06	1:00:00	49.6	85.2	68.1	38.8	52.9	51.5	47.9	44.5	43.5	99.8
106	11/6/2013 1:06	1:00:00	46.6	82.2	67.5	35.2	50.2	49.1	45	39.9	38.6	80.6
107	11/6/2013 2:06	1:00:00	42.6	78.3	56.4	31.4	47.7	45.7	40	34.9	33.6	83
108	11/6/2013 3:06	1:00:00	43.1	78.7	59.4	30.9	48.2	46.3	40.2	36.7	35.5	84.5
109	11/6/2013 4:06	1:00:00	50.8	86.4	73.7	31.7	51.5	49.4	40.9	35.9	34.9	101.4
110	11/6/2013 5:06	1:00:00	46	81.6	62.6	34.9	49.9	48.7	44.4	39.7	37.9	86.2
111	11/6/2013 6:06	1:00:00	53.5	89.1	85.7	40.5	58.6	57.1	50.9	46.1	45.2	88.7
112	11/6/2013 7:06	1:00:00	62.8	98.4	80.6	54.3	65.7	63.1	60	57.3	56.4	102.9
113	11/6/2013 8:06	1:00:00	60.9	96.5	73.3	55.1	63.6	62.7	60.3	58.3	57.5	96.9
114	11/6/2013 9:06	1:00:00	59.3	94.9	72	50.9	63.1	62	58.1	54.8	54	96.5
115	11/6/2013 10:06	1:00:00	57.5	93.1	80.7	45.6	61.4	60	54.8	51	50	94.3
116	11/6/2013 11:06	1:00:00	56.4	92	69.1	46.8	60.7	59.4	54.8	50.7	49.9	97.2
117	11/6/2013 12:06	1:00:00	56.8	92.4	70.2	45.3	61.2	59.8	55.1	51.3	50.4	94.8
118	11/6/2013 13:06	1:00:00	68.2	103.8	82.8	46.1	75.4	73.3	56.6	52.4	51.3	96.3
119	11/6/2013 14:06	0:00:16	55.7	67.8	59	51.5	58.6	58.5	56	51.7	51.6	78.3

Time Period	Max:	Min:	geo mean	Lp90
Daytime (7am - 7pm)	68.2	52.3	58.9	52.4
Evening (7pm-11pm)	69.2	51.1	58.0	48.8
Nighttime (11pm - 7am)	66.1	42.6	49.1	41.3

Table A3: Baseline Noise Monitoring results for DCL-03, 31 Lowe Court NS.

Record	Time	Measurment Time	LAeq	LAE	LAmax	LAmin	LA05	LA10	LA50	LA90	LA95	Lppeak
1	11/4/2013 12:05	1:00:00	59.3	94.9	69.7	44.3	63.7	62.3	57.8	52.6	51.2	98.5
2	11/4/2013 13:05	1:00:00	60.2	95.8	72.3	44.1	64.4	63.2	58.9	53.8	52.3	99.5
3	11/4/2013 14:05	1:00:00	59.7	95.3	72.2	43	64.1	62.8	58.4	53.2	51.9	96.6
4	11/4/2013 15:05	1:00:00	60.4	96	71.5	44.7	64.8	63.7	59	53.5	51.5	102.9
5	11/4/2013 16:05	1:00:00	60.9	96.5	69.8	48.5	64.9	63.8	59.9	55.6	54.2	100.6
6	11/4/2013 17:05	1:00:00	61.2	96.8	70.4	47.5	64.8	63.7	60.3	56.9	56.1	99.9
7	11/4/2013 18:05	1:00:00	59.6	95.2	70.1	47.2	63	62.2	58.8	55	54	95.5
8	11/4/2013 19:05	1:00:00	58.6	94.2	68.9	42.3	63	61.7	57.1	51.6	49.8	93.7
9	11/4/2013 20:05	1:00:00	56.6	92.2	68.8	39	61.5	60.1	54.5	48.2	45.9	91.8
10	11/4/2013 21:05	1:00:00	55.6	91.2	66.9	37.8	60.7	59.3	53.5	46.9	45	92
11	11/4/2013 22:05	1:00:00	54.1	89.7	66.7	35.7	59.1	57.9	51.6	44	41	92.6
12	11/4/2013 23:05	1:00:00	53	88.6	66.5	35.5	58.7	56.8	49.4	40.7	39	91.1
13	11/5/2013 0:05	1:00:00	53.3	88.9	67.2	31.9	59.2	57.8	49.4	38.6	36.2	87.8
14	11/5/2013 1:05	1:00:00	52.4	88	66.6	29.8	58.7	57.1	46.9	34.2	32.7	90.3
15	11/5/2013 2:05	1:00:00	50.7	86.3	67.2	28	57.9	54.9	41.8	33.3	32.4	92.5
16	11/5/2013 3:05	1:00:00	50	85.6	69.7	29.9	58.7	54.1	41.8	34	33	97.9
17	11/5/2013 4:05	1:00:00	50.7	86.3	67.2	29.9	58	55.1	40.9	33.9	33	88.8
18	11/5/2013 5:05	1:00:00	53.9	89.5	69.9	31.8	59.8	58	48.7	37	35.1	92.1
19	11/5/2013 6:05	1:00:00	56.7	92.3	66.7	40	61.2	60.1	55.2	48.5	46.5	92.6
20	11/5/2013 7:05	1:00:00	62.7	98.3	75	48.6	65.7	65	62.2	57.4	55.7	100.3
21	11/5/2013 8:05	1:00:00	55.9	91.5	65	45.6	61	59.1	54.1	50.3	49.4	92
22	11/5/2013 9:05	1:00:00	59.5	95.1	68.1	42.8	63.4	62.6	58.8	52.3	50.5	95.4
23	11/5/2013 10:05	1:00:00	57.9	93.5	70.8	36.8	62.4	61.1	56.4	49.1	46.7	99
24	11/5/2013 11:05	1:00:00	56.9	92.5	74.1	34.3	61.3	60	55	48	45.7	100
25	11/5/2013 12:05	1:00:00	56	91.6	71.5	34	60.5	58.9	54.2	46.5	44.4	99.2
26	11/5/2013 13:05	1:00:00	55.8	91.4	69.9	36.2	60.5	59	53.8	46.8	44.1	100.3
27	11/5/2013 14:05	1:00:00	56	91.6	71.3	38.2	60.6	58.9	53.8	47.1	45.2	99.5
28	11/5/2013 15:05	1:00:00	56.3	91.9	70.5	38.8	61.1	59.6	54.2	48.2	46.4	100.1
29	11/5/2013 16:05	1:00:00	58	93.6	70.5	41.6	61.7	60.7	56.9	52.2	50.6	98.5
30	11/5/2013 17:05	1:00:00	58.2	93.8	70.4	46.3	61.8	60.7	57.2	53.6	52.5	99.7
31	11/5/2013 18:05	1:00:00	58.6	94.2	67.5	51.4	61.8	61	57.9	55.1	54.3	93.3
32	11/5/2013 19:05	1:00:00	58	93.6	67	46.7	61.7	60.5	57.1	53.3	52.3	94
33	11/5/2013 20:05	1:00:00	58.1	93.7	74.3	45.6	61.5	60.5	57.1	53	51.9	98.3
34	11/5/2013 21:05	1:00:00	59	94.6	67.5	44.5	62.6	61.5	58.3	54.2	52.9	90.2
35	11/5/2013 22:05	1:00:00	57	92.6	74.3	44.1	61	59.9	55.6	49.9	48.3	97.4
36	11/5/2013 23:05	1:00:00	50.7	86.3	71.4	37	61.1	59.7	54.9	48.4	46.8	93.6
37	11/6/2013 0:05	1:00:00	53.7	89.3	65.2	35.6	59.1	57.9	50.9	42	40.1	93.1
38	11/6/2013 1:05	1:00:00	50.8	86.4	64.2	31.4	57.9	55.5	44.8	35.1	34	90.5
39	11/6/2013 2:05	1:00:00	47.5	83.1	67.8	28.2	54.2	51.4	38.3	32	31.4	91.1
40	11/6/2013 3:05	1:00:00	46.4	82	65.3	28.1	52.8	49.4	37.2	32.5	31.7	89.5
41	11/6/2013 4:05	1:00:00	48.2	83.8	66.7	28.4	54.6	51.9	38.8	32.8	32	89.4
42	11/6/2013 5:05	1:00:00	50.1	85.7	67.1	32	56.4	53.8	44.2	36.6	35.3	92.5
43	11/6/2013 6:05	1:00:00	56.2	92.3	66.4	38.2	61.8	60.7	54.6	43.9	41.8	90.7
44	11/6/2013 7:05	1:00:00	63.7	99.3	72.5	52.3	66.2	65.7	63.6	60.1	58.9	99.7
45	11/6/2013 8:05	1:00:00	62	97.6	68.9	50.3	65.5	64.8	61.4	55.9	54.7	95.9
46	11/6/2013 9:05	1:00:00	61	96.6	69.5	49.5	64.1	63.3	60.4	56.5	55	98.8
47	11/6/2013 10:05	1:00:00	58.3	93.9	76.3	44.4	62.1	61	57	52.1	50.9	99.3
48	11/6/2013 11:05	1:00:00	65.9	101.5	89.4	42.2	67.7	61.6	56.4	51.3	49.9	102.5
49	11/6/2013 12:05	1:00:00	57.7	93.3	73.2	44.5	61.2	59.8	55.6	50.7	49.2	100.2
50	11/6/2013 13:05	1:00:00	57.1	92.7	72.8	43.4	61	59.9	55.9	51.3	50.3	99.1
51	11/6/2013 14:05	0:15:40	57.6	87.3	65.7	47.7	61.5	60.3	56.5	52.1	50.9	93.5

Time Period	Max:	Min:	geo mean	Lp90
Daytime (7am - 7pm)	65.9	55.8	59.1	52.4
Evening (7pm-11pm)	59.0	54.1	57.1	50.6
Nighttime (7pm - 7am)	50.7	46.4	51.8	37.2

Figure 1 24-Hour Baseline Noise Monitoring - Site 1, Terrace Lane (July 28-29, 2011)

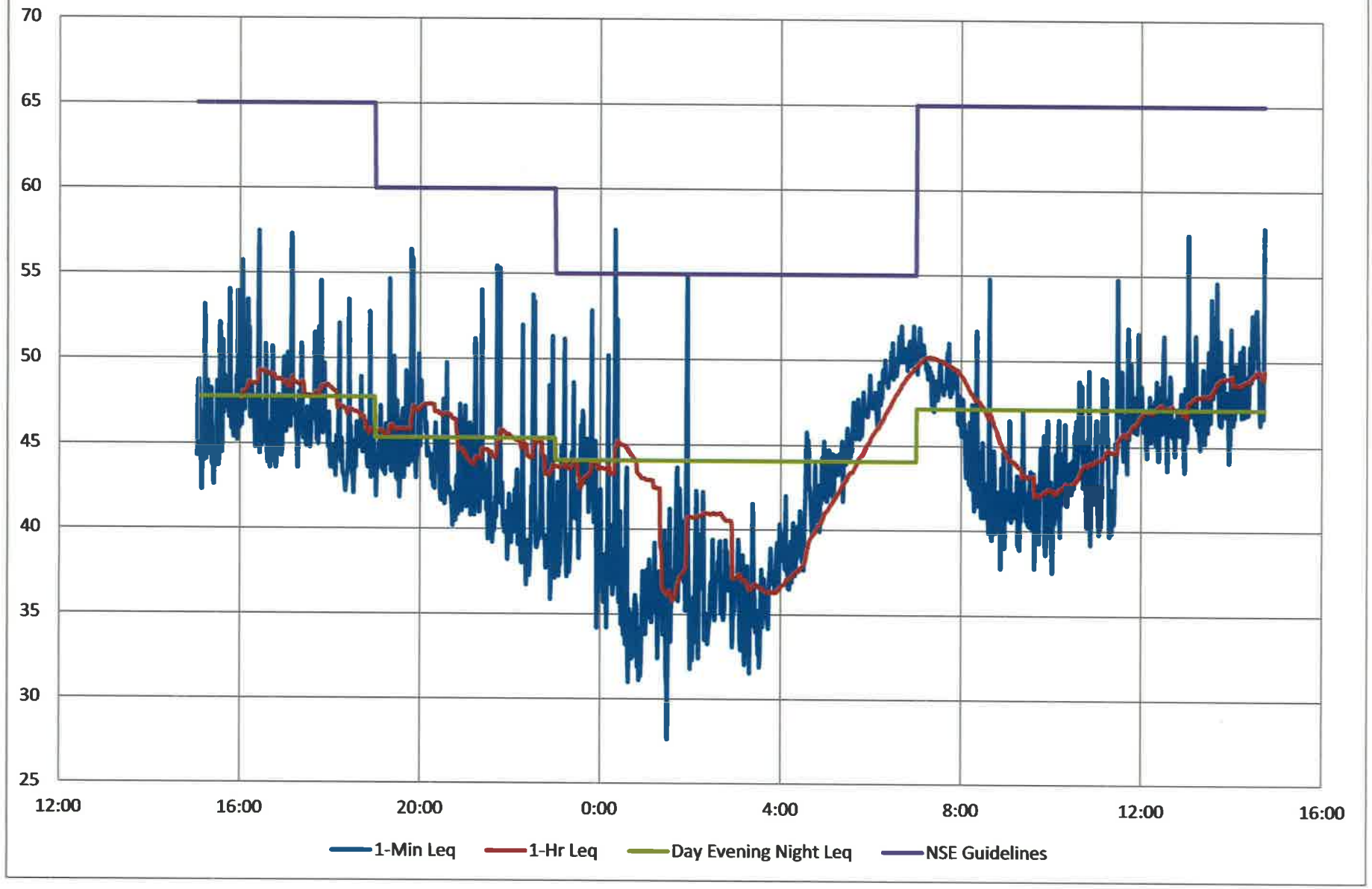


Figure 2 24-Hour Baseline Noise Monitoring - Site 2, Daycare (June 30 - July 1, 2011)

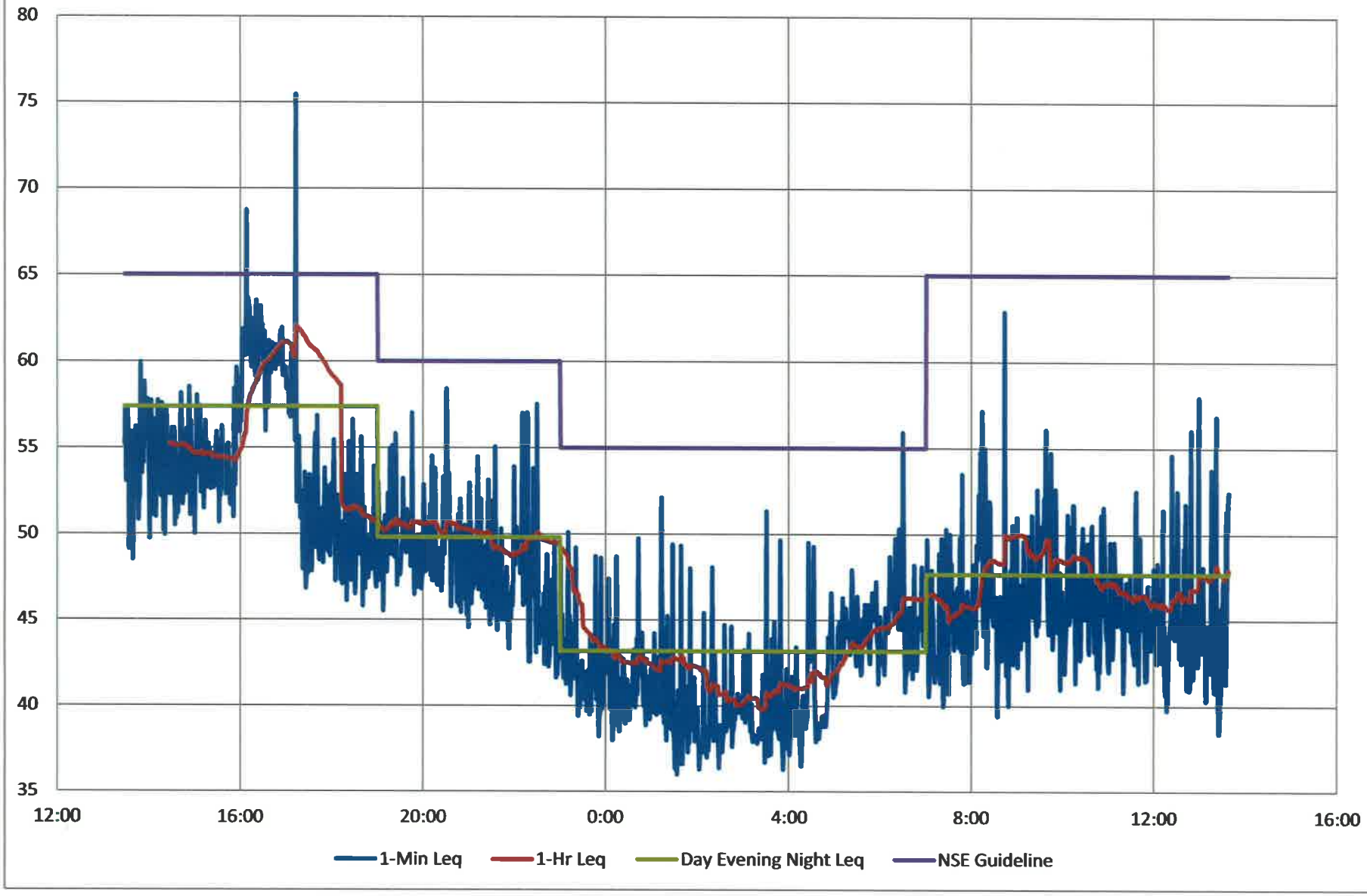


Figure 3 24-Hour Baseline Noise Monitoring - Site 3, Rockmanor Drive (June 29 - 30, 2011)

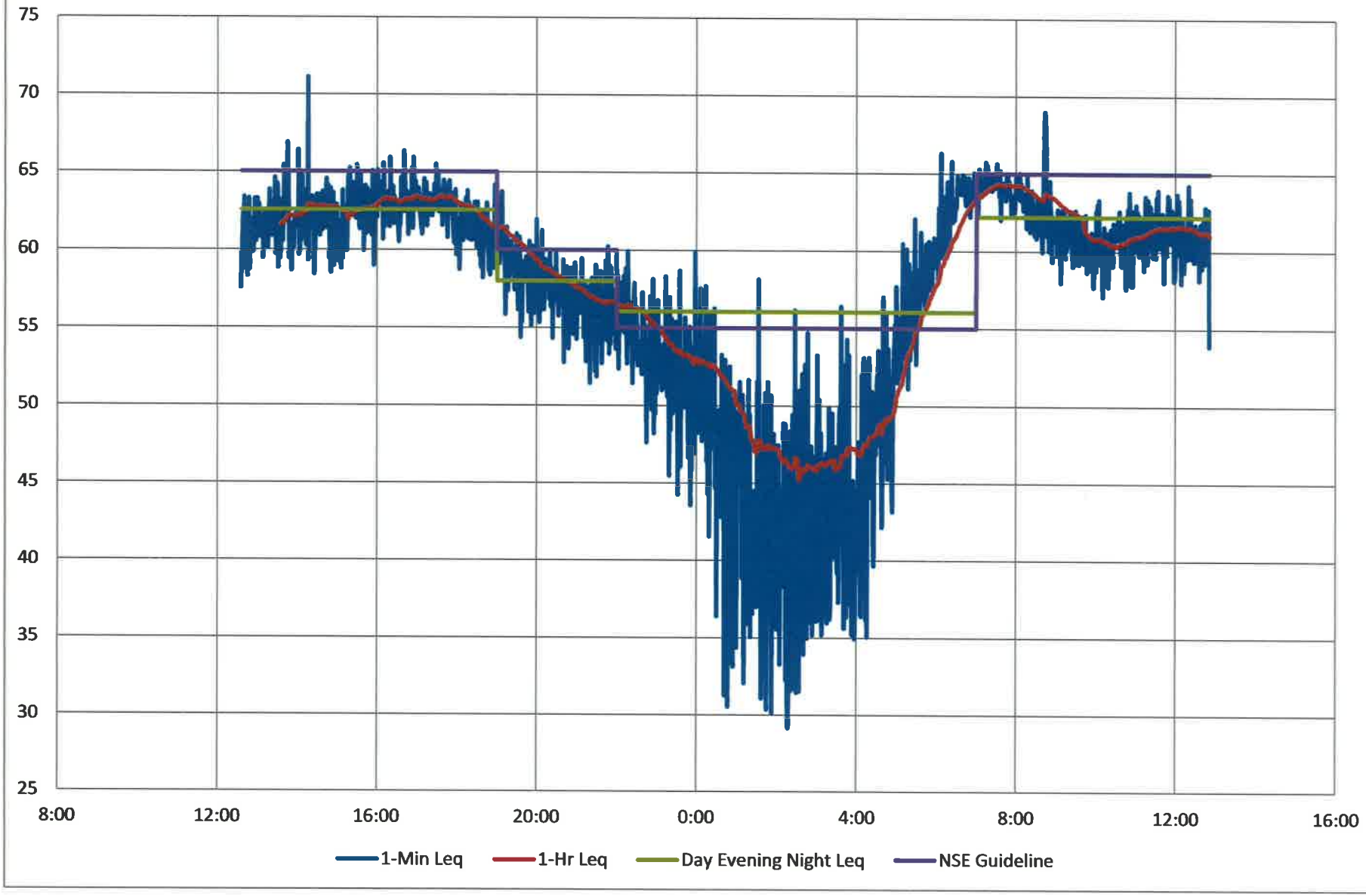


Figure 4 24-Hour Baseline Noise Monitoring - Site 4, Highschool (June 29-30, 2011)

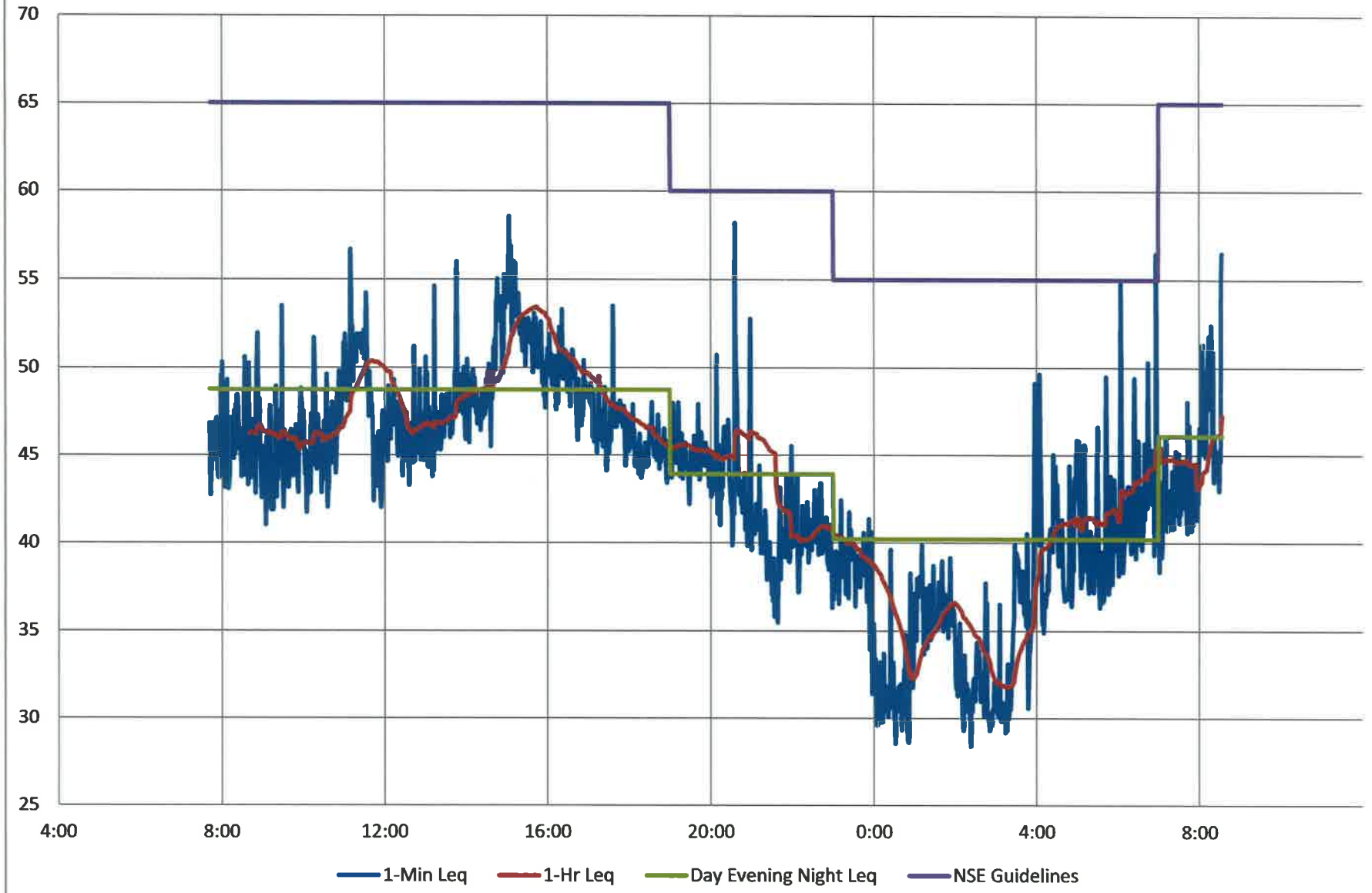


Figure 5 24-Hour Baseline Noise Monitoring - Site 5, Restaurant (June 29-30, 2011)

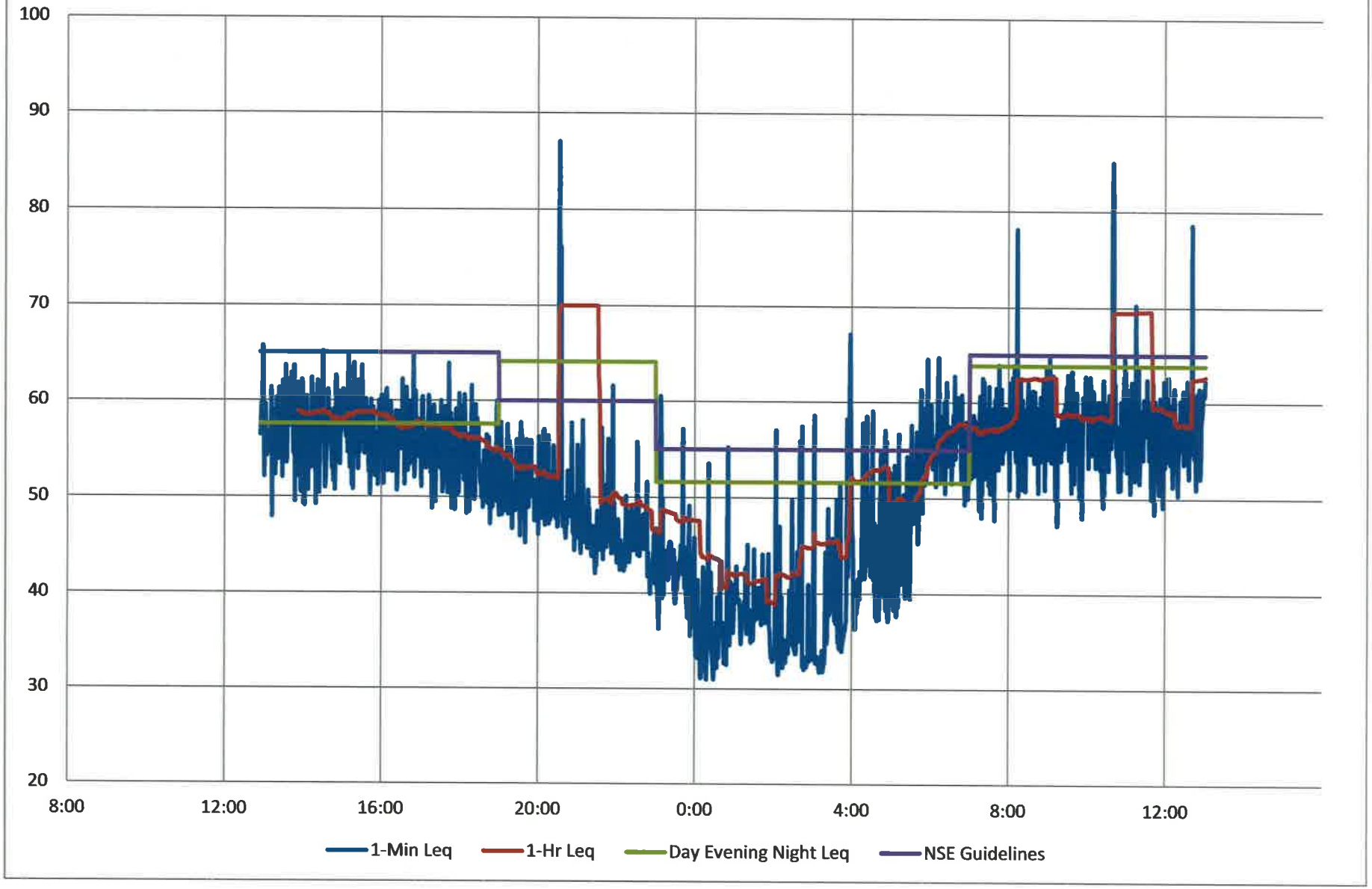
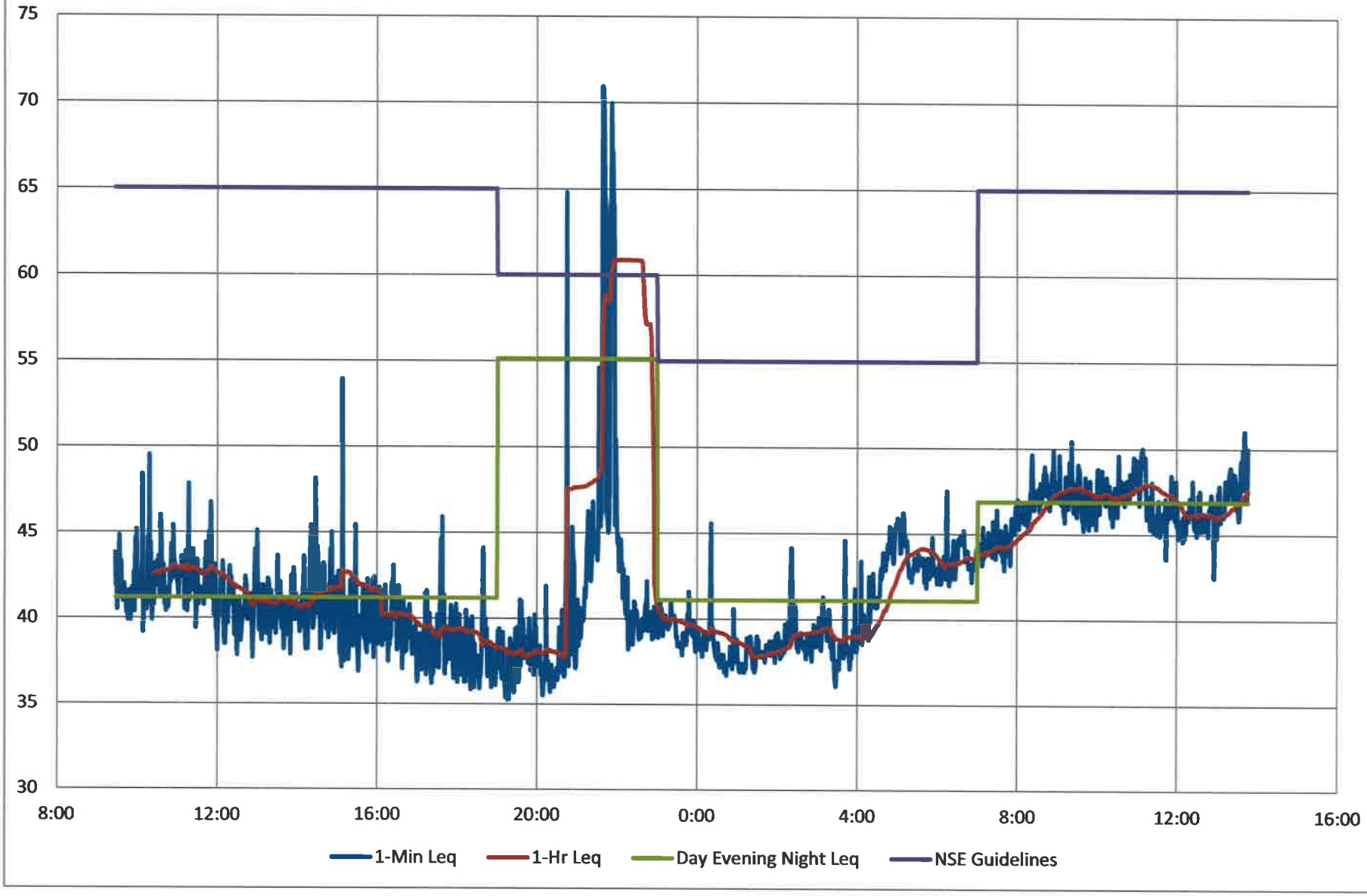


Figure 6 24-Hour Baseline Noise Monitoring - Site 6, Correctional Facility (May 31 - June 1, 2011)



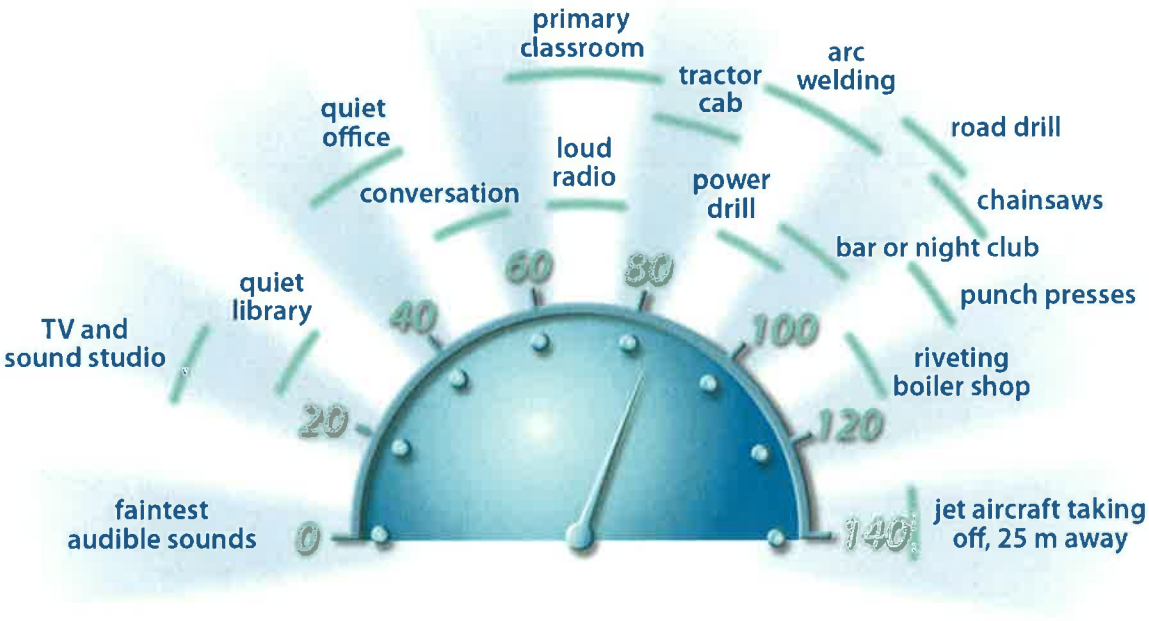
Basic Noise Concepts

As noise is a complex subject, some general introductory information is thought to be useful for those who do not have a background in acoustics. A complete description of acoustics is beyond the scope of this document, however, it is hoped that enough information is provided to give a general understanding.

Sound is produced by any vibrating body and is transmitted in air as a longitudinal wave motion. It is, therefore, a form of mechanical energy and is typically measured in energy-related units. For humans, sound is defined as acoustic energy in the frequency range that can be heard by the human ear – from 20 to 20,000 Hz. Noise is generally defined as "unwanted sound" and is thus subjective in nature. One of the most basic descriptors of sound is the sound pressure level (SPL). The SPL of a sound reflects only its magnitude and does not refer to the source of the sound or the character of the sound. Sound pressure levels are most commonly measured and described in decibels (Denoted dB) or A-weighted decibels (Denoted dBA). A-weighted decibels more closely correlate with the subjective loudness of a sound, as discerned by the human ear.

Typical sound pressure levels range from about 20 dBA in an extremely quiet wilderness area to between 50 and 70 dBA in towns during the day time, 90 dBA or more in industrial settings to well over 120 dBA near to a jet-aircraft at take-off (Berglund, Lindvall 1995). The sound pressure levels of some familiar sounds are compared in Figure A.1.

Figure A1 Comparison of decibel levels (http://www.hse.gov.uk/noise/advice.htm)



Another basic descriptor of sound is the Sound Power Level (PWL). This is a basic quantity which describes the amount of acoustic power radiated by a source (i.e., motor, generator). It is the fundamental quantity which produces a sound pressure level (SPL) at a certain distance from a source. It is used to define the source for assessment purposes and to calculate the SPL at a receptor. The PWL is also usually described in decibels or A-weighted decibels.

Understanding the nature of sound travel in the outdoor environment is also important. Sound measured at a certain distance from a point source is reduced by about 6 dBA at twice that distance. For example, if the sound from a source at a distance of 1 metre is 75 dBA then at 2 metres it will be approximately 69 dBA and at 4 metres 63 dBA and so on. When more than one source is involved, the reduction of noise with distance may vary depending on the arrangement of the sources with respect to the receptor. Other factors such as complex topography, obstructions between the noise source and the receptor as well as atmospheric conditions, especially wind direction can also complicate the attenuation (reduction effect) of distance. These issues are dealt with through the use of computer modelling programs based on atmospheric physics.

A widely used "rule of thumb" for the loudness of a particular sound is that the sound must be increased in intensity by 10 dBA for the sound to be perceived as twice as loud. For example it takes ten violins to sound twice as loud as one violin. Although this rule is widely used, it must be emphasized that it is an approximate general statement based upon a great deal of investigation of average human hearing but it is not to be taken as a hard and fast rule (Georgia State University 2005). Another rule of thumb is that differences of 3 dB are just perceptible, especially in a fluctuating sound, but 5 dB is distinctly perceptible.

DEFINITIONS

Attenuation

The reduction of sound intensity by various means (*e.g.*, air, humidity and porous materials).

Audibility

Audibility is the detectability of sound by animals with normal hearing, including humans. Audibility is affected by the hearing ability of the animal, other simultaneous interfering sounds or stimuli, and by the frequency content and amplitude of the sound.

Average Day Sound Level, L_d

Fifteen hour average sound level calculated from the sound levels obtained between the daytime hours of 7 am to 10 pm.

Average Night Sound Level, L_N

Nine hour average sound level calculated from the sound levels obtained between the nighttime hours of 10 pm to 7 am.

A-Weighting

The weighting network used to account for changes in level sensitivity as a function of frequency. The A-weighting network de-emphasizes the high (6.3 kHz and above) and low (below 1 kHz) frequencies, and emphasizes the frequencies between 1 kHz and 6.3 kHz, in an established standard to simulate the relative response of the human ear. The A-weighting system is the most common network in use in environmental sound assessments and criteria.

Ambient Noise

All-encompassing sound that is associated with a given environment, usually a composite of sounds from many sources near and far.

Background Noise

All-encompassing sound of a given environment without the sound source of interest.

Day Night Average Sound Level (L_{dn})

Twenty-four hour average sound level, obtained after the addition of 10 decibels to sound levels in the night, from 10 pm to 7 am.

$L_{dn} = 10 \log (1/24 (15 (10L_d/10) + 9 (10(L_n + 10)/10)))$

Where,

L_{dn} = day-night sound level (dB)

L_d = daytime equivalent sound level (dB)

L_n = nighttime equivalent sound level (dB)

Decibel

A logarithmic measure of any measured physical quantity and commonly used in the measurement of sound. The decibel provides the possibility of representing a large span of signal levels in a simple manner as opposed to using the basic unit Pascal. The difference between the sound pressure for silence versus a loud sound is a factor of over a billion to one, therefore it is less cumbersome, and more convenient in analysis, to use a small range of equivalent values: 0 to 130 decibels.

Energy Equivalent Sound Level (L_{eq})

The L_{eq} is the level of a constant sound over a specific time period that has the same sound energy as the actual (varying) sound over the same period. L_{eq} is strongly influenced by intrusive sounds and will typically be higher than the steady state sound level. It is the metric most often used in regulatory applications, sound emission rating for turbines or other machinery, and environmental monitoring. L_{eq} should be used carefully in quantifying natural

ambient sound levels because occasional loud sound levels (gusts of wind, birds, insects) may heavily influence (increase) its value, even though the typical sound levels are lower.

Existing Ambient

All sounds in a given area (includes all natural sounds as well as all mechanical, electrical and other human-caused sounds).

Hearing Range (human)

An average healthy young person can hear frequencies from approximately 20 Hz to 20,000 Hz, and sound pressure levels from 0 dB to 130 dB or more (threshold of pain). Adults hear a significantly reduced range of frequencies, often less than 10,000 Hz at the high end, and the threshold of hearing also increases with age. In terms of hearing differences in sound levels, the smallest perceptible change is 1 dB, but this would only be possible in controlled environments. Change of 3 dBA may be perceived, depending on how variable the sound is; changes of this magnitude in average levels during gusty wind conditions, for example, would generally not be noticeable, but changes in the fairly constant hum of an operating appliance would be perceived. In natural environmental sounds changes of 5 dBA would be detectible.

Human perception of noise is on a logarithmic scale, and that means that there is a non-linear relationship between the energy content of a sound level and the human perceived volume. A doubling of the energy content is measured as a 3 dB increase, but to humans this is a just perceptible difference in sound. In the normal fluctuations of outdoor sound, this might not even be perceptible. For humans to perceive a doubling in the volume of the sound, the energy must increase by 10 dB.

% Highly Annoyed

The preferred measurement scale for noise annoyance used by Health Canada is the "percent highly annoyed", or %HA, a metric that is based on some pioneering work of the US EPA in measuring noise annoyance to the public in the 1970's. The scale is based on an equation (see below) that is derived by statistical linear regression methods that fit a response line to the graph of community annoyance versus day-night sound level, L_{dn} (see L_{dn}).

$$\% HA = 100 / [1 + \exp(10.4 - 0.132 L_{dn})]$$

Natural Ambient

Natural ambient sound is defined as all natural sounds in a given area, excluding all non-natural sounds. "Natural ambient" is considered synonymous with the term "natural quiet," although natural ambient is more appropriate because nature is often not quiet.

Noise

Traditionally, noise has been defined as unwanted, undesired, or unpleasant sound. This makes noise a subjective term. Sounds that may be unwanted and undesired by some may be wanted and desirable by others.

Octave

An octave is the interval between two frequencies having a ratio of 2 to 1. For acoustic measurements, the octaves start at 1000 Hz center frequency and go up or down from that point, at the 2:1 ratio. From 1000 Hz, the next filter's center frequency is 2000 Hz, the next is 4000 Hz, etc., or 500 Hz, 250 Hz, etc. Octave filtering is used in measurement and analysis, and can be full octave, one-third octave or greater subdivisions. The division of sound into frequency bands is done in analysis because the different frequencies behave differently in the atmosphere, higher frequency sound being absorbed more readily than low frequency sound.

Sound

Sound is a pressure fluctuation due to a wave motion in air, water, or other media that has the potential to be heard through the auditory mechanisms of humans or animals.

Sound Power Level (L_W)

The sound power level is the total sound energy radiated by a source per unit time. The unit of measurement is the decibel representing a ratio of acoustic watts to a reference level of watts. The acoustic power radiated from a given sound source as related to a reference power level (typically 10^{-12} watts) and expressed as decibels. A sound power level of 1 watt = 120 dB. Conventionally, the reference level = 10^{-12} watts.

Sound Pressure Level (SPL)

Sound levels are represented by the energy in the sound pressure level as defined as ten times the base-10 logarithm of the square of the ratio of the mean-square sound pressure, in a stated frequency band (often weighted), and the reference mean-square sound pressure of 20 μPa, the threshold of human hearing.

$SPL = 10*\log_{10}(p^2 / p_{ref}^2)$ (dB)

where:

p = mean-square sound pressure; and

p_{ref} = reference mean-square sound pressure of 20 μPa.

Appendix B
2013 Water Chemistry Results

Maxxam

Success Through Science®

Your Project #: 13-8348-1000
Site Location: HWY 107
Your C.O.C. #: B 127589

Attention: Karen March
Dillon Consulting Limited
Halifax
137 Chain Lake Dr
Suite 100
Halifax , NS
B3S 1B3

Report Date: 2013/10/04

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3G4849
Received: 2013/09/27, 12:33

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Carbonate, Bicarbonate and Hydroxide	3	N/A	2013/10/02	CAM SOP-00102	APHA 4500-CO2 D
Alkalinity	3	N/A	2013/10/03	ATL SOP 00013	Based on EPA310.2
Chloride	3	N/A	2013/10/04	ATL SOP 00014	Based on SM4500-Cl-
Colour	3	N/A	2013/10/04	ATL SOP 00020	Based on SM2120C
Conductance - water	3	N/A	2013/10/01	ATL SOP-00004	Based on SM2510B
Hardness (calculated as CaCO3)	3	N/A	2013/10/03	ATL SOP 00048	Based on SM2340B
Metals Water Total MS (1)	3	2013/10/02	2013/10/02	ATL SOP 00058	Based on EPA6020A
Ion Balance (% Difference)	3	N/A	2013/10/04		
Anion and Cation Sum	3	N/A	2013/10/03		
Nitrogen Ammonia - water	3	N/A	2013/10/03	ATL SOP 00015	Based on USEPA 350.1
Nitrogen - Nitrate + Nitrite	3	N/A	2013/10/03	ATL SOP 00016	Based on USGS - Enz.
Nitrogen - Nitrite	3	N/A	2013/10/03	ATL SOP 00017	Based on SM4500-NO2B
Nitrogen - Nitrate (as N)	3	N/A	2013/10/04	ATL SOP 00018	Based on ASTMD3867
pH (2)	3	N/A	2013/10/01	ATL SOP 00003	Based on SM4500H+B
Phosphorus - ortho	3	N/A	2013/10/04	ATL SOP 00021	Based on USEPA 365.2
Sat. pH and Langelier Index (@ 20C)	2	N/A	2013/10/03	ATL SOP-00049	.
Sat. pH and Langelier Index (@ 20C)	1	N/A	2013/10/04	ATL SOP-00049	.
Sat. pH and Langelier Index (@ 4C)	2	N/A	2013/10/03	ATL SOP-00049	.
Sat. pH and Langelier Index (@ 4C)	1	N/A	2013/10/04	ATL SOP-00049	.
Reactive Silica	3	N/A	2013/10/03	ATL SOP 00022	Based on EPA 366.0
Sulphate	3	N/A	2013/10/03	ATL SOP 00023	Based on EPA 375.4
Total Dissolved Solids (TDS calc)	3	N/A	2013/10/04		
Organic carbon - Total (TOC)	3	N/A	2013/10/04	ATL SOP 00037	Based on SM5310C
Total Suspended Solids	3	N/A	2013/10/01	ATL SOP 00007	based on EPA 160.2
Turbidity	3	N/A	2013/10/04	ATL SOP 00011	based on EPA 180.1

Remarks:

Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) New RDLs in effect due to release of NS Contaminated Sites Regulations. Reduced RDL based on MDL study performance. Low level

Your Project #: 13-8748-1000
Site Location: HWY 107
Your C.O.C. #: B 127590

Attention: Karen March
Dillon Consulting Limited
Halifax
137 Chain Lake Dr
Suite 100
Halifax , NS
B3S 1B3

Report Date: 2013/10/11

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3G8260
Received: 2013/10/03, 10:56

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Carbonate, Bicarbonate and Hydroxide	2	N/A	2013/10/09	CAM SOP-00102	APHA 4500-CO2 D
Alkalinity	2	N/A	2013/10/09	ATL SOP 00013	Based on EPA310.2
Chloride	2	N/A	2013/10/10	ATL SOP 00014	Based on SM4500-Cl-
Colour	2	N/A	2013/10/09	ATL SOP 00020	Based on SM2120C
Conductance - water	2	N/A	2013/10/09	ATL SOP-00004	Based on SM2510B
Hardness (calculated as CaCO3)	2	N/A	2013/10/10	ATL SOP 00048	Based on SM2340B
Metals Water Total MS (1)	2	2013/10/08	2013/10/10	ATL SOP 00058	Based on EPA6020A
Ion Balance (% Difference)	2	N/A	2013/10/10		
Anion and Cation Sum	2	N/A	2013/10/10		
Nitrogen Ammonia - water	2	N/A	2013/10/08	ATL SOP 00015	Based on USEPA 350.1
Nitrogen - Nitrate + Nitrite	2	N/A	2013/10/10	ATL SOP 00016	Based on USGS - Enz.
Nitrogen - Nitrite	2	N/A	2013/10/10	ATL SOP 00017	Based on SM4500-NO2B
Nitrogen - Nitrate (as N)	2	N/A	2013/10/10	ATL SOP 00018	Based on ASTMD3867
pH (2)	2	N/A	2013/10/09	ATL SOP 00003	Based on SM4500H+B
Phosphorus - ortho	2	N/A	2013/10/10	ATL SOP 00021	Based on USEPA 365.2
Sat. pH and Langelier Index (@ 20C)	2	N/A	2013/10/10	ATL SOP-00049	
Sat. pH and Langelier Index (@ 4C)	2	N/A	2013/10/10	ATL SOP-00049	
Reactive Silica	2	N/A	2013/10/09	ATL SOP 00022	Based on EPA 366.0
Sulphate	2	N/A	2013/10/10	ATL SOP 00023	Based on EPA 375.4
Total Dissolved Solids (TDS calc)	2	N/A	2013/10/10		
Organic carbon - Total (TOC) (3)	2	N/A	2013/10/09	ATL SOP 00037	Based on SM5310C
Total Suspended Solids	3	N/A	2013/10/08	ATL SOP 00007	based on EPA 160.2
Turbidity	2	N/A	2013/10/09	ATL SOP 00011	based on EPA 180.1

Remarks:

Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) New RDLs in effect due to release of NS Contaminated Sites Regulations. Reduced RDL based on MDL study performance. Low level analytical run checks being implemented.
(2) The APHA Standard Method require pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for

compliance. All Laboratory pH analyses in this report are reported past the APHA Standard Method holding time.
(3) TOC and DOC present in the sample should be considered as non-purgeable TOC and DOC

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Leonard Muise, Project Manager
Email: LMuise@maxxam.ca
Phone# (902) 420-0203 Ext:236

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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

Maxxam Job #: B3G8260
Report Date: 2013/10/11

Dillon Consulting Limited
Client Project #: 13-8748-1000
Site Location: HWY 107

RESULTS OF ANALYSES OF WATER

Maxxam ID		TI2765	TI2766		TI2767		
Sampling Date		2013/10/02 15:00	2013/10/02 15:00		2013/10/02 15:00		
COC Number		B 127590	B 127590		B 127590		
	Units	**WRIGHTS POND**		**RDL**	**AND1**	**RDL**	**QC Batch**
Calculated Parameters							
Anion Sum	me/L		0.710	N/A	0.410	N/A	3374420
Bicarb. Alkalinity (calc. as CaCO3)	mg/L		ND	1.0	ND	1.0	3374417
Calculated TDS	mg/L		47	1.0	25	1.0	3374423
Carb. Alkalinity (calc. as CaCO3)	mg/L		ND	1.0	ND	1.0	3374417
Cation Sum	me/L		0.770	N/A	0.450	N/A	3374420
Hardness (CaCO3)	mg/L		5.9	1.0	6.5	1.0	3374418
Ion Balance (% Difference)	%		4.05	N/A	4.65	N/A	3374419
Langelier Index (@ 20C)	N/A		NC		NC		3374421
Langelier Index (@ 4C)	N/A		NC		NC		3374422
Nitrate (N)	mg/L		ND	0.050	ND	0.050	3374413
Saturation pH (@ 20C)	N/A		NC		NC		3374421
Saturation pH (@ 4C)	N/A		NC		NC		3374422
Inorganics							
Total Alkalinity (Total as CaCO3)	mg/L		ND	5.0	ND	5.0	3379205
Dissolved Chloride (Cl)	mg/L		23	1.0	12	1.0	3379215
Colour	TCU		180	25	26	5.0	3379219
Nitrate + Nitrite	mg/L		ND	0.050	ND	0.050	3379221
Nitrite (N)	mg/L		ND	0.010	ND	0.010	3379225
Nitrogen (Ammonia Nitrogen)	mg/L		0.27	0.050	0.057	0.050	3376539
Total Organic Carbon (C)	mg/L		14	0.50	5.2	0.50	3380074
Orthophosphate (P)	mg/L		ND	0.010	ND	0.010	3379220
pH	pH		5.65	N/A	6.16	N/A	3378269
Reactive Silica (SiO2)	mg/L		3.5	0.50	ND	0.50	3379218
Total Suspended Solids	mg/L	9.0	1.4	1.0	2.0	1.0	3376367
Dissolved Sulphate (SO4)	mg/L		3.1	2.0	3.1	2.0	3379216
Turbidity	NTU		0.67	0.10	0.27	0.10	3379513
Conductivity	uS/cm		83	1.0	53	1.0	3378275

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

Maxxam Job #: B3G8260
Report Date: 2013/10/11

Dillon Consulting Limited
Client Project #: 13-8748-1000
Site Location: HWY 107

ELEMENTS BY ICP/MS (WATER)

Maxxam ID		TI2766	TI2767		
Sampling Date		2013/10/02 15:00	2013/10/02 15:00		
COC Number		B 127590	B 127590		
	Units	**POND**	**AND1**	**RDL**	**QC Batch**
Metals					
Total Aluminum (Al)	ug/L	400	93	5.0	3377663
Total Antimony (Sb)	ug/L	ND	ND	1.0	3377663
Total Arsenic (As)	ug/L	ND	ND	1.0	3377663
Total Barium (Ba)	ug/L	5.3	6.3	1.0	3377663
Total Beryllium (Be)	ug/L	ND	ND	1.0	3377663
Total Bismuth (Bi)	ug/L	ND	ND	2.0	3377663
Total Boron (B)	ug/L	ND	ND	50	3377663
Total Cadmium (Cd)	ug/L	0.012	0.011	0.010	3377663
Total Calcium (Ca)	ug/L	1800	1800	100	3377663
Total Chromium (Cr)	ug/L	ND	ND	1.0	3377663
Total Cobalt (Co)	ug/L	ND	ND	0.40	3377663
Total Copper (Cu)	ug/L	ND	ND	2.0	3377663
Total Iron (Fe)	ug/L	490	ND	50	3377663
Total Lead (Pb)	ug/L	0.92	ND	0.50	3377663
Total Magnesium (Mg)	ug/L	340	500	100	3377663
Total Manganese (Mn)	ug/L	32	19	2.0	3377663
Total Molybdenum (Mo)	ug/L	ND	ND	2.0	3377663
Total Nickel (Ni)	ug/L	ND	ND	2.0	3377663
Total Phosphorus (P)	ug/L	ND	ND	100	3377663
Total Potassium (K)	ug/L	330	490	100	3377663
Total Selenium (Se)	ug/L	ND	ND	1.0	3377663
Total Silver (Ag)	ug/L	ND	ND	0.10	3377663
Total Sodium (Na)	ug/L	14000	7000	100	3377663
Total Strontium (Sr)	ug/L	7.1	8.7	2.0	3377663
Total Thallium (Tl)	ug/L	ND	ND	0.10	3377663
Total Tin (Sn)	ug/L	ND	ND	2.0	3377663
Total Titanium (Ti)	ug/L	4.3	ND	2.0	3377663
Total Uranium (U)	ug/L	ND	ND	0.10	3377663
Total Vanadium (V)	ug/L	ND	ND	2.0	3377663
Total Zinc (Zn)	ug/L	7.8	5.6	5.0	3377663

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

Maxxam Job #: B3G8260
Report Date: 2013/10/11

Dillon Consulting Limited
Client Project #: 13-8748-1000
Site Location: HWY 107

Package 1	5.3°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

Dillon Consulting Limited
Attention: Karen March
Client Project #: 13-8748-1000
P.O. #:
Site Location: HWY 107

Quality Assurance Report

Maxxam Job Number: DB3G8260

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3376367 AWM	QC Standard	Total Suspended Solids	2013/10/08		99	%	80 - 120
	Method Blank	Total Suspended Solids	2013/10/08	ND, RDL=1.0		mg/L	
	RPD	Total Suspended Solids	2013/10/08	16.2		%	25
3376539 ALG	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2013/10/08		97	%	80 - 120
	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2013/10/08		97	%	80 - 120
	Method Blank	Nitrogen (Ammonia Nitrogen)	2013/10/08	ND, RDL=0.050		mg/L	
	RPD	Nitrogen (Ammonia Nitrogen)	2013/10/08	NC		%	25
3377663 DLB	Matrix Spike	Total Aluminum (Al)	2013/10/10		96	%	80 - 120
		Total Antimony (Sb)	2013/10/10		102	%	80 - 120
		Total Arsenic (As)	2013/10/10		94	%	80 - 120
		Total Barium (Ba)	2013/10/10		94	%	80 - 120
		Total Beryllium (Be)	2013/10/10		92	%	80 - 120
		Total Bismuth (Bi)	2013/10/10		97	%	80 - 120
		Total Boron (B)	2013/10/10		94	%	80 - 120
		Total Cadmium (Cd)	2013/10/10		92	%	80 - 120
		Total Calcium (Ca)	2013/10/10		NC	%	80 - 120
		Total Chromium (Cr)	2013/10/10		93	%	80 - 120
		Total Cobalt (Co)	2013/10/10		92	%	80 - 120
		Total Copper (Cu)	2013/10/10		NC	%	80 - 120
		Total Iron (Fe)	2013/10/10		94	%	80 - 120
		Total Lead (Pb)	2013/10/10		96	%	80 - 120
		Total Magnesium (Mg)	2013/10/10		NC	%	80 - 120
		Total Manganese (Mn)	2013/10/10		95	%	80 - 120
		Total Molybdenum (Mo)	2013/10/10		97	%	80 - 120
		Total Nickel (Ni)	2013/10/10		91	%	80 - 120
		Total Phosphorus (P)	2013/10/10		100	%	80 - 120
		Total Potassium (K)	2013/10/10		95	%	80 - 120
		Total Selenium (Se)	2013/10/10		90	%	80 - 120
		Total Silver (Ag)	2013/10/10		94	%	80 - 120
		Total Sodium (Na)	2013/10/10		95	%	80 - 120
		Total Strontium (Sr)	2013/10/10		NC	%	80 - 120
		Total Thallium (Tl)	2013/10/10		98	%	80 - 120
		Total Tin (Sn)	2013/10/10		103	%	80 - 120
		Total Titanium (Ti)	2013/10/10		98	%	80 - 120
		Total Uranium (U)	2013/10/10		101	%	80 - 120
		Total Vanadium (V)	2013/10/10		96	%	80 - 120
		Total Zinc (Zn)	2013/10/10		90	%	80 - 120
	Spiked Blank	Total Aluminum (Al)	2013/10/10		100	%	80 - 120
		Total Antimony (Sb)	2013/10/10		103	%	80 - 120
		Total Arsenic (As)	2013/10/10		94	%	80 - 120
		Total Barium (Ba)	2013/10/10		97	%	80 - 120
		Total Beryllium (Be)	2013/10/10		92	%	80 - 120
		Total Bismuth (Bi)	2013/10/10		100	%	80 - 120
		Total Boron (B)	2013/10/10		94	%	80 - 120
		Total Cadmium (Cd)	2013/10/10		93	%	80 - 120
		Total Calcium (Ca)	2013/10/10		89	%	80 - 120
		Total Chromium (Cr)	2013/10/10		95	%	80 - 120
		Total Cobalt (Co)	2013/10/10		96	%	80 - 120
		Total Copper (Cu)	2013/10/10		93	%	80 - 120
		Total Iron (Fe)	2013/10/10		97	%	80 - 120
		Total Lead (Pb)	2013/10/10		98	%	80 - 120
		Total Magnesium (Mg)	2013/10/10		100	%	80 - 120
		Total Manganese (Mn)	2013/10/10		97	%	80 - 120
		Total Molybdenum (Mo)	2013/10/10		99	%	80 - 120
		Total Nickel (Ni)	2013/10/10		95	%	80 - 120

Maxxam Analytics International Corporation o/a Maxxam Analytics 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

Dillon Consulting Limited
Attention: Karen March
Client Project #: 13-8748-1000
P.O. #:
Site Location: HWY 107

Quality Assurance Report (Continued)

Maxxam Job Number: DB3G8260

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3377663 DLB	Spiked Blank	Total Phosphorus (P)	2013/10/10		101	%	80 - 120
		Total Potassium (K)	2013/10/10		99	%	80 - 120
		Total Selenium (Se)	2013/10/10		92	%	80 - 120
		Total Silver (Ag)	2013/10/10		96	%	80 - 120
		Total Sodium (Na)	2013/10/10		99	%	80 - 120
		Total Strontium (Sr)	2013/10/10		95	%	80 - 120
		Total Thallium (Tl)	2013/10/10		100	%	80 - 120
		Total Tin (Sn)	2013/10/10		101	%	80 - 120
		Total Titanium (Ti)	2013/10/10		98	%	80 - 120
		Total Uranium (U)	2013/10/10		101	%	80 - 120
		Total Vanadium (V)	2013/10/10		99	%	80 - 120
		Total Zinc (Zn)	2013/10/10		93	%	80 - 120
	Method Blank	Total Aluminum (Al)	2013/10/10	ND, RDL=5.0		ug/L	
		Total Antimony (Sb)	2013/10/10	ND, RDL=1.0		ug/L	
		Total Arsenic (As)	2013/10/10	ND, RDL=1.0		ug/L	
		Total Barium (Ba)	2013/10/10	ND, RDL=1.0		ug/L	
		Total Beryllium (Be)	2013/10/10	ND, RDL=1.0		ug/L	
		Total Bismuth (Bi)	2013/10/10	ND, RDL=2.0		ug/L	
		Total Boron (B)	2013/10/10	ND, RDL=50		ug/L	
		Total Cadmium (Cd)	2013/10/10	ND, RDL=0.010		ug/L	
		Total Calcium (Ca)	2013/10/10	ND, RDL=100		ug/L	
		Total Chromium (Cr)	2013/10/10	ND, RDL=1.0		ug/L	
		Total Cobalt (Co)	2013/10/10	ND, RDL=0.40		ug/L	
		Total Copper (Cu)	2013/10/10	ND, RDL=2.0		ug/L	
		Total Iron (Fe)	2013/10/10	ND, RDL=50		ug/L	
		Total Lead (Pb)	2013/10/10	ND, RDL=0.50		ug/L	
		Total Magnesium (Mg)	2013/10/10	ND, RDL=100		ug/L	
		Total Manganese (Mn)	2013/10/10	ND, RDL=2.0		ug/L	
		Total Molybdenum (Mo)	2013/10/10	ND, RDL=2.0		ug/L	
		Total Nickel (Ni)	2013/10/10	ND, RDL=2.0		ug/L	
		Total Phosphorus (P)	2013/10/10	ND, RDL=100		ug/L	
		Total Potassium (K)	2013/10/10	ND, RDL=100		ug/L	
		Total Selenium (Se)	2013/10/10	ND, RDL=1.0		ug/L	
		Total Silver (Ag)	2013/10/10	ND, RDL=0.10		ug/L	
		Total Sodium (Na)	2013/10/10	ND, RDL=100		ug/L	
		Total Strontium (Sr)	2013/10/10	ND, RDL=2.0		ug/L	
		Total Thallium (Tl)	2013/10/10	ND, RDL=0.10		ug/L	
		Total Tin (Sn)	2013/10/10	ND, RDL=2.0		ug/L	
		Total Titanium (Ti)	2013/10/10	ND, RDL=2.0		ug/L	
		Total Uranium (U)	2013/10/10	ND, RDL=0.10		ug/L	
		Total Vanadium (V)	2013/10/10	ND, RDL=2.0		ug/L	
		Total Zinc (Zn)	2013/10/10	ND, RDL=5.0		ug/L	
	RPD	Total Aluminum (Al)	2013/10/10	3.3		%	20
		Total Antimony (Sb)	2013/10/10	NC		%	20
		Total Arsenic (As)	2013/10/10	1.6		%	20
		Total Barium (Ba)	2013/10/10	NC		%	20
		Total Beryllium (Be)	2013/10/10	NC		%	20
		Total Bismuth (Bi)	2013/10/10	NC		%	20
		Total Boron (B)	2013/10/10	NC		%	20
		Total Cadmium (Cd)	2013/10/10	NC		%	20
		Total Calcium (Ca)	2013/10/10	NC		%	20
		Total Chromium (Cr)	2013/10/10	NC		%	20
		Total Cobalt (Co)	2013/10/10	NC		%	20
		Total Copper (Cu)	2013/10/10	0.3		%	20
		Total Iron (Fe)	2013/10/10	1.5		%	20

Dillon Consulting Limited
Attention: Karen March
Client Project #: 13-8748-1000
P.O. #:
Site Location: HWY 107

Quality Assurance Report (Continued)

Maxxam Job Number: DB3G8260

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3377663 DLB	RPD	Total Lead (Pb)	2013/10/10	NC		%	20
		Total Magnesium (Mg)	2013/10/10	NC		%	20
		Total Manganese (Mn)	2013/10/10	NC		%	20
		Total Molybdenum (Mo)	2013/10/10	NC		%	20
		Total Nickel (Ni)	2013/10/10	NC		%	20
		Total Phosphorus (P)	2013/10/10	NC		%	20
		Total Potassium (K)	2013/10/10	NC		%	20
		Total Selenium (Se)	2013/10/10	NC		%	20
		Total Silver (Ag)	2013/10/10	NC		%	20
		Total Sodium (Na)	2013/10/10	0.3		%	20
		Total Strontium (Sr)	2013/10/10	NC		%	20
		Total Thallium (Tl)	2013/10/10	NC		%	20
		Total Tin (Sn)	2013/10/10	NC		%	20
		Total Titanium (Ti)	2013/10/10	NC		%	20
		Total Uranium (U)	2013/10/10	NC		%	20
		Total Vanadium (V)	2013/10/10	NC		%	20
		Total Zinc (Zn)	2013/10/10	NC		%	20
3378269 SCR	QC Standard	pH	2013/10/09		100	%	80 - 120
	RPD	pH	2013/10/09	0.3		%	25
3378275 SCR	Spiked Blank	Conductivity	2013/10/09		100	%	80 - 120
	Method Blank	Conductivity	2013/10/09	3.5, RDL=1.0		uS/cm	
	RPD	Conductivity	2013/10/09	1.4		%	25
3379205 MCY	Matrix Spike	Total Alkalinity (Total as CaCO3)	2013/10/09		NC	%	80 - 120
	Spiked Blank	Total Alkalinity (Total as CaCO3)	2013/10/09		104	%	80 - 120
	Method Blank	Total Alkalinity (Total as CaCO3)	2013/10/09	ND, RDL=5.0		mg/L	
	RPD	Total Alkalinity (Total as CaCO3)	2013/10/09	1.1		%	25
3379215 MCY	Matrix Spike	Dissolved Chloride (Cl)	2013/10/10		NC	%	80 - 120
	QC Standard	Dissolved Chloride (Cl)	2013/10/10		106	%	80 - 120
	Spiked Blank	Dissolved Chloride (Cl)	2013/10/10		106	%	80 - 120
	Method Blank	Dissolved Chloride (Cl)	2013/10/10	ND, RDL=1.0		mg/L	
	RPD	Dissolved Chloride (Cl)	2013/10/10	5.5		%	25
3379216 ALG	Matrix Spike	Dissolved Sulphate (SO4)	2013/10/10		NC	%	80 - 120
	Spiked Blank	Dissolved Sulphate (SO4)	2013/10/10		96	%	80 - 120
	Method Blank	Dissolved Sulphate (SO4)	2013/10/10	ND, RDL=2.0		mg/L	
	RPD	Dissolved Sulphate (SO4)	2013/10/10	1		%	25
3379218 MCY	Matrix Spike	Reactive Silica (SiO2)	2013/10/09		94	%	80 - 120
	Spiked Blank	Reactive Silica (SiO2)	2013/10/09		99	%	80 - 120
	Method Blank	Reactive Silica (SiO2)	2013/10/09	ND, RDL=0.50		mg/L	
	RPD	Reactive Silica (SiO2)	2013/10/09	0.9		%	25
3379219 ARS	QC Standard	Colour	2013/10/09		113	%	80 - 120
	Method Blank	Colour	2013/10/09	ND, RDL=5.0		TCU	
	RPD	Colour	2013/10/09	NC		%	25
3379220 MCY	Matrix Spike	Orthophosphate (P)	2013/10/10		99	%	80 - 120
	Spiked Blank	Orthophosphate (P)	2013/10/10		97	%	80 - 120
	Method Blank	Orthophosphate (P)	2013/10/10	ND, RDL=0.010		mg/L	
	RPD	Orthophosphate (P)	2013/10/10	1.7		%	25
3379221 ARS	Matrix Spike	Nitrate + Nitrite	2013/10/10		98	%	80 - 120
	Spiked Blank	Nitrate + Nitrite	2013/10/10		97	%	80 - 120
	Method Blank	Nitrate + Nitrite	2013/10/10	ND, RDL=0.050		mg/L	
	RPD	Nitrate + Nitrite	2013/10/10	NC		%	25
3379225 MCY	Matrix Spike	Nitrite (N)	2013/10/10		100	%	80 - 120
	Spiked Blank	Nitrite (N)	2013/10/10		93	%	80 - 120
	Method Blank	Nitrite (N)	2013/10/10	ND, RDL=0.010		mg/L	
	RPD	Nitrite (N)	2013/10/10	NC		%	25
3379513 SCR	QC Standard	Turbidity	2013/10/09		98	%	80 - 120

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Dillon Consulting Limited
Attention: Karen March
Client Project #: 13-8748-1000
P.O. #:
Site Location: HWY 107

Quality Assurance Report (Continued)

Maxxam Job Number: DB3G8260

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3379513 SCR	Method Blank	Turbidity	2013/10/09	ND, RDL=0.10		NTU	
	RPD	Turbidity	2013/10/09	1.5		%	25
3380074 SSI	Matrix Spike	Total Organic Carbon (C)	2013/10/09		86	%	80 - 120
	Spiked Blank	Total Organic Carbon (C)	2013/10/09		90	%	80 - 120
	Method Blank	Total Organic Carbon (C)	2013/10/09	ND, RDL=0.50		mg/L	
	RPD	Total Organic Carbon (C)	2013/10/09	NC		%	25

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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Validation Signature Page

Maxxam Job #: B3G8260

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Ann Buck, Bedford Inorg

Mike MacGillivray, Scientific Specialist (Inorganics)

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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analytical run checks being implemented.
(2) The APHA Standard Method require pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the APHA Standard Method holding time.

Encryption Key

Avery Withrow

04 Oct 2013 17:14:23 -03:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Leonard Muise, Project Manager
Email: LMuise@maxxam.ca
Phone# (902) 420-0203 Ext:236

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

Maxxam Job #: B3G4849
Report Date: 2013/10/04

Dillon Consulting Limited
Client Project #: 13-8348-1000
Site Location: HWY 107
Sampler Initials: KM

RESULTS OF ANALYSES OF WATER

Maxxam ID		TG4796			TG4797	TG4797		
Sampling Date		2013/09/25 15:00			2013/09/25 15:00	2013/09/25 15:00		
COC Number		B 127589			B 127589	B 127589		
	Units	**WRIGHTS**	**RDL**	**QC Batch**	**AND 1**	**AND 1 Lab-Dup**	**RDL**	**QC Batch**
Calculated Parameters								
Anion Sum	me/L	0.370	N/A	3367720	1.84		N/A	3367720
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	ND	1.0	3367716	13		1.0	3367716
Calculated TDS	mg/L	23	1.0	3367725	110		1.0	3367725
Carb. Alkalinity (calc. as CaCO3)	mg/L	ND	1.0	3367716	ND		1.0	3367716
Cation Sum	me/L	0.450	N/A	3367720	1.88		N/A	3367720
Hardness (CaCO3)	mg/L	6.6	1.0	3367718	20		1.0	3367718
Ion Balance (% Difference)	%	9.76	N/A	3367719	1.08		N/A	3367719
Langelier Index (@ 20C)	N/A	NC		3367723	-2.62			3367723
Langelier Index (@ 4C)	N/A	NC		3367724	-2.87			3367724
Nitrate (N)	mg/L	ND	0.050	3367721	0.053		0.050	3367721
Saturation pH (@ 20C)	N/A	NC		3367723	9.45			3367723
Saturation pH (@ 4C)	N/A	NC		3367724	9.70			3367724
Inorganics								
Total Alkalinity (Total as CaCO3)	mg/L	ND	5.0	3371196	13		5.0	3371245
Dissolved Chloride (Cl)	mg/L	11	1.0	3371197	53		1.0	3371248
Colour	TCU	32	5.0	3371219	56		25	3371252
Nitrate + Nitrite	mg/L	ND	0.050	3371239	0.053		0.050	3371265
Nitrite (N)	mg/L	ND	0.010	3371240	ND		0.010	3371266
Nitrogen (Ammonia Nitrogen)	mg/L	0.15	0.050	3371830	0.44 (1)	0.93 (2)	0.050	3371830
Total Organic Carbon (C)	mg/L	5.2	0.50	3374263	6.7		0.50	3374263
Orthophosphate (P)	mg/L	ND	0.010	3371224	ND		0.010	3371263
pH	pH	6.15	N/A	3370135	6.83		N/A	3370135
Reactive Silica (SiO2)	mg/L	ND	0.50	3371201	5.8		0.50	3371251
Total Suspended Solids	mg/L	ND	2.0	3368235	ND		2.0	3368235
Dissolved Sulphate (SO4)	mg/L	2.4	2.0	3371199	3.7		2.0	3371249
Turbidity	NTU	0.65	0.10	3374778	0.53		0.10	3374778
Conductivity	uS/cm	54	1.0	3369533	220		1.0	3369533

ND = Not detected
RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch
(1) Duplicate results exceeded RPD acceptance criteria. This may be due to sample heterogeneity.
(2) Poor RPD for duplicates due to sample matrix.

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Maxxam Job #: B3G4849
Report Date: 2013/10/04

Dillon Consulting Limited
Client Project #: 13-8348-1000
Site Location: HWY 107
Sampler Initials: KM

RESULTS OF ANALYSES OF WATER

Maxxam ID		TG4798		
Sampling Date		2013/09/25 15:00		
COC Number		B 127589		
	Units	**LLT**	**RDL**	**QC Batch**
Calculated Parameters				
Anion Sum	me/L	0.150	N/A	3367720
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	ND	1.0	3367716
Calculated TDS	mg/L	20	1.0	3367725
Carb. Alkalinity (calc. as CaCO3)	mg/L	ND	1.0	3367716
Cation Sum	me/L	0.370	N/A	3367720
Hardness (CaCO3)	mg/L	4.6	1.0	3367718
Ion Balance (% Difference)	%	42.3	N/A	3367719
Langelier Index (@ 20C)	N/A	NC		3367723
Langelier Index (@ 4C)	N/A	NC		3367724
Nitrate (N)	mg/L	ND	0.050	3367721
Saturation pH (@ 20C)	N/A	NC		3367723
Saturation pH (@ 4C)	N/A	NC		3367724
Inorganics				
Total Alkalinity (Total as CaCO3)	mg/L	ND	5.0	3371245
Dissolved Chloride (Cl)	mg/L	5.2	1.0	3371248
Colour	TCU	190	25	3371252
Nitrate + Nitrite	mg/L	ND	0.050	3371265
Nitrite (N)	mg/L	ND	0.010	3371266
Nitrogen (Ammonia Nitrogen)	mg/L	0.21	0.050	3371830
Total Organic Carbon (C)	mg/L	16 (1)	2.5	3374263
Orthophosphate (P)	mg/L	ND	0.010	3371263
pH	pH	5.44	N/A	3370135
Reactive Silica (SiO2)	mg/L	6.0	0.50	3371251
Total Suspended Solids	mg/L	7.8	5.0	3368235
Dissolved Sulphate (SO4)	mg/L	ND	2.0	3371249
Turbidity	NTU	1.0	0.10	3374778
Conductivity	uS/cm	27	1.0	3370149

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Elevated reporting limit due to sample matrix.

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Maxxam Job #: B3G4849
Report Date: 2013/10/04

Dillon Consulting Limited
Client Project #: 13-8348-1000
Site Location: HWY 107
Sampler Initials: KM

ELEMENTS BY ICP/MS (WATER)

Maxxam ID		TG4796	TG4797	TG4798		
Sampling Date		2013/09/25 15:00	2013/09/25 15:00	2013/09/25 15:00		
COC Number		B 127589	B 127589	B 127589		
	Units	**WRIGHTS**	**AND 1**	**LLT**	**RDL**	**QC Batch**
Metals						
Total Aluminum (Al)	ug/L	87	130	600	5.0	3370861
Total Antimony (Sb)	ug/L	ND	ND	ND	1.0	3370861
Total Arsenic (As)	ug/L	ND	ND	ND	1.0	3370861
Total Barium (Ba)	ug/L	6.1	13	4.4	1.0	3370861
Total Beryllium (Be)	ug/L	ND	ND	ND	1.0	3370861
Total Bismuth (Bi)	ug/L	ND	ND	ND	2.0	3370861
Total Boron (B)	ug/L	ND	ND	ND	50	3370861
Total Cadmium (Cd)	ug/L	ND	0.017	0.016	0.010	3370861
Total Calcium (Ca)	ug/L	1800	6300	1300	100	3370861
Total Chromium (Cr)	ug/L	ND	ND	1.1	1.0	3370861
Total Cobalt (Co)	ug/L	ND	2.0	3.6	0.40	3370861
Total Copper (Cu)	ug/L	ND	ND	ND	2.0	3370861
Total Iron (Fe)	ug/L	88	290	3700	50	3370861
Total Lead (Pb)	ug/L	ND	ND	0.77	0.50	3370861
Total Magnesium (Mg)	ug/L	490	1100	330	100	3370861
Total Manganese (Mn)	ug/L	20	260	390	2.0	3370861
Total Molybdenum (Mo)	ug/L	ND	ND	ND	2.0	3370861
Total Nickel (Ni)	ug/L	ND	ND	ND	2.0	3370861
Total Phosphorus (P)	ug/L	ND	ND	ND	100	3370861
Total Potassium (K)	ug/L	420	1400	340	100	3370861
Total Selenium (Se)	ug/L	ND	ND	ND	1.0	3370861
Total Silver (Ag)	ug/L	ND	ND	ND	0.10	3370861
Total Sodium (Na)	ug/L	6700	32000	2800	100	3370861
Total Strontium (Sr)	ug/L	8.2	24	5.2	2.0	3370861
Total Thallium (Tl)	ug/L	ND	ND	ND	0.10	3370861
Total Tin (Sn)	ug/L	ND	ND	ND	2.0	3370861
Total Titanium (Ti)	ug/L	ND	ND	4.8	2.0	3370861
Total Uranium (U)	ug/L	ND	ND	ND	0.10	3370861
Total Vanadium (V)	ug/L	ND	ND	4.6	2.0	3370861
Total Zinc (Zn)	ug/L	ND	ND	ND	5.0	3370861

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B3G4849
Report Date: 2013/10/04

Dillon Consulting Limited
Client Project #: 13-8348-1000
Site Location: HWY 107
Sampler Initials: KM

Package 1	7.3°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Sample TG4796-01: Total Suspended Solids: Used all of the sample provided, DL raised. RCAp Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample TG4797-01: Total Suspended Solids: Used all of the sample provided, DL raised.

Sample TG4798-01: RCAp Ion Balance acceptable. Low ionic strength sample.

Results relate only to the items tested.

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Dillon Consulting Limited
Attention: Karen March
Client Project #: 13-8348-1000
P.O. #:
Site Location: HWY 107

Quality Assurance Report

Maxxam Job Number: DB3G4849

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3368235	AWM	QC Standard	Total Suspended Solids	2013/10/01		99	%	80 - 120
		Method Blank	Total Suspended Solids	2013/10/01	ND, RDL=1.0		mg/L	
		RPD	Total Suspended Solids	2013/10/01	1.8		%	25
3369533	SCR	Spiked Blank	Conductivity	2013/10/01		100	%	80 - 120
		Method Blank	Conductivity	2013/10/01	ND, RDL=1.0		uS/cm	
		RPD	Conductivity	2013/10/01	0.6		%	25
3370135	SCR	QC Standard	pH	2013/10/01		101	%	80 - 120
		RPD	pH	2013/10/01	0.3		%	25
3370149	SCR	Spiked Blank	Conductivity	2013/10/01		100	%	80 - 120
		Method Blank	Conductivity	2013/10/01	ND, RDL=1.0		uS/cm	
		RPD	Conductivity	2013/10/01	0		%	25
3370861	DLB	Matrix Spike	Total Aluminum (Al)	2013/10/02		102	%	80 - 120
			Total Antimony (Sb)	2013/10/02		107	%	80 - 120
			Total Arsenic (As)	2013/10/02		102	%	80 - 120
			Total Barium (Ba)	2013/10/02		100	%	80 - 120
			Total Beryllium (Be)	2013/10/02		98	%	80 - 120
			Total Bismuth (Bi)	2013/10/02		103	%	80 - 120
			Total Boron (B)	2013/10/02		99	%	80 - 120
			Total Cadmium (Cd)	2013/10/02		103	%	80 - 120
			Total Calcium (Ca)	2013/10/02		NC	%	80 - 120
			Total Chromium (Cr)	2013/10/02		101	%	80 - 120
			Total Cobalt (Co)	2013/10/02		104	%	80 - 120
			Total Copper (Cu)	2013/10/02		103	%	80 - 120
			Total Iron (Fe)	2013/10/02		100	%	80 - 120
			Total Lead (Pb)	2013/10/02		101	%	80 - 120
			Total Magnesium (Mg)	2013/10/02		101	%	80 - 120
			Total Manganese (Mn)	2013/10/02		102	%	80 - 120
			Total Molybdenum (Mo)	2013/10/02		105	%	80 - 120
			Total Nickel (Ni)	2013/10/02		103	%	80 - 120
			Total Phosphorus (P)	2013/10/02		109	%	80 - 120
			Total Potassium (K)	2013/10/02		104	%	80 - 120
			Total Selenium (Se)	2013/10/02		101	%	80 - 120
			Total Silver (Ag)	2013/10/02		100	%	80 - 120
			Total Sodium (Na)	2013/10/02		NC	%	80 - 120
			Total Strontium (Sr)	2013/10/02		NC	%	80 - 120
			Total Thallium (Tl)	2013/10/02		104	%	80 - 120
			Total Tin (Sn)	2013/10/02		104	%	80 - 120
			Total Titanium (Ti)	2013/10/02		100	%	80 - 120
			Total Uranium (U)	2013/10/02		104	%	80 - 120
			Total Vanadium (V)	2013/10/02		104	%	80 - 120
			Total Zinc (Zn)	2013/10/02		102	%	80 - 120
		Spiked Blank	Total Aluminum (Al)	2013/10/02		102	%	80 - 120
			Total Antimony (Sb)	2013/10/02		103	%	80 - 120
			Total Arsenic (As)	2013/10/02		100	%	80 - 120
			Total Barium (Ba)	2013/10/02		101	%	80 - 120
			Total Beryllium (Be)	2013/10/02		97	%	80 - 120
			Total Bismuth (Bi)	2013/10/02		101	%	80 - 120
			Total Boron (B)	2013/10/02		98	%	80 - 120
			Total Cadmium (Cd)	2013/10/02		103	%	80 - 120
			Total Calcium (Ca)	2013/10/02		92	%	80 - 120
			Total Chromium (Cr)	2013/10/02		101	%	80 - 120
			Total Cobalt (Co)	2013/10/02		102	%	80 - 120
			Total Copper (Cu)	2013/10/02		103	%	80 - 120
			Total Iron (Fe)	2013/10/02		99	%	80 - 120
			Total Lead (Pb)	2013/10/02		99	%	80 - 120

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Dillon Consulting Limited
Attention: Karen March
Client Project #: 13-8348-1000
P.O. #:
Site Location: HWY 107

Quality Assurance Report (Continued)

Maxxam Job Number: DB3G4849

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3370861 DLB	Spiked Blank	Total Magnesium (Mg)	2013/10/02		101	%	80 - 120
		Total Manganese (Mn)	2013/10/02		101	%	80 - 120
		Total Molybdenum (Mo)	2013/10/02		102	%	80 - 120
		Total Nickel (Ni)	2013/10/02		102	%	80 - 120
		Total Phosphorus (P)	2013/10/02		106	%	80 - 120
		Total Potassium (K)	2013/10/02		104	%	80 - 120
		Total Selenium (Se)	2013/10/02		100	%	80 - 120
		Total Silver (Ag)	2013/10/02		99	%	80 - 120
		Total Sodium (Na)	2013/10/02		101	%	80 - 120
		Total Strontium (Sr)	2013/10/02		99	%	80 - 120
		Total Thallium (Tl)	2013/10/02		101	%	80 - 120
		Total Tin (Sn)	2013/10/02		100	%	80 - 120
		Total Titanium (Ti)	2013/10/02		102	%	80 - 120
		Total Uranium (U)	2013/10/02		101	%	80 - 120
		Total Vanadium (V)	2013/10/02		103	%	80 - 120
		Total Zinc (Zn)	2013/10/02		100	%	80 - 120
	Method Blank	Total Aluminum (Al)	2013/10/02	ND, RDL=5.0		ug/L	
		Total Antimony (Sb)	2013/10/02	ND, RDL=1.0		ug/L	
		Total Arsenic (As)	2013/10/02	ND, RDL=1.0		ug/L	
		Total Barium (Ba)	2013/10/02	ND, RDL=1.0		ug/L	
		Total Beryllium (Be)	2013/10/02	ND, RDL=1.0		ug/L	
		Total Bismuth (Bi)	2013/10/02	ND, RDL=2.0		ug/L	
		Total Boron (B)	2013/10/02	ND, RDL=50		ug/L	
		Total Cadmium (Cd)	2013/10/02	ND, RDL=0.010		ug/L	
		Total Calcium (Ca)	2013/10/02	ND, RDL=100		ug/L	
		Total Chromium (Cr)	2013/10/02	ND, RDL=1.0		ug/L	
		Total Cobalt (Co)	2013/10/02	ND, RDL=0.40		ug/L	
		Total Copper (Cu)	2013/10/02	ND, RDL=2.0		ug/L	
		Total Iron (Fe)	2013/10/02	ND, RDL=50		ug/L	
		Total Lead (Pb)	2013/10/02	ND, RDL=0.50		ug/L	
		Total Magnesium (Mg)	2013/10/02	ND, RDL=100		ug/L	
		Total Manganese (Mn)	2013/10/02	ND, RDL=2.0		ug/L	
		Total Molybdenum (Mo)	2013/10/02	ND, RDL=2.0		ug/L	
		Total Nickel (Ni)	2013/10/02	ND, RDL=2.0		ug/L	
		Total Phosphorus (P)	2013/10/02	ND, RDL=100		ug/L	
		Total Potassium (K)	2013/10/02	ND, RDL=100		ug/L	
		Total Selenium (Se)	2013/10/02	ND, RDL=1.0		ug/L	
		Total Silver (Ag)	2013/10/02	ND, RDL=0.10		ug/L	
		Total Sodium (Na)	2013/10/02	ND, RDL=100		ug/L	
		Total Strontium (Sr)	2013/10/02	ND, RDL=2.0		ug/L	
		Total Thallium (Tl)	2013/10/02	ND, RDL=0.10		ug/L	
		Total Tin (Sn)	2013/10/02	ND, RDL=2.0		ug/L	
		Total Titanium (Ti)	2013/10/02	ND, RDL=2.0		ug/L	
		Total Uranium (U)	2013/10/02	ND, RDL=0.10		ug/L	
		Total Vanadium (V)	2013/10/02	ND, RDL=2.0		ug/L	
		Total Zinc (Zn)	2013/10/02	ND, RDL=5.0		ug/L	
	RPD	Total Lead (Pb)	2013/10/02	NC		%	20
3371196 MCN	Matrix Spike	Total Alkalinity (Total as CaCO3)	2013/10/03		NC	%	80 - 120
	Spiked Blank	Total Alkalinity (Total as CaCO3)	2013/10/03		97	%	80 - 120
	Method Blank	Total Alkalinity (Total as CaCO3)	2013/10/03	ND, RDL=5.0		mg/L	
	RPD	Total Alkalinity (Total as CaCO3)	2013/10/03	0.2		%	25
3371197 ARS	Matrix Spike	Dissolved Chloride (Cl)	2013/10/04		105	%	80 - 120
	QC Standard	Dissolved Chloride (Cl)	2013/10/04		112	%	80 - 120
	Spiked Blank	Dissolved Chloride (Cl)	2013/10/04		94	%	80 - 120
	Method Blank	Dissolved Chloride (Cl)	2013/10/04	ND, RDL=1.0		mg/L	

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Dillon Consulting Limited
Attention: Karen March
Client Project #: 13-8348-1000
P.O. #:
Site Location: HWY 107

Quality Assurance Report (Continued)

Maxxam Job Number: DB3G4849

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3371197	ARS	RPD	Dissolved Chloride (Cl)	2013/10/04	1.4		%	25
3371199	ARS	Matrix Spike	Dissolved Sulphate (SO4)	2013/10/03		111	%	80 - 120
		Spiked Blank	Dissolved Sulphate (SO4)	2013/10/03		91	%	80 - 120
		Method Blank	Dissolved Sulphate (SO4)	2013/10/03	ND, RDL=2.0		mg/L	
		RPD	Dissolved Sulphate (SO4)	2013/10/03	NC		%	25
3371201	MCN	Matrix Spike	Reactive Silica (SiO2)	2013/10/03		100	%	80 - 120
		Spiked Blank	Reactive Silica (SiO2)	2013/10/03		98	%	80 - 120
		Method Blank	Reactive Silica (SiO2)	2013/10/03	ND, RDL=0.50		mg/L	
		RPD	Reactive Silica (SiO2)	2013/10/03	2.6		%	25
3371219	MCN	QC Standard	Colour	2013/10/04		108	%	80 - 120
		Method Blank	Colour	2013/10/04	ND, RDL=5.0		TCU	
		RPD	Colour	2013/10/04	2.8		%	25
3371224	ARS	Matrix Spike	Orthophosphate (P)	2013/10/04		96	%	80 - 120
		Spiked Blank	Orthophosphate (P)	2013/10/04		99	%	80 - 120
		Method Blank	Orthophosphate (P)	2013/10/04	ND, RDL=0.010		mg/L	
		RPD	Orthophosphate (P)	2013/10/04	NC		%	25
3371239	ARS	Matrix Spike	Nitrate + Nitrite	2013/10/03		98	%	80 - 120
		Spiked Blank	Nitrate + Nitrite	2013/10/03		98	%	80 - 120
		Method Blank	Nitrate + Nitrite	2013/10/03	ND, RDL=0.050		mg/L	
		RPD	Nitrate + Nitrite	2013/10/03	NC		%	25
3371240	ARS	Matrix Spike	Nitrite (N)	2013/10/03		93	%	80 - 120
		Spiked Blank	Nitrite (N)	2013/10/03		99	%	80 - 120
		Method Blank	Nitrite (N)	2013/10/03	ND, RDL=0.010		mg/L	
		RPD	Nitrite (N)	2013/10/03	NC		%	25
3371245	MCN	Matrix Spike	Total Alkalinity (Total as CaCO3)	2013/10/03		NC	%	80 - 120
		Spiked Blank	Total Alkalinity (Total as CaCO3)	2013/10/03		97	%	80 - 120
		Method Blank	Total Alkalinity (Total as CaCO3)	2013/10/03	ND, RDL=5.0		mg/L	
		RPD	Total Alkalinity (Total as CaCO3)	2013/10/03	1.1		%	25
3371248	ARS	Matrix Spike	Dissolved Chloride (Cl)	2013/10/04		NC	%	80 - 120
		QC Standard	Dissolved Chloride (Cl)	2013/10/04		108	%	80 - 120
		Spiked Blank	Dissolved Chloride (Cl)	2013/10/04		96	%	80 - 120
		Method Blank	Dissolved Chloride (Cl)	2013/10/04	ND, RDL=1.0		mg/L	
		RPD	Dissolved Chloride (Cl)	2013/10/04	6.1		%	25
3371249	ARS	Matrix Spike	Dissolved Sulphate (SO4)	2013/10/03		NC	%	80 - 120
		Spiked Blank	Dissolved Sulphate (SO4)	2013/10/03		92	%	80 - 120
		Method Blank	Dissolved Sulphate (SO4)	2013/10/03	ND, RDL=2.0		mg/L	
		RPD	Dissolved Sulphate (SO4)	2013/10/03	0.5		%	25
3371251	MCN	Matrix Spike	Reactive Silica (SiO2)	2013/10/03		NC	%	80 - 120
		Spiked Blank	Reactive Silica (SiO2)	2013/10/03		99	%	80 - 120
		Method Blank	Reactive Silica (SiO2)	2013/10/03	ND, RDL=0.50		mg/L	
		RPD	Reactive Silica (SiO2)	2013/10/03	0.1		%	25
3371252	MCN	QC Standard	Colour	2013/10/04		115	%	80 - 120
		Method Blank	Colour	2013/10/04	ND, RDL=5.0		TCU	
		RPD	Colour	2013/10/04	NC		%	25
3371263	ARS	Matrix Spike	Orthophosphate (P)	2013/10/04		98	%	80 - 120
		Spiked Blank	Orthophosphate (P)	2013/10/04		98	%	80 - 120
		Method Blank	Orthophosphate (P)	2013/10/04	ND, RDL=0.010		mg/L	
		RPD	Orthophosphate (P)	2013/10/04	NC		%	25
3371265	ARS	Matrix Spike	Nitrate + Nitrite	2013/10/03		95	%	80 - 120
		Spiked Blank	Nitrate + Nitrite	2013/10/03		97	%	80 - 120
		Method Blank	Nitrate + Nitrite	2013/10/03	ND, RDL=0.050		mg/L	
		RPD	Nitrate + Nitrite	2013/10/03	0.7		%	25
3371266	ARS	Matrix Spike	Nitrite (N)	2013/10/03		98	%	80 - 120
		Spiked Blank	Nitrite (N)	2013/10/03		92	%	80 - 120
		Method Blank	Nitrite (N)	2013/10/03	ND, RDL=0.010		mg/L	

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Dillon Consulting Limited
Attention: Karen March
Client Project #: 13-8348-1000
P.O. #:
Site Location: HWY 107

Quality Assurance Report (Continued)

Maxxam Job Number: DB3G4849

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3371266 ARS	RPD	Nitrite (N)	2013/10/03	NC		%	25
3371830 MCN	Matrix Spike [TG4797-02]	Nitrogen (Ammonia Nitrogen)	2013/10/03		98	%	80 - 120
	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2013/10/03		99	%	80 - 120
	Method Blank	Nitrogen (Ammonia Nitrogen)	2013/10/03	ND, RDL=0.050		mg/L	
	RPD [TG4797-02]	Nitrogen (Ammonia Nitrogen)	2013/10/03	71.6 (1)		%	25
3374263 MCY	Matrix Spike	Total Organic Carbon (C)	2013/10/04		88	%	80 - 120
	Spiked Blank	Total Organic Carbon (C)	2013/10/04		85	%	80 - 120
	Method Blank	Total Organic Carbon (C)	2013/10/04	ND, RDL=0.50		mg/L	
	RPD	Total Organic Carbon (C)	2013/10/04	3.0		%	25
3374778 SCR	QC Standard	Turbidity	2013/10/04		97	%	80 - 120
	Method Blank	Turbidity	2013/10/04	ND, RDL=0.10		NTU	
	RPD	Turbidity	2013/10/04	7.6		%	25

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.
(1) Poor RPD for duplicates due to sample matrix.

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Validation Signature Page

Maxxam Job #: B3G4849

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Colleen Acker, Supervisor, General Chemistry

Mike MacGillivray, Scientific Specialist (Inorganics)

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Appendix C
Priority Species Background

C-1 ACCDC Data
C-2 Priority Species Short-list

Atlantic Canada Conservation Data Centre
Centre de données sur la conservation du Canada atlantique

DATA REPORT 5847: BedfordSite1, NS

Prepared 16 May 2017
by J. Churchill, Data Manager

CONTENTS OF REPORT

Map 1. A 100 km buffer around the study area

1.0 PREFACE

The Atlantic Canada Conservation Data Centre (ACCDC) is part of a network of NatureServe data centres and heritage programs serving 50 states in the U.S.A, 10 provinces and 1 territory in Canada, plus several Central and South American countries. The NatureServe network is more than 30 years old and shares a common conservation data methodology. The ACCDC was founded in 1997, and maintains data for the jurisdictions of New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland and Labrador. Although a non-governmental agency, the ACCDC is supported by 6 federal agencies and 4 provincial governments, as well as through outside grants and data processing fees. URL: www.ACCDC.com.

Upon request and for a fee, the ACCDC queries its database and produces customized reports of the rare and endangered flora and fauna known to occur in or near a specified study area. As a supplement to that data, the ACCDC includes locations of managed areas with some level of protection, and known sites of ecological interest or sensitivity.

1.1 DATA LIST

Included datasets:

Filename	Contents
Bedfordsite1NS_5847ob.xls	All Rare and legally protected *Flora and Fauna* in your study area
Bedfordsite1NS_5847ob100km.xls	A list of Rare and legally protected *Flora and Fauna* within 100 km of your study area
Bedfordsite1NS_5847ma.xls	All *Managed Areas* in your study area
Bedfordsite1NS_5847sa.xls	All *Significant Natural Areas* in your study area
Bedfordsite1NS_5847ff.xls	Rare and common *Freshwater Fish* in your study area (DFO database)
Bedfordsite1NS_5847bp.xls	Rare and common *Pelagic Birds* in your study area (CWS database)
Bedfordsite1NS_5847bc.xls	Rare and common *Colonial Birds* in your study area

1.2 RESTRICTIONS

The ACCDC makes a strong effort to verify the accuracy of all the data that it manages, but it shall not be held responsible for any inaccuracies in data that it provides. By accepting ACCDC data, recipients assent to the following limits of use:

a) Data is restricted to use by trained personnel who are sensitive to landowner interests and to potential threats to rare and/or endangered flora and fauna posed by the information provided.
b) Data is restricted to use by the specified Data User; any third party requiring data must make its own data request.
c) The ACCDC requires Data Users to cease using and delete data 12 months after receipt, and to make a new request for updated data if necessary at that time.
d) ACCDC data responses are restricted to the data in our Data System at the time of the data request.
e) Each record has an estimate of locational uncertainty, which must be referenced in order to understand the record's relevance to a particular location. Please see attached Data Dictionary for details.
f) ACCDC data responses are not to be construed as exhaustive inventories of taxa in an area.
g) The absence of a taxon cannot be inferred by its absence in an ACCDC data response.

1.3 ADDITIONAL INFORMATION

The attached file DataDictionary 2.1.pdf provides metadata for the data provided.

Please direct any additional questions about ACCDC data to the following individuals:

Plants, Lichens, Ranking Methods, All other Inquiries
Sean Blaney, Senior Scientist, Executive Director
Tel: (506) 364-2658
sblaney@mta.ca

Animals (Fauna)
John Klymko, Zoologist
Tel: (506) 364-2660
jklymko@mta.ca

Plant Communities
Sarah Robinson, Community Ecologist
Tel: (506) 364-2664
srobinson@mta.ca

Data Management, GIS
James Churchill, Data Manager
Tel: (902) 679-6146
jlchurchill@mta.ca

Billing
Jean Breau
Tel: (506) 364-2657
jrbreau@mta.ca

Questions on the biology of Federal Species at Risk can be directed to ACCDC: (506) 364-2658, with questions on Species at Risk regulations to: Samara Eaton, Canadian Wildlife Service (NB and PE): (506) 364-5060 or Julie McKnight, Canadian Wildlife Service (NS): (902) 426-4196.

For provincial information about rare taxa and protected areas, or information about game animals, deer yards, old growth forests, archeological sites, fish habitat etc., in New Brunswick, please contact Stewart Lusk, Natural Resources: (506) 453-7110.

For provincial information about rare taxa and protected areas, or information about game animals, deer yards, old growth forests, archeological sites, fish habitat etc., in Nova Scotia, please contact Sherman Boates, NSDNR: (902) 679-6146. To determine if location-sensitive species (section 4.3) occur near your study site please contact a NSDNR Regional Biologist:

Western: Duncan Bayne
(902) 648-3536
Duncan.Bayne@novascotia.ca

Western: Donald Sam
(902) 634-7525
Donald.Sam@novascotia.ca

Central: Shavonne Meyer
(902) 893-6353
Shavonne.Meyer@novascotia.ca

Central: Kimberly George
(902) 893-5630
Kimberly.George@novascotia.ca

Eastern: Mark Pulsifer
(902) 863-7523
Mark.Pulsifer@novascotia.ca

Eastern: Donald Anderson
(902) 295-3949
Donald.Anderson@novascotia.ca

Eastern: Terry Power
(902) 563-3370
Terrance.Power@novascotia.ca

For provincial information about rare taxa and protected areas, or information about game animals, fish habitat etc., in Prince Edward Island, please contact Garry Gregory, PEI Dept. of Communities, Land and Environment: (902) 569-7595.

2.0 RARE AND ENDANGERED SPECIES

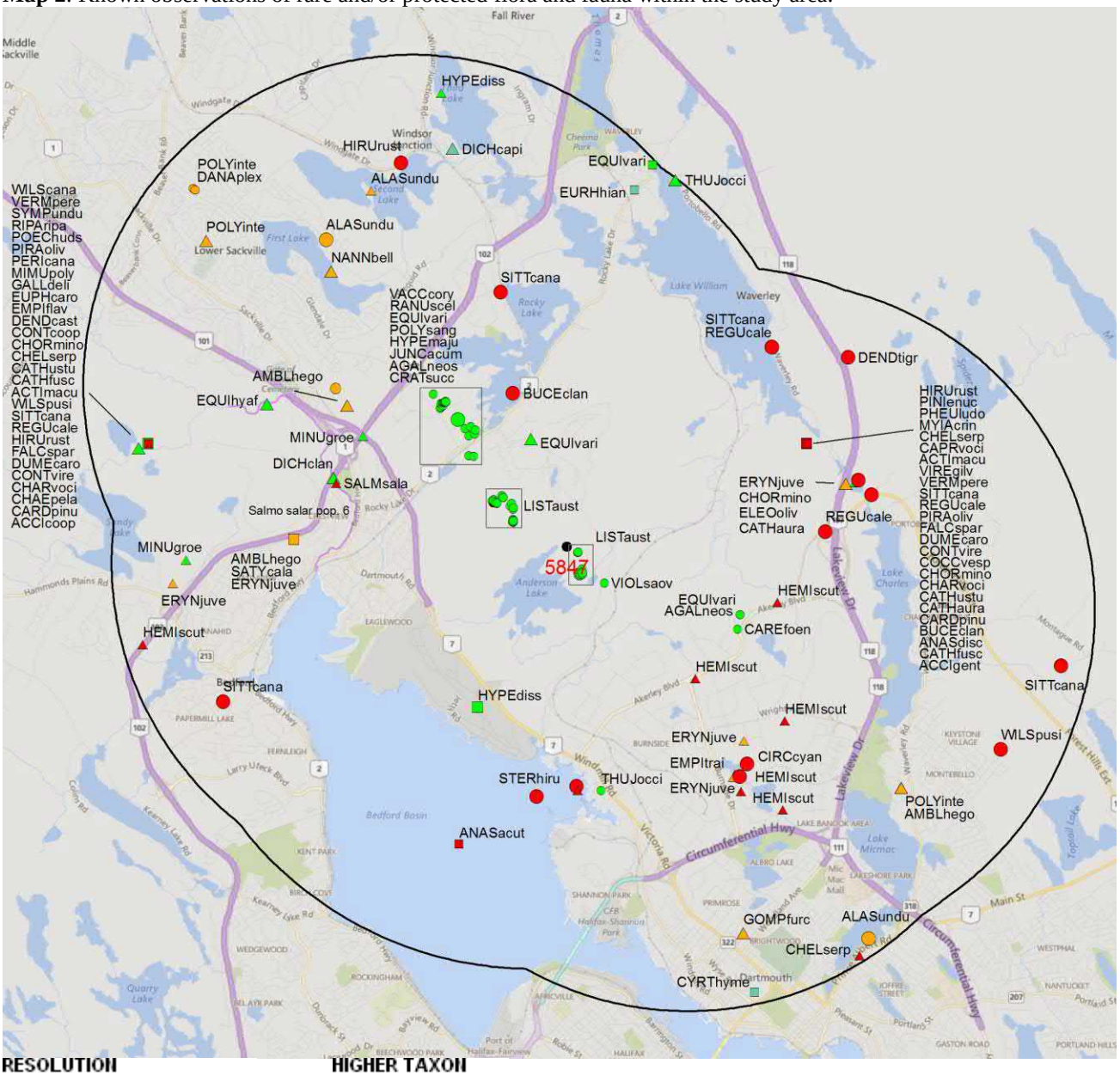
2.1 FLORA

The study area contains 89 records of 18 vascular, 3 records of 3 nonvascular flora (Map 2 and attached: *ob.xls).

2.2 FAUNA

The study area contains 135 records of 45 vertebrate, 32 records of 8 invertebrate fauna (Map 2 and attached data files - see 1.1 Data List). Please see section 4.3 to determine if 'location-sensitive' species occur near your study site.

Map 2: Known observations of rare and/or protected flora and fauna within the study area.



RESOLUTION

- 4.7 within 50s of kilometers
- 4.0 within 10s of kilometers
- 3.7 within 5s of kilometers
- 3.0 within kilometers
- 2.7 within 500s of meters
- 2.0 within 100s of meters
- 1.7 within 10s of meters

HIGHER TAXON

- vertebrate fauna
- invertebrate fauna
- vascular flora
- nonvascular flora

3.0 SPECIAL AREAS

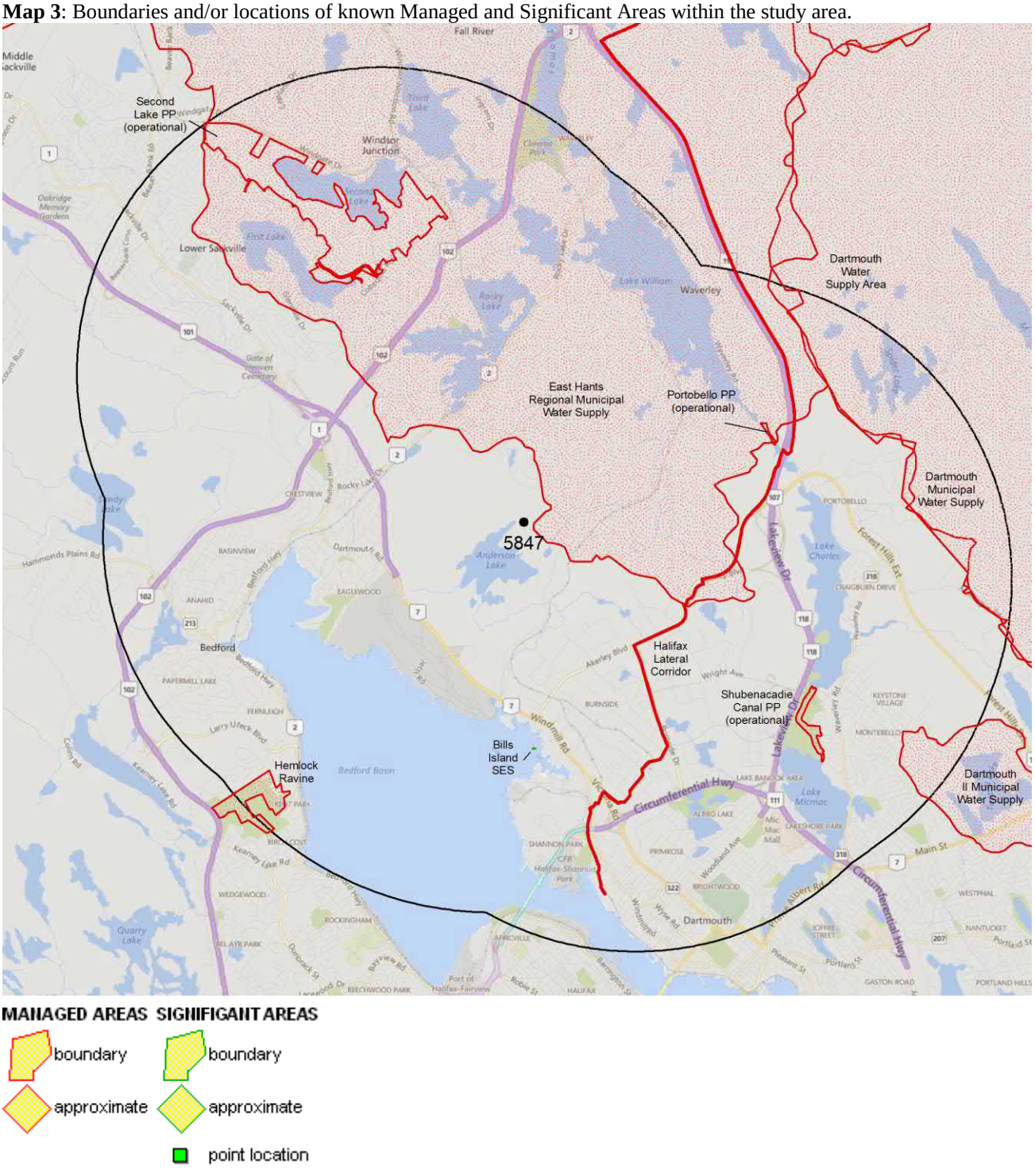
3.1 MANAGED AREAS

The GIS scan identified 9 managed areas in the vicinity of the study area (Map 3 and attached file: *ma*.xls)

3.2 SIGNIFICANT AREAS

The GIS scan identified 1 biologically significant site in the vicinity of the study area (Map 3 and attached file: *sa*.xls)

Map 3: Boundaries and/or locations of known Managed and Significant Areas within the study area.



4.0 RARE SPECIES LISTS

Rare and/or endangered taxa (excluding "location-sensitive" species, section 4.3) within the study area listed in order of concern, beginning with legally listed taxa, with the number of observations per taxon and the distance in kilometers from study area centroid to the closest observation (± the precision, in km, of the record). [P] = vascular plant, [N] = nonvascular plant, [A] = vertebrate animal, [I] = invertebrate animal, [C] = community. Note: records are from attached files *ob.xls/*ob.shp only.

4.1 FLORA

	Scientific *Name*	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)
N	*Cyrtomnium hymenophylloides*	Short-pointed Lantern Moss				S2?	3 Sensitive	1	7.3 ± 5.0
N	*Eurhynchium hians*	Light Beaked Moss				S2S3	3 Sensitive	1	5.5 ± 5.0
N	*Dichelyma capillaceum*	Hairlike Dichelyma Moss				S3S4	4 Secure	1	6.3 ± 3.0
P	*Thuja occidentalis*	Eastern White Cedar			Vulnerable	S1	1 At Risk	2	3.7 ± 0.0
P	*Ranunculus sceleratus*	Cursed Buttercup				S1S2	2 May Be At Risk	16	2.0 ± 0.0
P	*Symphyotrichum undulatum*	Wavy-leaved Aster				S2	3 Sensitive	2	6.5 ± 7.0
P	*Hypericum majus*	Large St John's-wort				S2	3 Sensitive	1	2.3 ± 0.0
P	*Hypericum dissimulatum*	Disguised St John's-wort				S2S3	3 Sensitive	2	2.8 ± 10.0
P	*Eleocharis olivacea*	Yellow Spikerush				S2S3	3 Sensitive	1	4.5 ± 0.0
P	*Minuartia groenlandica*	Greenland Stitchwort				S3	3 Sensitive	2	3.5 ± 0.0
P	*Polygala sanguinea*	Blood Milkwort				S3	3 Sensitive	1	2.4 ± 0.0
P	*Carex foenea*	Fernald's Hay Sedge				S3	4 Secure	1	2.9 ± 0.0
P	*Listera australis*	Southern Twayblade				S3	4 Secure	48	0.2 ± 0.0
P	*Dichanthelium clandestinum*	Deer-tongue Panic Grass				S3	4 Secure	1	3.7 ± 1.0
P	*Equisetum variegatum*	Variegated Horsetail				S3	4 Secure	5	1.7 ± 1.0
P	*Vaccinium corymbosum*	Highbush Blueberry				S3S4	4 Secure	1	3.1 ± 0.0
P	*Crataegus succulenta*	Fleshy Hawthorn				S3S4	5 Undetermined	1	2.0 ± 0.0
P	*Agalinis neoscotica*	Nova Scotia Agalinis				S3S4	4 Secure	2	2.2 ± 0.0
P	*Viola sagittata var. ovata*	Arrow-Leaved Violet				S3S4	4 Secure	1	0.8 ± 0.0
P	*Juncus acuminatus*	Sharp-Fruit Rush				S3S4	4 Secure	1	2.2 ± 0.0
P	*Equisetum hyemale var. affine*	Common Scouring-rush				S3S4	4 Secure	1	5.0 ± 2.0

4.2 FAUNA

	Scientific *Name*	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)
A	*Caprimulgus vociferus*	Whip-Poor-Will	Threatened	Threatened	Threatened	S1?B	1 At Risk	1	4.0 ± 7.0
A	*Chordeiles minor*	Common Nighthawk	Threatened	Threatened	Threatened	S2B	1 At Risk	4	4.0 ± 7.0
A	*Contopus cooperi*	Olive-sided Flycatcher	Threatened	Threatened	Threatened	S2B	1 At Risk	1	6.5 ± 7.0
A	*Chaetura pelagica*	Chimney Swift	Threatened	Threatened	Endangered	S2B,S1M	1 At Risk	2	6.5 ± 7.0
A	*Hirundo rustica*	Barn Swallow	Threatened		Endangered	S2S3B	1 At Risk	7	4.0 ± 7.0
A	*Riparia riparia*	Bank Swallow	Threatened			S2S3B	2 May Be At Risk	2	6.5 ± 7.0
A	*Wilsonia canadensis*	Canada Warbler	Threatened	Threatened	Endangered	S3B	1 At Risk	1	6.5 ± 7.0
A	*Euphagus carolinus*	Rusty Blackbird	Special Concern	Special Concern	Endangered	S2B	2 May Be At Risk	2	6.5 ± 7.0
A	*Chelydra serpentina*	Snapping Turtle	Special Concern	Special Concern	Vulnerable	S3	3 Sensitive	8	4.0 ± 10.0
A	*Contopus virens*	Eastern Wood-Pewee	Special Concern		Vulnerable	S3S4B	3 Sensitive	11	4.0 ± 7.0
A	*Coccothraustes vespertinus*	Evening Grosbeak	Special Concern			S3S4B,S3N	4 Secure	4	4.0 ± 7.0
A	*Accipiter cooperii*	Cooper's Hawk	Not At Risk			S1?B	5 Undetermined	1	6.5 ± 7.0
A	*Hemidactylium scutatum*	Four-toed Salamander	Not At Risk			S3	4 Secure	6	2.8 ± 0.0
A	*Sterna hirundo*	Common Tern	Not At Risk			S3B	3 Sensitive	3	3.6 ± 0.0
A	*Accipiter gentilis*	Northern Goshawk	Not At Risk			S3S4	4 Secure	1	4.0 ± 7.0
A	*Circus cyaneus*	Northern Harrier	Not At Risk			S3S4B	4 Secure	1	4.3 ± 0.0
A	*Salmo salar*	Atlantic Salmon				S1	2 May Be At Risk	1	3.6 ± 0.0
A	*Anas acuta*	Northern Pintail				S1B	2 May Be At Risk	1	4.8 ± 7.0
A	*Myiarchus crinitus*	Great Crested Flycatcher				S1B	2 May Be At Risk	1	4.0 ± 7.0
A	*Mimus polyglottos*	Northern Mockingbird				S1B	4 Secure	1	6.5 ± 7.0

	Scientific *Name*	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)
A	*Vireo gilvus*	Warbling Vireo				S1B	5 Undetermined	1	4.0 ± 7.0
A	*Empidonax traillii*	Willow Flycatcher				S2B	3 Sensitive	1	4.4 ± 0.0
A	*Dendroica tigrina*	Cape May Warbler				S2B	3 Sensitive	1	5.1 ± 0.0
A	*Piranga olivacea*	Scarlet Tanager				S2B	5 Undetermined	2	4.0 ± 7.0
A	*Bucephala clangula*	Common Goldeneye				S2B,S5N	4 Secure	2	2.5 ± 0.0
A	*Carduelis pinus*	Pine Siskin				S2S3	3 Sensitive	4	4.0 ± 7.0
A	*Cathartes aura*	Turkey Vulture				S2S3B	3 Sensitive	4	4.0 ± 7.0
A	*Pheucticus ludovicianus*	Rose-breasted Grosbeak				S2S3B	3 Sensitive	1	4.0 ± 7.0
A	*Pinicola enucleator*	Pine Grosbeak				S2S3B,S5N	2 May Be At Risk	1	4.0 ± 7.0
A	*Perisoreus canadensis*	Gray Jay				S3	3 Sensitive	3	6.5 ± 7.0
A	*Poecile hudsonica*	Boreal Chickadee				S3	3 Sensitive	3	6.5 ± 7.0
A	*Sitta canadensis*	Red-breasted Nuthatch				S3	4 Secure	14	4.0 ± 0.0
A	*Falco sparverius*	American Kestrel				S3B	4 Secure	2	4.0 ± 7.0
A	*Charadrius vociferus*	Killdeer				S3B	3 Sensitive	3	4.0 ± 7.0
A	*Gallinago delicata*	Wilson's Snipe				S3B	3 Sensitive	2	6.5 ± 7.0
A	*Dumetella carolinensis*	Gray Catbird				S3B	2 May Be At Risk	6	4.0 ± 7.0
A	*Wilsonia pusilla*	Wilson's Warbler				S3B	3 Sensitive	2	6.5 ± 7.0
A	*Anas discors*	Blue-winged Teal				S3S4B	2 May Be At Risk	1	4.0 ± 7.0
A	*Actitis macularius*	Spotted Sandpiper				S3S4B	3 Sensitive	4	4.0 ± 7.0
A	*Empidonax flaviventris*	Yellow-bellied Flycatcher				S3S4B	3 Sensitive	2	6.5 ± 7.0
A	*Regulus calendula*	Ruby-crowned Kinglet				S3S4B	3 Sensitive	6	3.9 ± 0.0
A	*Catharus fuscescens*	Veery				S3S4B	4 Secure	4	4.0 ± 7.0
A	*Catharus ustulatus*	Swainson's Thrush				S3S4B	4 Secure	3	4.0 ± 7.0
A	*Vermivora peregrina*	Tennessee Warbler				S3S4B	3 Sensitive	2	4.0 ± 7.0
A	*Dendroica castanea*	Bay-breasted Warbler				S3S4B	3 Sensitive	2	6.5 ± 7.0
I	*Danaus plexippus*	Monarch	Endangered	Special Concern		S2B	3 Sensitive	3	7.8 ± 0.0
I	*Satyrium calanus*	Banded Hairstreak				S2	5 Undetermined	2	4.1 ± 10.0
I	*Amblyscirtes hegon*	Pepper and Salt Skipper				S2S3	4 Secure	5	4.0 ± 1.0
I	*Alasmidonta undulata*	Triangle Floater				S2S3	4 Secure	5	5.9 ± 0.0
I	*Gomphaeschna furcillata*	Harlequin Darner				S3	3 Sensitive	1	6.5 ± 1.0
I	*Nannothemis bella*	Elfin Skimmer				S3	4 Secure	1	5.5 ± 1.0
I	*Polygonia interrogationis*	Question Mark				S3B	4 Secure	4	6.3 ± 1.0
I	*Erynnis juvenalis*	Juvenal's Duskywing				S3S4	4 Secure	11	4.0 ± 0.0

4.3 LOCATION SENSITIVE SPECIES

The Department of Natural Resources in each Maritimes province considers a number of species "location sensitive". Concern about exploitation of location-sensitive species precludes inclusion of precise coordinates in this report. Those intersecting your study area are indicated below with "YES".

Nova Scotia

Scientific *Name*	Common Name	SARA	Prov Legal Prot	Known within the Study Site?
Fraxinus nigra	**Black Ash**		**Threatened**	**YES**
Emydoidea blandingii	*Blanding's Turtle - Nova Scotia pop.*	Endangered	Vulnerable	No
Glyptemys insculpta	**Wood Turtle**	**Threatened**	**Threatened**	**YES**
Falco peregrinus pop. 1	Peregrine Falcon - anatum/tundrius pop.	Special Concern	Vulnerable	No
Bat Hibernaculum		**[Endangered][1]**	**[Endangered][1]**	**YES**

1 *Myotis lucifugus* (Little Brown Myotis), *Myotis septentrionalis* (Long-eared Myotis), and *Perimyotis subflavus* (Tri-colored Bat or Eastern Pipistrelle) are all Endangered under the Federal Species at Risk Act and the NS Endangered Species Act.

4.4 SOURCE BIBLIOGRAPHY

The recipient of these data shall acknowledge the ACCDC and the data sources listed below in any documents, reports, publications or presentations, in which this dataset makes a significant contribution.

# recs	CITATION
75	LaPaix, R.W.; Crowell, M.J.; MacDonald, M. 2011. Stantec rare plant records, 2010-11. Stantec Consulting, 334 recs.
70	Lepage, D. 2014. Maritime Breeding Bird Atlas Database. Bird Studies Canada, Sackville NB, 407,838 recs.
47	Erskine, A.J. 1992. Maritime Breeding Bird Atlas Database. NS Museum & Nimbus Publ., Halifax, 82,125 recs.
12	Layberry, R.A. & Hall, P.W., LaFontaine, J.D. 1998. The Butterflies of Canada. University of Toronto Press. 280 pp+plates.
9	Staff, DNR 2007. Restricted & Limited Use Land Database (RLUL).
8	Scott, F.W. 2002. Nova Scotia Herpetofauna Atlas Database. Acadia University, Wolfville NS, 8856 recs.
7	Klymko, J.J.D. 2014. Maritimes Butterfly Atlas, 2012 submissions. Atlantic Canada Conservation Data Centre, 8552 records.
6	Benjamin, L.K. (compiler). 2001. Significant Habitat & Species Database. Nova Scotia Dept of Natural Resources, 15 spp, 224 recs.
5	Benjamin, L.K. (compiler). 2007. Significant Habitat & Species Database. Nova Scotia Dept Natural Resources, 8439 recs.
5	Klymko, J.J.D. 2012. Maritimes Butterfly Atlas, 2010 and 2011 records. Atlantic Canada Conservation Data Centre, 6318 recs.
4	Benjamin, L.K. (compiler). 2012. Significant Habitat & Species Database. Nova Scotia Dept Natural Resources, 4965 recs.
4	Munro, Marian K. Nova Scotia Provincial Museum of Natural History Herbarium Database. Nova Scotia Provincial Museum of Natural History, Halifax, Nova Scotia. 2013.
4	Newell, R.E. 2005. E.C. Smith Digital Herbarium. E.C. Smith Herbarium, Irving Biodiversity Collection, Acadia University, Web site: http://luxor.acadiau.ca/library/Herbarium/project/. 582 recs.
3	Canadian Wildlife Service. 2011. Eastern Canada Seabirds at Sea (ECSAS), 3.27 Ed. Environment Canada, 305,783 recs.
2	Archibald, D.R. 2003. NS Freshwater Mussel Fieldwork. Nova Scotia Dept Natural Resources, 213 recs.
2	Brunelle, P.-M. (compiler). 2009. ADIP/MDDS Odonata Database: data to 2006 inclusive. Atlantic Dragonfly Inventory Program (ADIP), 24200 recs.
2	Newell, R.E. 2000. E.C. Smith Herbarium Database. Acadia University, Wolfville NS, 7139 recs.
1	Belland, R.J. Maritimes moss records from various herbarium databases. 2014.
1	Benjamin, L.K. (compiler) 2012. Significant Habitat & Species Database. NS Dept of Natural Resources.
1	Edsall, J. 2007. Personal Butterfly Collection: specimens collected in the Canadian Maritimes, 1961-2007. J. Edsall, unpubl. report, 137 recs.
1	Hicks, Andrew. 2009. Coastal Waterfowl Surveys Database, 2000-08. Canadian Wildlife Service, Sackville, 46488 recs (11149 non-zero).
1	LaPaix, R.; Parker, M. 2013. email to Sean Blaney regarding Listera australis observations near Kearney Lake. East Coast Aquatics, 2.
1	Pronych, G. & Wilson, A. 1993. Atlas of Rare Vascular Plants in Nova Scotia. Nova Scotia Museum, Halifax NS, I:1-168, II:169-331. 1446 recs.
1	Roland, A.E. & Smith, E.C. 1969. The Flora of Nova Scotia, 1st Ed. Nova Scotia Museum, Halifax, 743pp.
1	Wilhelm, S.I. et al. 2011. Colonial Waterbird Database.
1	Wilhelm, S.I. et al. 2011. Colonial Waterbird Database. Canadian Wildlife Service, Sackville, 2698 sites, 9718 recs (8192 obs).

5.0 RARE SPECIES WITHIN 100 KM

A 100 km buffer around the study area contains 29638 records of 140 vertebrate and 715 records of 60 invertebrate fauna; 5865 records of 293 vascular, 756 records of 98 nonvascular flora (attached: *ob100km.xls).

Taxa within 100 km of the study site that are rare and/or endangered in the province in which the study site occurs. All ranks correspond to the province in which the study site falls, even for out-of-province records. Taxa are listed in order of concern, beginning with legally listed taxa, with the number of observations per taxon and the distance in kilometers from study area centroid to the closest observation (± the precision, in km, of the record).

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
A	*Coregonus huntsmani*	Atlantic Whitefish	Endangered	Endangered	Endangered	S1	7 Exotic	9	86.1 ± 1.0	NS
A	*Myotis lucifugus*	Little Brown Myotis	Endangered	Endangered	Endangered	S1	1 At Risk	33	5.6 ± 0.0	NS
A	*Myotis septentrionalis*	Northern Long-eared Myotis	Endangered	Endangered	Endangered	S1	1 At Risk	5	32.5 ± 0.0	NS
A	*Perimyotis subflavus*	Eastern Pipistrelle	Endangered	Endangered	Endangered	S1	1 At Risk	7	32.5 ± 0.0	NS
A	*Emydoidea blandingii*	Blanding's Turtle - Nova Scotia pop.	Endangered	Endangered	Endangered	S1	1 At Risk	160	95.1 ± 0.0	NS
A	*Salmo salar pop. 1*	Atlantic Salmon - Inner Bay of Fundy pop.	Endangered	Endangered		S1	2 May Be At Risk	31	13.6 ± 0.0	NS
A	*Charadrius melodus melodus*	Piping Plover melodus ssp	Endangered	Endangered	Endangered	S1B	1 At Risk	862	15.8 ± 0.0	NS
A	*Sterna dougallii*	Roseate Tern	Endangered	Endangered	Endangered	S1B	1 At Risk	63	28.6 ± 0.0	NS
A	*Morone saxatilis pop. 2*	Striped Bass- Bay of Fundy pop.	Endangered			S1B	2 May Be At Risk	4	23.9 ± 0.0	NS
A	*Dermochelys coriacea (Atlantic pop.)*	Leatherback Sea Turtle - Atlantic pop.	Endangered	Endangered		S1S2N		3	34.8 ± 5.0	NS
A	*Calidris canutus rufa*	Red Knot rufa ssp	Endangered		Endangered	S2M	1 At Risk	583	17.6 ± 0.0	NS
A	*Caprimulgus vociferus*	Whip-Poor-Will	Threatened	Threatened	Threatened	S1?B	1 At Risk	13	4.0 ± 7.0	NS
A	*Glyptemys insculpta*	Wood Turtle	Threatened	Threatened	Threatened	S2	3 Sensitive	131	5.3 ± 1.0	NS
A	*Acipenser oxyrinchus*	Atlantic Sturgeon	Threatened			S2	2 May Be At Risk	5	33.2 ± 0.0	NS
A	*Anguilla rostrata*	American Eel	Threatened			S2	4 Secure	9	27.6 ± 0.0	NS
A	*Chordeiles minor*	Common Nighthawk	Threatened	Threatened	Threatened	S2B	1 At Risk	360	4.0 ± 7.0	NS
A	*Contopus cooperi*	Olive-sided Flycatcher	Threatened	Threatened	Threatened	S2B	1 At Risk	553	6.5 ± 7.0	NS
A	*Chaetura pelagica*	Chimney Swift	Threatened	Threatened	Endangered	S2B,S1M	1 At Risk	223	6.5 ± 7.0	NS
A	*Thamnophis sauritus pop. 3*	Eastern Ribbonsnake - Atlantic pop.	Threatened	Threatened	Threatened	S2S3	1 At Risk	30	90.7 ± 0.0	NS
A	*Hirundo rustica*	Barn Swallow	Threatened		Endangered	S2S3B	1 At Risk	704	4.0 ± 7.0	NS
A	*Riparia riparia*	Bank Swallow	Threatened			S2S3B	2 May Be At Risk	272	6.5 ± 7.0	NS
A	*Wilsonia canadensis*	Canada Warbler	Threatened	Threatened	Endangered	S3B	1 At Risk	549	6.5 ± 7.0	NS
A	*Dolichonyx oryzivorus*	Bobolink	Threatened		Vulnerable	S3S4B	3 Sensitive	346	12.1 ± 7.0	NS
A	*Sturnella magna*	Eastern Meadowlark	Threatened			SHB	3 Sensitive	2	46.2 ± 7.0	NS
A	*Hylocichla mustelina*	Wood Thrush	Threatened			SUB	5 Undetermined	29	32.0 ± 7.0	NS
A	*Passerculus sandwichensis princeps*	Savannah Sparrow princeps ssp	Special Concern	Special Concern		S1B	3 Sensitive	2	21.1 ± 0.0	NS
A	*Falco peregrinus pop. 1*	Peregrine Falcon - anatum/tundrius	Special Concern	Special Concern	Vulnerable	S1B,SNAM	3 Sensitive	85	34.0 ± 0.0	NS
A	*Asio flammeus*	Short-eared Owl	Special Concern	Special Concern		S1S2B	2 May Be At Risk	9	9.2 ± 7.0	NS
A	*Euphagus carolinus*	Rusty Blackbird	Special Concern	Special Concern	Endangered	S2B	2 May Be At Risk	200	6.5 ± 7.0	NS
A	*Histrionicus histrionicus pop. 1*	Harlequin Duck - Eastern pop.	Special Concern	Special Concern	Endangered	S2N	1 At Risk	18	30.7 ± 2.0	NS
A	*Phalaropus lobatus*	Red-necked Phalarope	Special Concern			S2S3M	3 Sensitive	6	17.6 ± 0.0	NS
A	*Chelydra serpentina*	Snapping Turtle	Special Concern	Special Concern	Vulnerable	S3	3 Sensitive	96	4.0 ± 10.0	NS
A	*Contopus virens*	Eastern Wood-Pewee	Special Concern		Vulnerable	S3S4B	3 Sensitive	523	4.0 ± 7.0	NS
A	*Coccothraustes vespertinus*	Evening Grosbeak	Special Concern			S3S4B,S3N	4 Secure	316	4.0 ± 7.0	NS
A	*Phocoena phocoena (NW Atlantic pop.)*	Harbour Porpoise - Northwest Atlantic pop.	Special Concern	Threatened		S4		4	52.4 ± 1.0	NS
A	*Podiceps auritus*	Horned Grebe	Special Concern			S4N	4 Secure	1	86.5 ± 10.0	NS

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
A	*Lynx canadensis*	Canadian Lynx	Not At Risk		Endangered	S1	1 At Risk	2	79.1 ± 1.0	NS
A	*Accipiter cooperii*	Cooper's Hawk	Not At Risk			S1?B	5 Undetermined	2	6.5 ± 7.0	NS
A	*Fulica americana*	American Coot	Not At Risk			S1B	5 Undetermined	5	51.7 ± 7.0	NS
A	*Sorex dispar*	Long-tailed Shrew	Not At Risk	Special Concern		S2	3 Sensitive	3	82.2 ± 0.0	NS
A	*Aegolius funereus*	Boreal Owl	Not At Risk			S2?B	5 Undetermined	4	40.0 ± 7.0	NS
A	*Glaucomys volans*	Southern Flying Squirrel	Not At Risk	Special Concern		S2S3	3 Sensitive	6	66.3 ± 0.0	NS
A	*Globicephala melas*	Long-finned Pilot Whale	Not At Risk			S2S3		1	56.9 ± 100.0	NS
A	*Hemidactylium scutatum*	Four-toed Salamander	Not At Risk			S3	4 Secure	26	2.8 ± 0.0	NS
A	*Sterna hirundo*	Common Tern	Not At Risk			S3B	3 Sensitive	200	3.6 ± 0.0	NS
A	*Sialia sialis*	Eastern Bluebird	Not At Risk			S3B	3 Sensitive	62	14.0 ± 0.0	NS
A	*Accipiter gentilis*	Northern Goshawk	Not At Risk			S3S4	4 Secure	108	4.0 ± 7.0	NS
A	*Lagenorhynchus acutus*	Atlantic White-sided Dolphin	Not At Risk			S3S4		1	36.6 ± 1.0	NS
A	*Circus cyaneus*	Northern Harrier	Not At Risk			S3S4B	4 Secure	222	4.3 ± 0.0	NS
A	*Ammodramus nelsoni*	Nelson's Sparrow	Not At Risk			S3S4B	4 Secure	91	16.0 ± 7.0	NS
A	*Alces americanus*	Moose			Endangered	S1	1 At Risk	9	19.4 ± 0.0	NS
A	*Salmo salar*	Atlantic Salmon				S1	2 May Be At Risk	31	3.6 ± 0.0	NS
A	*Passerina cyanea*	Indigo Bunting				S1?B	5 Undetermined	19	43.7 ± 7.0	NS
A	*Anas acuta*	Northern Pintail				S1B	2 May Be At Risk	16	4.8 ± 7.0	NS
A	*Gallinula chloropus*	Common Moorhen				S1B	5 Undetermined	2	48.1 ± 7.0	NS
A	*Myiarchus crinitus*	Great Crested Flycatcher				S1B	2 May Be At Risk	23	4.0 ± 7.0	NS
A	*Cistothorus palustris*	Marsh Wren				S1B	5 Undetermined	2	72.4 ± 0.0	NS
A	*Mimus polyglottos*	Northern Mockingbird				S1B	4 Secure	40	6.5 ± 7.0	NS
A	*Toxostoma rufum*	Brown Thrasher				S1B	5 Undetermined	11	9.2 ± 7.0	NS
A	*Vireo gilvus*	Warbling Vireo				S1B	5 Undetermined	18	4.0 ± 7.0	NS
A	*Dendroica pinus*	Pine Warbler				S1B	5 Undetermined	12	9.2 ± 7.0	NS
A	*Calidris minutilla*	Least Sandpiper				S1B,S3M	4 Secure	1012	17.1 ± 7.0	NS
A	*Charadrius semipalmatus*	Semipalmated Plover				S1B,S3S4M	4 Secure	1386	13.0 ± 0.0	NS
A	*Lasiurus cinereus*	Hoary Bat				S1S2B, S1M	2 May Be At Risk	2	20.8 ± 0.0	NS
A	*Pluvialis dominica*	American Golden-Plover				S1S2M	3 Sensitive	218	17.6 ± 0.0	NS
A	*Limosa haemastica*	Hudsonian Godwit				S1S2M	3 Sensitive	86	17.6 ± 0.0	NS
A	*Vireo philadelphicus*	Philadelphia Vireo				S2?B	5 Undetermined	26	14.7 ± 0.0	NS
A	*Anas clypeata*	Northern Shoveler				S2B	2 May Be At Risk	7	25.1 ± 7.0	NS
A	*Anas strepera*	Gadwall				S2B	2 May Be At Risk	19	9.2 ± 7.0	NS
A	*Empidonax traillii*	Willow Flycatcher				S2B	3 Sensitive	26	4.4 ± 0.0	NS
A	*Dendroica tigrina*	Cape May Warbler				S2B	3 Sensitive	102	5.1 ± 0.0	NS
A	*Piranga olivacea*	Scarlet Tanager				S2B	5 Undetermined	33	4.0 ± 7.0	NS
A	*Pooecetes gramineus*	Vesper Sparrow				S2B	2 May Be At Risk	31	12.1 ± 7.0	NS
A	*Molothrus ater*	Brown-headed Cowbird				S2B	4 Secure	122	9.2 ± 7.0	NS
A	*Alca torda*	Razorbill				S2B,S4N	3 Sensitive	17	51.9 ± 0.0	NS
A	*Bucephala clangula*	Common Goldeneye				S2B,S5N	4 Secure	99	2.5 ± 0.0	NS
A	*Branta bernicla*	Brant				S2M	3 Sensitive	1	68.7 ± 0.0	NS
A	*Phalacrocorax carbo*	Great Cormorant				S2S3	3 Sensitive	46	17.5 ± 12.0	NS
A	*Asio otus*	Long-eared Owl				S2S3	2 May Be At Risk	21	10.6 ± 7.0	NS
A	*Carduelis pinus*	Pine Siskin				S2S3	3 Sensitive	324	4.0 ± 7.0	NS
A	*Cathartes aura*	Turkey Vulture				S2S3B	3 Sensitive	15	4.0 ± 7.0	NS
A	*Rallus limicola*	Virginia Rail				S2S3B	5 Undetermined	17	17.9 ± 7.0	NS
A	*Tringa semipalmata*	Willet				S2S3B	2 May Be At Risk	1224	16.0 ± 7.0	NS
A	*Petrochelidon pyrrhonota*	Cliff Swallow				S2S3B	2 May Be At Risk	182	10.6 ± 7.0	NS
A	*Pheucticus ludovicianus*	Rose-breasted Grosbeak				S2S3B	3 Sensitive	238	4.0 ± 7.0	NS
A	*Icterus galbula*	Baltimore Oriole				S2S3B	2 May Be At Risk	53	9.2 ± 7.0	NS
A	*Pinicola enucleator*	Pine Grosbeak				S2S3B,S5N	2 May Be At Risk	115	4.0 ± 7.0	NS
A	*Numenius phaeopus*	Hudsonian Whimbrel				S2S3M	3 Sensitive	212	17.6 ± 0.0	NS

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
	hudsonicus									
A	*Calidris melanotos*	Pectoral Sandpiper				S2S3M	4 Secure	276	17.6 ± 0.0	NS
A	*Phalaropus fulicarius*	Red Phalarope				S2S3M	3 Sensitive	2	20.6 ± 0.0	NS
A	*Perisoreus canadensis*	Gray Jay				S3	3 Sensitive	409	6.5 ± 7.0	NS
A	*Poecile hudsonica*	Boreal Chickadee				S3	3 Sensitive	431	6.5 ± 7.0	NS
A	*Sitta canadensis*	Red-breasted Nuthatch				S3	4 Secure	740	4.0 ± 7.0	NS
A	*Alosa pseudoharengus*	Alewife				S3	3 Sensitive	18	16.8 ± 0.0	NS
A	*Salvelinus fontinalis*	Brook Trout				S3	3 Sensitive	20	16.8 ± 0.0	NS
A	*Salvelinus namaycush*	Lake Trout				S3	3 Sensitive	2	30.8 ± 0.0	NS
A	*Synaptomys cooperi*	Southern Bog Lemming				S3	4 Secure	1	82.2 ± 0.0	NS
A	*Pekania pennanti*	Fisher				S3	3 Sensitive	2	67.7 ± 5.0	NS
A	*Calidris maritima*	Purple Sandpiper				S3?N	3 Sensitive	162	17.5 ± 12.0	NS
A	*Calcarius lapponicus*	Lapland Longspur				S3?N	4 Secure	1	88.2 ± 0.0	NS
A	*Falco sparverius*	American Kestrel				S3B	4 Secure	231	4.0 ± 7.0	NS
A	*Charadrius vociferus*	Killdeer				S3B	3 Sensitive	440	4.0 ± 7.0	NS
A	*Gallinago delicata*	Wilson's Snipe				S3B	3 Sensitive	292	6.5 ± 7.0	NS
A	*Sterna paradisaea*	Arctic Tern				S3B	2 May Be At Risk	59	21.2 ± 0.0	NS
A	*Coccyzus erythropthalmus*	Black-billed Cuckoo				S3B	2 May Be At Risk	40	12.1 ± 7.0	NS
A	*Tyrannus tyrannus*	Eastern Kingbird				S3B	3 Sensitive	170	9.2 ± 7.0	NS
A	*Dumetella carolinensis*	Gray Catbird				S3B	2 May Be At Risk	324	4.0 ± 7.0	NS
A	*Wilsonia pusilla*	Wilson's Warbler				S3B	3 Sensitive	65	6.5 ± 7.0	NS
A	*Tringa melanoleuca*	Greater Yellowlegs				S3B,S3S4M	3 Sensitive	1384	13.0 ± 0.0	NS
A	*Oceanodroma leucorhoa*	Leach's Storm-Petrel				S3B,S5M	4 Secure	31	30.2 ± 0.0	NS
A	*Rissa tridactyla*	Black-legged Kittiwake				S3B,S5N	3 Sensitive	8	51.9 ± 0.0	NS
A	*Fratercula arctica*	Atlantic Puffin				S3B,S5N	3 Sensitive	18	51.9 ± 0.0	NS
A	*Pluvialis squatarola*	Black-bellied Plover				S3M	4 Secure	1597	17.6 ± 0.0	NS
A	*Tringa flavipes*	Lesser Yellowlegs				S3M	4 Secure	583	17.6 ± 0.0	NS
A	*Arenaria interpres*	Ruddy Turnstone				S3M	4 Secure	658	17.6 ± 0.0	NS
A	*Calidris pusilla*	Semipalmated Sandpiper				S3M	3 Sensitive	1254	13.0 ± 0.0	NS
A	*Calidris fuscicollis*	White-rumped Sandpiper				S3M	4 Secure	723	17.6 ± 0.0	NS
A	*Limnodromus griseus*	Short-billed Dowitcher				S3M	4 Secure	943	17.6 ± 0.0	NS
A	*Calidris alba*	Sanderling				S3M,S2N	4 Secure	1175	17.6 ± 0.0	NS
A	*Chroicocephalus ridibundus*	Black-headed Gull				S3N	4 Secure	1	33.7 ± 7.0	NS
A	*Somateria mollissima*	Common Eider				S3S4	4 Secure	389	16.0 ± 7.0	NS
A	*Picoides arcticus*	Black-backed Woodpecker				S3S4	3 Sensitive	140	9.2 ± 7.0	NS
A	*Loxia curvirostra*	Red Crossbill				S3S4	4 Secure	181	9.2 ± 7.0	NS
A	*Botaurus lentiginosus*	American Bittern				S3S4B	3 Sensitive	116	9.2 ± 7.0	NS
A	*Anas discors*	Blue-winged Teal				S3S4B	2 May Be At Risk	47	4.0 ± 7.0	NS
A	*Actitis macularius*	Spotted Sandpiper				S3S4B	3 Sensitive	604	4.0 ± 7.0	NS
A	*Empidonax flaviventris*	Yellow-bellied Flycatcher				S3S4B	3 Sensitive	411	6.5 ± 7.0	NS
A	*Regulus calendula*	Ruby-crowned Kinglet				S3S4B	3 Sensitive	955	3.9 ± 0.0	NS
A	*Catharus fuscescens*	Veery				S3S4B	4 Secure	294	4.0 ± 7.0	NS
A	*Catharus ustulatus*	Swainson's Thrush				S3S4B	4 Secure	839	4.0 ± 7.0	NS
A	*Vermivora peregrina*	Tennessee Warbler				S3S4B	3 Sensitive	237	4.0 ± 7.0	NS
A	*Dendroica castanea*	Bay-breasted Warbler				S3S4B	3 Sensitive	319	6.5 ± 7.0	NS
A	*Dendroica striata*	Blackpoll Warbler				S3S4B	3 Sensitive	91	9.2 ± 7.0	NS
A	*Passerella iliaca*	Fox Sparrow				S3S4B	4 Secure	65	9.5 ± 0.0	NS
A	*Mergus serrator*	Red-breasted Merganser				S3S4B,S5N	4 Secure	56	16.0 ± 7.0	NS
A	*Bucephala albeola*	Bufflehead				S3S4N	4 Secure	25	17.5 ± 12.0	NS
A	*Leucophaeus atricilla*	Laughing Gull				SHB	4 Secure	2	57.8 ± 0.0	NS
A	*Progne subis*	Purple Martin				SHB	2 May Be At Risk	2	95.3 ± 7.0	NS
A	*Eremophila alpestris*	Horned Lark				SHB,S4S5N	4 Secure	7	12.1 ± 7.0	NS
A	*Morus bassanus*	Northern Gannet				SHB,S5M	4 Secure	2	32.9 ± 12.0	NS
I	*Gomphus ventricosus*	Skillet Clubtail	Endangered			S1	2 May Be At Risk	2	23.0 ± 0.0	NS

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I	*Danaus plexippus*	Monarch	Endangered	Special Concern		S2B	3 Sensitive	75	7.8 ± 0.0	NS
I	*Barnea truncata*	Atlantic Mud-piddock	Threatened			S1	1 At Risk	1	75.3 ± 1.0	NS
I	*Alasmidonta varicosa*	Brook Floater	Special Concern		Threatened	S1S2	3 Sensitive	5	37.7 ± 0.0	NS
I	*Bombus terricola*	Yellow-banded Bumblebee	Special Concern			S3	3 Sensitive	3	47.4 ± 0.0	NS
I	*Cicindela formosa*	Big Sand Tiger Beetle				S1	2 May Be At Risk	1	77.4 ± 1.0	NS
I	*Satyrium acadica*	Acadian Hairstreak				S1	5 Undetermined	1	79.3 ± 0.0	NS
I	*Somatochlora brevicincta*	Quebec Emerald				S1	2 May Be At Risk	1	23.8 ± 0.0	NS
I	*Polygonia comma*	Eastern Comma				S1?	1 At Risk	10	9.3 ± 1.0	NS
I	*Polygonia satyrus*	Satyr Comma				S1?	3 Sensitive	2	11.1 ± 1.0	NS
I	*Strymon melinus*	Grey Hairstreak				S1S2	4 Secure	6	47.4 ± 1.0	NS
I	*Nymphalis l-album*	Compton Tortoiseshell				S1S2	4 Secure	10	9.2 ± 0.0	NS
I	*Somatochlora kennedyi*	Kennedy's Emerald				S1S2	2 May Be At Risk	3	14.6 ± 1.0	NS
I	*Coenagrion resolutum*	Taiga Bluet				S1S2	2 May Be At Risk	2	7.8 ± 1.0	NS
I	*Stylurus scudderi*	Zebra Clubtail				S1S2	2 May Be At Risk	6	23.0 ± 0.0	NS
I	*Lycaena hyllus*	Bronze Copper				S2	4 Secure	2	20.7 ± 1.0	NS
I	*Satyrium calanus*	Banded Hairstreak				S2	5 Undetermined	10	4.1 ± 10.0	NS
I	*Satyrium calanus falacer*	Banded Hairstreak				S2	1 At Risk	2	11.8 ± 0.0	NS
I	*Boloria chariclea*	Arctic Fritillary				S2	3 Sensitive	4	92.6 ± 1.0	NS
I	*Aglais milberti*	Milbert's Tortoiseshell				S2	4 Secure	9	11.1 ± 1.0	NS
I	*Epitheca princeps*	Prince Baskettail				S2	3 Sensitive	12	7.8 ± 1.0	NS
I	*Enallagma signatum*	Orange Bluet				S2	2 May Be At Risk	3	12.9 ± 1.0	NS
I	*Margaritifera margaritifera*	Eastern Pearlshell				S2	3 Sensitive	69	28.2 ± 1.0	NS
I	*Pantala hymenaea*	Spot-Winged Glider				S2?B	3 Sensitive	6	12.9 ± 1.0	NS
I	*Thorybes pylades*	Northern Cloudywing				S2S3	3 Sensitive	1	76.0 ± 1.0	NS
I	*Amblyscirtes hegon*	Pepper and Salt Skipper				S2S3	4 Secure	21	4.0 ± 1.0	NS
I	*Satyrium liparops*	Striped Hairstreak				S2S3	5 Undetermined	8	7.6 ± 1.0	NS
I	*Satyrium liparops strigosum*	Striped Hairstreak				S2S3	3 Sensitive	2	11.8 ± 0.0	NS
I	*Euphydryas phaeton*	Baltimore Checkerspot				S2S3	4 Secure	14	9.3 ± 1.0	NS
I	*Ophiogomphus aspersus*	Brook Snaketail				S2S3	2 May Be At Risk	2	28.1 ± 0.0	NS
I	*Ophiogomphus mainensis*	Maine Snaketail				S2S3	2 May Be At Risk	9	85.9 ± 0.0	NS
I	*Ophiogomphus rupinsulensis*	Rusty Snaketail				S2S3	2 May Be At Risk	19	23.0 ± 0.0	NS
I	*Somatochlora forcipata*	Forcipate Emerald				S2S3	2 May Be At Risk	4	9.3 ± 1.0	NS
I	*Somatochlora franklini*	Delicate Emerald				S2S3	3 Sensitive	1	27.3 ± 1.0	NS
I	*Erythrodiplax berenice*	Seaside Dragonlet				S2S3	3 Sensitive	2	63.8 ± 0.0	NS
I	*Enallagma vesperum*	Vesper Bluet				S2S3	3 Sensitive	2	75.7 ± 1.0	NS
I	*Alasmidonta undulata*	Triangle Floater				S2S3	4 Secure	24	5.9 ± 0.0	NS
I	*Hippodamia parenthesis*	Parenthesis Lady Beetle				S3	5 Undetermined	1	84.6 ± 0.0	NS
I	*Naemia seriata*	a Ladybird beetle				S3	3 Sensitive	1	65.3 ± 1.0	NS
I	*Chilocorus stigma*	Twice-stabbed Lady Beetle				S3	4 Secure	1	59.7 ± 0.0	NS
I	*Callophrys henrici*	Henry's Elfin				S3	4 Secure	23	9.3 ± 1.0	NS
I	*Callophrys lanoraieensis*	Bog Elfin				S3	2 May Be At Risk	15	7.6 ± 1.0	NS
I	*Speyeria aphrodite*	Aphrodite Fritillary				S3	4 Secure	19	9.4 ± 1.0	NS
I	*Polygonia faunus*	Green Comma				S3	4 Secure	10	9.3 ± 1.0	NS
I	*Megisto cymela*	Little Wood-satyr				S3	4 Secure	1	83.1 ± 0.0	NS
I	*Oeneis jutta*	Jutta Arctic				S3	2 May Be At Risk	4	27.3 ± 1.0	NS
I	*Aeshna clepsydra*	Mottled Darner				S3	4 Secure	11	7.6 ± 1.0	NS
I	*Aeshna constricta*	Lance-Tipped Darner				S3	4 Secure	16	14.2 ± 1.0	NS

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I	*Boyeria grafiana*	Ocellated Darner				S3	3 Sensitive	4	40.7 ± 1.0	NS
I	*Gomphaeschna furcillata*	Harlequin Darner				S3	3 Sensitive	6	6.5 ± 1.0	NS
I	*Somatochlora tenebrosa*	Clamp-Tipped Emerald				S3	4 Secure	13	14.6 ± 1.0	NS
I	*Nannothemis bella*	Elfin Skimmer				S3	4 Secure	18	5.5 ± 1.0	NS
I	*Enallagma vernale*	Vernal Bluet				S3	5 Undetermined	5	26.5 ± 1.0	NS
I	*Amphiagrion saucium*	Eastern Red Damsel				S3	4 Secure	2	75.0 ± 1.0	NS
I	*Polygonia interrogationis*	Question Mark				S3B	4 Secure	115	6.3 ± 1.0	NS
I	*Erynnis juvenalis*	Juvenal's Duskywing				S3S4	4 Secure	53	4.0 ± 0.0	NS
I	*Amblyscirtes vialis*	Common Roadside-Skipper				S3S4	4 Secure	10	9.3 ± 1.0	NS
I	*Polygonia progne*	Grey Comma				S3S4	4 Secure	19	11.1 ± 1.0	NS
I	*Lanthus parvulus*	Northern Pygmy Clubtail				S3S4	4 Secure	3	76.3 ± 5.0	NS
I	*Lampsilis radiata*	Eastern Lampmussel				S3S4	3 Sensitive	11	34.7 ± 0.0	NS
N	*Erioderma pedicellatum (Atlantic pop.)*	Boreal Felt Lichen - Atlantic pop.	Endangered	Endangered	Endangered	S1	1 At Risk	245	13.5 ± 0.0	NS
N	*Erioderma mollissimum*	Graceful Felt Lichen	Endangered		Endangered	S1S2	2 May Be At Risk	7	42.2 ± 0.0	NS
N	*Peltigera hydrothyria*	Eastern Waterfan	Threatened			S1	2 May Be At Risk	2	83.1 ± 3.0	NS
N	*Pannaria lurida*	Veined Shingle Lichen	Threatened			S1S2	2 May Be At Risk	1	99.2 ± 0.0	NS
N	*Anzia colpodes*	Black-foam Lichen	Threatened			S3	3 Sensitive	2	54.9 ± 0.0	NS
N	*Sclerophora peronella (Nova Scotia pop.)*	Frosted Glass-whiskers Lichen - Nova Scotia pop.	Special Concern	Special Concern		S1?		10	23.5 ± 7.0	NS
N	*Degelia plumbea*	Blue Felt Lichen	Special Concern	Special Concern	Vulnerable	S3	4 Secure	42	18.0 ± 0.0	NS
N	*Fissidens exilis*	Pygmy Pocket Moss	Not At Risk			S1S2	1 At Risk	3	42.8 ± 1.0	NS
N	*Pseudevernia cladonia*	Ghost Antler Lichen	Not At Risk			S2S3	3 Sensitive	13	15.4 ± 0.0	NS
N	*Aloina brevirostris*	Short-Beaked Rigid Screw Moss				S1		1	41.9 ± 2.0	NS
N	*Collema cristatum*	Fingered Tarpaper Lichen				S1	5 Undetermined	3	49.2 ± 0.0	NS
N	*Peltigera lepidophora*	Scaly Pelt Lichen				S1	2 May Be At Risk	1	50.9 ± 0.0	NS
N	*Aloina rigida*	Aloe-Like Rigid Screw Moss				S1?	2 May Be At Risk	2	41.9 ± 2.0	NS
N	*Conardia compacta*	Coast Creeping Moss				S1?	3 Sensitive	1	35.4 ± 2.0	NS
N	*Tortula obtusifolia*	a Moss				S1?	5 Undetermined	2	75.5 ± 1.0	NS
N	*Paludella squarrosa*	Tufted Fen Moss				S1?	3 Sensitive	2	41.8 ± 0.0	NS
N	*Lichina confinis*	Marine Seaweed Lichen				S1?	6 Not Assessed	2	29.5 ± 0.0	NS
N	*Parmeliella parvula*	Poor-man's Shingles Lichen				S1?	2 May Be At Risk	1	47.1 ± 0.0	NS
N	*Aulacomnium heterostichum*	One-sided Groove Moss				S1S2	3 Sensitive	3	41.9 ± 2.0	NS
N	*Hypnum pratense*	Meadow Plait Moss				S1S2	3 Sensitive	1	88.5 ± 3.0	NS
N	*Mnium thomsonii*	Thomson's Leafy Moss				S1S2	3 Sensitive	1	47.6 ± 2.0	NS
N	*Plagiothecium latebricola*	Alder Silk Moss				S1S2	3 Sensitive	2	51.7 ± 5.0	NS
N	*Sematophyllum demissum*	a Moss				S1S2	3 Sensitive	2	9.5 ± 2.0	NS
N	*Sphagnum platyphyllum*	Flat-leaved Peat Moss				S1S2		2	13.0 ± 3.0	NS
N	*Timmia megapolitana*	Metropolitan Timmia Moss				S1S2	3 Sensitive	3	79.9 ± 1.0	NS
N	*Tortula mucronifolia*	Mucronate Screw Moss				S1S2	3 Sensitive	1	82.6 ± 3.0	NS
N	*Cyrto-hypnum minutulum*	Tiny Cedar Moss				S1S2	3 Sensitive	1	92.1 ± 0.0	NS
N	*Bryohaplocladium microphyllum*	Tiny-leaved Haplocladium Moss				S1S2		1	65.7 ± 5.0	NS
N	*Sticta limbata*	Powdered Moon Lichen				S1S2	2 May Be At Risk	3	43.3 ± 0.0	NS
N	*Anacamptodon splachnoides*	a Moss				S2?	3 Sensitive	2	8.7 ± 30.0	NS
N	*Weissia muhlenbergiana*	a Moss				S2?	3 Sensitive	5	47.6 ± 1.0	NS

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N	*Atrichum angustatum*	Lesser Smoothcap Moss				S2?	3 Sensitive	2	81.0 ± 5.0	NS
N	*Bryum algovicum*	a Moss				S2?	3 Sensitive	1	41.9 ± 2.0	NS
N	*Campylium polygamum*	a Moss				S2?	5 Undetermined	2	9.5 ± 2.0	NS
N	*Campylium radicale*	Long-stalked Fine Wet Moss				S2?	5 Undetermined	1	88.5 ± 3.0	NS
N	*Dicranum condensatum*	Condensed Broom Moss				S2?	5 Undetermined	2	64.1 ± 0.0	NS
N	*Ditrichum rhynchostegium*	a Moss				S2?	3 Sensitive	1	7.7 ± 1.0	NS
N	*Fissidens taxifolius*	Yew-leaved Pocket Moss				S2?	3 Sensitive	2	41.9 ± 2.0	NS
N	*Grimmia anomala*	Mountain Forest Grimmia				S2?	3 Sensitive	1	61.5 ± 1.0	NS
N	*Kiaeria starkei*	Starke's Fork Moss				S2?	3 Sensitive	1	43.3 ± 10.0	NS
N	*Orthotrichum anomalum*	Anomalous Bristle Moss				S2?	3 Sensitive	1	49.5 ± 2.0	NS
N	*Philonotis marchica*	a Moss				S2?	5 Undetermined	2	82.0 ± 0.0	NS
N	*Racomitrium affine*	a Moss				S2?	5 Undetermined	1	22.8 ± 2.0	NS
N	*Sematophyllum marylandicum*	a Moss				S2?	3 Sensitive	2	9.8 ± 3.0	NS
N	*Sphagnum subnitens*	Lustrous Peat Moss				S2?	3 Sensitive	1	56.7 ± 2.0	NS
N	*Tetraplodon angustatus*	Toothed-leaved Nitrogen Moss				S2?	3 Sensitive	1	56.7 ± 2.0	NS
N	*Cyrtomnium hymenophylloides*	Short-pointed Lantern Moss				S2?	3 Sensitive	1	7.3 ± 5.0	NS
N	*Platylomella lescurii*	a Moss				S2?	3 Sensitive	4	38.3 ± 0.0	NS
N	*Phylliscum demangeonii*	Black Rock-wafer Lichen				S2?	5 Undetermined	1	80.0 ± 2.0	NS
N	*Leptogium teretiusculum*	Beaded Jellyskin Lichen				S2?	3 Sensitive	2	16.2 ± 0.0	NS
N	*Peltigera collina*	Tree Pelt Lichen				S2?	3 Sensitive	3	43.1 ± 2.0	NS
N	*Ephemerum serratum*	a Moss				S2S3	3 Sensitive	2	49.6 ± 5.0	NS
N	*Eurhynchium hians*	Light Beaked Moss				S2S3	3 Sensitive	3	5.5 ± 5.0	NS
N	*Platydictya subtilis*	Bark Willow Moss				S2S3	3 Sensitive	1	89.4 ± 3.0	NS
N	*Tortula truncata*	a Moss				S2S3	3 Sensitive	3	57.7 ± 300.0	NS
N	*Limprichtia revolvens*	a Moss				S2S3	3 Sensitive	2	35.7 ± 2.0	NS
N	*Solorina saccata*	Woodland Owl Lichen				S2S3	2 May Be At Risk	4	49.2 ± 0.0	NS
N	*Everniastrum catawbiense*	Powder-tipped Antler Lichen				S2S3	2 May Be At Risk	2	44.1 ± 0.0	NS
N	*Fuscopannaria leucosticta*	Rimmed Shingles Lichen				S2S3	2 May Be At Risk	5	56.1 ± 0.0	NS
N	*Leptogium milligranum*	Stretched Jellyskin Lichen				S2S3	3 Sensitive	3	83.6 ± 0.0	NS
N	*Parmeliopsis ambigua*	Green Starburst Lichen				S2S3	3 Sensitive	1	72.4 ± 2.0	NS
N	*Racodium rupestre*	Rockhair Lichen				S2S3	5 Undetermined	1	47.2 ± 0.0	NS
N	*Umbilicaria polyphylla*	Petalled Rocktripe Lichen				S2S3	3 Sensitive	1	72.4 ± 2.0	NS
N	*Usnea flammea*	Coastal Bushy Beard Lichen				S2S3	3 Sensitive	1	29.4 ± 1.0	NS
N	*Collema nigrescens*	Blistered Tarpaper Lichen				S3	3 Sensitive	5	13.8 ± 0.0	NS
N	*Sticta fuliginosa*	Peppered Moon Lichen				S3	3 Sensitive	17	17.1 ± 0.0	NS
N	*Leptogium subtile*	Appressed Jellyskin Lichen				S3	3 Sensitive	3	42.6 ± 0.0	NS
N	*Fuscopannaria ahlneri*	Corrugated Shingles Lichen				S3	4 Secure	31	23.9 ± 0.0	NS
N	*Heterodermia speciosa*	Powdered Fringe Lichen				S3	4 Secure	1	95.4 ± 0.0	NS
N	*Heterodermia squamulosa*	Scaly Fringe Lichen				S3	3 Sensitive	1	99.2 ± 0.0	NS
N	*Leptogium corticola*	Blistered Jellyskin Lichen				S3	3 Sensitive	13	40.5 ± 0.0	NS
N	*Leptogium lichenoides*	Tattered Jellyskin Lichen				S3	2 May Be At Risk	5	49.0 ± 0.0	NS
N	*Nephroma bellum*	Naked Kidney Lichen				S3	3 Sensitive	1	86.5 ± 0.0	NS
N	*Punctelia appalachensis*	Appalachian Speckleback Lichen				S3	3 Sensitive	2	83.9 ± 0.0	NS
N	*Moelleropsis nebulosa*	Blue-gray Moss Shingle Lichen				S3	4 Secure	29	40.4 ± 0.0	NS
N	*Usnea macaronesica*	Beard Lichen				S3	5 Undetermined	2	43.3 ± 1.0	NS

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N	*Calliergon giganteum*	Giant Spear Moss				S3?	3 Sensitive	2	38.7 ± 3.0	NS
N	*Drummondia prorepens*	a Moss				S3?	3 Sensitive	1	48.4 ± 5.0	NS
N	*Anomodon tristis*	a Moss				S3?	3 Sensitive	8	52.8 ± 15.0	NS
N	*Helodium blandowii*	Wetland-plume Moss				S3?	4 Secure	4	12.8 ± 7.0	NS
N	*Mnium stellare*	Star Leafy Moss				S3?	5 Undetermined	2	46.2 ± 1.0	NS
N	*Cladina stygia*	Black-footed Reindeer Lichen				S3?	3 Sensitive	3	35.0 ± 0.0	NS
N	*Anomodon rugelii*	Rugel's Anomodon Moss				S3S4	3 Sensitive	2	82.6 ± 0.0	NS
N	*Dichelyma capillaceum*	Hairlike Dichelyma Moss				S3S4	4 Secure	3	6.3 ± 3.0	NS
N	*Thamnobryum alleghaniense*	a Moss				S3S4	3 Sensitive	4	75.1 ± 4.0	NS
N	*Schistidium agassizii*	Elf Bloom Moss				S3S4	4 Secure	2	61.5 ± 1.0	NS
N	*Hylocomiastrum pyrenaicum*	a Feather Moss				S3S4	3 Sensitive	1	11.5 ± 0.0	NS
N	*Arctoparmelia incurva*	Finger Ring Lichen				S3S4	4 Secure	1	29.4 ± 1.0	NS
N	*Hypogymnia vittata*	Slender Monk's Hood Lichen				S3S4	4 Secure	1	32.1 ± 0.0	NS
N	*Leptogium saturninum*	Bearded Jellyskin Lichen				S3S4	5 Undetermined	3	43.9 ± 0.0	NS
N	*Physconia detersa*	Bottlebrush Frost Lichen				S3S4	3 Sensitive	1	62.7 ± 0.0	NS
N	*Sphaerophorus fragilis*	Fragile Coral Lichen				S3S4	4 Secure	1	29.4 ± 1.0	NS
N	*Coccocarpia palmicola*	Salted Shell Lichen				S3S4	4 Secure	158	40.4 ± 0.0	NS
N	*Physcia caesia*	Blue-gray Rosette Lichen				S3S4	5 Undetermined	1	29.4 ± 1.0	NS
N	*Physcia tenella*	Fringed Rosette Lichen				S3S4	6 Not Assessed	1	29.4 ± 1.0	NS
N	*Anaptychia palmulata*	Shaggy Fringed Lichen				S3S4	4 Secure	8	62.7 ± 0.0	NS
N	*Evernia prunastri*	Valley Oakmoss Lichen				S3S4	3 Sensitive	1	45.2 ± 2.0	NS
N	*Heterodermia neglecta*	Fringe Lichen				S3S4	4 Secure	10	41.7 ± 0.0	NS
P	*Bartonia paniculata ssp. paniculata*	Branched Bartonia	Threatened	Threatened		SNA		1	81.9 ± 10.0	NS
P	*Clethra alnifolia*	Coast Pepper-Bush	Special Concern	Special Concern	Vulnerable	S1	1 At Risk	2	14.8 ± 0.0	NS
P	*Lilaeopsis chinensis*	Eastern Lilaeopsis	Special Concern	Special Concern	Vulnerable	S2	3 Sensitive	136	77.5 ± 1.0	NS
P	*Lophiola aurea*	Goldencrest	Special Concern	Threatened	Vulnerable	S2	1 At Risk	211	86.3 ± 1.0	NS
P	*Isoetes prototypus*	Prototype Quillwort	Special Concern	Special Concern	Vulnerable	S2	3 Sensitive	13	84.8 ± 0.0	NS
P	*Scirpus longii*	Long's Bulrush	Special Concern	Special Concern	Vulnerable	S3	3 Sensitive	6	96.0 ± 0.0	NS
P	*Floerkea proserpinacoides*	False Mermaidweed	Not At Risk			S2	3 Sensitive	24	79.1 ± 7.0	NS
P	*Helianthemum canadense*	Long-branched Frostweed			Endangered	S1	1 At Risk	2	17.0 ± 1.0	NS
P	*Cypripedium arietinum*	Ram's-Head Lady's-Slipper			Endangered	S1	1 At Risk	151	39.6 ± 2.0	NS
P	*Thuja occidentalis*	Eastern White Cedar			Vulnerable	S1	1 At Risk	16	3.7 ± 0.0	NS
P	*Acer saccharinum*	Silver Maple				S1	5 Undetermined	12	69.6 ± 2.0	NS
P	*Osmorhiza depauperata*	Blunt Sweet Cicely				S1	2 May Be At Risk	1	71.3 ± 5.0	NS
P	*Sanicula odorata*	Clustered Sanicle				S1	2 May Be At Risk	11	41.1 ± 7.0	NS
P	*Zizia aurea*	Golden Alexanders				S1	2 May Be At Risk	35	69.1 ± 1.0	NS
P	*Antennaria parlinii*	a Pussytoes				S1	2 May Be At Risk	16	41.8 ± 0.0	NS
P	*Cynoglossum virginianum var. boreale*	Wild Comfrey				S1	2 May Be At Risk	5	44.8 ± 1.0	NS
P	*Arabis glabra*	Tower Mustard				S1	5 Undetermined	1	77.9 ± 0.0	NS
P	*Draba glabella*	Rock Whitlow-Grass				S1	2 May Be At Risk	2	83.4 ± 0.0	NS
P	*Lobelia spicata*	Pale-Spiked Lobelia				S1	2 May Be At Risk	8	71.7 ± 7.0	NS
P	*Desmodium canadense*	Canada Tick-trefoil				S1	2 May Be At Risk	12	72.8 ± 1.0	NS
P	*Desmodium glutinosum*	Large Tick-Trefoil				S1	2 May Be At Risk	17	43.2 ± 0.0	NS
P	*Ribes americanum*	Wild Black Currant				S1	5 Undetermined	4	43.6 ± 3.0	NS
P	*Fraxinus americana*	White Ash				S1	2 May Be At Risk	2	85.0 ± 0.0	NS
P	*Fraxinus*	Red Ash				S1	2 May Be At Risk	8	24.9 ± 5.0	NS

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
	pennsylvanica									
P	*Polygala polygama*	Racemed Milkwort				S1	5 Undetermined	1	9.6 ± 1.0	NS
P	*Polygonum careyi*	Carey's Smartweed				S1	5 Undetermined	1	58.4 ± 3.0	NS
P	*Podostemum ceratophyllum*	Horn-leaved Riverweed				S1	2 May Be At Risk	4	87.5 ± 0.0	NS
P	*Montia fontana*	Water Blinks				S1	2 May Be At Risk	1	11.5 ± 1.0	NS
P	*Lysimachia quadrifolia*	Whorled Yellow Loosestrife				S1	5 Undetermined	1	23.2 ± 0.0	NS
P	*Amelanchier nantucketensis*	Nantucket Serviceberry				S1	2 May Be At Risk	1	94.5 ± 1.0	NS
P	*Salix myrtillifolia*	Blueberry Willow				S1	2 May Be At Risk	1	45.4 ± 0.0	NS
P	*Salix serissima*	Autumn Willow				S1	2 May Be At Risk	2	45.3 ± 0.0	NS
P	*Dirca palustris*	Eastern Leatherwood				S1	2 May Be At Risk	49	31.7 ± 1.0	NS
P	*Boehmeria cylindrica*	Small-spike False-nettle				S1	2 May Be At Risk	47	32.2 ± 0.0	NS
P	*Pilea pumila*	Dwarf Clearweed				S1	2 May Be At Risk	3	42.7 ± 0.0	NS
P	*Carex garberi*	Garber's Sedge				S1	2 May Be At Risk	4	83.1 ± 0.0	NS
P	*Carex gynocrates*	Northern Bog Sedge				S1	2 May Be At Risk	2	45.5 ± 0.0	NS
P	*Carex haydenii*	Hayden's Sedge				S1	2 May Be At Risk	3	76.2 ± 1.0	NS
P	*Carex pellita*	Woolly Sedge				S1	2 May Be At Risk	2	67.9 ± 10.0	NS
P	*Carex laxiflora*	Loose-Flowered Sedge				S1	2 May Be At Risk	2	82.2 ± 1.0	NS
P	*Carex ormostachya*	Necklace Spike Sedge				S1	2 May Be At Risk	1	91.3 ± 5.0	NS
P	*Carex plantaginea*	Plantain-Leaved Sedge				S1	2 May Be At Risk	3	78.6 ± 0.0	NS
P	*Carex prairea*	Prairie Sedge				S1	2 May Be At Risk	2	85.1 ± 1.0	NS
P	*Carex viridula var. saxilittoralis*	Greenish Sedge				S1	2 May Be At Risk	4	70.6 ± 2.0	NS
P	*Iris prismatica*	Slender Blue Flag				S1	2 May Be At Risk	1	83.2 ± 100.0	NS
P	*Sisyrinchium fuscatum*	Coastal Plain Blue-eyed-grass				S1	2 May Be At Risk	1	85.3 ± 0.0	NS
P	*Juncus secundus*	Secund Rush				S1	2 May Be At Risk	1	87.9 ± 0.0	NS
P	*Juncus vaseyi*	Vasey Rush				S1	2 May Be At Risk	1	83.7 ± 0.0	NS
P	*Allium tricoccum*	Wild Leek				S1	2 May Be At Risk	22	80.7 ± 5.0	NS
P	*Trillium grandiflorum*	White Trillium				S1	5 Undetermined	3	85.1 ± 1.0	NS
P	*Malaxis brachypoda*	White Adder's-Mouth				S1	2 May Be At Risk	4	76.4 ± 10.0	NS
P	*Spiranthes casei var. casei*	Case's Ladies'-Tresses				S1	2 May Be At Risk	1	66.3 ± 0.0	NS
P	*Bromus latiglumis*	Broad-Glumed Brome				S1	2 May Be At Risk	28	66.6 ± 0.0	NS
P	*Dichanthelium xanthophysum*	Slender Panic Grass				S1	2 May Be At Risk	9	82.3 ± 1.0	NS
P	*Elymus wiegandii*	Wiegand's Wild Rye				S1	2 May Be At Risk	6	9.2 ± 7.0	NS
P	*Elymus hystrix var. bigeloviana*	Spreading Wild Rye				S1	2 May Be At Risk	11	41.4 ± 0.0	NS
P	*Puccinellia fasciculata*	Saltmarsh Alkali Grass				S1	5 Undetermined	2	70.7 ± 1.0	NS
P	*Adiantum pedatum*	Northern Maidenhair Fern				S1	2 May Be At Risk	11	38.7 ± 0.0	NS
P	*Equisetum palustre*	Marsh Horsetail				S1	2 May Be At Risk	1	79.7 ± 5.0	NS
P	*Botrychium lunaria*	Common Moonwort				S1	2 May Be At Risk	3	23.1 ± 2.0	NS
P	*Selaginella rupestris*	Rock Spikemoss				S1	2 May Be At Risk	1	43.9 ± 0.0	NS
P	*Solidago hispida*	Hairy Goldenrod				S1?	2 May Be At Risk	2	9.2 ± 7.0	NS
P	*Suaeda rolandii*	Roland's Sea-Blite				S1?	2 May Be At Risk	3	45.1 ± 2.0	NS
P	*Proserpinaca palustris var. palustris*	Marsh Mermaidweed				S1?	2 May Be At Risk	2	78.5 ± 1.0	NS
P	*Crataegus robinsonii*	Robinson's Hawthorn				S1?	5 Undetermined	1	75.5 ± 5.0	NS
P	*Carex pensylvanica*	Pennsylvania Sedge				S1?	2 May Be At Risk	2	16.7 ± 0.0	NS
P	*Dichanthelium acuminatum var. lindheimeri*	Woolly Panic Grass				S1?	5 Undetermined	3	82.0 ± 5.0	NS
P	*Fraxinus nigra*	Black Ash			Threatened	S1S2	1 At Risk	179	0.3 ± 0.0	NS
P	*Rudbeckia laciniata*	Cut-Leaved Coneflower				S1S2	2 May Be At Risk	15	28.8 ± 7.0	NS
P	*Rudbeckia laciniata var. gaspereauensis*	Cut-Leaved Coneflower				S1S2	2 May Be At Risk	9	69.2 ± 0.0	NS

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P	*Arabis hirsuta var. pycnocarpa*	Western Hairy Rockcress				S1S2	2 May Be At Risk	1	81.4 ± 0.0	NS
P	*Cardamine maxima*	Large Toothwort				S1S2	2 May Be At Risk	1	93.1 ± 0.0	NS
P	*Proserpinaca intermedia*	Intermediate Mermaidweed				S1S2	2 May Be At Risk	2	38.6 ± 0.0	NS
P	*Conopholis americana*	American Cancer-root				S1S2	2 May Be At Risk	14	78.0 ± 1.0	NS
P	*Anemone virginiana var. alba*	Virginia Anemone				S1S2	3 Sensitive	5	75.4 ± 7.0	NS
P	*Hepatica nobilis var. obtusa*	Round-lobed Hepatica				S1S2	2 May Be At Risk	44	36.3 ± 0.0	NS
P	*Ranunculus sceleratus*	Cursed Buttercup				S1S2	2 May Be At Risk	20	2.0 ± 0.0	NS
P	*Gratiola neglecta*	Clammy Hedge-Hyssop				S1S2	3 Sensitive	5	63.6 ± 2.0	NS
P	*Carex livida var. radicaulis*	Livid Sedge				S1S2	2 May Be At Risk	12	50.0 ± 10.0	NS
P	*Juncus greenei*	Greene's Rush				S1S2	2 May Be At Risk	5	9.6 ± 10.0	NS
P	*Platanthera huronensis*	Fragrant Green Orchid				S1S2	5 Undetermined	1	41.1 ± 10.0	NS
P	*Cinna arundinacea*	Sweet Wood Reed Grass				S1S2	2 May Be At Risk	54	66.8 ± 0.0	NS
P	*Festuca subverticillata*	Nodding Fescue				S1S2	2 May Be At Risk	12	54.5 ± 5.0	NS
P	*Cryptogramma stelleri*	Steller's Rockbrake				S1S2	2 May Be At Risk	3	50.1 ± 0.0	NS
P	*Carex vacillans*	Estuarine Sedge				S1S3	5 Undetermined	1	61.9 ± 0.0	NS
P	*Conioselinum chinense*	Chinese Hemlock-parsley				S2	3 Sensitive	1	48.9 ± 0.0	NS
P	*Osmorhiza longistylis*	Smooth Sweet Cicely				S2	2 May Be At Risk	17	44.4 ± 0.0	NS
P	*Erigeron philadelphicus*	Philadelphia Fleabane				S2	3 Sensitive	2	68.8 ± 1.0	NS
P	*Lactuca hirsuta var. sanguinea*	Hairy Lettuce				S2	3 Sensitive	4	23.7 ± 7.0	NS
P	*Symphyotrichum undulatum*	Wavy-leaved Aster				S2	3 Sensitive	108	6.5 ± 7.0	NS
P	*Symphyotrichum ciliolatum*	Fringed Blue Aster				S2	3 Sensitive	16	43.3 ± 0.0	NS
P	*Impatiens pallida*	Pale Jewelweed				S2	3 Sensitive	2	83.2 ± 1.0	NS
P	*Caulophyllum thalictroides*	Blue Cohosh				S2	2 May Be At Risk	47	35.8 ± 0.0	NS
P	*Arabis drummondii*	Drummond's Rockcress				S2	3 Sensitive	9	80.3 ± 0.0	NS
P	*Cardamine parviflora var. arenicola*	Small-flowered Bittercress				S2	3 Sensitive	14	34.1 ± 50.0	NS
P	*Draba arabisans*	Rock Whitlow-Grass				S2	3 Sensitive	13	82.2 ± 1.0	NS
P	*Stellaria humifusa*	Saltmarsh Starwort				S2	3 Sensitive	4	58.4 ± 0.0	NS
P	*Stellaria longifolia*	Long-leaved Starwort				S2	3 Sensitive	11	35.8 ± 5.0	NS
P	*Chenopodium rubrum*	Red Pigweed				S2	2 May Be At Risk	2	70.6 ± 2.0	NS
P	*Hudsonia ericoides*	Pinebarren Golden Heather				S2	3 Sensitive	29	9.2 ± 7.0	NS
P	*Hypericum majus*	Large St John's-wort				S2	3 Sensitive	3	2.3 ± 0.0	NS
P	*Crassula aquatica*	Water Pygmyweed				S2	3 Sensitive	1	36.0 ± 0.0	NS
P	*Myriophyllum farwellii*	Farwell's Water Milfoil				S2	3 Sensitive	9	26.1 ± 1.0	NS
P	*Myriophyllum verticillatum*	Whorled Water Milfoil				S2	3 Sensitive	3	44.7 ± 7.0	NS
P	*Utricularia resupinata*	Inverted Bladderwort				S2	3 Sensitive	1	96.6 ± 0.0	NS
P	*Oenothera fruticosa ssp. glauca*	Narrow-leaved Evening Primrose				S2	5 Undetermined	8	19.5 ± 7.0	NS
P	*Polygonum arifolium*	Halberd-leaved Tearthumb				S2	3 Sensitive	7	42.6 ± 0.0	NS
P	*Rumex salicifolius var. mexicanus*	Triangular-valve Dock				S2	3 Sensitive	11	33.1 ± 0.0	NS
P	*Primula mistassinica*	Mistassini Primrose				S2	3 Sensitive	16	73.0 ± 1.0	NS
P	*Anemone canadensis*	Canada Anemone				S2	2 May Be At Risk	3	34.0 ± 7.0	NS
P	*Anemone quinquefolia*	Wood Anemone				S2	3 Sensitive	13	47.6 ± 0.0	NS
P	*Anemone virginiana*	Virginia Anemone				S2	3 Sensitive	16	40.8 ± 5.0	NS
P	*Anemone virginiana*	Virginia Anemone				S2	3 Sensitive	2	41.1 ± 7.0	NS

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
	var. virginiana									
P	*Caltha palustris*	Yellow Marsh Marigold				S2	3 Sensitive	1	71.1 ± 5.0	NS
P	*Galium boreale*	Northern Bedstraw				S2	2 May Be At Risk	7	76.1 ± 1.0	NS
P	*Galium labradoricum*	Labrador Bedstraw				S2	3 Sensitive	79	42.5 ± 0.0	NS
P	*Salix pedicellaris*	Bog Willow				S2	3 Sensitive	75	35.3 ± 0.0	NS
P	*Salix sericea*	Silky Willow				S2	2 May Be At Risk	119	21.9 ± 1.0	NS
P	*Saxifraga paniculata ssp. neogaea*	White Mountain Saxifrage				S2	3 Sensitive	4	76.4 ± 7.0	NS
P	*Tiarella cordifolia*	Heart-leaved Foamflower				S2	3 Sensitive	16	39.9 ± 0.0	NS
P	*Agalinis maritima*	Saltmarsh Agalinis				S2	3 Sensitive	1	14.1 ± 0.0	NS
P	*Viola nephrophylla*	Northern Bog Violet				S2	3 Sensitive	6	51.1 ± 1.0	NS
P	*Carex atratiformis*	Scabrous Black Sedge				S2	3 Sensitive	3	92.5 ± 0.0	NS
P	*Carex bebbii*	Bebb's Sedge				S2	3 Sensitive	14	41.8 ± 0.0	NS
P	*Carex castanea*	Chestnut Sedge				S2	2 May Be At Risk	23	42.5 ± 0.0	NS
P	*Carex comosa*	Bearded Sedge				S2	3 Sensitive	7	48.1 ± 7.0	NS
P	*Carex hystericina*	Porcupine Sedge				S2	2 May Be At Risk	7	79.2 ± 0.0	NS
P	*Carex tenera*	Tender Sedge				S2	3 Sensitive	5	42.6 ± 0.0	NS
P	*Carex tuckermanii*	Tuckerman's Sedge				S2	3 Sensitive	21	41.7 ± 2.0	NS
P	*Vallisneria americana*	Wild Celery				S2	2 May Be At Risk	11	31.8 ± 1.0	NS
P	*Allium schoenoprasum var. sibiricum*	Wild Chives				S2	2 May Be At Risk	1	75.4 ± 7.0	NS
P	*Lilium canadense*	Canada Lily				S2	2 May Be At Risk	57	29.2 ± 0.0	NS
P	*Najas gracillima*	Thread-Like Naiad				S2	3 Sensitive	2	33.3 ± 0.0	NS
P	*Cypripedium parviflorum var. pubescens*	Yellow Lady's-slipper				S2	3 Sensitive	9	13.2 ± 7.0	NS
P	*Cypripedium parviflorum var. makasin*	Small Yellow Lady's-Slipper				S2	3 Sensitive	13	41.8 ± 0.0	NS
P	*Cypripedium reginae*	Showy Lady's-Slipper				S2	2 May Be At Risk	30	39.9 ± 0.0	NS
P	*Goodyera pubescens*	Downy Rattlesnake-Plantain				S2	3 Sensitive	10	36.2 ± 1.0	NS
P	*Platanthera flava*	Southern Rein-Orchid				S2	3 Sensitive	31	82.0 ± 0.0	NS
P	*Platanthera flava var. flava*	Southern Rein Orchid				S2	3 Sensitive	3	70.0 ± 7.0	NS
P	*Platanthera flava var. herbiola*	Pale Green Orchid				S2	5 Undetermined	7	69.2 ± 1.0	NS
P	*Platanthera macrophylla*	Large Round-Leaved Orchid				S2	3 Sensitive	5	52.9 ± 1.0	NS
P	*Spiranthes lucida*	Shining Ladies'-Tresses				S2	2 May Be At Risk	13	37.5 ± 1.0	NS
P	*Dichanthelium linearifolium*	Narrow-leaved Panic Grass				S2	3 Sensitive	8	48.1 ± 7.0	NS
P	*Piptatherum canadense*	Canada Rice Grass				S2	3 Sensitive	8	17.7 ± 1.0	NS
P	*Piptatherum pungens*	Slender Rice Grass				S2	3 Sensitive	2	70.3 ± 10.0	NS
P	*Potamogeton friesii*	Fries' Pondweed				S2	2 May Be At Risk	10	76.7 ± 5.0	NS
P	*Potamogeton richardsonii*	Richardson's Pondweed				S2	2 May Be At Risk	7	48.8 ± 0.0	NS
P	*Dryopteris fragrans var. remotiuscula*	Fragrant Wood Fern				S2	3 Sensitive	11	85.1 ± 1.0	NS
P	*Woodsia glabella*	Smooth Cliff Fern				S2	3 Sensitive	2	84.6 ± 1.0	NS
P	*Symphyotrichum boreale*	Boreal Aster				S2?	3 Sensitive	6	19.7 ± 5.0	NS
P	*Cuscuta cephalanthi*	Buttonbush Dodder				S2?	5 Undetermined	1	34.7 ± 0.0	NS
P	*Epilobium coloratum*	Purple-veined Willowherb				S2?	3 Sensitive	5	37.3 ± 0.0	NS
P	*Crataegus submollis*	Quebec Hawthorn				S2?	5 Undetermined	5	31.8 ± 7.0	NS
P	*Carex peckii*	White-Tinged Sedge				S2?	2 May Be At Risk	4	39.4 ± 0.0	NS
P	*Eleocharis ovata*	Ovate Spikerush				S2?	3 Sensitive	6	30.3 ± 0.0	NS

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
P	*Scirpus pedicellatus*	Stalked Bulrush				S2?	3 Sensitive	7	33.0 ± 0.0	NS
P	*Potamogeton pulcher*	Spotted Pondweed			Vulnerable	S2S3	3 Sensitive	10	67.9 ± 2.0	NS
P	*Hieracium robinsonii*	Robinson's Hawkweed				S2S3	3 Sensitive	2	74.1 ± 1.0	NS
P	*Iva frutescens ssp. oraria*	Big-leaved Marsh-elder				S2S3	3 Sensitive	17	51.0 ± 1.0	NS
P	*Senecio pseudoarnica*	Seabeach Ragwort				S2S3	3 Sensitive	19	19.3 ± 1.0	NS
P	*Betula michauxii*	Michaux's Dwarf Birch				S2S3	3 Sensitive	13	13.7 ± 0.0	NS
P	*Sagina nodosa*	Knotted Pearlwort				S2S3	4 Secure	38	20.8 ± 0.0	NS
P	*Sagina nodosa ssp. borealis*	Knotted Pearlwort				S2S3	4 Secure	7	61.1 ± 0.0	NS
P	*Ceratophyllum echinatum*	Prickly Hornwort				S2S3	3 Sensitive	6	69.9 ± 0.0	NS
P	*Hypericum dissimulatum*	Disguised St John's-wort				S2S3	3 Sensitive	5	2.8 ± 10.0	NS
P	*Triosteum aurantiacum*	Orange-fruited Tinker's Weed				S2S3	3 Sensitive	22	41.0 ± 2.0	NS
P	*Shepherdia canadensis*	Soapberry				S2S3	3 Sensitive	73	34.0 ± 7.0	NS
P	*Empetrum eamesii ssp. atropurpureum*	Pink Crowberry				S2S3	3 Sensitive	5	9.0 ± 7.0	NS
P	*Empetrum eamesii ssp. eamesii*	Pink Crowberry				S2S3	3 Sensitive	5	9.0 ± 7.0	NS
P	*Chamaesyce polygonifolia*	Seaside Spurge				S2S3	3 Sensitive	3	63.3 ± 3.0	NS
P	*Halenia deflexa*	Spurred Gentian				S2S3	3 Sensitive	3	32.0 ± 0.0	NS
P	*Hedeoma pulegioides*	American False Pennyroyal				S2S3	3 Sensitive	16	32.3 ± 5.0	NS
P	*Polygonum buxiforme*	Small's Knotweed				S2S3	5 Undetermined	7	49.9 ± 7.0	NS
P	*Polygonum raii*	Sharp-fruited Knotweed				S2S3	5 Undetermined	3	47.3 ± 1.0	NS
P	*Amelanchier fernaldii*	Fernald's Serviceberry				S2S3	5 Undetermined	1	81.5 ± 7.0	NS
P	*Potentilla canadensis*	Canada Cinquefoil				S2S3	3 Sensitive	1	58.6 ± 5.0	NS
P	*Galium aparine*	Common Bedstraw				S2S3	3 Sensitive	23	11.6 ± 0.0	NS
P	*Galium obtusum*	Blunt-leaved Bedstraw				S2S3	3 Sensitive	1	99.0 ± 0.0	NS
P	*Salix pellita*	Satiny Willow				S2S3	3 Sensitive	3	53.0 ± 2.0	NS
P	*Carex adusta*	Lesser Brown Sedge				S2S3	3 Sensitive	5	10.8 ± 5.0	NS
P	*Carex hirtifolia*	Pubescent Sedge				S2S3	3 Sensitive	24	41.2 ± 0.0	NS
P	*Carex houghtoniana*	Houghton's Sedge				S2S3	3 Sensitive	1	56.4 ± 1.0	NS
P	*Eleocharis olivacea*	Yellow Spikerush				S2S3	3 Sensitive	8	4.5 ± 0.0	NS
P	*Eriophorum gracile*	Slender Cottongrass				S2S3	3 Sensitive	6	25.1 ± 7.0	NS
P	*Coeloglossum viride var. virescens*	Long-bracted Frog Orchid				S2S3	2 May Be At Risk	2	66.9 ± 1.0	NS
P	*Cypripedium parviflorum*	Yellow Lady's-slipper				S2S3	3 Sensitive	513	38.7 ± 1.0	NS
P	*Poa glauca*	Glaucous Blue Grass				S2S3	3 Sensitive	5	43.3 ± 1.0	NS
P	*Botrychium lanceolatum var. angustisegmentum*	Lance-Leaf Grape-Fern				S2S3	3 Sensitive	4	54.4 ± 5.0	NS
P	*Botrychium simplex*	Least Moonwort				S2S3	3 Sensitive	4	39.0 ± 0.0	NS
P	*Ophioglossum pusillum*	Northern Adder's-tongue				S2S3	3 Sensitive	5	9.3 ± 50.0	NS
P	*Angelica atropurpurea*	Purple-stemmed Angelica				S3	4 Secure	1	69.0 ± 0.0	NS
P	*Erigeron hyssopifolius*	Hyssop-leaved Fleabane				S3	3 Sensitive	16	42.3 ± 7.0	NS
P	*Hieracium paniculatum*	Panicled Hawkweed				S3	4 Secure	19	41.0 ± 11.0	NS
P	*Megalodonta beckii*	Water Beggarticks				S3	4 Secure	8	36.0 ± 5.0	NS
P	*Packera paupercula*	Balsam Groundsel				S3	4 Secure	39	39.6 ± 0.0	NS
P	*Alnus serrulata*	Smooth Alder				S3	3 Sensitive	23	85.4 ± 0.0	NS
P	*Betula pumila*	Bog Birch				S3	3 Sensitive	3	42.9 ± 0.0	NS
P	*Campanula aparinoides*	Marsh Bellflower				S3	3 Sensitive	17	46.5 ± 1.0	NS
P	*Minuartia groenlandica*	Greenland Stitchwort				S3	3 Sensitive	37	3.5 ± 0.0	NS

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
P	*Empetrum eamesii*	Pink Crowberry				S3	3 Sensitive	83	9.2 ± 7.0	NS
P	*Vaccinium boreale*	Northern Blueberry				S3	3 Sensitive	2	49.1 ± 0.0	NS
P	*Vaccinium caespitosum*	Dwarf Bilberry				S3	4 Secure	55	29.0 ± 0.0	NS
P	*Vaccinium uliginosum*	Alpine Bilberry				S3	3 Sensitive	3	25.0 ± 1.0	NS
P	*Bartonia virginica*	Yellow Bartonia				S3	4 Secure	26	21.9 ± 7.0	NS
P	*Geranium bicknellii*	Bicknell's Crane's-bill				S3	4 Secure	14	49.9 ± 3.0	NS
P	*Proserpinaca palustris*	Marsh Mermaidweed				S3	4 Secure	20	40.6 ± 0.0	NS
P	*Proserpinaca palustris var. crebra*	Marsh Mermaidweed				S3	4 Secure	27	30.7 ± 0.0	NS
P	*Proserpinaca pectinata*	Comb-leaved Mermaidweed				S3	4 Secure	15	7.6 ± 1.0	NS
P	*Teucrium canadense*	Canada Germander				S3	3 Sensitive	45	23.8 ± 5.0	NS
P	*Epilobium strictum*	Downy Willowherb				S3	3 Sensitive	6	54.5 ± 0.0	NS
P	*Polygala sanguinea*	Blood Milkwort				S3	3 Sensitive	12	2.4 ± 0.0	NS
P	*Polygonum pensylvanicum*	Pennsylvania Smartweed				S3	4 Secure	23	31.8 ± 7.0	NS
P	*Polygonum scandens*	Climbing False Buckwheat				S3	3 Sensitive	14	33.4 ± 2.0	NS
P	*Plantago rugelii*	Rugel's Plantain				S3	4 Secure	7	9.8 ± 0.0	NS
P	*Primula laurentiana*	Laurentian Primrose				S3	4 Secure	10	78.3 ± 7.0	NS
P	*Samolus valerandi ssp. parviflorus*	Seaside Brookweed				S3	3 Sensitive	40	7.2 ± 1.0	NS
P	*Pyrola asarifolia*	Pink Pyrola				S3	4 Secure	9	35.5 ± 50.0	NS
P	*Pyrola minor*	Lesser Pyrola				S3	3 Sensitive	1	86.9 ± 7.0	NS
P	*Ranunculus gmelinii*	Gmelin's Water Buttercup				S3	4 Secure	41	31.7 ± 0.0	NS
P	*Rhamnus alnifolia*	Alder-leaved Buckthorn				S3	4 Secure	107	31.0 ± 0.0	NS
P	*Agrimonia gryposepala*	Hooked Agrimony				S3	4 Secure	99	23.3 ± 5.0	NS
P	*Amelanchier stolonifera*	Running Serviceberry				S3	4 Secure	43	39.2 ± 3.0	NS
P	*Cephalanthus occidentalis*	Common Buttonbush				S3	3 Sensitive	18	95.2 ± 0.0	NS
P	*Geocaulon lividum*	Northern Comandra				S3	4 Secure	2	87.9 ± 5.0	NS
P	*Limosella australis*	Southern Mudwort				S3	4 Secure	7	15.7 ± 3.0	NS
P	*Lindernia dubia*	Yellow-seeded False Pimperel				S3	4 Secure	7	42.6 ± 0.0	NS
P	*Laportea canadensis*	Canada Wood Nettle				S3	3 Sensitive	40	31.6 ± 0.0	NS
P	*Verbena hastata*	Blue Vervain				S3	4 Secure	106	16.0 ± 7.0	NS
P	*Carex cryptolepis*	Hidden-scaled Sedge				S3	4 Secure	9	20.7 ± 6.0	NS
P	*Carex eburnea*	Bristle-leaved Sedge				S3	3 Sensitive	5	57.0 ± 1.0	NS
P	*Carex lupulina*	Hop Sedge				S3	4 Secure	42	15.9 ± 1.0	NS
P	*Carex rosea*	Rosy Sedge				S3	4 Secure	29	41.0 ± 1.0	NS
P	*Carex swanii*	Swan's Sedge				S3	3 Sensitive	3	7.3 ± 0.0	NS
P	*Carex tribuloides*	Blunt Broom Sedge				S3	4 Secure	13	40.4 ± 0.0	NS
P	*Carex wiegandii*	Wiegand's Sedge				S3	3 Sensitive	3	53.6 ± 0.0	NS
P	*Carex foenea*	Fernald's Hay Sedge				S3	4 Secure	13	2.9 ± 0.0	NS
P	*Eleocharis nitida*	Quill Spikerush				S3	4 Secure	11	38.8 ± 5.0	NS
P	*Elodea canadensis*	Canada Waterweed				S3	4 Secure	7	31.4 ± 0.0	NS
P	*Juncus subcaudatus var. planisepalus*	Woods-Rush				S3	3 Sensitive	14	24.7 ± 0.0	NS
P	*Juncus dudleyi*	Dudley's Rush				S3	4 Secure	14	43.2 ± 0.0	NS
P	*Goodyera repens*	Lesser Rattlesnake-plantain				S3	3 Sensitive	5	54.0 ± 0.0	NS
P	*Listera australis*	Southern Twayblade				S3	4 Secure	104	0.2 ± 0.0	NS
P	*Platanthera grandiflora*	Large Purple Fringed Orchid				S3	4 Secure	58	43.3 ± 1.0	NS
P	*Platanthera hookeri*	Hooker's Orchid				S3	4 Secure	14	43.9 ± 0.0	NS
P	*Platanthera orbiculata*	Small Round-leaved Orchid				S3	4 Secure	10	37.5 ± 4.0	NS
P	*Spiranthes ochroleuca*	Yellow Ladies'-tresses				S3	4 Secure	14	18.4 ± 7.0	NS
P	*Alopecurus aequalis*	Short-awned Foxtail				S3	4 Secure	7	53.9 ± 0.0	NS
P	*Dichanthelium clandestinum*	Deer-tongue Panic Grass				S3	4 Secure	265	3.7 ± 1.0	NS

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
P	*Panicum rigidulum var. pubescens*	Redtop Panic Grass				S3	4 Secure	91	95.7 ± 0.0	NS
P	*Potamogeton praelongus*	White-stemmed Pondweed				S3	3 Sensitive	3	62.7 ± 5.0	NS
P	*Potamogeton zosteriformis*	Flat-stemmed Pondweed				S3	3 Sensitive	15	36.0 ± 5.0	NS
P	*Sparganium natans*	Small Burreed				S3	4 Secure	10	43.7 ± 0.0	NS
P	*Asplenium trichomanes*	Maidenhair Spleenwort				S3	4 Secure	14	66.4 ± 0.0	NS
P	*Asplenium trichomanes-ramosum*	Green Spleenwort				S3	3 Sensitive	8	80.3 ± 7.0	NS
P	*Equisetum pratense*	Meadow Horsetail				S3	3 Sensitive	14	41.5 ± 0.0	NS
P	*Equisetum variegatum*	Variegated Horsetail				S3	4 Secure	20	1.7 ± 1.0	NS
P	*Isoetes acadiensis*	Acadian Quillwort				S3	3 Sensitive	7	21.5 ± 0.0	NS
P	*Lycopodium sitchense*	Sitka Clubmoss				S3	4 Secure	2	71.3 ± 1.0	NS
P	*Huperzia appalachiana*	Appalachian Fir-Clubmoss				S3	3 Sensitive	16	61.7 ± 7.0	NS
P	*Botrychium dissectum*	Cut-leaved Moonwort				S3	4 Secure	4	77.8 ± 0.0	NS
P	*Polypodium appalachianum*	Appalachian Polypody				S3	5 Undetermined	13	41.6 ± 0.0	NS
P	*Asclepias incarnata ssp. pulchra*	Swamp Milkweed				S3?	5 Undetermined	55	19.8 ± 5.0	NS
P	*Polygonum amphibium var. emersum*	Water Smartweed				S3?	5 Undetermined	18	33.1 ± 0.0	NS
P	*Lycopodium sabinifolium*	Ground-Fir				S3?	4 Secure	2	75.3 ± 0.0	NS
P	*Suaeda calceoliformis*	Horned Sea-blite				S3S4	4 Secure	10	9.2 ± 7.0	NS
P	*Vaccinium corymbosum*	Highbush Blueberry				S3S4	4 Secure	2	3.1 ± 0.0	NS
P	*Myriophyllum sibiricum*	Siberian Water Milfoil				S3S4	4 Secure	5	71.5 ± 0.0	NS
P	*Rhexia virginica*	Virginia Meadow Beauty				S3S4	4 Secure	157	78.1 ± 5.0	NS
P	*Sanguinaria canadensis*	Bloodroot				S3S4	4 Secure	57	28.0 ± 0.0	NS
P	*Polygonum fowleri*	Fowler's Knotweed				S3S4	4 Secure	3	74.4 ± 1.0	NS
P	*Rumex maritimus*	Sea-Side Dock				S3S4		5	67.7 ± 0.0	NS
P	*Rumex maritimus var. fueginus*	Tierra del Fuego Dock				S3S4	4 Secure	12	58.9 ± 0.0	NS
P	*Crataegus succulenta*	Fleshy Hawthorn				S3S4	5 Undetermined	1	2.0 ± 0.0	NS
P	*Fragaria vesca ssp. americana*	Woodland Strawberry				S3S4	4 Secure	65	31.6 ± 0.0	NS
P	*Salix petiolaris*	Meadow Willow				S3S4	4 Secure	19	43.6 ± 0.0	NS
P	*Agalinis neoscotica*	Nova Scotia Agalinis				S3S4	4 Secure	17	2.2 ± 0.0	NS
P	*Viola sagittata var. ovata*	Arrow-Leaved Violet				S3S4	4 Secure	18	0.8 ± 0.0	NS
P	*Carex argyrantha*	Silvery-flowered Sedge				S3S4	4 Secure	9	52.0 ± 1.0	NS
P	*Eriophorum russeolum*	Russet Cottongrass				S3S4	4 Secure	9	29.6 ± 3.0	NS
P	*Sisyrinchium atlanticum*	Eastern Blue-Eyed-Grass				S3S4	4 Secure	6	66.5 ± 0.0	NS
P	*Triglochin gaspensis*	Gasp ├⌐ Arrowgrass				S3S4	5 Undetermined	27	32.0 ± 0.0	NS
P	*Juncus acuminatus*	Sharp-Fruit Rush				S3S4	4 Secure	4	2.2 ± 0.0	NS
P	*Luzula parviflora*	Small-flowered Woodrush				S3S4	4 Secure	2	77.7 ± 0.0	NS
P	*Liparis loeselii*	Loesel's Twayblade				S3S4	4 Secure	5	13.2 ± 5.0	NS
P	*Panicum tuckermanii*	Tuckerman's Panic Grass				S3S4	4 Secure	7	42.6 ± 0.0	NS
P	*Trisetum spicatum*	Narrow False Oats				S3S4	4 Secure	13	41.3 ± 1.0	NS
P	*Cystopteris bulbifera*	Bulblet Bladder Fern				S3S4	4 Secure	74	32.4 ± 0.0	NS
P	*Equisetum hyemale*	Common Scouring-rush				S3S4	4 Secure	4	41.2 ± 0.0	NS
P	*Equisetum hyemale var. affine*	Common Scouring-rush				S3S4	4 Secure	55	5.0 ± 2.0	NS
P	*Equisetum scirpoides*	Dwarf Scouring-Rush				S3S4	4 Secure	57	36.4 ± 4.0	NS

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
P	*Lycopodium complanatum*	Northern Clubmoss				S3S4	4 Secure	12	7.3 ± 1.0	NS
P	*Schizaea pusilla*	Little Curlygrass Fern				S3S4	4 Secure	5	17.3 ± 1.0	NS
P	*Viola canadensis*	Canada Violet				SH	0.1 Extirpated	2	48.2 ± 0.0	NS

5.1 SOURCE BIBLIOGRAPHY (100 km)

The recipient of these data shall acknowledge the ACCDC and the data sources listed below in any documents, reports, publications or presentations, in which this dataset makes a significant contribution.

# recs	CITATION
13887	Morrison, Guy. 2011. Maritime Shorebird Survey (MSS) database. Canadian Wildlife Service, Ottawa, 15939 surveys. 86171 recs.
10002	Lepage, D. 2014. Maritime Breeding Bird Atlas Database. Bird Studies Canada, Sackville NB, 407,838 recs.
3406	Erskine, A.J. 1992. Maritime Breeding Bird Atlas Database. NS Museum & Nimbus Publ., Halifax, 82,125 recs.
835	Blaney, C.S.; Mazerolle, D.M.; Belliveau, A.B. 2013. Atlantic Canada Conservation Data Centre Fieldwork 2013. Atlantic Canada Conservation Data Centre, 9000+ recs.
623	Cameron, E. 2008. Canadian Gypsum Co. survey 2007-08. Conestoga-Rovers & Assoc., 623 recs.
448	Benjamin, L.K. (compiler). 2007. Significant Habitat & Species Database. Nova Scotia Dept Natural Resources, 8439 recs.
434	Blaney, C.S.; Mazerolle, D.M. 2010. Fieldwork 2010. Atlantic Canada Conservation Data Centre. Sackville NB, 15508 recs.
424	Blaney, C.S.; Mazerolle, D.M.; Belliveau, A.B. 2015. Atlantic Canada Conservation Data Centre Fieldwork 2015. Atlantic Canada Conservation Data Centre, # recs.
409	Newell, R.E. 2000. E.C. Smith Herbarium Database. Acadia University, Wolfville NS, 7139 recs.
397	Blaney, C.S.; Mazerolle, D.M.; Belliveau, A.B. 2014. Atlantic Canada Conservation Data Centre Fieldwork 2014. Atlantic Canada Conservation Data Centre, # recs.
396	Newell, R.E. 2005. E.C. Smith Digital Herbarium. E.C. Smith Herbarium, Irving Biodiversity Collection, Acadia University, Web site: http://luxor.acadiau.ca/library/Herbarium/project/. 582 recs.
347	Hicks, Andrew. 2009. Coastal Waterfowl Surveys Database, 2000-08. Canadian Wildlife Service, Sackville, 46488 recs (11149 non-zero).
334	Blaney, C.S.; Mazerolle, D.M. 2012. Fieldwork 2012. Atlantic Canada Conservation Data Centre, 13,278 recs.
321	Benjamin, L.K. (compiler). 2012. Significant Habitat & Species Database. Nova Scotia Dept Natural Resources, 4965 recs.
284	Amirault, D.L. & Stewart, J. 2007. Piping Plover Database 1894-2006. Canadian Wildlife Service, Sackville, 3344 recs, 1228 new.
248	Pronych, G. & Wilson, A. 1993. Atlas of Rare Vascular Plants in Nova Scotia. Nova Scotia Museum, Halifax NS, I:1-168, II:169-331. 1446 recs.
213	Neily, T.H. & Pepper, C.; Toms, B. 2013. Nova Scotia lichen location database. Mersey Tobeatic Research Institute, 1301 records.
209	Toms, Brad. 2012. Atlantic Coastal Plain Flora records, 2011. Mersey-Tobiatic Research Institute, 1109 recs.
194	Layberry, R.A. & Hall, P.W., LaFontaine, J.D. 1998. The Butterflies of Canada. University of Toronto Press. 280 pp+plates.
170	Munro, Marian K. Nova Scotia Provincial Museum of Natural History Herbarium Database. Nova Scotia Provincial Museum of Natural History, Halifax, Nova Scotia. 2013.
168	Klymko, J.J.D. 2014. Maritimes Butterfly Atlas, 2012 submissions. Atlantic Canada Conservation Data Centre, 8552 records.
160	McNeil, J.A. 2010. Blandings Turtle (Emydoidea blandingii) sightings, 1946-2009. Parks Canada, 12,871 recs of 597+ individuals.
152	Scott, F.W. 2002. Nova Scotia Herpetofauna Atlas Database. Acadia University, Wolfville NS, 8856 recs.
137	Cameron, R.P. 2009. Cyanolichen database. Nova Scotia Environment & Labour, 1724 recs.
136	Pepper, C. 2013. 2013 rare bird and plant observations in Nova Scotia. , 181 records.
134	Wilhelm, S.I. et al. 2011. Colonial Waterbird Database. Canadian Wildlife Service, Sackville, 2698 sites, 9718 recs (8192 obs).
132	Brunelle, P.-M. (compiler). 2009. ADIP/MDDS Odonata Database: data to 2006 inclusive. Atlantic Dragonfly Inventory Program (ADIP), 24200 recs.
123	Blaney, C.S.; Mazerolle, D.M. 2008. Fieldwork 2008. Atlantic Canada Conservation Data Centre. Sackville NB, 13343 recs.
117	Blaney, C.S.; Mazerolle, D.M. 2011. Fieldwork 2011. Atlantic Canada Conservation Data Centre. Sackville NB.
107	Blaney, C.S. 2000. Fieldwork 2000. Atlantic Canada Conservation Data Centre. Sackville NB, 1265 recs.
99	LaPaix, R.W.; Crowell, M.J.; MacDonald, M. 2011. Stantec rare plant records, 2010-11. Stantec Consulting, 334 recs.
77	Roland, A.E. & Smith, E.C. 1969. The Flora of Nova Scotia, 1st Ed. Nova Scotia Museum, Halifax, 743pp.
77	Zinck, M. & Roland, A.E. 1998. Roland's Flora of Nova Scotia. Nova Scotia Museum, 3rd ed., rev. M. Zinck; 2 Vol., 1297 pp.
73	Belliveau, A.G. 2014. Plant Records from Southern and Central Nova Scotia. Atlantic Canada Conservation Data Centre, 919 recs.
72	Hill, N.M. 1994. Status report on the Long's bulrush Scirpus longii in Canada. Committee on the Status of Endangered Wildlife in Canada, 7 recs.
72	Manthorne, A. 2014. MaritimesSwiftwatch Project database 2013-2014. Bird Studies Canada, Sackville NB, 326 recs.
70	Cameron, R.P. 2011. Lichen observations, 2011. Nova Scotia Environment & Labour, 731 recs.
68	Belland, R.J. Maritimes moss records from various herbarium databases. 2014.
62	Belliveau, A.G. 2016. Atlantic Canada Conservation Data Centre Fieldwork 2016. Atlantic Canada Conservation Data Centre, 10695 recs.
58	Klymko, J.J.D. 2012. Maritimes Butterfly Atlas, 2010 and 2011 records. Atlantic Canada Conservation Data Centre, 6318 recs.
46	Cameron, R.P. 2009. Erioderma pedicellatum database, 1979-2008. Dept Environment & Labour, 103 recs.
43	Nova Scotia Nature Trust. 2013. Nova Scotia Nature Trust 2013 Species records. Nova Scotia Nature Trust, 95 recs.
42	Amirault, D.L. & McKnight, J. 2003. Piping Plover Database 1991-2003. Canadian Wildlife Service, Sackville, unpublished data. 7 recs.
42	Stewart, J.I. 2010. Peregrine Falcon Surveys in New Brunswick, 2002-09. Canadian Wildlife Service, Sackville, 58 recs.
40	Cameron, E. 2007. Canadian Gypsum Co. survey 2005-07. Dillon Consulting Ltd, 40 recs.

# recs	CITATION
39	Benjamin, L.K. (compiler). 2001. Significant Habitat & Species Database. Nova Scotia Dept of Natural Resources, 15 spp, 224 recs.
39	Porter, C.J.M. 2014. Field work data 2007-2014. Nova Scotia Nature Trust, 96 recs.
35	Blaney, C.S.; Mazerolle, D.M.; Hill, N.M. 2011. Nova Scotia Crown Share Land Legacy Trust Fieldwork. Atlantic Canada Conservation Data Centre, 5022 recs.
35	Klymko, J.J.D.; Robinson, S.L. 2012. 2012 field data. Atlantic Canada Conservation Data Centre, 447 recs.
34	Blaney, C.S.; Spicer, C.D.; Popma, T.M.; Hanel, C. 2002. Fieldwork 2002. Atlantic Canada Conservation Data Centre. Sackville NB, 2252 recs.
33	Neily, T.H. & Pepper, C.; Toms, B. 2015. Nova Scotia lichen location database [as of 2015-02-15]. Mersey Tobeatic Research Institute, 1691 records.
31	Blaney, C.S.; Spicer, C.D.; Rothfels, C. 2004. Fieldwork 2004. Atlantic Canada Conservation Data Centre. Sackville NB, 1343 recs.
29	Bryson, I. 2013. Nova Scotia rare plant records. CBCL Ltd., 180 records.
28	Benjamin, L.K. 2011. NSDNR fieldwork & consultant reports 1997, 2009-10. Nova Scotia Dept Natural Resources, 85 recs.
28	McNeil, J.A. 2010. Ribbonsnake (Thamophis sauritus) sightings, 1900-2009. Parks Canada, 2521 recs of 716+ individuals.
28	Pepper, Chris. 2012. Observations of breeding Canada Warbler's along the Eastern Shore, NS. Pers. comm. to S. Blaney, Jan. 20, 28 recs.
27	Canadian Wildlife Service, Dartmouth. 2010. Piping Plover censuses 2007-09, 304 recs.
26	Neily, T.H. 2013. Email communication to Sean Blaney regarding Listera australis observations made from 2007 to 2011 in Nova Scotia. , 50.
25	Belliveau, A. 2013. Rare species records from Nova Scotia. Mersey Tobeatic Research Institute, 296 records. 296 recs.
23	Hall, R.A. 2001. S.. NS Freshwater Mussel Fieldwork. Nova Scotia Dept Natural Resources, 178 recs.
22	Hall, R.A. 2003. NS Freshwater Mussel Fieldwork. Nova Scotia Dept Natural Resources, 189 recs.
22	Nelly, T.H. 2006. Cypripedium arietinum in Hants Co. Pers. comm. to C.S. Blaney. 22 recs, 22 recs.
19	Robinson, S.L. 2014. 2013 Field Data. Atlantic Canada Conservation Data Centre.
18	Blaney, C.S. 2003. Fieldwork 2003. Atlantic Canada Conservation Data Centre. Sackville NB, 1042 recs.
18	Edsall, J. 2007. Personal Butterfly Collection: specimens collected in the Canadian Maritimes, 1961-2007. J. Edsall, unpubl. report, 137 recs.
17	Neily, T.H. 2010. Erioderma Pedicellatum records 2005-09. Mersey Tobiatic Research Institute, 67 recs.
16	Munro, Marian K. Nova Scotia Provincial Museum of Natural History Herbarium Database. Nova Scotia Provincial Museum of Natural History, Halifax, Nova Scotia. 2014.
15	Archibald, D.R. 2003. NS Freshwater Mussel Fieldwork. Nova Scotia Dept Natural Resources, 213 recs.
15	Basquill, S.P. 2011 vascular plant field data. Nova Scotia Department of Natural Resources, 37 recs.
15	Powell, B.C. 1967. Female sexual cycles of Chrysemy spicta & Clemmys insculpta in Nova Scotia. Can. Field-Nat., 81:134-139. 26 recs.
14	Blaney, C.S.; Mazerolle, D.M.; Oberndorfer, E. 2007. Fieldwork 2007. Atlantic Canada Conservation Data Centre. Sackville NB, 13770 recs.
14	Cameron, R.P. 2014. 2013-14 rare species field data. Nova Scotia Department of Environment, 35 recs.
14	Robinson, S.L. 2015. 2014 field data.
13	Belliveau, A. 2012. 2012 Atlantic Coastal Plain Flora observations. Mersey Tobeatic Research Institute, 1543.
13	Goltz, J.P. & Bishop, G. 2005. Confidential supplement to Status Report on Prototype Quillwort (Isoetes prototypus). Committee on the Status of Endangered Wildlife in Canada, 111 recs.
13	Holder, M. 2003. Assessment and update status report on the Eastern Lilaeopsis (Lilaeopsis chinensis) in Canada. Committee on the Status of Endangered Wildlife in Canada, 16 recs.
13	Neily, T.H. 2012. 2012 Erioderma pedicellatum records in Nova Scotia.
13	Nova Scotia Nature Trust. 2014. Ladyslipper records from Saint Croix Nova Scotia, JLC Ed. Nova Scotia Nature Trust.
12	Basquill, S.P. 2012. 2012 rare vascular plant field data. Nova Scotia Department of Natural Resources, 37 recs.
11	Bredin, K.A. 2002. NS Freshwater Mussel Fieldwork. Atlantic Canada Conservation Data Centere, 30 recs.
10	Cameron, R.P. 2013. 2013 rare species field data. Nova Scotia Department of Environment, 71 recs.
10	Klymko, J.J.D.; Robinson, S.L. 2014. 2013 field data. Atlantic Canada Conservation Data Centre.
9	Cameron, R.P. 2006. Erioderma pedicellatum 2006 field data. NS Dept of Environment, 9 recs.
9	Gilhen, J. 1984. Amphibians & Reptiles of Nova Scotia, 1st Ed. Nova Scotia Museum, 164pp.
8	Cameron, R.P. 2005. Erioderma pedicellatum unpublished data. NS Dept of Environment, 9 recs.
8	Olsen, R. Herbarium Specimens. Nova Scotia Agricultural College, Truro. 2003.
8	Sollows, M.C,. 2008. NBM Science Collections databases: mammals. New Brunswick Museum, Saint John NB, download Jan. 2008, 4983 recs.
7	Adams, J. & Herman, T.B. 1998. Thesis, Unpublished map of C. insculpta sightings. Acadia University, Wolfville NS, 88 recs.
7	Boyne, A.W. & Grecian, V.D. 1999. Tern Surveys. Canadian Wildlife Service, Sackville, unpublished data. 23 recs.
7	Cameron, B. 2006. Hepatica americana Survey at Scotia Mine Site in Gays River, and Discovery of Three Yellow-listed Species. Conestoga-Rovers and Associates, (a consulting firm), october 25. 7 recs.
7	Downes, C. 1998-2000. Breeding Bird Survey Data. Canadian Wildlife Service, Ottawa, 111 recs.
6	Benjamin, L.K. 2006. Cypripedium arietinum. Pers. comm. to D. Mazerolle. 9 recs, 9 recs.
6	Benjamin, L.K. 2012. NSDNR fieldwork & consultant reports 2008-2012. Nova Scotia Dept Natural Resources, 196 recs.
6	Blaney, C.S.; Mazerolle, D.M. 2009. Fieldwork 2009. Atlantic Canada Conservation Data Centre. Sackville NB, 13395 recs.
6	Blaney, C.S.; Spicer, C.D. 2001. Fieldwork 2001. Atlantic Canada Conservation Data Centre. Sackville NB, 981 recs.
6	Cameron, R.P. 2009. Nova Scotia nonvascular plant observations, 1995-2007. Nova Scotia Dept Natural Resources, 27 recs.
6	Cameron, R.P. 2012. Additional rare plant records, 2009. , 7 recs.
6	Clayden, S.R. 2005. Confidential supplement to Status Report on Ghost Antler Lichen (Pseudevernia cladonia). Committee on the Status of Endangered Wildlife in Canada, 27 recs.
6	Hall, R. 2008. Rare plant records in old fieldbook notes from Truro area. Pers. comm. to C.S. Blaney. 6 recs, 6 recs.
6	Klymko, J.J.D. 2012. Odonata specimens & observations, 2010. Atlantic Canada Conservation Data Centre, 425 recs.
6	Matthew Smith. 2010. Field trip report from Avon Caving Club outlining the discovery of Cyrpipedium arietinum and Hepatica nobilis populations. Public Works and Government Services Canada.
6	Neily, T.H. & Anderson, F. 2011. Lichen observations from NRC site at Sandy Cove. , 97.
6	Whittam, R.M. 1999. Status Report on the Roseate Tern (update) in Canada. Committee on the Status of Endangered Wildlife in Canada, 36 recs.

# recs	CITATION
5	Chaput, G. 2002. Atlantic Salmon: Maritime Provinces Overview for 2001. Dept of Fisheries & Oceans, Atlantic Region, Science Stock Status Report D3-14. 39 recs.
5	Porter, K. 2013. 2013 rare and non-rare vascular plant field data. St. Mary's University, 57 recs.
5	Towell, C. 2014. 2014 Northern Goshawk and Common Nighthawk email reports, NS. NS Department of Natural Resources.
4	Brunelle, P.-M. (compiler). 2010. ADIP/MDDS Odonata Database: NB, NS Update 1900-09. Atlantic Dragonfly Inventory Program (ADIP), 935 recs.
4	Cameron, R.P. 2012. Rob Cameron 2012 vascular plant data. NS Department of Environment, 30 recs.
4	Christie, D.S. 2000. Christmas Bird Count Data, 1997-2000. Nature NB, 54 recs.
4	Clayden, S.R. 1998. NBM Science Collections databases: vascular plants. New Brunswick Museum, Saint John NB, 19759 recs.
4	Cody, W.J. 2003. Nova Scotia specimens of Equisetum pratense at the DAO herbarium in Ottawa. , Pers. comm. to C.S. Blaney. 4 recs.
4	Forsythe, B. 2006. Cypripedium arietinum at Meadow Pond, Hants Co. Pers. comm. to C.S. Blaney. 4 recs, 4 recs.
4	Klymko, J.J.D. 2012. Insect fieldwork & submissions, 2011. Atlantic Canada Conservation Data Centre. Sackville NB, 760 recs.
4	Mills, Pamela. 2007. Iva frutescens records. Nova Scotia Dept of Natural Resources, Wildlife Div. Pers. comm. to S. Basquil, 4 recs.
4	Newell, R. & Neily, T.; Toms, B.; Proulx, G. et al. 2011. NCC Properties Fieldwork in NS: August-September 2010. Nature Conservancy Canada, 106 recs.
4	Oldham, M.J. 2000. Oldham database records from Maritime provinces. Oldham, M.J; ONHIC, 487 recs.
3	Basquill, S.P. 2003. Fieldwork 2003. Atlantic Canada Conservation Data Centre, Sackville NB, 69 recs.
3	Basquill, S.P. 2009. 2009 field observations. Nova Scotia Dept of Natural Resources.
3	Benjamin, L.K. 2009. Boreal Felt Lichen, Mountain Avens, Orchid and other recent records. Nova Scotia Dept Natural Resources, 105 recs.
3	Benjamin, L.K. 2009. NSDNR Fieldwork & Consultants Reports. Nova Scotia Dept Natural Resources, 143 recs.
3	Bradford, R. 2004. Coregonus huntsmani locations. Dept of Fisheries & Oceans, Atlantic Region, Pers. comm. to K. Bredin. 4 recs.
3	Doubt, J. 2013. Email to Sean Blaney with Nova Scotia records of Fissidens exilis at Canadian Museum of Nature. pers. comm., 3 records.
3	LaPaix, R.; Parker, M. 2013. email to Sean Blaney regarding Listera australis observations near Kearney Lake. East Coast Aquatics, 2.
3	Newell, R. E., MacKinnon, C. M. & Kennedy, A. C. 2006. Botanical Survey of Boot Island National Wildlife Area, Nova Scotia, 2004. Canadian Wildlife Service, Atlantic Region, Technical Report Series Number 450. 3 recs.
3	Plissner, J.H. & Haig, S.M. 1997. 1996 International piping plover census. US Geological Survey, Corvallis OR, 231 pp.
2	Amiro, Peter G. 1998. Atlantic Salmon: Inner Bay of Fundy SFA 22 & part of SFA 23. Dept of Fisheries & Oceans, Atlantic Region, Science Stock Status Report D3-12. 4 recs.
2	Bagnell, B.A. 2001. New Brunswick Bryophyte Occurrences. B&B Botanical, Sussex, 478 recs.
2	Basquill, S.P. 2011. Field observations & specimen collections, 2010. Nova Scotia Department of Natural Resources, Pers. comm. , 8 Recs.
2	Blaney, C.S. 1999. Fieldwork 1999. Atlantic Canada Conservation Data Centre. Sackville NB, 292 recs.
2	Bridgehouse, D. Email communication (July 3, 2014) to John Klymko regarding hairstreak butterfly observations made Nova Scotia. 2014.
2	Cameron, B. 2005. C. palmicola, E. pedicellatum records from Sixth Lake. Pers. comm. to C.S. Blaney. 3 recs, 3 recs.
2	Clerc, P. 2011. Notes on the genus Usnea Adanson (lichenized Ascomycota). III. Bibliotheca Lichenologica, 106, 41-51.
2	Frittaion, C. 2012. NSNT 2012 Field Observations. Nova Scotia Nature Trust, Pers comm. to S. Blaney Feb. 7, 34 recs.
2	Gilhen, J., Jones, A., McNeil, J., Tanner, A.W. 2012. A Significant Range Extension for the Eastern Ribbonsnake, Thamnophis sauritus, in Nova Scotia, Canada. The Canadian Field-Naturalist, 126(3): 231-233.
2	Hill, N.M. 2013. email communications to Sean Blaney and David Mazerolle regarding the discovery of Listera australis populations at Black River Lake and Middlewood. , 2.
2	Klymko, J.J.D. 2011. Insect fieldwork & submissions, 2010. Atlantic Canada Conservation Data Centre. Sackville NB, 742 recs.
2	Lock, A.R., Brown, R.G.B. & Gerriets, S.H. 1994. Gazetteer of Marine Birds in Atlantic Canada. Canadian Wildlife Service, Atlantic Region, 137 pp.
2	McAlpine, D.F. 1998. NBM Science Collections databases to 1998. New Brunswick Museum, Saint John NB, 241 recs.
2	Munro, M. 2003. Caulophyllum thalictroides & Carex hirtifolia at Herbert River, Brooklyn, NS. , Pers. comm. to C.S. Blaney. 2 recs.
2	Munro, M. 2003. Dirca palustris & Hepatica nobilis var. obtusa at Cogmagun River, NS. , Pers. comm. to C.S. Blaney . 2 recs.
2	Neily, T.H.; Smith, C.; Whitman, E. 2011. NCC Logging Lake (Halifax Co. NS) properties baseline survey data. Nature Conservancy of Canada, 2 recs.
2	Newell, R.E. 2006. Rare plant observations in Digby Neck. Pers. comm. to S. Blaney, 6 recs.
2	O'Neil, S. 1998. Atlantic Salmon: Eastern Shore Nova Scotia SFA 20. Dept of Fisheries & Oceans, Atlantic Region, Science. Stock Status Report D3-10. 4 recs.
2	Shafer, A.B.A., D.T. Stewart. 2006. A Disjunct Population of Sorex dispar (Long-Tailed Shrew) in Nova Scotia. Northeastern Naturalist, 13(4): 603-608.
2	Standley, L.A. 2002. Carex haydenii in Nova Scotia. , Pers. comm. to C.S. Blaney. 4 recs.
2	WIlliams, M. Cape Breton University Digital Herbarium. Cape Breton University Digital Herbarium. 2013.
1	Amirault, D.L. 2003. 2003 Peregrine Falcon Survey. Canadian Wildlife Service, Sackville, unpublished data. 7 recs.
1	Amirault, D.L. 2005. 2005 Peregrine Falcon Survey. Canadian Wildlife Service, Sackville, unpublished data. 27 recs.
1	Amiro, Peter G. 1998. Atlantic Salmon: Southern Nova Scotia SFA 21. Dept of Fisheries & Oceans, Atlantic Region, Science. Stock Status Report D3-11. 1 rec.
1	Austin-Smith, P. 2014. 2014 Common Nighthawk personal communication report, NS. NS Department of Natural Resources.
1	Basquill, S. P. 2008. Nova Scotia Dept of Natural Resources.
1	Basquill, S.P. 2004. C. americana and Sedum sp records, 2002. Pers. comm. to C.S. Blaney. 2 recs, 2 recs.
1	Basquill, S.P. 2012. 2012 Bryophyte specimen data. Nova Scotia Department of Natural Resources, 37 recs.
1	Basquill, S.P.; Quigley, E. 2006. New Minuartia groenlandica record for NS. Pers. comm. to C.S. Blaney, Oct 6, 1 rec.
1	Benedict, B. Connell Herbarium Specimens (Data) . University New Brunswick, Fredericton. 2003.
1	Benedict, B. Connell Herbarium Specimens, Digital photos. University New Brunswick, Fredericton. 2005.
1	Benjamin, L.K. 2003. Cypripedium arietinum in Cogmagun River NS. Pers. comm. to S. Blaney, 1 rec.
1	Bruce, J. 2014. 2014 Wood Turtle email report, Nine Mile River, NS. NS Department of Natural Resources.
1	Clayden, S.R. 2006. Pseudevernia cladonia records. NB Museum. Pers. comm. to S. Blaney, Dec, 4 recs.
1	Crowell, A. 2004. Cypripedium arietinum in Weir Brook, Hants Co. Pers. comm. to S. Blaney, 1 rec.

# recs	CITATION
1	Crowell, M. 2013. email to Sean Blaney regarding Listera australis at Bear Head and Mill Cove Canadian Forces Station. Jacques Whitford Environmental Ltd., 2.
1	Jacques Whitford Ltd. 2003. Cananda Lily location. Pers. Comm. to S. Blaney. 2pp, 1 rec, 1 rec.
1	Klymko, J.J.D. 2010. Miscellaneous observations reported to ACCDC (zoology). Pers. comm. from various persons, 3 recs.
1	Klymko, J.J.D. 2012. Insect field work & submissions. Atlantic Canada Conservation Data Centre, 852 recs.
1	Lautenschlager, R.A. 2010. Miscellaneous observations reported to ACCDC (zoology). Pers. comm. from various persons, 2 recs.
1	Layberry, R.A. 2012. Lepidopteran records for the Maritimes, 1974-2008. Layberry Collection, 1060 recs.
1	MacKinnon, D.; Wright, P.; Smith, D. 2014. 2014 Common Tern email report, Eastern Passage, NS. NS Department of Environment.
1	Majka, C.G. & McCorquodale, D.B. 2006. The Coccinellidae (Coleoptera) of the Maritime Provinces of Canada: new records, biogeographic notes, and conservation concerns. Zootaxa. Zootaxa, 1154: 49–68. 7 recs.
1	Neily, P.D. Plant Specimens. Nova Scotia Dept Natural Resources, Truro. 2006.
1	Neily, T.H. 2004. Hepatica nobilis var. obtusa record for Falmouth NS. Pers. comm. to C.S. Blaney, 1 rec.
1	Newell, R.E. 2004. Hepatica nobilis var. obtusa record. Pers. comm. to S. Blaney, 1 rec.
1	Niel, K. & Majka, C. 2008. New Records of Tiger Beetles (Coleoptera: Carabidae: Cicindelinae) in Nova Scotia. Journal of the Acadian Entomological Society, 4: 3-6.
1	Robinson, S.L. 2016. 2016 field data. Atlantic Canada Conservation Data Centre.
1	Scott, F.W. 1988. Status Report on the Southern Flying Squirrel (Glaucomys volans) in Canada. Committee on the Status of Endangered Wildlife in Canada, 2 recs.
1	Sollows, M.C,. 2009. NBM Science Collections databases: Coccinellid & Cerambycid Beetles. New Brunswick Museum, Saint John NB, download Feb. 2009, 569 recs.
1	Sollows, M.C,. 2009. NBM Science Collections databases: molluscs. New Brunswick Museum, Saint John NB, download Jan. 2009, 6951 recs (2957 in Atlantic Canada).
1	Sollows, M.C. 2008. NBM Science Collections databases: herpetiles. New Brunswick Museum, Saint John NB, download Jan. 2008, 8636 recs.
1	Stewart, P. 2013. email to Sean Blaney regarding the discovery of a Listera australis population at Blockhouse. Envirosphere Consultants Limited, 1.
1	Wilson, G. 2013. 2013 Snapping Turtle email report, Wentworth, NS. Pers. comm.

Appendix C-2

Potential Priority Plant / Lichen Species for 107 Burnside to Bedford Study Area based on Previous Studies; ACCDC data; and SARA/NSESA/COSEWIC Listings and Potential Habitat Present

Species	Name	SARA (or COSEWIC*) Status and Sched. and NSESA Status and ACCDC Rank / General Status [1]	Habitat[2] (nearby reference locations)	Flowers[2]
Betula michauxii	Dwarf Birch	S2 / Sensitive	Peat and sphagnum bogs.	Jun-Jul. (visible throughout)
Megalodonta (Bidens) beckii	Beck Water-marigold	S3 / Secure	Shallow, quiet water, slow stream/pond.	Aug-Sept.
Campanula aparinoides	Marsh Bellflower	S3 / Sensitive	Meadow, ditch, river bank.	Aug.
Cardamine parviflora	Small-flower Bitter-cress	S2 / Sensitive	Dry wood, shaded ledge, sandy soil.	Apr.-Aug.
Carex adusta	Crowded Sedge	S2S3 / Sensitive	Dry open woods, gravel, rock, clearing, acidic.	Jun.-Sept.
Clethra alnifolia	Coast pepper-bush	Special Concern Sched. 1 COSEWIC Threatened NSESA Vulnerable S1 / At Risk	Headwater lakeshore, swamp, thicket, sandy woods.	late Sept.-Oct.
Collema nigrescens	Blistered Tarpaper Lichen	S2S3 / Sensitive	Bark of deciduous trees and shrubs, occasionally on rock.	Na – visible year round
Degelia plumbea	Blue Felt Lichen	Special Concern NSESA Vulnerable S2 / Secure	Old-growth Yellow Birch, but occasionally on mature Trembling Aspen and rarely White Spruce.	Na – visible year round
Eleocharis flavescens (olivacea)	Capitate Spikerush	S2S3 / Sensitive	Peaty bog muck, wet sandy shore/swale.	Jun.-Oct.
Elymus wiegandii	Wiegand's Wild Rye	S1 / May be at risk	Streambank and meadow.	Jul-Aug.
Empetrum eamesii	Rock Crowberry	S2S3 / Sensitive	Headland bog barren.	Jul-Nov.
Erioderma mollissimum	Graceful (Vole Ears) Felt Lichen	Endangered Sched. 1 NSESA Endangered S1S2 / May be at risk	Humid coastal forest.	Na – visible year round
Erioderma pedicellatum	Boreal Felt Lichen (Atlantic)	Endangered Sched. 1 NSESA Endangered	Moist balsam fir forests. Limited potential at site.	Na – visible year round
Fraxinus nigra	Black Ash	NSESA Threatened S1S2 / At Risk	Low ground, damp wood, swamp. **Observed (Stantec 2011) in wetlands - north of HWY 102, north of Rocky Lake, WL24, WL118 and north of Anderson Lake.**	May-Jun.
Fraxinus pennsylvanica	Red Ash	S1 / May be at risk	Near lake or pond, low-lying area.	May (visible year-round)
Helianthemum canadense	Rock-rose	NSESA Endangered S1 / At Risk	Sandy plains/barrens. Record unlikely to be local.	June-early Jul.
Hieracium kalmii	Kalm's Hawkweed	SU / Undetermined	Roadside, clearings and thickets. **Observed (Stantec 2011) in disturbed area throughout including WL23.**	Jul-Aug.
Hudsonia ericoides	Golden-heather	S2 / Sensitive	Dry rocky sandy barrens, disturbed sandy soil.	Late May-early Jul.
Hypericum dissimulatum	Disguised St Johns-wort	S2S3 / Sensitive	Shores, damp open areas.	Summer
Hypericum majus	Canada St. Johns-wort	S2 / Sensitive	Wet or dry open soil . **Observed (Stantec 2011) in WL23.**	July-Sept.
Isoetes prototypus	Prototype Quillwort	Special Concern Sched. 1 NSESA Vulnerable	Bordering lake, pond occasionally river, up to 1 m deep.	Spring - summer

Species	Name	SARA (or COSEWIC*) Status and Sched. and NSESA Status and ACCDC Rank / General Status [1]	Habitat[2] (nearby reference locations)	Flowers[2]
		S2 / Sensitive		
Juncus greenei	Greenes Rush	S1S2 / May be at risk	Sandy soil, dunes.	June-Sept.
Lactuca hirsuta	Hairy Wild Lettuce	S2 / Sensitive	Dry open woods and cut-over.	July-Sept.
Leptogium teretiusculum	Beaded Jellyskin Lichen	-	Shaded humid hardwood bark in riparian areas.	Na – visible year round
Listera australis	Southern Twayblade	S3 / Secure	Red maple swale, wetland . **Observed (Stantec 2011) in wetlands north and west of Anderson Lake (outside current footprint). Found in 2014 study area (see Section 4).**	Late Jun.-Jul.
Minuartia groenlandica	Mountain Sandwort	S3 / Sensitive	Granite ledges, gravel, on coast at higher elevation – known for the general area, **including a patch potentially within the ROW. Found in 2014 study area (see Section 4).**	June-Aug.
Myriophyllum farwellii	Water-milfoil	S2 / Sensitive	Ponds and slow moving stream.	June-Sept.
Ophioglossum pusillum	Adder'sTongue	S2S3 / Sensitive	Acid soil, ditch, old field.	Late May-Aug.
Piptatherum canadense	Canada Rice Grass	S2 / Sensitive	Sandy dry open ground.	Early summer
Polygala sanguinea	Field Milkwort	S2S3 / Sensitive	Poor acidic field, damp slope, open woods/bush**. Observed (Stantec 2011) in WL23 to the north of current footprint.**	Late Jun.-Oct.
Pseudevernia cladonia	Ghost Antler	S2S3 / Sensitive	Lichen on trees typically red spruce, black spruce or balsam fir -Low elevation along Fundy and Atlantic coast – records in the Halifax area.	Year-round
Ranunculus sceleratus	Cursed Buttercup	S1S2 / May be at risk	Pool and rill, brackish to fresh. **Observed (Stantec 2011) in WL20, WL25.**	May-Aug.
Salix sericea	Silky Willow	S2 / May be at risk	Wet thicket, stream edge, marsh.	Early summer
Spiranthes ochroleuca	Yellow Ladies-tresses	S3 / Secure	Uplands.	Sept.-Oct.
Symphyotrichum boreale	Boreal Aster	S2? / Sensitive	Mostly calcareous areas, fens, marshes, bogs, open cedar-tamarack-spruce swamps, stream and pond margins, wet meadows, swales. **Observed (Stantec 2011) in WL17 east of current footprint.**	Aug.–Oct.
Symphyotrichum ciliolatum	Lindleys Aster	S2S3 / Sensitive	Open field, lawn, wood edge.	Aug.-Sept.
Symphyotrichium undulatum	Wavy-leaved Aster	S2 / Sensitive	Woods, field, barrens.	Aug-Sept.
Thuja occidentalis	Eastern White Cedar	NSESA Vulnerable; S1 / At Risk	Cedar swamps, ornamental cedar not considered at risk. **Observed (Stantec 2011) along Highway 102 – identified as ornamental.**	Year-round
Vaccinium cespitosum (caespitosum)	Dwarf Blueberry/Bilberry	S3 / Secure	Rocky substrate, acidic soils, cliffs, rocks.	Late May to mid June
Vaccinium corymbosum	Highbush Blueberry	S3S4 / Secure	Forested and shrub bog.	Mid June
Vaccinium uliginosum	Alpine Blueberry	S3 / Sensitive	Dry or wet organic or not acid soils.	Summer

1. Status as of May 2017
   S-rank - S1 Extremely rare in province; S2 Rare in the province; S3 Uncommon in the province; S4 Widespread, common and apparently secure in province; S5 Widespread, abundant and secure in the province. SNR Status not yet assessed.
   General Status - "Sensitive" indicating they are potentially susceptible to human activities or natural events
   "May be at Risk" or "At Risk" therefore considered here to be of high conservation concern within the province.
   "Undetermined" indicating that there is currently insufficient data, information, or knowledge available to evaluate its status.
2. Zinck 1998

Appendix C-2

Potential Priority Animal Species for 107 Burnside to Bedford Study Area based on Previous Studies; ACCDC data and SARA/NSESA/COSEWIC Listings and Potential Habitat Present

Common Name	Scientific Name	SARA (or COSEWIC*) Status and Sched. and NSESA Status, S Rank and General Status [1]	Habitat Preference and Observations in Vicinity (BBS = Breeding Bird Survey)	Timing for Investi-gation
INVERTEBRATES				
Banded Hairstreak	*Satyrium calanus*	S2 / Undetermined	Woodlands or roadside, with flowers like milkweed and clover.	Late June - Aug.
Bog Elfin	*Callophrys (Incisalia) lanoraieensis*	S3 / May be at risk	Tamarack and black spruce bogs.	Summer
Forcipate Emerald	*Somatochlora forcipata*	S2S3 / May be at risk	Pool in bog and small forested stream.	Summer
Harlequin Darner	*Gomphaeschna furcillata*	S3 / Sensitive	Alder Swamp, bog.	Late May-early July
Kennedy's Emerald	*Somatochlora kennedyi*	S1S2 / May be at risk	Slow open streams in bogs or marshes, bog pond, boreal swamp.	Late May - early Aug.
Monarch (Butterfly)	*Danaus plexippus*	Special Concern Sched. 1 S2B / Sensitive	Migrates through area, feeds on milkweed or similar wildflower; Canadian habitat not vulnerable.	Late summer
Mustard White	*Pieris oleracea*	S4 / Sensitive	Open forest, field, deciduous forest, bog, streamside.	Summer
Orange Bluet	*Enallagma signatum*	S2 / May be at risk	Open water and adjacent forest.	May-Oct.
Satyr Comma	*Polygonia satyrus*	S1? / Sensitive	Boreal forest, riparian woods.	Mid Apr.-late Aug.
Spot-winged Glider	*Pantala hymenaea*	S2?B / Sensitive	Temporary ponds and pools.	Mid June - late Aug.
Taiga Bluet	*Coenagrion resolutum*	S1S2 / May be at risk	Sedge marshes.	Late summer
Prince Baskettail	*Epitheca princes*	S2 / Sensitive	Slow moving water.	Early Jun. to late Aug.
BIRDS				
American Bittern	*Botaurus lentiginosus*	S3S4B / Sensitive	Nests in freshwater marshes and occasionally salt marshes.	Nest mid. May – mid Aug.
Bank Swallow	*Riparia riparia*	COSEWIC Threatened S3B / May be at risk	Nest banks, cliffs. **Observed in 1992 BBS, unknown location.**	Nest May-July
Baltimore Oriole	*Icterus galbula*	S2S3B / May be at risk	Nest deciduous trees often suburban or water side.	Nest late May - June
Barn Swallow	*Hirundo rustica*	COSEWIC Threatened NSESA Endangered S3B / At risk	Nest on structures. **Observed in Bedford Industrial Park area during 2011 BBS.**	Nest summer
Bay-breasted Warbler	*Dendroica castanea*	S3S4B / Sensitive	Breeds in mature coniferous forest, particularly in areas with high spruce budworm concentrations.	Nest mid. June-July
Black-backed Woodpecker	*Picoides arcticus*	S3S4 / Sensitive	Nest in cavities. **Observed in 2011 BBS.**	Nest May-June
Black-billed Cuckoo	*Coccyzus erythropthalmus*	S3?B / May be at Risk	Nests in forest edges and tall shrub thickets.	Nest early June – mid. Aug.
Blue-winged Teal	*Anas discors*	S3B / May be at risk	Nest in fertile marshes.	Nest mid. May-July
Bobolink	*Dolichonyx oryzivorus*)	COSEWIC Threatened NSESA Vulnerable S3S4B / Sensitive	Nest in lush meadows, open grasslands, hayfields.	Nests June to July
Boreal Chickadee	*Poecile hudsonica*	S3 / Sensitive	Nest cavities in rotted tree stumps. **Observed in 1992 BBS, unknown location.**	Nest mid. May – mid Aug.
Canada Warbler	*Wilsonia Canadensis*	Threatened Sched. 1 NSESA Endangered S3B / At risk	Nest - mid aged mixed forest. **Observed in 2016 off of Anderson Lake powerline. Observed in numerous wetlands in ROW area in 2011 BBS.**	Nest June
Cape May Warbler	*Dendroica tigrina*	S3?B / Sensitive	Nests in conifers. **Observed in Wetland 118 and**	Nest June

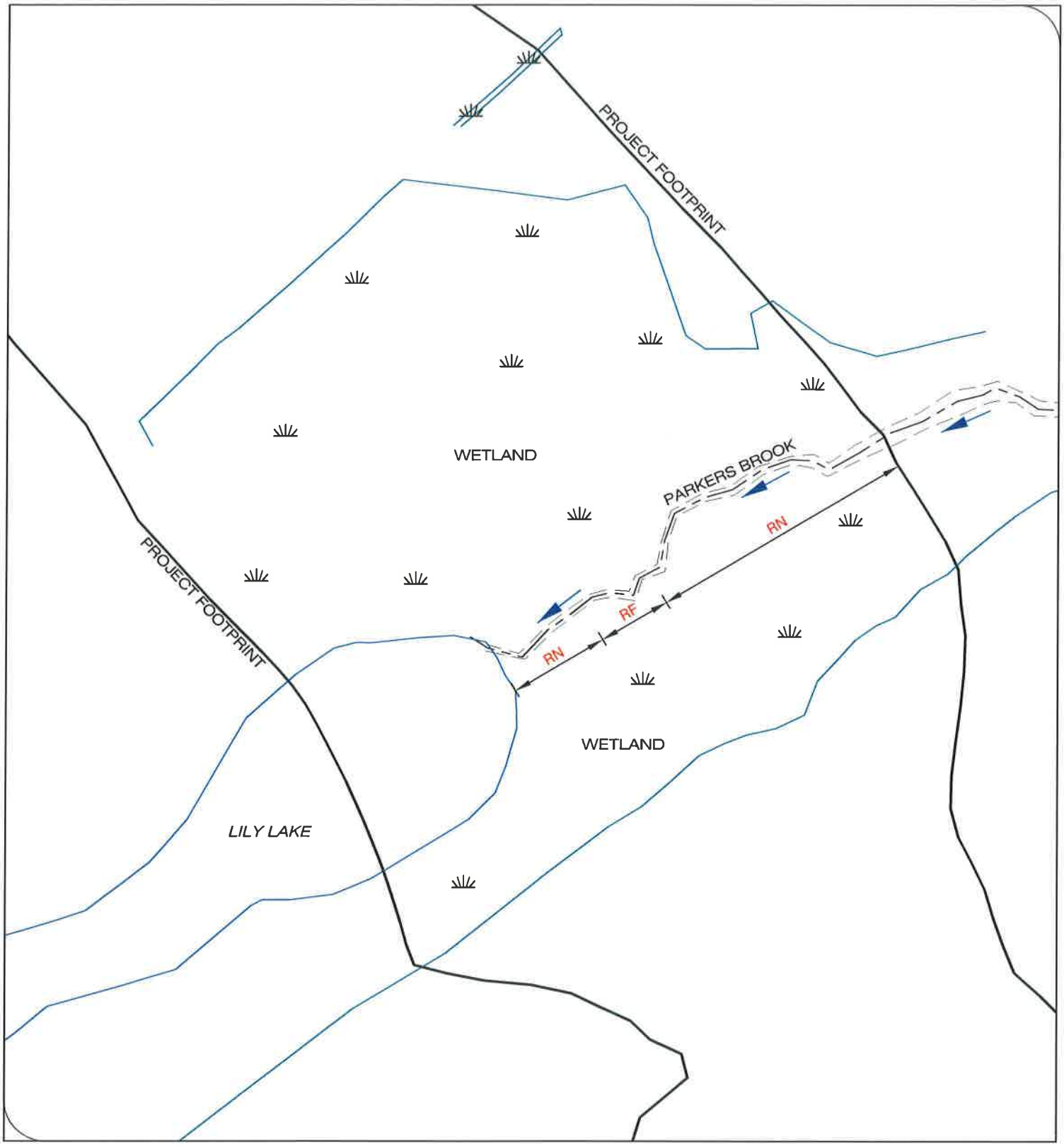
Common Name	Scientific Name	SARA (or COSEWIC*) Status and Sched. and NSESA Status, S Rank and General Status [1]	Habitat Preference and Observations in Vicinity (BBS = Breeding Bird Survey)	Timing for Investi-gation
			63 in 2011 BBS.	
Chimney Swift	*Chaetura pelagica*	Threatened Sched. 1 NSESA Endangered S2S3B / At risk	Chimneys and large hollow trees nest / roost.	Nest May – July
Cliff Swallow	*Petrochelidon pyrrhonota*	S3B / May be at Risk	Breeds in settled areas, nesting colonially on buildings and structures such as bridges.	Nest early June- Aug.
Common Loon	*Gavia immer*	S3B,S4N / May be at risk	May nest in around adjacent lakes. **Observed flying over Anderson Lake.**	Nest summer
Common Nighthawk	*Chordeiles minor*	Threatened Sched. 1 NSESA Threatened S3B / At risk	Nest -sparsely vegetated or bare ground (cutover/burns, building roof). **Observed flying over north of Anderson Lake.**	Nest June-July
Common Tern	*Sterna hirundo*	S3B / Sensitive	**Observed in Lily Lake area in 2011 BBS.**	Nest late May-early Aug.
Eastern Bluebird	*Sialia sialis*	S3B / Sensitive	Woodpecker holes forage low vegetation with scattered trees clear-cut near forest, favour broad-leaf.	Nest May-July
Eastern Phoebe	*Sayornis phoebe*	S3S4B / Sensitive	Found in woodlands and along forest edges, often near water.	Nest early May- early Aug.
Eastern Wood-pewee	*Conopus virens*	COSEWIC Special Concern NSESA Vulnerable S3BS4B / Sensitive	Nest open forest. **Observed in Wetland 25 and north of Anderson Lake areas in 2011 BBS.**	Nest early June-early Sept.
Golden-crowned Kinglet	*Regulus satrapa*	S4 / Sensitive	**Observed in forest and wetlands north of Anderson Lake in 2011 BBS.**	Nest mid-May-late July
Gray Catbird	*Dumetella carolinensis*	S3B / May be at risk	Nest shrubbery. **Observed in Wetland 23 in 2011 BBS.**	Nest late May – early Aug.
Gray Jay	*Perisoreus canadensis*	S3S4 / Sensitive	Nests in forest. **Observed in 1992 BBS, unknown location.**	Nest late Mar. – early July
Great Crested Flycatcher	*Myiarchus crinitus*	S2B / May be at risk	Nests in hollow tree. **Observed north of Wetland 117 in 2011 BBS.**	Nest late May - early Aug.
Killdeer	*Charadrius vociferus*	S3S4B / Sensitive	**Observed in Bedford Commons area and north of Wetland 21 in 2011 BBS.**	Nest mid. April-early June
Long-eared Owl	*Asio otus*	S2 / May be at risk	Nest in woodlands.	Nest Apr.-June
Northern Goshawk	*Accipiter gentillis*	S3S4 / Secure	Woodland species.	Nest Apr.-May
Olive-sided Flycatcher	*Contopus cooperi*	Threatened Sched. 1 NSESA Threatened S3B / At risk	Nest open forest – conifers or mixed.	Nest June-Jul.
Pine Grosbeak	*Pinicola enucleator*	S3?B,S5N / May be at risk	Nests in conifers.	Nest May-June
Pine Siskin	*Carduelis pinus*	S3S4B, S5N / Sensitive	Breeds in mature coniferous forest.	Nest Late April-early Aug.
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	S3S4B / Sensitive	**Observed near Wetland 20 in 2011 BBS and unknown location in 1992 BBS.**	Nest early June-late July
Ruby-crowned Kinglet	*Regulus calendula*	S4B / Sensitive	**Observed in forest and wetlands north of Anderson Lake in 2011 BBS.**	Nest Mid May-early July
Rusty Blackbird	*Euphagus carolinus*	Special Concern Sched. 1 NSESA Endangered S2S3B / May be at risk	Nests in swamps and bogs along sluggish streams.	Nest May-July
Savannah Sparrow	*Passerculus sandwichensis*	Special Concern Sched. 1	Nest open vegetated areas, ground.	Nest mid May-August

Common Name	Scientific Name	SARA (or COSEWIC*) Status and Sched. and NSESA Status, S Rank and General Status [1]	Habitat Preference and Observations in Vicinity (BBS = Breeding Bird Survey)	Timing for Investi-gation
	princeps	S1B / Sensitive		
Spotted Sandpiper	*Actitis macularius*	S3S4B / Sensitive	**Observed in Wetland 23 in 2011 BBS.**	Nest Late May-July
Tennessee Warbler	*Vermivora peregrina*	S3S4B / Sensitive	**Known for Wetland 23.**	Nest June-July
Tree Swallow	*Tachycineta bicolor*	S4B / Sensitive	**Observed in numerous wetlands in ROW area in 2011 BBS.**	Nest May-July
Yellow-bellied Flycatcher	*Empidonax flaviventris*	S3S4B / Sensitive	**Observed north of Anderson Lake and Wetland 63 in 2011 BBS.**	Nest mid June-early Aug.
Whip-poor-will	*Caprimulgus vociferus*	Threatened Sched. 1 NSESA Threatened S1?B / At risk	Nests on ground.	Nest June
Willet	*Tringa semipalmata*	S2S3B / May be at risk	Nest coastal near marsh.	Nest mid May-July
Willow Flycatcher	*Empidonax traillii*	S2B / Sensitive	Breeds in moist, shrubby areas often with standing or running water.	Nest in the summer.
Wilson's Snipe	*Gallinago delicata*	S3S4B / Sensitive	**Observed in 1992 BBS, unknown location.**	Nest May-July
Wilson's Warbler	*Wilsonia pusilla*	S3S4B / Sensitive	Nests in riparian shrub thickets.	Nest mid. June-early July
FISH				
Atlantic salmon S. Upland pop.	*Salmo salar*	COSEWIC Endangered S2 / May be at risk	Gravel bottomed streams, rivers.	Late summer/fall
American eel	*Anguilla rostrata*	COSEWIC Threatened S5 / Secure	Fresh water streams for adults. Migrate to sea to spawn. **Known for Wrights Brook.**	Non-winter
Atlantic whitefish	*Coregonus huntsmani*	Endangered Sched. 1 NSESA Endangered S1/ Exotic?	**Anderson Lake** introduction as part of recovery strategy.	Non-winter
Brook trout	*Salvelinus fontinalis*	S4 / Sensitive	Streams, brooks.	Late summer/fall
Gaspereau	*Alosa pseudoharengus*	S4 / Sensitive	Spawn above head of tide in rivers, stillwater, lake.	Spring-summer
Herptiles				
Snapping turtle	*Chelydra serpentina*	Special Concern Sched. 1 NSESA Vulnerable S5 / Sensitive	Vegetated lakes and streams, nest on sand / gravel.	Non-winter
Wood turtle	*Glyptemys insculpta*	Threatened Sched. 1 NSESA Threatened S2 / Sensitive	Nest on gravel bank near river, overwinter in pools, clear streams.	Late spring
MAMMALS				
Mainland Moose	*Alces alces american*	NSESA Endangered S1 / At risk	Forest – occasionally enter city area.	n/a
Little Brown Myotis	*Myotis lucifugus*	Endangered Sched. 1 NSESA Endangered S1 / At risk	Hibernate in caves, may feed in area.	Summer - fall
Northern Myotis	*Myotis septentrionalis*	Endangered Sched. 1 NSESA Endangered S1 / At risk	Hibernate dense forest and caves, may feed in area.	Summer - fall
Tri-coloured Bat / Eastern Pipistrelle	*Pipistrellus subflavus*	Endangered Sched. 1 NSESA Endangered S1 / At risk	Hibernate in caves, may feed in area.	Summer - fall

1. Status as of May 2017-

S-rank - S1 Extremely rare in province; S2 Rare in the province; S3 Uncommon in the province; S4 Widespread, common and apparently secure in province; S5 Widespread, abundant and secure in the province. SNR Status not yet assessed.
General Status - "Sensitive" indicating they are potentially susceptible to human activities or natural events
"May be at Risk" or "At Risk" therefore considered here to be of high conservation concern within the province.
"Undetermined" indicating that there is currently insufficient data, information, or knowledge available to evaluate its status.

Appendix D
Fish Habitat Data



NOVA SCOTIA TRANSPORTATION AND INFRASTRUCTURE RENEWAL
HIGHWAY 107
ENVIRONMENTAL ASSESSMENT

WC-18
PARKERS BROOK/TRIBUTARY TO LILY LAKE
FIGURE 1

RN	RUN	CC	CASCADE	FL	FLAT (NATURAL DEADWATER)
RF	RIFFLE	INT	INTERMITTENT	→	FLOW DIRECTION
PL	POOL	RN/RF	NATURAL RUN-RIFFLE SEQUENCE		

DILLON CONSULTING

MAP/DRAWING INFORMATION
Nova Scotia Transportation and Infrastrucutre Renewal and Allison Land Surveys Limited.

CREATED BY: TLR
CHECKED BY: ???
DESIGNED BY: KLM

File Location:
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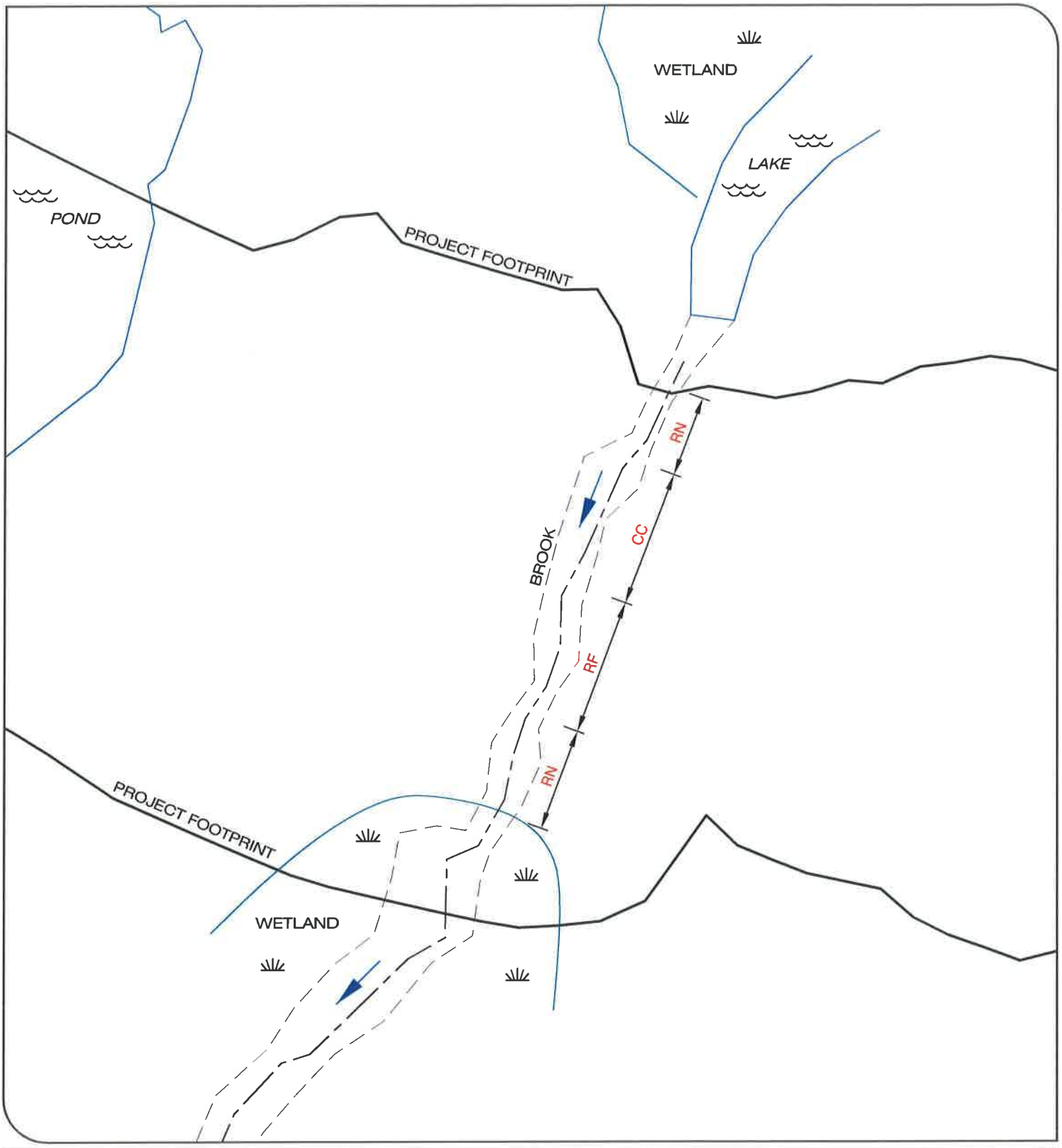
N W E S

PROJECT: 13 8348

DATE: 22/08/14



NOVA SCOTIA TRANSPORTATION AND INFRASTRUCTURE RENEWAL
HIGHWAY 107
ENVIRONMENTAL ASSESSMENT

WC-TRIBUTARY TO WRIGHTS BROOK
FIGURE 2

RN	RUN	CC	CASCADE	FL	FLAT (NATURAL DEADWATER)
RF	RIFFLE	INT	INTERMITTENT	→	FLOW DIRECTION
PL	POOL	RN/RF	NATURAL RUN-RIFFLE SEQUENCE		

DILLON CONSULTING

MAP/DRAWING INFORMATION
Nova Scotia Transportation and Infrastrucutre Renewal and Allison Land Surveys Limited.

CREATED BY: TLR
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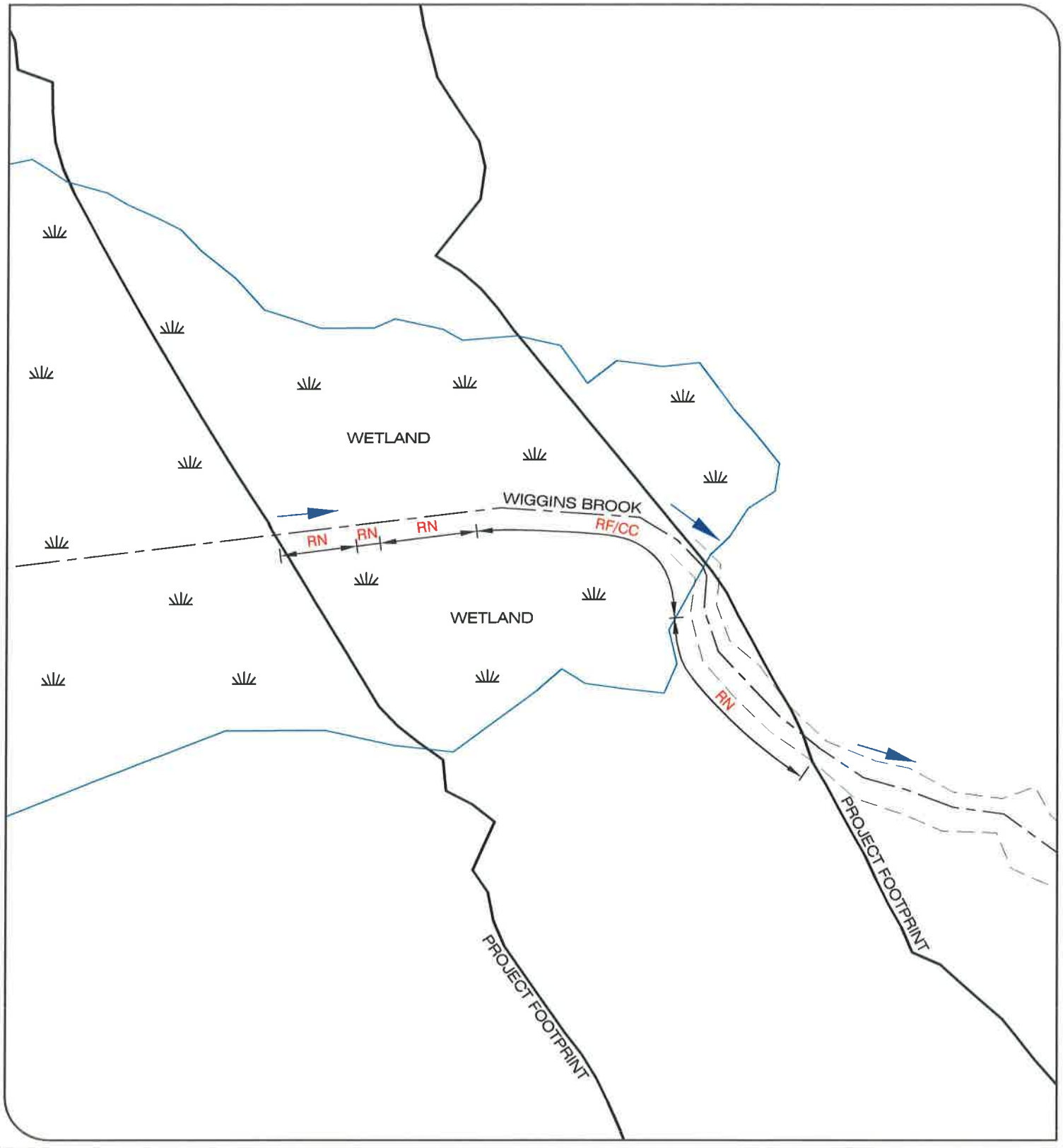
PROJECT: 13 8348

DATE: 22/08/14



NOVA SCOTIA TRANSPORTATION AND INFRASTRUCTURE RENEWAL
HIGHWAY 107
ENVIRONMENTAL ASSESSMENT

WC-04
WIGGINS BROOK/ WRIGHTS BROOK
FIGURE 3

RN	RUN	CC	CASCADE	FL	FLAT (NATURAL DEADWATER)
RF	RIFFLE	INT	INTERMITTENT	→	FLOW DIRECTION
PL	POOL	RN/RF	NATURAL RUN-RIFFLE SEQUENCE		

DILLON CONSULTING

MAP/DRAWING INFORMATION
Nova Scotia Transportation and Infrastrucutre Renewal and Allison Land Surveys Limited.

CREATED BY: TLR
CHECKED BY: ???
DESIGNED BY: KLM

File Location:
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0 5 10 20m

N W E S

PROJECT: 13 8348

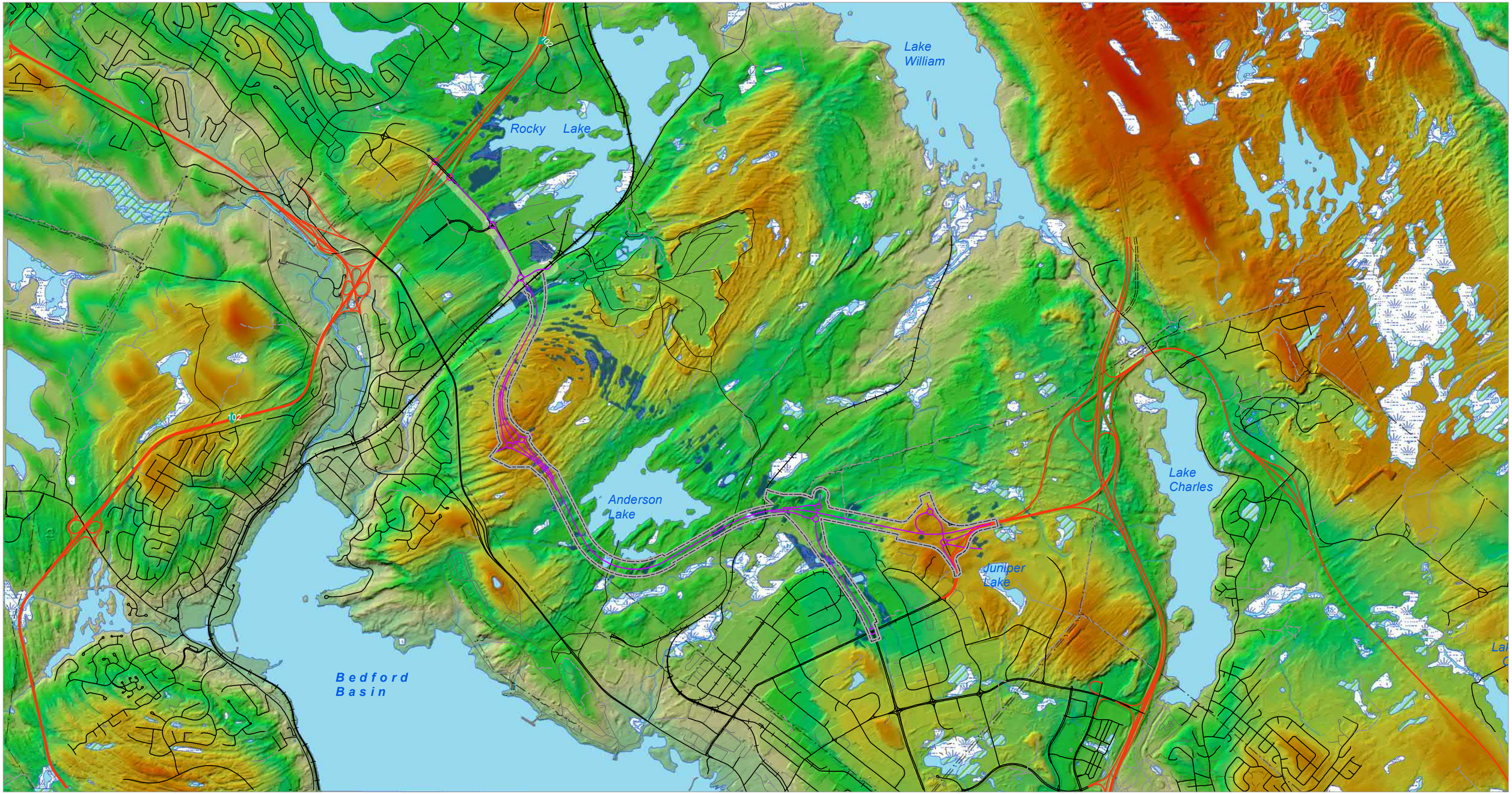
DATE: 22/08/14

Summary of Fish Captures 2010 to 2013

ID	Date	Area	Gear	Freq.	V	Effort	T	C	Sp	Name	No	Sz (cm)	Ref
WC-3 (Enchanted Lake)	10/9/2010	Littoral zone	Minnow traps (4)	-	-	overnight	20.15	596	-	Unidentified fish jumped	0	-	Stantec 2011
WC-4 (Wrights/ Wiggins Brook)	9/9/2010	75 m upstream of RoW	LR-24	75	200	611 sec	18.7	603	*Salvelinus fontinalis* *Fundulus diaphanous* *Angullia rostrata* *Rhinichthys atratulus*	Brook trout Banded killifish American eel Blacknose dace* Salmonid	5 1 6 2 1	4.5-7.4 8 16-19 4.6-8.9 na	Stantec 2011
WC-5 (Flat Lake)	9/9/2010	Littoral zone	Minnow traps (4)	-	-	overnight	19.22	579	*Notemigonus crysoleucas*	Golden shiner	1	8.7	Stantec 2011
WC-8 (trib. to Anderson Lake)	9/9/2010	100 m upstream of RoW	LR-24	80	450	437 sec	15.91	47	-	-	0	-	Stantec 2011
Pond south of Anderson Lake	10/3/2013	Littoral zone	Minnow traps (4)	-	-	overnight (2) Daytime (2)	15	-	-	-	0	0	-
Inlet to Wrights tributary	10/3/2013	Littoral zone	Minnow traps (2)	-	-	overnight (2) Daytime (2)	15	-	*Fundulus diaphanous* *Notemigonus crysoleucas*	Banded killifish Golden shiner	1 1	5 5	-
Wrights tributary	10/3/2013	RoW	Electro-fishing	60-90	200-600	1000 sec	15	-	*Angullia rostrata* *Fundulus diaphanous* *unknown*	American eel Banded killifish unknown	13 1 1	8-30 8 15	-
Trib. to Anderson Lake	9/25/2013	75 m downstream RoW	Electro-fishing	60-90	200-600	300 sec	15	-	-	-	-	-	-
Unnamed trib to Lily Lake	10/9/2010	75 m upstream of RoW	LR-24	75	250	837 sec	17.84	664	*Fundulus diaphanous* *Catostomus commersoni* *Pungitius pungitius*	Banded killifish White sucker Ninespine stickleback	7 1 2	4.8-7.5 6.6 4-5.6	Stantec 2011
Lily Lake	23/9/2010	Littoral zone	Minnow traps (4)	-	-	overnight	21.29	469			0	-	Stantec 2011
Unnamed stream	9/9/2010	Littoral zone	LR-24	90	210	437 sec	14.28	445	*Pungitius pungitius*	Ninespine stickleback	6	3-4	Stantec 2011
Unnamed wetland	23/9/2010	Littoral zone	Minnow traps (4)	-	-	overnight	17.84	607	*Ameiurus nebulosus*	Brown bullhead	2	14.7-15.8	Stantec 2011

- Blacknose dace unconfirmed

Appendix E
Wetland Data



Nova Scotia Transportation and Infrastructure Renewal

Highway 107 Burnside to Bedford Environmental Assessment

FIGURE E-1

SHADED RELIEF AND WETLANDS

NOVA SCOTIA

PROPOSED HIGHWAY 107 ALIGNMENT

WATERCOURSE

HIGHWAY

OTHER ROAD

TRAIL/TRACK

NSDNR WETLANDS

WETLAND (TOPOGRAPHIC DATABASE)

FIELD DEFINED WETLANDS (STANTEC/DILLON)

OPEN WATER

BUFFERED CENTRELINE STUDY AREA (75 M)

APPROXIMATE RIGHT OF WAY STUDY AREA (AS PER NSTIR MAY 2017)

DILLON CONSULTING

MAP DRAWING INFORMATION:
DATA PROVIDED BY GeoNova, Halifax Open Data,NSDNR

MAP CREATED BY: SCM
MAP CHECKED BY: KLM
MAP PROJECTION: NAD 1983 UTM Zone 20N

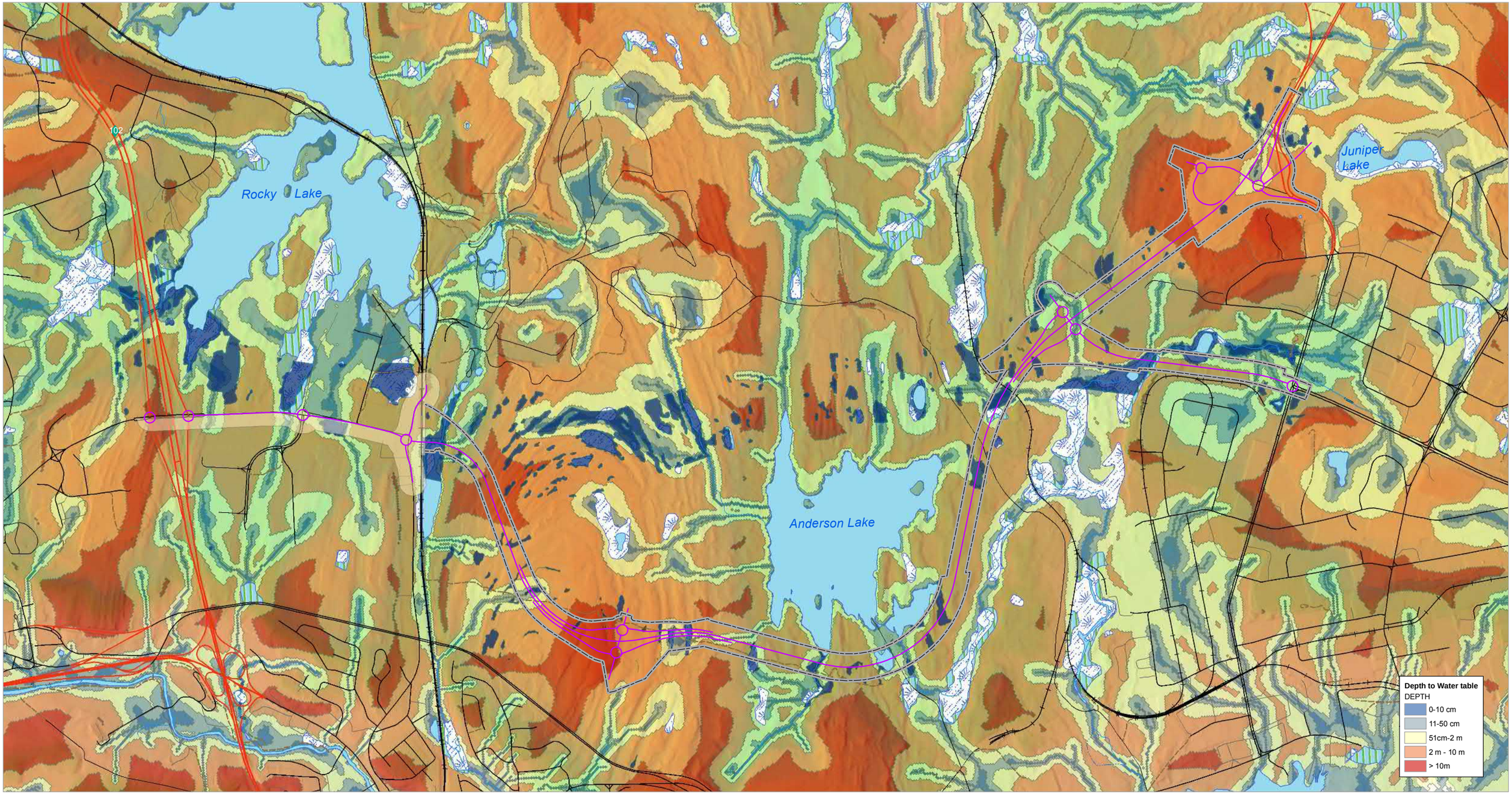
0 125 250 500 750 Metres

N
W E
S

FINAL

PROJECT: 13-8348

Date: June 2017



Nova Scotia Transportation and Infrastructure Renewal

Highway 107 Burnside to Bedford Environmental Assessment

FIGURE E - 2

DEPTH TO WATERTABLE

NOVA SCOTIA

PROPOSED HIGHWAY 107 ALIGNMENT	OTHER ROAD	NSDNR WETLANDS	OPEN WATER
WATERCOURSE	TRAIL/TRACK	WETLAND (TOPOGRAPHIC DATABASE)	APPROXIMATE RIGHT OF WAY STUDY AREA (AS PER NSTIR MAY 2017)
HIGHWAY		FIELD DEFINED WETLANDS (STANTEC/DILLON)	BUFFERED CENTRELINE STUDY AREA (75 M)

DILLON CONSULTING

MAP DRAWING INFORMATION:
DATA PROVIDED BY GeoNova, Halifax Open Data,NSDNR

MAP CREATED BY: SCM
MAP CHECKED BY: KLM
MAP PROJECTION: NAD 1983 UTM Zone 20N

0 125 250 500 750 Metres

N E S W

FINAL

PROJECT: 13-8348

Date: June 2017

Table 1 Habitat Descriptions for the Assessed Wetlands

Strata	Common Name	Scientific Name	13	17	17	17	17	17	20	20	21	21	21	23	23	25	25	25	25	25	25	26	30	32	35	36	39	41	42	43	43	43	44	44	45	48
			Mixed Shrub Swamp	Deciduous Treed Swamp	Low Shrub Bog	Mixed Shrub Swamp	Mixed Treed Swamp	Non-vegetated Shallow Water (Disturbed)	Mixed Treed Swamp	Tall Shrub Swamp	Graminoid Marsh	Mixed Shrub Swamp	Non-vegetated Shallow water (Disturbed)	Forb Marsh	Tall Shrub Swamp	Deciduous Treed / Tall Shrub Swamp	Graminoid Marsh	Mixed Shrub Swamp (1)	Mixed Shrub Swamp (2)	Non-vegetated Shallow Water (Waterbody)	Tall Shrub Swamp	Deciduous Treed Swamp	Deciduous Treed Swamp	Deciduous Treed Swamp	Mixed treed swamp	Mixed Treed Swamp	Mixed Treed Swamp	Deciduous Treed Swamp	Coniferous Treed Swamp	Coniferous Treed Swamp	Deciduous Treed Swamp	Mixed Shrub Swamp	Deciduous Treed Swamp	Mixed Treed Swamp	Mixed Treed Swamp	Mixed Treed Swamp
Trees	Balsam Fir	*Abies balsamea*					30																													
	Red Maple	*Acer rubrum*		35			30																				10									
	Sugar maple	*Acer saccharum*																						30												
	a Serviceberry	*Amelanchier sp.*																						10												
	Yellow Birch	*Betula alleghaniensis*																																		
	Paper Birch	*Betula papyrifera*																																		
	Gray Birch	*Betula populifolia*		10																		2	2													
	White Ash	*Fraxinus americana*																2																		
	American Larch	*Larix laricina*																																		
	White Spruce	*Picea glauca*												5																						
	Black Spruce	*Picea mariana*		2			5									55	3	30	10											3						
	Red Spruce	*Picea rubens*																							10	1			10	15						8
	Eastern White Pine	*Pinus strobus*																																		
	Trembling Aspen	*Populus tremuloides*																							5	3	3		3				8	5	7	7
	Northern Red Oak	*Quercus rubra*																							3		15				10					
Shrubs	Balsam Fir	*Abies balsamea*																							1				1	3					1	2
	Striped Maple	*Acer pensylvanicum*																						3												
	Red Maple	*Acer rubrum*	5																																	
	Speckled Alder	*Alnus incana*		20			5																													
	Green Alder	*Alnus viridis*								2																										
	a Serviceberry	*Amelanchier sp.*																																		
	Bog Rosemary	*Andromeda polifolia*				5																														
	Heart-leaved Birch	*Betula papyrifera*																			20															
	Gray Birch	*Betula populifolia*												40																						
	Leatherleaf	*Chamaedaphne calyculata*	90		60	30																														
	Beaked Hazel	*Corylus cornuta*																																		
	White Ash	*Fraxinus americana*																																		
	Black Huckleberry	*Gaylussacia baccata*																																		
	Bigelow's Huckleberry	*Gaylussacia bigeloviana*																																		
	American Witch-Hazel	*Hamamelis virginiana*																																		
	Common Winterberry	*Ilex verticillata*																																		
	Sheep Laurel	*Kalmia angustifolia*																			8															
	Pale Bog Laurel	*Kalmia polifolia*			2																															
	American Larch	*Larix laricina*			5																															
	Common Labrador Tea	*Ledum groenlandicum*																																		
	Mountain Fly Honeysuckle	*Lonicera villosa*																																		
	Three-leaved False Soloman's Seal	*Maianthemum trifolium*				5																														
	Sweet Gale	*Myrica gale*		20		60																														
	Mountain Holly	*Nemopanthus mucronatus*		40			30							5				1																		
	Black Chokeberry	*Photinia melanocarpa*												15																						
	Chokeberry	*Photinia spp.*							5	2															5				10					10	10	50	5
	White Spruce	*Picea glauca*																							20	<1										
	Black Spruce	*Picea mariana*					10																													
	Northern Red Oak	*Quercus rubra*																																		
	Rhodora	*Rhododendron canadense*	10	20																						7	10		10					10	
	Multiflora Rose	*Rosa multiflora*																				10								10						
	Shining Rose	*Rosa nitida*																																		
	Rose	*Rosa sp.*				15																														
	Bristly Dewberry	*Rubus hispidus*																								1									1	
	Red Raspberry	*Rubus idaeus*																																		
	Ball's Willow	*Salix balli*													5						5	20	25	10												
	Balsam Willow	*Salix pyrifolia*							15	5						10						15	15		60	25	30		20	20	10		5	5	35	35
	Willow	*Salix sp.*																																	5	
	Black Elderberry	*Sambucus nigra ssp. canadensis*								15					5											28										
	White Meadowsweet	*Spiraea alba*	10			5																10	10													
	Northern Poison Oak	*Toxicodendron rydbergii*																																		
	Late Lowbush Blueberry	*Vaccinium angustifolium*	10																																	
	Velvet-leaved Blueberry	*Vaccinium myrtilloides*																																		
	Blueberry	*Vaccinium spp.*																																		
	Northern Wild Raisin	*Viburnum nudum*																							1						1				1	
Herbs	Rough Bent Grass	*Agrostis scabra*																																		
	Wild Sarsaparilla	*Aralia nudicaulis*																													5					
	Common Lady Fern	*Athyrium filix-femina*																			5	3	3	20												
	Northern Shorthusk	*Brachyelytrum septentrionale*																																		
	Bluejoint Reed Grass	*Calamagrostis canadensis*										10		5																						
	Coastal Sedge	*Carex exilis*			30																															
	Northern Long Sedge	*Carex folliculata*																																		
	Slender Sedge	*Carex lasiocarpa*							5																											
	Finely-Nerved Sedge	*Carex leptonervia*							5	5	5					60		80				80	80		95	85	70		85	90		100	95	95	65	90
	Sedges	*Carex spp.*																						1												
	Tussock Sedge	*Carex stricta*				5																	10													
	Three-seeded Sedge	*Carex trisperma*					10																													
	Cladonia Lichen	*Cladonia sp.*																				10		3												
	Goldthread	*Coptis trifolia*																																		
	Bunchberry	*Cornus canadensis*																								7	10		10	10	5		10	3	5	10
	Pink Lady's-Slipper	*Cypripedium acaule*																																		
	Hairy Flat-top White Aster	*Doellingeria umbellata*									30						40		30		25															
	Round-leaved Sundew	*Drosera rotundifolia*																																		
	Spinulose Wood Fern	*Dryopteris carthusiana*												5																						
	Crested Wood Fern	*Dryopteris cristata*																																		
	Hairy Willowherb	*Epilobium hirsutum*																																		
	Field Horsetail	*Equisetum arvense*																																		
	Water Horsetail	*Equisetum fluviatile*																																		
	Variegated Horsetail	*Equisetum variegatum*																				20	20			1				3						
	Tussock Cottongrass	*Eriophorum vaginatum*																				2	2	5												
	Tawny Cottongrass	*Eriophorum virginicum*							15			10						2			5					7	1						3			
	Low Rough Aster	*Eurybia radula*							5	70		5			40	30					35														2	
	Grass-leaved Goldenrod	*Euthamia graminifolia*																										1								
	Rough Bedstraw	*Galium asprellum*																																		
	Dyer's Bedstraw	*Galium tinctorium*																																		
	Canada Manna Grass	*Glyceria canadensis*																																		
	Manna Grass	*Glyceria sp*																															1			
	Stairstep Moss	*Hylocomium splendens*									30																				3	40				
	Spotted Jewelweed	*Impatiens capensis*																					<1	1												
	Harlequin Blue Flag	*Iris versicolor*																				<1	5	15												
	Soft Rush	*Juncus effusus*										10													5		25	8	15	3	20	1	15	15	20	10

Table 1 Habitat Descriptions for the Assessed Wetlands

Strata	Common Name	Scientific Name	13	17	17	17	17	17	20	20	21	21	21	23	23	25	25	25	25	25	25	26	30	32	35	36	39	41	42	43	43	43	44	44	45	48
			Mixed Shrub Swamp	Deciduous Treed Swamp	Low Shrub Bog	Mixed Shrub Swamp	Mixed Treed Swamp	Non-vegetated Shallow Water (Waterbody)	Mixed Treed Swamp	Tall Shrub Swamp	Graminoid Marsh	Mixed Shrub Swamp	Non-vegetated Shallow water (Disturbed)	Forb Marsh	Tall Shrub Swamp	Deciduous Treed / Tall Shrub Swamp	Graminoid Marsh	Mixed Shrub Swamp (1)	Mixed Shrub Swamp (2)	Non-vegetated Shallow Water (Waterbody)	Tall Shrub Swamp	Deciduous Treed Swamp	Deciduous Treed Swamp	Deciduous Treed Swamp	Mixed treed swamp	Mixed Treed Swamp	Mixed Treed Swamp	Deciduous Treed Swamp	Coniferous Treed Swamp	Coniferous Treed Swamp	Deciduous Treed Swamp	Mixed Shrub Swamp	Deciduous Treed Swamp	Mixed Treed Swamp	Mixed Treed Swamp	Mixed Treed Swamp
Ground Vegetation	Rush	*Juncus spp*																																		
	Marsh Seedbox	*Ludwigia palustris*																																	3	
	Swamp Yellow Loosestrife	*Lysimachia terrestris*								10						20									5	15										
	Purple Loosestrife	*Lythrum salicaria*										10													5	3	2	15	18	10	5		12	18		14
	Wild Lily-of-The-Valley	*Maianthemum canadense*					5																													
	Three-leaved False Soloman's Seal	*Maianthemum trifolium*		5																											1					
	Ostrich Fern	*Matteuccia struthiopteris*																							1		1									
	Mnium Moss	*Mnium sp.*																																		
	Misc mosses	*na*																																		
	Misc Byophytes	*na*															15		55																	
	Variegated Pond-lily	*Nuphar lutea*																							20	15		35	15	15		10	35	20	10	18
	Fragrant Water-lily	*Nymphaea odorata*																														3				
	Whorled Wood Aster	*Oclemena acuminata*																																		
	a hybrid White Panicled American-As	*Oclemena x blakei*																																		
	Sensitive Fern	*Onoclea sensibilis*																									15	5	5	5					5	5
	Cinnamon Fern	*Osmunda cinnamomea*																																		
	Interrupted Fern	*Osmunda claytoniana*										10														1					15	60				
	Royal Fern	*Osmunda regalis*		20		10																														
	Common Wood Sorrel	*Oxalis montana*																	3																	
	Feathermoss	*Pleurozium schreberi*																3																		
	Fowl Blue Grass	*Poa palustris*																																		
	Hair-cap Moss	*Polytrichum sp.*																																		
	Pickerelweed	*Pontederia cordata*																																		
	Bracken Fern	*Pteridium aquilinum*																																		
	Plume Moss	*Ptilium crista-castrensis*																																		
	Bristly Dewberry	*Rubus hispidus*																																		
	Dwarf Red Raspberry	*Rubus pubescens*														5		70																		
	Northern Pitcher Plant	*Sarracenia purpurea*			0.5																															
	Common Woolly Bulrush	*Scirpus cyperinus*																												3						
	Small-fruited Bulrush	*Scirpus microcarpus*																									3				5				3	
	Bittersweet Nightshade	*Solanum dulcamara*																																		
	Rough-stemmed Goldenrod	*Solidago rugosa*																							3		1	1								
	Peatmoss	*Sphagnum spp.*		50	95	5	70		10																1	2				1					
	Calico Aster	*Symphyotrichum lateriflorum*							40							35			1			23	25	50	20	25	25	25	10	15	55		45	20	25	20
	New York Aster	*Symphyotrichum novi-belgii*																						4												
	Tall Meadow-Rue	*Thalictrum pubescens*																													1					
	New York Fern	*Thelypteris noveboracensis*																				15	15						1							
	Eastern Marsh Fern	*Thelypteris palustris*																							1	1	2	5	1		1		1			
	Northern Starflower	*Trientalis borealis*																										5					5	1		3
	Narrow-Leaved Cattail	*Typha angustifolia*																				2	2	1												
	Broad-leaved Cattail	*Typha latifolia*							5																3	2	10	2	5	20						2
	a Bladderwort	*Utricularia sp.*																																		
	Large Cranberry	*Vaccinium macrocarpon*							5							2										15	5	5	20	25				30	15	25
	Small Cranberry	*Vaccinium oxycoccos*																				2	2								1					
	Marsh Blue Violet	*Viola cucullata*														<1						1	1						2	<1						
	Small White Violet	*Viola macloskeyi*																																		
	a Violet	*Viola sp.*																																		

Table 1 Habitat Descriptions for the Assessed Wetlands

Strata	Common Name	Scientific Name	83	83	85	90	94	95	97	97	99	100	102	104	107	109	110	111	113	114	115	115	116	117	118	118	118	118	119	120	120	120	122	125	125
			Graminoid Marsh	Mixed Treed Swamp	Mixed Treed Swamp	Mixed Treed Swamp	Deciduous Treed Swamp	Mixed Treed Swamp	Mixed Treed Swamp	Non-vegetated Shallow Water (Waterbody)	Mixed Treed Swamp	Mixed Treed / Tall Shrub Swamp	Mixed Treed Swamp	Mixed Treed Swamp	Deciduous Treed Swamp	Deciduous Treed Swamp	Deciduous Treed Swamp	Deciduous Treed Swamp	Deciduous Treed Swamp	Deciduous Treed Swamp (Immature)	Mixed Treed Swamp	Tall Shrub Swamp	Mixed Swamp	Mixed Treed Swamp	Coniferous Treed Swamp	Floating-leaved Aquatic Shallow Water (Waterbody)	Graminoid Marsh	Mixed Treed Swamp	Tall Shrub Swamp	Deciduous Treed Swamp	Deciduous Treed Swamp	Mixed Treed Swamp	Non-vegetated Shallow Water (Waterbody)	Tall Shrub Swamp	Graminoid Marsh	Non-vegetated Shallow water (Disturbed)
Trees	Balsam Fir	*Abies balsamea*																																	
	Red Maple	*Acer rubrum*																																	
	Sugar maple	*Acer saccharum*																	1				15	40					10						
	a Serviceberry	*Amelanchier sp.*																																	
	Yellow Birch	*Betula alleghaniensis*																		30		10						30			8	25			
	Paper Birch	*Betula papyrifera*																																	
	Gray Birch	*Betula populifolia*																																	
	White Ash	*Fraxinus americana*																																	
	American Larch	*Larix laricina*																					2												
	White Spruce	*Picea glauca*																																	
	Black Spruce	*Picea mariana*																				15			20			10	40		10	30			
	Red Spruce	*Picea rubens*		10	20						5	5		20		10					5			2	25										
	Eastern White Pine	*Pinus strobus*																																	
	Trembling Aspen	*Populus tremuloides*																																	
	Northern Red Oak	*Quercus rubra*					2	5								5																			
Shrubs	Balsam Fir	*Abies balsamea*																																	
	Striped Maple	*Acer pensylvanicum*														5			5					5									4		
	Red Maple	*Acer rubrum*																																	
	Speckled Alder	*Alnus incana*																	2																
	Green Alder	*Alnus viridis*																																	
	a Serviceberry	*Amelanchier sp.*																																	
	Bog Rosemary	*Andromeda polifolia*																																	
	Heart-leaved Birch	*Betula papyrifera*																																	
	Gray Birch	*Betula populifolia*																																	
	Leatherleaf	*Chamaedaphne calyculata*																																	
	Beaked Hazel	*Corylus cornuta*																																	
	White Ash	*Fraxinus americana*																										3							
	Black Huckleberry	*Gaylussacia baccata*																																	
	Bigelow's Huckleberry	*Gaylussacia bigeloviana*																																	
	American Witch-Hazel	*Hamamelis virginiana*																																	
	Common Winterberry	*Ilex verticillata*																															30		
	Sheep Laurel	*Kalmia angustifolia*											5																						
	Pale Bog Laurel	*Kalmia polifolia*																																	
	American Larch	*Larix laricina*																							15							5			
	Common Labrador Tea	*Ledum groenlandicum*																				5													
	Mountain Fly Honeysuckle	*Lonicera villosa*	30																								5								
	Three-leaved False Soloman's Seal	*Maianthemum trifolium*																																	
	Sweet Gale	*Myrica gale*																																	
	Mountain Holly	*Nemopanthus mucronatus*																							2										
	Black Chokeberry	*Photinia melanocarpa*																																	
	Chokeberry	*Photinia spp.*					3								5		5	5			1														
	White Spruce	*Picea glauca*		2									5	5						25	15	7			2			2	1						
	Black Spruce	*Picea mariana*																												10					
	Northern Red Oak	*Quercus rubra*																																	
	Rhodora	*Rhododendron canadense*					10																		2										
	Multiflora Rose	*Rosa multiflora*										20																							
	Shining Rose	*Rosa nitida*																									8						1		
	Rose	*Rosa sp.*							0.5																		4								
	Bristly Dewberry	*Rubus hispidus*					3								5				4																
	Red Raspberry	*Rubus idaeus*																																	
	Ball's Willow	*Salix balli*																			1	2								5					
	Balsam Willow	*Salix pyrifolia*						40	10		2	60	30	15		5	5	15		1	35							5	2			8			
	Willow	*Salix sp.*													20								20												
	Black Elderberry	*Sambucus nigra ssp. canaderis*																													60				
	White Meadowsweet	*Spiraea alba*																																	
	Northern Poison Oak	*Toxicodendron rydbergii*																																	
	Late Lowbush Blueberry	*Vaccinium angustifolium*																																	
	Velvet-leaved Blueberry	*Vaccinium myrtilloides*															5																		
	Blueberry	*Vaccinium spp.*																									5						1		
	Northern Wild Raisin	*Viburnum nudum*																																	
	Rough Bent Grass	*Agrostis scabra*																																	
	Wild Sarsaparilla	*Aralia nudicaulis*					4																												
	Common Lady Fern	*Athyrium filix-femina*																												20					
	Northern Shorthusk	*Brachyelytrum septentrionale*			5																														
	Bluejoint Reed Grass	*Calamagrostis canadensis*	35																														2		
	Coastal Sedge	*Carex exilis*																																	
	Northern Long Sedge	*Carex folliculata*																															10		
	Slender Sedge	*Carex lasiocarpa*																					4	10						5					
	Finely-Nerved Sedge	*Carex leptonervia*	80	70	80	80	15	80	65		90	50	75	70	60	50	20	65	60	50	80	80	25					60	1						
	Sedges	*Carex spp.*																																	
	Tussock Sedge	*Carex stricta*																																	
	Three-seeded Sedge	*Carex trisperma*																											5	20	5	5			
	Cladonia Lichen	*Cladonia sp.*																																	
	Goldthread	*Coptis trifolia*																		15		4													
	Bunchberry	*Cornus canadensis*					4		2			7																							
	Pink Lady's-Slipper	*Cypripedium acaule*																									5								
	Hairy Flat-top White Aster	*Doellingeria umbellata*																									15						5	30	
	Round-leaved Sundew	*Drosera rotundifolia*																																	
	Spinulose Wood Fern	*Dryopteris carthusiana*																																	
	Crested Wood Fern	*Dryopteris cristata*	0.5																																
	Hairy Willowherb	*Epilobium hirsutum*																					0.5												
	Field Horsetail	*Equisetum arvense*																					10												
	Water Horsetail	*Equisetum fluviatile*																																	
	Variegated Horsetail	*Equisetum variegatum*										1	5	5							10		2												
	Tussock Cottongrass	*Eriophorum vaginatum*																																	
	Tawny Cottongrass	*Eriophorum virginicum*										2		10	10						10	5		1					5			10			
	Low Rough Aster	*Eurybia radula*					3							10	10	15	15		10	10	15	25	20	1				15	25	35	20	40		30		
	Grass-leaved Goldenrod	*Euthamia graminifolia*					5																												
	Rough Bedstraw	*Galium asprellum*																													2				
	Dyer's Bedstraw	*Galium tinctorium*																																	
	Canada Manna Grass	*Glyceria canadensis*																																	
	Manna Grass	*Glyceria sp*									5									15		20										5			
	Stairstep Moss	*Hylocomium splendens*				10																					2					2			
	Spotted Jewelweed	*Impatiens capensis*																	1																
	Harlequin Blue Flag	*Iris versicolor*																	5				5												
	Soft Rush	*Juncus effusus*		20		25	45	25	30							7				2				2											

Table 1 Habitat Descriptions for the Assessed Wetlands

Strata	Common Name	Scientific Name	83	83	85	90	94	95	97	97	99	100	102	104	107	109	110	111	113	114	115	115	116	117	118	118	118	118	119	120	120	120	122	125	125
			Graminoid Marsh	Mixed Treed Swamp	Mixed Treed Swamp	Mixed Treed Swamp	Deciduous Treed Swamp	Mixed Treed Swamp	Mixed Treed Swamp	Non-vegetated Shallow Water (Waterbody)	Mixed Treed Swamp	Mixed Treed / Tall Shrub Swamp	Mixed Treed Swamp	Mixed Treed Swamp	Deciduous Treed Swamp	Deciduous Treed Swamp	Deciduous Treed Swamp	Deciduous Treed Swamp	Deciduous Treed Swamp	Deciduous Treed Swamp	Deciduous Treed Swamp (Immature)	Mixed Treed Swamp	Tall Shrub Swamp	Mixed Swamp	Mixed Treed Swamp	Coniferous Treed Swamp	Floating-leaved Aquatic Shallow Water (Waterbody)	Graminoid Marsh	Mixed Treed Swamp	Tall Shrub Swamp	Deciduous Treed Swamp	Deciduous Treed Swamp	Mixed Treed Swamp	Non-vegetated Shallow Water (Waterbody)	Tall Shrub Swamp	Graminoid Marsh	Non-vegetated Shallow water (Disturbed)
Ground Vegetation	Rush	*Juncus spp*																																	
	Marsh Seedbox	*Ludwigia palustris*										3																							
	Swamp Yellow Loosestrife	*Lysimachia terrestris*					1	7				30	60	10	5		20	60		15	5								7	15	7			2		
	Purple Loosestrife	*Lythrum salicaria*		10		10	4					3													2				2					1		
	Wild Lily-of-The-Valley	*Maianthemum canadense*																																	
	Three-leaved False Soloman's Seal	*Maianthemum trifolium*																																	
	Ostrich Fern	*Matteuccia struthiopteris*																																	
	Mnium Moss	*Mnium sp.*																															1		
	Misc mosses	*na*																																	
	Misc Byophytes	*na*																				2						10				5	5		
	Variegated Pond-lily	*Nuphar lutea*			60	15			30		50	1						20			1	2							5			2			
	Fragrant Water-lily	*Nymphaea odorata*																																	
	Whorled Wood Aster	*Oclemena acuminata*							15																										
	a hybrid White Panicled American-As	*Oclemena x blakei*																					2												
	Sensitive Fern	*Onoclea sensibilis*										1	10	5	5					1		1								2	7				
	Cinnamon Fern	*Osmunda cinnamomea*																																	
	Interrupted Fern	*Osmunda claytoniana*		15	15	15														2								2			1			
	Royal Fern	*Osmunda regalis*																															8		
	Common Wood Sorrel	*Oxalis montana*																																	
	Feathermoss	*Pleurozium schreberi*																																	
	Fowl Blue Grass	*Poa palustris*																															1		
	Hair-cap Moss	*Polytrichum sp.*																						1											
	Pickerelweed	*Pontederia cordata*																																	
	Bracken Fern	*Pteridium aquilinum*																																	
	Plume Moss	*Ptilium crista-castrensis*																																	
	Bristly Dewberry	*Rubus hispidus*																																	
	Dwarf Red Raspberry	*Rubus pubescens*																5															3		
	Northern Pitcher Plant	*Sarracenia purpurea*																		1															
	Common Woolly Bulrush	*Scirpus cyperinus*																																	
	Small-fruited Bulrush	*Scirpus microcarpus*					5					3																							
	Bittersweet Nightshade	*Solanum dulcamara*																																	
	Rough-stemmed Goldenrod	*Solidago rugosa*					3	7	20			10			15	10	25	50		2				5	1			5					1		
	Peatmoss	*Sphagnum spp.*												15	10						5			5						0.5					
	Calico Aster	*Symphyotrichum lateriflorum*		25	25	25	43	30	15			10	65	30	60	60	10	35		1	15	<1	25	25	5			20	5	40	35	25		10		
	New York Aster	*Symphyotrichum novi-belgii*																																	
	Tall Meadow-Rue	*Thalictrum pubescens*																																	
	New York Fern	*Thelypteris noveboracensis*												5							12														
	Eastern Marsh Fern	*Thelypteris palustris*					3				10	7							2																
	Northern Starflower	*Trientalis borealis*			10		10										5	5													5				
	Narrow-Leaved Cattail	*Typha angustifolia*																	20				30							60					
	Broad-leaved Cattail	*Typha latifolia*		15		25			20																5			15				5			
	a Bladderwort	*Utricularia sp.*																					10	5											
	Large Cranberry	*Vaccinium macrocarpon*		20	10	20		30	20		10		15	30	5			5		<1	15				40			5				15			
	Small Cranberry	*Vaccinium oxycoccos*										5									20														
	Marsh Blue Violet	*Viola cucullata*																		<1															
	Small White Violet	*Viola macloskeyi*															5																		
	a Violet	*Viola sp.*					1																												

Table 1 Habitat Descriptions for the Assessed Wetlands

Strata	Common Name	Scientific Name	131 Forb Marsh	131 Graminoid Marsh	131 Tall Shrub Swamp	132 Tall Shrub Swamp	133 Mixed Treed Swamp	134 Deciduous Treed Swamp	136 Non-vegetated Shallow Water (Vernal pool)	139 Mixed Treed Swamp	141 Treed Bog	144 Tall Shrub Swamp	149 Graminoid Shallow Water (Vernal pool)	150 Mixed Treed Swamp	151 Graminoid Marsh	151 Tall Shrub Swamp
Trees	Balsam Fir	*Abies balsamea*											5			
	Red Maple	*Acer rubrum*														
	Sugar maple	*Acer saccharum*														
	a Serviceberry	*Amelanchier sp.*														
	Yellow Birch	*Betula alleghaniensis*	2		3										65	5
	Paper Birch	*Betula papyrifera*														
	Gray Birch	*Betula populifolia*														
	White Ash	*Fraxinus americana*														
	American Larch	*Larix laricina*														
	White Spruce	*Picea glauca*														
	Black Spruce	*Picea mariana*	5		5											
	Red Spruce	*Picea rubens*					10				3			10		
	Eastern White Pine	*Pinus strobus*														
	Trembling Aspen	*Populus tremuloides*					5	15								
	Northern Red Oak	*Quercus rubra*					5							1		
Shrubs	Balsam Fir	*Abies balsamea*														
	Striped Maple	*Acer pensylvanicum*								5		25				
	Red Maple	*Acer rubrum*														
	Speckled Alder	*Alnus incana*														
	Green Alder	*Alnus viridis*														
	a Serviceberry	*Amelanchier sp.*	15		10											
	Bog Rosemary	*Andromeda polifolia*			3											
	Heart-leaved Birch	*Betula papyrifera*	40		10											
	Gray Birch	*Betula populifolia*														
	Leatherleaf	*Chamaedaphne calyculata*														
	Beaked Hazel	*Corylus cornuta*														
	White Ash	*Fraxinus americana*														
	Black Huckleberry	*Gaylussacia baccata*														2
	Bigelow's Huckleberry	*Gaylussacia bigeloviana*														
	American Witch-Hazel	*Hamamelis virginiana*		3												
	Common Winterberry	*Ilex verticillata*														
	Sheep Laurel	*Kalmia angustifolia*			8											
	Pale Bog Laurel	*Kalmia polifolia*														
	American Larch	*Larix laricina*														
	Common Labrador Tea	*Ledum groenlandicum*			2	10										
	Mountain Fly Honeysuckle	*Lonicera villosa*			2										5	
	Three-leaved False Soloman's Seal	*Maianthemum trifolium*													10	
	Sweet Gale	*Myrica gale*														
	Mountain Holly	*Nemopanthus mucronatus*														
	Black Chokeberry	*Photinia melanocarpa*	3													
	Chokeberry	*Photinia spp.*														
	White Spruce	*Picea glauca*												8		
	Black Spruce	*Picea mariana*														
	Northern Red Oak	*Quercus rubra*														
	Rhodora	*Rhododendron canadense*							10							
	Multiflora Rose	*Rosa multiflora*												10		
	Shining Rose	*Rosa nitida*														
	Rose	*Rosa sp.*														
	Bristly Dewberry	*Rubus hispidus*						10		5				2		3
	Red Raspberry	*Rubus idaeus*														
	Ball's Willow	*Salix balliii*	3	2	20										5	15
	Balsam Willow	*Salix pyrifolia*			3		35			40				65		5
	Willow	*Salix sp.*														
	Black Elderberry	*Sambucus nigra ssp. canadens*														
	White Meadowsweet	*Spiraea alba*														
	Northern Poison Oak	*Toxicodendron rydbergii*														
	Late Lowbush Blueberry	*Vaccinium angustifolium*			5											
	Velvet-leaved Blueberry	*Vaccinium myrtilloides*							1		15					
	Blueberry	*Vaccinium spp.*														
	Northern Wild Raisin	*Viburnum nudum*														
	Rough Bent Grass	*Agrostis scabra*														
	Wild Sarsaparilla	*Aralia nudicaulis*								20						10
	Common Lady Fern	*Athyrium filix-femina*														
	Northern Shorthusk	*Brachyelytrum septentrionale*														
	Bluejoint Reed Grass	*Calamagrostis canadensis*				40						10	20		20	10
	Coastal Sedge	*Carex exilis*	5													
	Northern Long Sedge	*Carex folliculata*			2											
	Slender Sedge	*Carex lasiocarpa*										30			1	
	Finely-Nerved Sedge	*Carex leptonervia*					65	70	5	70	85	50		85	47.5	25
	Sedges	*Carex spp.*														
	Tussock Sedge	*Carex stricta*				5							3		2	3
	Three-seeded Sedge	*Carex trisperma*														
	Cladonia Lichen	*Cladonia sp.*														
	Goldthread	*Coptis trifolia*													3	
	Bunchberry	*Cornus canadensis*														
	Pink Lady's-Slipper	*Cypripedium acaule*														
	Hairy Flat-top White Aster	*Doellingeria umbellata*	25	30		20						3	3		22.5	
	Round-leaved Sundew	*Drosera rotundifolia*														
	Spinulose Wood Fern	*Dryopteris carthusiana*														
	Crested Wood Fern	*Dryopteris cristata*														
	Hairy Willowherb	*Epilobium hirsutum*														
	Field Horsetail	*Equisetum arvense*														
	Water Horsetail	*Equisetum fluviatile*										20				
	Variegated Horsetail	*Equisetum variegatum*					5							5		1
	Tussock Cottongrass	*Eriophorum vaginatum*														
	Tawny Cottongrass	*Eriophorum virginicum*				5							5	10		10
	Low Rough Aster	*Eurybia radula*	3		28	5		5		20		15			5	10
	Grass-leaved Goldenrod	*Euthamia graminifolia*														20
	Rough Bedstraw	*Galium asprellum*														
	Dyer's Bedstraw	*Galium tinctorium*														
	Canada Manna Grass	*Glyceria canadensis*										10				5
	Manna Grass	*Glyceria sp*				5					5		2			20
	Stairstep Moss	*Hylocomium splendens*			1						70					
	Spotted Jewelweed	*Impatiens capensis*														
	Harlequin Blue Flag	*Iris versicolor*												2		
	Soft Rush	*Juncus effusus*											8			

Table 1 Habitat Descriptions for the Assessed Wetlands

Strata	Common Name	Scientific Name	131 Forb Marsh	131 Graminoid Marsh	131 Tall Shrub Swamp	132 Tall Shrub Swamp	133 Mixed Treed Swamp	134 Deciduous Treed Swamp	136 Non-vegetated Shallow Water (Vernal pool)	139 Mixed Treed Swamp	141 Treed Bog	144 Tall Shrub Swamp	149 Graminoid Shallow Water (Vernal pool)	150 Mixed Treed Swamp	151 Graminoid Marsh	151 Tall Shrub Swamp
Ground Vegetation	Rush	*Juncus spp*														
	Marsh Seedbox	*Ludwigia palustris*														
	Swamp Yellow Loosestrife	*Lysimachia terrestris*												15		3
	Purple Loosestrife	*Lythrum salicaria*						5					5	2		
	Wild Lily-of-The-Valley	*Maianthemum canadense*														
	Three-leaved False Soloman's Seal	*Maianthemum trifolium*									10					
	Ostrich Fern	*Matteuccia struthiopteris*														
	Mnium Moss	*Mnium sp.*														
	Misc mosses	*na*														
	Misc Byophytes	*na*														
	Variegated Pond-lily	*Nuphar lutea*					5			15						
	Fragrant Water-lily	*Nymphaea odorata*														
	Whorled Wood Aster	*Oclemena acuminata*														
	a hybrid White Panicled American-As	*Oclemena x blakei*														1
	Sensitive Fern	*Onoclea sensibilis*					10	30		10	10					2
	Cinnamon Fern	*Osmunda cinnamomea*														
	Interrupted Fern	*Osmunda claytoniana*			1											
	Royal Fern	*Osmunda regalis*														
	Common Wood Sorrel	*Oxalis montana*														
	Feathermoss	*Pleurozium schreberi*														
	Fowl Blue Grass	*Poa palustris*														
	Hair-cap Moss	*Polytrichum sp.*										5				
	Pickerelweed	*Pontederia cordata*			10											5
	Bracken Fern	*Pteridium aquilinum*		1	2											
	Plume Moss	*Ptilium crista-castrensis*	5			5			0.5							
	Bristly Dewberry	*Rubus hispidus*			1											
	Dwarf Red Raspberry	*Rubus pubescens*			15				0.5						3	
	Northern Pitcher Plant	*Sarracenia purpurea*														
	Common Woolly Bulrush	*Scirpus cyperinus*									15					
	Small-fruited Bulrush	*Scirpus microcarpus*														
	Bittersweet Nightshade	*Solanum dulcamara*											5			
	Rough-stemmed Goldenrod	*Solidago rugosa*				5	5	5								
	Peatmoss	*Sphagnum spp.*					10			10				4		
	Calico Aster	*Symphyotrichum lateriflorum*			3	5	50	50		40				20		
	New York Aster	*Symphyotrichum novi-belgii*														
	Tall Meadow-Rue	*Thalictrum pubescens*														
	New York Fern	*Thelypteris noveboracensis*														
	Eastern Marsh Fern	*Thelypteris palustris*						20		10						
	Northern Starflower	*Trientalis borealis*														
	Narrow-Leaved Cattail	*Typha angustifolia*												<1		
	Broad-leaved Cattail	*Typha latifolia*									10					
	a Bladderwort	*Utricularia sp.*														
	Large Cranberry	*Vaccinium macrocarpon*					10	10		10	5			5		
	Small Cranberry	*Vaccinium oxycoccos*												10		
	Marsh Blue Violet	*Viola cucullata*					2									
	Small White Violet	*Viola macloskeyi*			2											
	a Violet	*Viola sp.*														

Table 2 Plants Recorded within Wetlands of the Study Area and Information on their Population Status

Common Name	Scientific Name	SARA / COSEWIC Rank	NS ESA Rank	NSDNR Rank	AC CDC Rank	4	5	6	7	9	10	11	12	13	17	19	20	21	23	24	25	26	27	28	30	32	33
Balsam Fir	*Abies balsamea*	na	na	Secure	S5		P										P				P	P		P	P		
Striped Maple	*Acer pensylvanicum*	na	na	Secure	S5																P	P		P	P	P	
Norway Maple	*Acer platanoides*	na	na	Exotic	SNA														P								
Red Maple	*Acer rubrum*	na	na	Secure	S5									P	P	P		P	P		P	P			P	P	
Red Maple	*Acer rubrum var. rubrum*	na	na	Secure	S5															P							
Sugar Maple	*Acer saccharum*	na	na	Secure	S5																				P	P	
Mountain Maple	*Acer spicatum*	na	na	Secure	S5																					P	
Common Yarrow	*Achillea millefolium*	na	na	Secure	S5																						
Sneezeweed	*Achillea ptarmica*	na	na	Exotic	SNA																						
Goutweed	*Aegopodium podagraria*	na	na	Exotic	SNA																						
Nova Scotia Agalinis	*Agalinis neoscotica*	na	na	Secure	S3														P								
Slender Agalinis	*Agalinis tenuifolia*	na	na	Exotic	SNA																						
Colonial Bent Grass	*Agrostis capillaris*	na	na	Exotic	SNA																						
Upland Bent Grass	*Agrostis perennans*	na	na	Secure	S4S5																						
Rough Bent Grass	*Agrostis scabra*	na	na	Secure	S5																						
Creeping Bent Grass	*Agrostis stolonifera*	na	na	Secure	S5														P								
Creeping Bugleweed	*Ajuga reptans*	na	na	Exotic	SNA																						
Northern Water Plantain	*Alisma triviale*	na	na	Secure	S5													P	P		P						
Speckled Alder	*Alnus incana*	na	na	Secure	S5										P	P			P	P	P						
Green Alder	*Alnus viridis*	na	na	Secure	S5												P		P								
Water Foxtail	*Alopecurus geniculatus*	na	na	Exotic	SNA																						
Meadow Foxtail	*Alopecurus pratensis*	na	na	Exotic	SNA																						
Perennial Ragweed	*Ambrosia psilostachya*	na	na	Exotic	SNA																						
Canada Serviceberry	*Amelanchier canadensis*	na	na	Secure	S4?																						
Inland Serviceberry	*Amelanchier interior*	na	na	Secure	S4S5																P						
Smooth Serviceberry	*Amelanchier laevis*	na	na	Secure	S5																						
a Serviceberry	*Amelanchier sp.*	na	na	na	na									P		P				P							
Running Serviceberry	*Amelanchier x intermedia*	na	na	Not Assessed	SNA																P						
Pearly Everlasting	*Anaphalis margaritacea*	na	na	Secure	S5		P																				
Bog Rosemary	*Andromeda polifolia*	na	na	Secure	S5										P												
Howell's Pussytoes	*Antennaria howellii ssp. neodioica*	na	na	Secure	S5																						
Large Sweet Vernal Grass	*Anthoxanthum odoratum*	na	na	Exotic	SNA																						
Spreading Dogbane	*Apocynum androsaemifolium*	na	na	Secure	S5																						
Bristly Sarsaparilla	*Aralia hispida*	na	na	Secure	S5																						
Wild Sarsaparilla	*Aralia nudicaulis*	na	na	Secure	S5										P					P	P	P		P	P		
an Aster	*Aster sp.*	na	na	na	na																P						
Common Lady Fern	*Athyrium filix-femina*	na	na	Secure	S5										P						P	P			P	P	
Yellow Birch	*Betula alleghaniensis*	na	na	Secure	S5											P					P	P		P		P	
Paper Birch	*Betula papyrifera*	na	na	Secure	S5										P		P								P		
Heart-leaved Birch	*Betula papyrifera var. cordifolia*	na	na	Secure	S5										P						P						
Gray Birch	*Betula populifolia*	na	na	Secure	S5									P	P	P	P	P	P		P						
a hybrid Birch [papyrifera X populifolia]	*Betula x caerulea*	na	na	Not Assessed	SNA																						
Devil's Beggarticks	*Bidens frondosa*	na	na	Secure	S5																P						
a Beggartick	*Bidens sp.*	na	na	na	na												P										
Northern Shorthusk	*Brachyelytrum septentrionale*	na	na	Secure	S5																P	P		P	P	P	
Fringed Brome	*Bromus ciliatus*	na	na	Secure	S5																						
Bluejoint Reed Grass	*Calamagrostis canadensis*	na	na	Secure	S5	P	P								P		P	P		P	P				P	P	
Pickering's Reed Grass	*Calamagrostis pickeringii*	na	na	Secure	S4S5														P								
White-tinged Sedge	*Carex albicans*	na	na	Secure	S4																						
White-tinged Sedge	*Carex albicans var. emmonsii*	na	na	Secure	S4																						
Water Sedge	*Carex aquatilis*	na	na	Secure	S5																P						
Drooping Woodland Sedge	*Carex arctata*	na	na	Secure	S5																						
Atlantic Sedge	*Carex atlantica*	na	na	Secure	S4										P												
Brownish Sedge	*Carex brunnescens*	na	na	Secure	S5															P							
Silvery Sedge	*Carex canescens*	na	na	Secure	S5										P		P										
Fibrous-Root Sedge	*Carex communis*	na	na	Secure	S5																						
Fringed Sedge	*Carex crinita*	na	na	Secure	S5																						
White-edged Sedge	*Carex debilis*	na	na	Secure	S5																P				P	P	
Two-seeded Sedge	*Carex disperma*	na	na	Secure	S5																						
Star Sedge	*Carex echinata*	na	na	Secure	S5										P						P				P		
Coastal Sedge	*Carex exilis*	na	na	Secure	S4										P												
Yellow Sedge	*Carex flava*	na	na	Secure	S5														P								
Hay Sedge	*Carex foenea*	na	na	Secure	S3?																						
Northern Long Sedge	*Carex folliculata*	na	na	Secure	S5										P						P	P			P		
Nodding Sedge	*Carex gynandra*	na	na	Secure	S5														P		P	P			P	P	
Bladder Sedge	*Carex intumescens*	na	na	Secure	S5																						
Slender Sedge	*Carex lasiocarpa*	na	na	Secure	S5																P						
Lenticular Sedge	*Carex lenticularis*	na	na	Secure	S4														P								

Table 2 Plants Recorded within Wetlands of the Study Area and Information on their Population Status

Common Name	Scientific Name	SARA / COSEWIC Rank	NS ESA Rank	NSDNR Rank	AC CDC Rank	4	5	6	7	9	10	11	12	13	17	19	20	21	23	24	25	26	27	28	30	32	33
Bristly-stalked Sedge	*Carex leptalea*	na	na	Secure	S5										P		P			P	P						
Finely-Nerved Sedge	*Carex leptonervia*	na	na	Secure	S5																						
Sallow Sedge	*Carex lurida*	na	na	Secure	S5														P								
Boreal Bog Sedge	*Carex magellanica*	na	na	Secure	S5																						
Boreal Bog Sedge	*Carex magellanica ssp. irrigua*	na	na	Secure	S5																						
Smooth Black Sedge	*Carex nigra*	na	na	Secure	S5										P				P								
New England Sedge	*Carex novae-angliae*	na	na	Secure	S5																				P		
Cyperuslike Sedge	*Carex pseudocyperus*	na	na	Secure	S4S5																P						
Rough Sedge	*Carex scabrata*	na	na	Secure	S5										P												
Broom Sedge	*Carex scoparia*	na	na	Secure	S5																						
a Sedge	*Carex sp.*	na	na	na	na																P						
Awl-fruited Sedge	*Carex stipata*	na	na	Secure	S5																P						
Tussock Sedge	*Carex stricta*	na	na	Secure	S5										P		P				P						
Deep Green Sedge	*Carex tonsa*	na	na	Secure	S5																						
Three-seeded Sedge	*Carex trisperma*	na	na	Secure	S5										P												
Umbellate Sedge	*Carex umbellata*	na	na	Secure	S4																						
Greenish Sedge	*Carex viridula*	na	na	Secure	S4														P								
Black Knapweed	*Centaurea nigra*	na	na	Exotic	SNA																						
Common Chickweed	*Cerastium fontanum*	na	na	Exotic	SNA																						
Leatherleaf	*Chamaedaphne calyculata*	na	na	Secure	S5									P		P	P	P			P						
Fireweed	*Chamerion angustifolium*	na	na	Secure	S5																						
White Turtlehead	*Chelone glabra*	na	na	Secure	S5		P								P						P						
White Goosefoot	*Chenopodium album*	na	na	Exotic	SNA																						
Spotted Water-Hemlock	*Cicuta maculata*	na	na	Secure	S5																						
Small Enchanter's Nightshade	*Circaea alpina*	na	na	Secure	S5																						
Bull Thistle	*Cirsium vulgare*	na	na	Exotic	SNA								P				P										
Smooth Twigrush	*Cladium mariscoides*	na	na	Secure	S5														P								
Virginia Clematis	*Clematis virginiana*	na	na	Secure	S5																P						
Yellow Bluebead Lily	*Clintonia borealis*	na	na	Secure	S5										P						P						
Sweet-fern	*Comptonia peregrina*	na	na	Secure	S5																						
Field Bindweed	*Convolvulus arvensis*	na	na	Exotic	SNA												P										
Canada Horseweed	*Conyza canadensis*	na	na	Secure	S5																						
Goldthread	*Coptis trifolia*	na	na	Secure	S5										P					P	P				P		
Early Coralroot	*Corallorhiza trifida*	na	na	Secure	S3																						
Broom Crowberry	*Corema conradii*	na	na	Secure	S4																						
Alternate-leaved Dogwood	*Cornus alternifolia*	na	na	Secure	S5																						
Bunchberry	*Cornus canadensis*	na	na	Secure	S5										P		P								P		
Red Osier Dogwood	*Cornus sericea*	na	na	Secure	S5																						
Beaked Hazel	*Corylus cornuta*	na	na	Secure	S5										P			P		P	P	P		P	P	P	
Fireberry Hawthorn	*Crataegus chrysocarpa*	na	na	Secure	S4S5														P		P						
Big-Fruit Hawthorn	*Crataegus macrosperma*	na	na	Secure	S4?																						
a Hawthorn	*Crataegus sp.*	na	na	na	na																						
Fleshy Hawthorn	*Crataegus succulenta*	na	na	Undetermined	SNR																P						
a Hawthorne	*Crateagus sp.*	na	na	na	na																						
Narrow-leaved Hawksbeard	*Crepis tectorum*	na	na	Exotic	SNA																						
Pink Lady's-Slipper	*Cypripedium acaule*	na	na	Secure	S5									P	P												
Orchard Grass	*Dactylis glomerata*	na	na	Exotic	SNA																						
Poverty Oat Grass	*Danthonia spicata*	na	na	Secure	S5																						
Queen Anne's Lace	*Daucus carota*	na	na	Exotic	SNA																						
Eastern Hay-Scented Fern	*Dennstaedtia punctilobula*	na	na	Secure	S5																						
Deptford Pink	*Dianthus armeria*	na	na	Exotic	SNA																						
Woolly Panic Grass	*Dichanthelium acuminatum*	na	na	Secure	S5																						
Northern Panic Grass	*Dichanthelium boreale*	na	na	Secure	S5																						
Starved Panic Grass	*Dichanthelium depauperatum*	na	na	Secure	S4S5																						
Northern Bush Honeysuckle	*Diervilla lonicera*	na	na	Secure	S5										P												
Hairy Crab Grass	*Digitaria sanguinalis*	na	na	Exotic	SNA																						
False Yellowhead	*Dittrichia viscosa*	na	na	na	na					P			P														
Hairy Flat-top White Aster	*Doellingeria umbellata*	na	na	Secure	S5																P	P			P	P	
Spoon-Leaved Sundew	*Drosera intermedia*	na	na	Secure	S5										P												
Round-leaved Sundew	*Drosera rotundifolia*	na	na	Secure	S5										P												
Mountain Wood Fern	*Dryopteris campyloptera*	na	na	Secure	S5																P						
Spinulose Wood Fern	*Dryopteris carthusiana*	na	na	Secure	S5															P	P				P		
Crested Wood Fern	*Dryopteris cristata*	na	na	Secure	S5	P											P			P	P						
Evergreen Wood Fern	*Dryopteris intermedia*	na	na	Secure	S5																						
Marginal Wood Fern	*Dryopteris marginalis*	na	na	Secure	S5																P						
a Hybrid Wood-fern	*Dryopteris x boottii*	na	na	Not Assessed	SNA																P						
a Hybrid Wood-fern	*Dryopteris x triploidea*	na	na	Not Assessed	SNA																P						
Three-Way Sedge	*Dulichium arundinaceum*	na	na	Secure	S5										P												

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Needle Spikerush	*Eleocharis acicularis*	na	na	Secure	S5										P												
Blunt Spikerush	*Eleocharis obtusa*	na	na	Secure	S5													P									
a Spikerush	*Eleocharis sp.*	na	na	na	na														P								
Slender Spikerush	*Eleocharis tenuis*	na	na	Secure	S5														P								
Black Crowberry	*Empetrum nigrum*	na	na	Secure	S5										P							P					
Trailing Arbutus	*Epigaea repens*	na	na	Secure	S5																						
Northern Willowherb	*Epilobium ciliatum*	na	na	Secure	S5										P		P	P									
Hairy Willowherb	*Epilobium hirsutum*	na	na	Exotic	SNA																						
Bog Willowherb	*Epilobium leptophyllum*	na	na	Secure	S5																						
Marsh Willowherb	*Epilobium palustre*	na	na	Secure	S5																						
Willow-Herb	*Epilobium sp.*	na	na	na	na																						
Field Horsetail	*Equisetum arvense*	na	na	Secure	S5										P				P		P						
Water Horsetail	*Equisetum fluviatile*	na	na	Secure	S5														P								
Woodland Horsetail	*Equisetum sylvaticum*	na	na	Secure	S5																	P					
Variegated Horsetail	*Equisetum variegatum*	na	na	Secure	S3														P								
a Hybrid Horsetail	*Equisetum x litorale*	na	na	Not Assessed	SNA																P						
Eastern Burnweed	*Erechtites hieraciifolia*	na	na	Secure	S5																						
Annual Fleabane	*Erigeron annuus*	na	na	Secure	S4S5																						
Rough Fleabane	*Erigeron strigosus*	na	na	Secure	S5																						
White Buttons	*Eriocaulon aquaticum*	na	na	Secure	S5										P												
Tussock Cottongrass	*Eriophorum vaginatum*	na	na	Secure	S5										P												
Tawny Cotton-Grass	*Eriophorum virginicum*	na	na	Secure	S5										P												
Worm-seeded Wallflower	*Erysimum cheiranthoides*	na	na	Exotic	SNR																						
Spotted Joe-pye-weed	*Eupatorium maculatum*	na	na	Secure	S5																						
Common Boneset	*Eupatorium perfoliatum*	na	na	Secure	S5																P						
Common Eyebright	*Euphrasia nemorosa*	na	na	Secure	S5																						
Stiff Eyebright	*Euphrasia stricta*	na	na	Exotic	SNA																						
Low Rough Aster	*Eurybia radula*	na	na	Secure	S5																				P		
Slender Fragrant Goldenrod	*Euthamia caroliniana*	na	na	Secure	S4																						
Grass-leaved Goldenrod	*Euthamia graminifolia*	na	na	Secure	S5			P										P									
American Beech	*Fagus grandifolia*	na	na	Secure	S5				P						P												
Hair Fescue	*Festuca filiformis*	na	na	Exotic	SNA																						
Red Fescue	*Festuca rubra*	na	na	Secure	S5																						
Woodland Strawberry	*Fragaria vesca*	na	na	Secure	S4												P										
Wild Strawberry	*Fragaria virginiana*	na	na	Secure	S5										P				P		P						
Glossy Buckthorn	*Frangula alnus*	na	na	Exotic	SNA																						
White Ash	*Fraxinus americana*	na	na	Secure	S5	P															P	P			P	P	
European Ash	*Fraxinus excelsior*	na	na	Exotic	SNA														P								
Black Ash	*Fraxinus nigra*	na	na	Sensitive	S2S3	P						P								P							
Common Hemp-nettle	*Galeopsis tetrahit*	na	na	Exotic	SNA																						
Smooth Bedstraw	*Galium mollugo*	na	na	Exotic	SNA		P																				
Common Marsh Bedstraw	*Galium palustre*	na	na	Secure	S5														P		P						
a Bedstraw	*Galium sp.*	na	na	na	na										P			P									
Dyer's Bedstraw	*Galium tinctorium*	na	na	Secure	S5																						
Three-petaled Bedstraw	*Galium trifidum*	na	na	Secure	S5		P														P						
Creeping Snowberry	*Gaultheria hispidula*	na	na	Secure	S5																						
Eastern Teaberry	*Gaultheria procumbens*	na	na	Secure	S5																						
Black Huckleberry	*Gaylussacia baccata*	na	na	Secure	S5									P		P		P									
Bigelow's Huckleberry	*Gaylussacia bigeloviana*	na	na	Secure	S5										P												
Yellow Avens	*Geum aleppicum*	na	na	Secure	S5												P										
Rough Avens	*Geum laciniatum*	na	na	Secure	S5																P						
an Avens	*Geum sp.*	na	na	na	na												P										
Northern Manna Grass	*Glyceria borealis*	na	na	Secure	S5																						
Canada Manna Grass	*Glyceria canadensis*	na	na	Secure	S5																P						
Common Tall Manna Grass	*Glyceria grandis*	na	na	Secure	S4S5																						
Northern Mannagrass	*Glyceria laxa*	na	na	Secure	S4?																						
Atlantic Manna Grass	*Glyceria obtusa*	na	na	Secure	S4		P																				
a Mannagrass	*Glyceria sp.*	na	na	na	na												P			P		P				P	
Fowl Manna Grass	*Glyceria striata*	na	na	Secure	S5																	P					
Marsh Cudweed	*Gnaphalium uliginosum*	na	na	Exotic	SNA																						
American Witch-Hazel	*Hamamelis virginiana*	na	na	Secure	S5																			P			
Jerusalem Artichoke	*Helianthus tuberosus*	na	na	Exotic	SNA																						
Field Hawkweed	*Hieracium caespitosum*	na	na	Exotic	SNA																						
Canada Hawkweed	*Hieracium canadense*	na	na	Secure	S4S5																						
Kalm's Hawkweed	*Hieracium kalmii*	na	na	Undetermined	S2?																						
Common Hawkweed	*Hieracium lachenalii*	na	na	Exotic	SNA				P																		
Wall Hawkweed	*Hieracium murorum*	na	na	Exotic	SNA										P							P					
Mouse-ear Hawkweed	*Hieracium pilosella*	na	na	Exotic	SNA																						

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Tall Hawkweed	*Hieracium piloselloides*	na	na	Exotic	SNA																						
a Hawkweed	*Hieracium sp.*	na	na	na	na										P												
Whiplash Hawkweed	*Hieracium x flagellare*	na	na	Exotic	SNA																						
Smoothish Hawkweed	*Hieracium x floribundum*	na	na	Exotic	SNA																						
Canada St. John's-wort	*Hypericum canadense*	na	na	Secure	S5																						
Large St. John's-wort	*Hypericum majus*	na	na	May Be At Risk	S1														P								
Common St. John's-wort	*Hypericum perforatum*	na	na	Exotic	SNA																						
Hairy Cat's-ear	*Hypochaeris radicata*	na	na	Exotic	SNA																						
Inkberry	*Ilex glabra*	na	na	Secure	S5																						
Common Winterberry	*Ilex verticillata*	na	na	Secure	S5										P		P		P	P	P				P		
Spotted Jewelweed	*Impatiens capensis*	na	na	Secure	S5										P						P						
Harlequin Blue Flag	*Iris versicolor*	na	na	Secure	S5										P		P	P			P	P			P		
Jointed Rush	*Juncus articulatus*	na	na	Secure	S5														P								
Arctic Rush	*Juncus balticus*	na	na	Secure	S5														P								
Short-tailed Rush	*Juncus brevicaudatus*	na	na	Secure	S5																						
Toad Rush	*Juncus bufonius*	na	na	Secure	S5																						
Canada Rush	*Juncus canadensis*	na	na	Secure	S5			P							P		P		P		P						
Soft Rush	*Juncus effusus*	na	na	Secure	S5			P									P	P			P						
Soft Rush	*Juncus effusus var. solutus*	na	na	Secure	S5																						
Brown-Fruited Rush	*Juncus pelocarpus*	na	na	Secure	S5																						
a Rush	*Juncus sp.*	na	na	na	na										P		P		P								
Path Rush	*Juncus tenuis*	na	na	Secure	S5																						
Common Juniper	*Juniperus communis*	na	na	Secure	S5																						
Sheep Laurel	*Kalmia angustifolia*	na	na	Secure	S5									P		P	P	P			P			P	P		
Pale Bog Laurel	*Kalmia polifolia*	na	na	Secure	S5										P												
Tall Blue Lettuce	*Lactuca biennis*	na	na	Secure	S5																						
Tamarack	*Larix laricina*	na	na	Secure	S5										P	P	P				P						
Large-pod Pinweed	*Lechea intermedia*	na	na	Secure	S4																						
Large-pod Pinweed	*Lechea intermedia var. juniperina*	na	na	Secure	S4																						
Common Labrador Tea	*Ledum groenlandicum*	na	na	Secure	S5										P												
Rice Cut Grass	*Leersia oryzoides*	na	na	Secure	S5														P		P						
Lesser Duckweed	*Lemna minor*	na	na	na	SNA												P										
Fall Dandelion	*Leontodon autumnalis*	na	na	Exotic	SNA																						
Oxeye Daisy	*Leucanthemum vulgare*	na	na	Exotic	SNA																						
Butter-And-Eggs	*Linaria vulgaris*	na	na	Exotic	SNA																						
Twinflower	*Linnaea borealis*	na	na	Secure	S5										P												
Southern Twayblade	*Listera australis*	na	na	May Be At Risk	S2																						
Heart-leaved Twayblade	*Listera cordata*	na	na	Secure	S4																						
Water Lobelia	*Lobelia dortmanna*	na	na	Secure	S5										P												
Tall Fescue	*Lolium arundinaceum*	na	na	Exotic	SNA																						
Meadow Fescue	*Lolium pratense*	na	na	Exotic	SNA																						
Canada Fly Honeysuckle	*Lonicera canadensis*	na	na	Secure	S5										P						P	P			P		
Tartarian Honeysuckle	*Lonicera tatarica*	na	na	Exotic	SNA																						
Mountain Fly Honeysuckle	*Lonicera villosa*	na	na	Secure	S4S5												P				P				P		
Garden Bird's-foot Trefoil	*Lotus corniculatus*	na	na	Exotic	SNA																						
Marsh Seedbox	*Ludwigia palustris*	na	na	Secure	S5		P											P	P		P						
Large-Leaved Lupine	*Lupinus polyphyllus*	na	na	Exotic	SNA																						
Common Woodrush	*Luzula multiflora*	na	na	Secure	S5																						
Stiff Clubmoss	*Lycopodium annotinum*	na	na	Secure	S5																						
Running Clubmoss	*Lycopodium clavatum*	na	na	Secure	S5																						
Flat-branched Tree-clubmoss	*Lycopodium obscurum*	na	na	Secure	S4S5																						
American Water Horehound	*Lycopus americanus*	na	na	Secure	S5										P				P		P	P					
Northern Water Horehound	*Lycopus uniflorus*	na	na	Secure	S5		P								P		P	P	P		P	P			P		
Fringed Yellow Loosestrife	*Lysimachia ciliata*	na	na	Secure	S4										P												
Creeping Yellow Loosestrife	*Lysimachia nummularia*	na	na	Exotic	SNA					P																	
Swamp Yellow Loosestrife	*Lysimachia terrestris*	na	na	Secure	S5				P						P				P		P						
Tufted Yellow Loosestrife	*Lysimachia thyrsiflora*	na	na	Secure	S4																P						
Purple Loosestrife	*Lythrum salicaria*	na	na	Exotic	SNA													P	P		P						
Wild Lily-of-The-Valley	*Maianthemum canadense*	na	na	Secure	S5									P	P			P		P	P	P			P		
Large False Solomon's Seal	*Maianthemum racemosum*	na	na	Secure	S4S5																						
Three-leaved False Soloman's Seal	*Maianthemum trifolium*	na	na	Secure	S5	P									P					P							
Common Apple	*Malus pumila*	na	na	Exotic	SNA																						
Ostrich Fern	*Matteuccia struthiopteris*	na	na	Secure	S5																						
Indian Cucumber Root	*Medeola virginiana*	na	na	Secure	S5																						
American Cow Wheat	*Melampyrum lineare*	na	na	Secure	S5																						
White Sweet-clover	*Melilotus albus*	na	na	Exotic	SNA																						
Wild Mint	*Mentha arvensis*	na	na	Secure	S5																P						
Tall Millet Grass	*Milium effusum*	na	na	Secure	S4																						

Table 2 Plants Recorded within Wetlands of the Study Area and Information on their Population Status

Common Name	Scientific Name	SARA / COSEWIC Rank	NS ESA Rank	NSDNR Rank	AC CDC Rank	4	5	6	7	9	10	11	12	13	17	19	20	21	23	24	25	26	27	28	30	32	33
Partridgeberry	*Mitchella repens*	na	na	Secure	S5		P								P												
One-flowered Wintergreen	*Moneses uniflora*	na	na	Secure	S5																						
Indian Pipe	*Monotropa uniflora*	na	na	Secure	S5																P						
Northern Bayberry	*Morella pensylvanica*	na	na	Secure	S5																						
Small Forget-Me-Not	*Myosotis laxa*	na	na	Secure	S5				P												P						
a Forget-Me-Not	*Myosotis sp.*	na	na	na	na										P												
Sweet Gale	*Myrica gale*	na	na	Secure	S5									P	P						P						
Mountain Holly	*Nemopanthus mucronata*	na	na	Secure	S5																						
Mountain Holly	*Nemopanthus mucronatus*	na	na	Secure	S5									P	P	P		P									
Variegated Pond-lily	*Nuphar lutea*	na	na	Secure	S5										P												
Red-disked Yellow Pond-lily	*Nuphar lutea ssp. rubrodisca*	na	na	Secure	S4																						
Fragrant Water-lily	*Nymphaea odorata*	na	na	Secure	S5										P		P	P			P						
Whorled Wood Aster	*Oclemena acuminata*	na	na	Secure	S5	P									P		P				P	P			P	P	
Bog Aster	*Oclemena nemoralis*	na	na	Secure	S5										P												
a hybrid White Panicled American-Aster	*Oclemena x blakei*	na	na	Secure	S4S5										P		P				P	P					
Red Bartsia	*Odontites vernus*	na	na	Exotic	SNA														P								
Common Evening Primrose	*Oenothera biennis*	na	na	Secure	S5																						
Perennial Evening Primrose	*Oenothera perennis*	na	na	Secure	S5														P								
a Primrose	*Oenothera sp.*	na	na	na	na																						
Woodland Cudweed	*Omalotheca sylvatica*	na	na	Secure	S4S5																						
Sensitive Fern	*Onoclea sensibilis*	na	na	Secure	S5										P	P	P	P	P	P	P	P			P	P	
White-grained Mountain Rice	*Oryzopsis asperifolia*	na	na	Secure	S5																P						
Hairy Sweet Cicely	*Osmorhiza claytonii*	na	na	Secure	S4																						
Cinnamon Fern	*Osmunda cinnamomea*	na	na	Secure	S5		P								P						P	P			P	P	
Interrupted Fern	*Osmunda claytoniana*	na	na	Secure	S5																P	P			P	P	
Royal Fern	*Osmunda regalis*	na	na	Secure	S5		P								P				P		P				P		
Common Wood Sorrel	*Oxalis montana*	na	na	Secure	S5										P							P			P	
European Wood Sorrel	*Oxalis stricta*	na	na	Secure	S5																						
Golden Groundsel	*Packera aurea*	na	na	Secure	S4	P																					
Schweinitz's Groundsel	*Packera schweinitziana*	na	na	Secure	S4	P																					
Common Witch Grass	*Panicum capillare*	na	na	Exotic	SNA																						
Fall Panic Grass	*Panicum dichotomiflorum*	na	na	Secure	S5																						
a Panic-grass	*Panicum sp.*	na	na	na	na														P								
Reed Canary Grass	*Phalaris arundinacea*	na	na	Secure	S5												P		P								
Northern Beech Fern	*Phegopteris connectilis*	na	na	Secure	S5																						
Amur cork tree	*Phellodendron amurense*	na	na	na	na																						
Common Timothy	*Phleum pratense*	na	na	Exotic	SNA																						
Purple Chokeberry	*Photinia floribunda*	na	na	Secure	S5										P						P						
Black Chokeberry	*Photinia melanocarpa*	na	na	Secure	S5									P	P	P	P	P	P								
Red Chokeberry	*Photinia pyrifolia*	na	na	Secure	S4?											P											
White Spruce	*Picea glauca*	na	na	Secure	S5																P				P		
Black Spruce	*Picea mariana*	na	na	Secure	S5									P	P	P					P						
Red Spruce	*Picea rubens*	na	na	Secure	S5																	P		P			
Red Pine	*Pinus resinosa*	na	na	Secure	S4S5																						
Eastern White Pine	*Pinus strobus*	na	na	Secure	S5									P	P	P					P	P			P		
Scotch Pine	*Pinus sylvestris*	na	na	Exotic	SNA														P								
English Plantain	*Plantago lanceolata*	na	na	Exotic	SNA																						
Common Plantain	*Plantago major*	na	na	Exotic	SNA																						
Seaside Plantain	*Plantago maritima*	na	na	Secure	S5																						
Tall Northern Green Orchid	*Platanthera aquilonis*	na	na	Secure	S4?																P						
Club Spur Orchid	*Platanthera clavellata*	na	na	Secure	S5																						
an Orchid	*Platanthera sp.*	na	na	na	na																P						
Annual Blue Grass	*Poa annua*	na	na	Exotic	SNA																						
Canada Blue Grass	*Poa compressa*	na	na	Exotic	SNA																						
Fowl Blue Grass	*Poa palustris*	na	na	Secure	S5														P								
Kentucky Blue Grass	*Poa pratensis*	na	na	Secure	S5																						
Rose Pogonia	*Pogonia ophioglossoides*	na	na	Secure	S4										P												
Blood Milkwort	*Polygala sanguinea*	na	na	Sensitive	S2S3														P								
Fringed Black Bindweed	*Polygonum cilinode*	na	na	Secure	S5										P												
Japanese Knotweed	*Polygonum cuspidatum*	na	na	Exotic	SNA																						
False Waterpepper	*Polygonum hydropiperoides*	na	na	Secure	S5																						
Pale Smartweed	*Polygonum lapathifolium*	na	na	Secure	S5		P																				
Spotted Lady's-thumb	*Polygonum persicaria*	na	na	Exotic	SNA																						
Arrow-leaved Smartweed	*Polygonum sagittatum*	na	na	Secure	S5																P						
Bindweed	*Polygonum sp.*	na	na	na	na																						
Rock Polypody	*Polypodium virginianum*	na	na	Secure	S5										P		P										
Christmas Fern	*Polystichum acrostichoides*	na	na	Secure	S5																				P	P	
Pickerelweed	*Pontederia cordata*	na	na	Secure	S5										P						P						

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Large-toothed Aspen	*Populus grandidentata*	na	na	Secure	S5																						P
Quaking Aspen	*Populus tremuloides*	na	na	Secure	S5												P		P		P						
Alga Pondweed	*Potamogeton confervoides*	na	na	Secure	S4S5																						
Ribbon-leaved Pondweed	*Potamogeton epihydrus*	na	na	Secure	S5													P			P						
Variable-leaved Pondweed	*Potamogeton gramineus*	na	na	Secure	S5													P	P								
Clasping-leaved Pondweed	*Potamogeton perfoliatus*	na	na	Secure	S4S5										P												
Small Pondweed	*Potamogeton pusillus*	na	na	Secure	S5																P						
Small Pondweed	*Potamogeton pusillus ssp. pusillus*	na	na	Secure	S5													P									
a Pondweed	*Potamogeton sp.*	na	na	na	na										P		P	P									
Spiral Pondweed	*Potamogeton spirillus*	na	na	Secure	S5										P												
Silvery Cinquefoil	*Potentilla argentea*	na	na	Exotic	SNA																						
Rough Cinquefoil	*Potentilla norvegica*	na	na	Secure	S5																						
Old Field Cinquefoil	*Potentilla simplex*	na	na	Secure	S5														P								
Tall Rattlesnakeroot	*Prenanthes altissima*	na	na	Secure	S5																			P			
Three-leaved Rattlesnakeroot	*Prenanthes trifoliolata*	na	na	Secure	S5										P										P	P	
Common Self-heal	*Prunella vulgaris*	na	na	Secure	S5																						
Canada Plum	*Prunus nigra*	na	na	Exotic	SNA																						
Pin Cherry	*Prunus pensylvanica*	na	na	Secure	S5																						
Black Cherry	*Prunus serotina*	na	na	Secure	S5																P						
Bracken Fern	*Pteridium aquilinum*	na	na	Secure	S5											P					P				P		
Round-leaved Pyrola	*Pyrola americana*	na	na	Secure	S5																						
English Oak	*Quercus robur*	na	na	Exotic	SNA																						
Northern Red Oak	*Quercus rubra*	na	na	Secure	S5										P	P	P	P			P	P		P			
Creeping Buttercup	*Ranunculus repens*	na	na	Exotic	SNA												P										
Cursed Buttercup	*Ranunculus sceleratus*	na	na	May Be At Risk	S1S2												17				P						
European Buckthorn	*Rhamnus cathartica*	na	na	Exotic	SNA																						
Rhodora	*Rhododendron canadense*	na	na	Secure	S5									P		P	P	P	P		P						
Staghorn Sumac	*Rhus typhina*	na	na	Secure	S4S5																						
White Beakrush	*Rhynchospora alba*	na	na	Secure	S5										P												
Brown Beakrush	*Rhynchospora fusca*	na	na	Secure	S4														P								
Skunk Currant	*Ribes glandulosum*	na	na	Secure	S5											P											
Watercress	*Rorippa nasturtium-aquaticum*	na	na	Exotic	SNA										P												
Multiflora Rose	*Rosa multiflora*	na	na	Exotic	SNA		P										P										
Shining Rose	*Rosa nitida*	na	na	Secure	S4										P		P				P						
Rugosa Rose	*Rosa rugosa*	na	na	Exotic	SNA																						
a Rose	*Rosa sp.*	na	na	na	na										P												
Virginia Rose	*Rosa virginiana*	na	na	Secure	S5										P						P				P		
Allegheny Blackberry	*Rubus alleghaniensis*	na	na	Secure	S5																P						
Allegheny Blackberry	*Rubus allegheniensis*	na	na	Secure	S5		P																				
Smooth Blackberry	*Rubus canadensis*	na	na	Secure	S5											P					P				P		
Bristly Dewberry	*Rubus hispidus*	na	na	Secure	S5		P								P	P	P	P		P	P				P	P	
Red Raspberry	*Rubus idaeus*	na	na	Secure	S5										P		P				P					P	
Red Raspberry	*Rubus idaeus ssp. strigosus*	na	na	Secure	S5																P				P		
Dwarf Red Raspberry	*Rubus pubescens*	na	na	Secure	S5	P									P		P				P	P			P	P	
Arching Dewberry	*Rubus recurvicaulis*	na	na	Secure	SNR																						
a Blackberry	*Rubus sp.*	na	na	na	na																					P	
Sheep Sorrel	*Rumex acetosella*	na	na	Exotic	SNA																						
Curled Dock	*Rumex crispus*	na	na	Exotic	SNA														P		P						
Greater Water Dock	*Rumex orbiculatus*	na	na	Secure	S5						P				P		P										
Broad-leaved Arrowhead	*Sagittaria latifolia*	na	na	Secure	S5										P												
White Willow	*Salix alba*	na	na	Exotic	SNA																						
Bebb's Willow	*Salix bebbiana*	na	na	Secure	S5																						
Pussy Willow	*Salix discolor*	na	na	Secure	S5												P										
Cottony Willow	*Salix eriocephala*	na	na	Secure	S5														P								
Upland Willow	*Salix humilis*	na	na	Secure	S5												P		P								
Shining Willow	*Salix lucida*	na	na	Secure	S5													P	P								
Balsam Willow	*Salix pyrifolia*	na	na	Secure	S5									P			P		P								
a Willow	*Salix sp.*	na	na	na	na												P										
Basket Willow	*Salix viminalis*	na	na	Exotic	SNA																						
Black Elderberry	*Sambucus nigra ssp. canadensis*	na	na	Secure	S5		P													P	P						
Red Elderberry	*Sambucus racemosa*	na	na	Secure	S5					P							P										
Northern Pitcher Plant	*Sarracenia purpurea*	na	na	Secure	S5										P		P										
Hard-Stemmed Bulrush	*Schoenoplectus acutus var. acutus*	na	na	Secure	S4														P								
Common Woolly Bulrush	*Scirpus cyperinus*	na	na	Secure	S5										P		P										
Small-fruited Bulrush	*Scirpus microcarpus*	na	na	Secure	S5																						
a Bullrush	*Scirpus sp.*	na	na	na	na										P						P						
Marsh Skullcap	*Scutellaria galericulata*	na	na	Secure	S5																						
Mad-dog Skullcap	*Scutellaria lateriflora*	na	na	Secure	S5		P														P						

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a Skullcap	*Scutellaria sp.*	na	na	na	na																						
Sticky Ragwort	*Senecio viscosus*	na	na	Exotic	SNA														P								
Green Foxtail	*Setaria viridis*	na	na	Exotic	SNA																						
Three-Toothed Cinquefoil	*Sibbaldiopsis tridentata*	na	na	Secure	S5																						
Hedge Mustard	*Sisymbrium officinale*	na	na	Exotic	SNA					P																	
Mountain Blue-eyed-grass	*Sisyrinchium montanum*	na	na	Secure	S5														P								
Common Water Parsnip	*Sium suave*	na	na	Secure	S5										P												
Bittersweet Nightshade	*Solanum dulcamara*	na	na	Exotic	SNA										P			P		P	P	P				P	
White Goldenrod	*Solidago bicolor*	na	na	Secure	S5																						
Canada Goldenrod	*Solidago canadensis*	na	na	Secure	S5																						
Giant Goldenrod	*Solidago gigantea*	na	na	Secure	S5																						
Early Goldenrod	*Solidago juncea*	na	na	Secure	S5																						
Downy Goldenrod	*Solidago puberula*	na	na	Secure	S5																						
Rough-stemmed Goldenrod	*Solidago rugosa*	na	na	Secure	S5										P			P		P	P	P			P		
a Goldenrod	*Solidago sp.*	na	na	na	na																						
Northern Bog Goldenrod	*Solidago uliginosa*	na	na	Secure	S5										P												
Field Sow Thistle	*Sonchus arvensis*	na	na	Exotic	SNA																						
Prickly Sow Thistle	*Sonchus asper*	na	na	Exotic	SNA																						
Common Sow Thistle	*Sonchus oleraceus*	na	na	Exotic	SNA																						
a Sow Thistle	*Sonchus sp.*	na	na	na	na																						
False Spiraea	*Sorbaria sorbifolia*	na	na	Exotic	SNA														P								
American Mountain Ash	*Sorbus americana*	na	na	Secure	S5																P						
European Mountain Ash	*Sorbus aucuparia*	na	na	Exotic	SNA																						
a Mountain Ash	*Sorbus sp.*	na	na	na	na																						
American Burreed	*Sparganium americanum*	na	na	Secure	S5		P	P							P				P								
Green-fruited Burreed	*Sparganium emersum*	na	na	Secure	S5		P																				
Floating Burreed	*Sparganium fluctuans*	na	na	Secure	S4										P												
a Bur-reed	*Sparganium sp.*	na	na	na	na				P									P									
Prairie Cord Grass	*Spartina pectinata*	na	na	Secure	S5																						
White Meadowsweet	*Spiraea alba*	na	na	Secure	S5									P	P	P	P	P	P		P				P		
Steeplebush	*Spiraea tomentosa*	na	na	Secure	S5										P		P	P	P								
Nodding Ladies'-Tresses	*Spiranthes cernua*	na	na	Secure	S5														P								
Rose Twisted-stalk	*Streptopus lanceolatus*	na	na	Secure	S5																						
Boreal Aster	*Symphyotrichum boreale*	na	na	Sensitive	S2?										P												
Lance-leaved Aster	*Symphyotrichum lanceolatum*	na	na	Secure	S4S5																						
Calico Aster	*Symphyotrichum lateriflorum*	na	na	Secure	S5															P	P				P	P	
New England Aster	*Symphyotrichum novae-angliae*	na	na	Exotic	SNA														P								
New York Aster	*Symphyotrichum novi-belgii*	na	na	Secure	S5			P						P	P				P			P					
Purple-stemmed Aster	*Symphyotrichum puniceum*	na	na	Secure	S5															P	P				P		
Common Comfrey	*Symphytum officinale*	na	na	Exotic	SNA																						
Common Tansy	*Tanacetum vulgare*	na	na	Exotic	SNA																						
Common Dandelion	*Taraxacum officinale*	na	na	Exotic	SNA												P										
Tall Meadow-Rue	*Thalictrum pubescens*	na	na	Secure	S5										P					P	P						
New York Fern	*Thelypteris noveboracensis*	na	na	Secure	S5										P						P	P		P	P	P	
Eastern Marsh Fern	*Thelypteris palustris*	na	na	Secure	S5										P			P			P						
Bog Fern	*Thelypteris simulata*	na	na	Secure	S4S5																P						
Eastern White Cedar	*Thuja occidentalis*	na	na	At Risk	S1S2	P																					
Little-leaved Linden	*Tilia cordata*	na	na	Exotic	SNA																						
Pale False Manna Grass	*Torreyochloa pallida*	na	na	Secure	S4S5																						
Northern Poison Oak	*Toxicodendron rydbergii*	na	na	Secure	S5	P	P																				
Meadow Goatsbeard	*Tragopogon pratensis*	na	na	Exotic	SNA																						
Fraser's Marsh St. John's-wort	*Triadenum fraseri*	na	na	Secure	S5		P								P				P		P						
a Marsh St. John's Wort	*Triadenum sp.*	na	na	na	na										P						P						
Virginia St. John's-wort	*Triadenum virginicum*	na	na	Secure	S5										P												
Tufted Clubrush	*Trichophorum caespitosum*	na	na	Secure	S5										P												
Northern Starflower	*Trientalis borealis*	na	na	Secure	S5									P		P	P				P						
Rabbit's-foot Clover	*Trifolium arvense*	na	na	Exotic	SNA																						
Yellow Clover	*Trifolium aureum*	na	na	Exotic	SNA																						
Low Hop Clover	*Trifolium campestre*	na	na	Exotic	SNA																						
Red Clover	*Trifolium pratense*	na	na	Exotic	SNA																						
White Clover	*Trifolium repens*	na	na	Exotic	SNA																						
a Clover	*Trifolium sp.*	na	na	na	na																						
Painted Trillium	*Trillium undulatum*	na	na	Secure	S5																		P				
Eastern Hemlock	*Tsuga canadensis*	na	na	Secure	S4S5																	P					
Coltsfoot	*Tussilago farfara*	na	na	Exotic	SNA												P				P						
Narrow-Leaved Cattail	*Typha angustifolia*	na	na	Secure	S5														P								
Broad-leaved Cattail	*Typha latifolia*	na	na	Secure	S5			P		P					P		P	P			P						
a Cattail	*Typha sp.*	na	na	na	na																						

Table 2 Plants Recorded within Wetlands of the Study Area and Information on their Population Status

Common Name	Scientific Name	SARA / COSEWIC Rank	NS ESA Rank	NSDNR Rank	AC CDC Rank	4	5	6	7	9	10	11	12	13	17	19	20	21	23	24	25	26	27	28	30	32	33
Blue Cattail	*Typha x glauca*	na	na	Not Assessed	SNA												P										
White Elm	*Ulmus americana*	na	na	Secure	S4					P											P						
Wych Elm	*Ulmus glabra*	na	na	Exotic	SNA																						
Horned Bladderwort	*Utricularia cornuta*	na	na	Secure	S5										P												
Twin-stemmed Bladderwort	*Utricularia geminiscapa*	na	na	Secure	S4										P						P						
Flat-leaved Bladderwort	*Utricularia intermedia*	na	na	Secure	S5										P												
Greater Bladderwort	*Utricularia macrorhiza*	na	na	Secure	S5										P						P						
Late Lowbush Blueberry	*Vaccinium angustifolium*	na	na	Secure	S5									P		P		P		P							
Highbush Blueberry	*Vaccinium corymbosum*	na	na	Secure	S3											P											
Large Cranberry	*Vaccinium macrocarpon*	na	na	Secure	S5										P				P								
Velvet-leaved Blueberry	*Vaccinium myrtilloides*	na	na	Secure	S5												P				P						
Small Cranberry	*Vaccinium oxycoccos*	na	na	Secure	S5										P												
Common Valerian	*Valeriana officinalis*	na	na	Exotic	SNA											P	P										
Common Mullein	*Verbascum thapsus*	na	na	Exotic	SNA										P												
Common Speedwell	*Veronica officinalis*	na	na	Exotic	S5																						
Bird's-eye Speedwell	*Veronica persica*	na	na	Exotic	SNA																						
Marsh Speedwell	*Veronica scutellata*	na	na	Secure	S5																						
Thyme-Leaved Speedwell	*Veronica serpyllifolia*	na	na	Secure	S5												P										
Speedwell	*Veronica sp.*	na	na	na	na																						
Hobblebush	*Viburnum lantanoides*	na	na	Secure	S5																		P				
Northern Wild Raisin	*Viburnum nudum*	na	na	Secure	S5										P			P		P	P						
Highbush Cranberry	*Viburnum opulus*	na	na	Secure	S5																						
Tufted Vetch	*Vicia cracca*	na	na	Exotic	SNA																						
Sweet White Violet	*Viola blanda*	na	na	Secure	S5												P										
Marsh Blue Violet	*Viola cucullata*	na	na	Secure	S5										P										P		
Small White Violet	*Viola macloskeyi*	na	na	Secure	S5																						
Arrow-Leaved Violet	*Viola sagittata*	na	na	Secure	S3S4																						
a Violet	*Viola sp.*	na	na	na	na																						
Johnny-jump-up	*Viola tricolor*	na	na	Exotic	SNA																						

P = evidence of species observed in wetland

Table 2 Plants Recorded within Wetlands of the Study Area and Information on their Population Status

Common Name	Scientific Name	SARA / COSEWIC Rank	NS ESA Rank	NSDNR Rank	AC CDC Rank	102	104	105	106	107	109	110	111	113	114	115	116	117	118	119	120	122	125	131	132	133	134
Balsam Fir	*Abies balsamea*	na	na	Secure	S5	P	P								P	P		P	P	P	P	P				P	
Striped Maple	*Acer pensylvanicum*	na	na	Secure	S5													P									
Norway Maple	*Acer platanoides*	na	na	Exotic	SNA																						
Red Maple	*Acer rubrum*	na	na	Secure	S5	P	P			P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Red Maple	*Acer rubrum var. rubrum*	na	na	Secure	S5																						
Sugar Maple	*Acer saccharum*	na	na	Secure	S5																						
Mountain Maple	*Acer spicatum*	na	na	Secure	S5																						
Common Yarrow	*Achillea millefolium*	na	na	Secure	S5																						
Sneezeweed	*Achillea ptarmica*	na	na	Exotic	SNA																						
Goutweed	*Aegopodium podagraria*	na	na	Exotic	SNA																						
Nova Scotia Agalinis	*Agalinis neoscotica*	na	na	Secure	S3																						
Slender Agalinis	*Agalinis tenuifolia*	na	na	Exotic	SNA																						
Colonial Bent Grass	*Agrostis capillaris*	na	na	Exotic	SNA																			P			
Upland Bent Grass	*Agrostis perennans*	na	na	Secure	S4S5																						
Rough Bent Grass	*Agrostis scabra*	na	na	Secure	S5									P													
Creeping Bent Grass	*Agrostis stolonifera*	na	na	Secure	S5																	P	P	P			
Creeping Bugleweed	*Ajuga reptans*	na	na	Exotic	SNA																						
Northern Water Plantain	*Alisma triviale*	na	na	Secure	S5																P						
Speckled Alder	*Alnus incana*	na	na	Secure	S5	P				P		P	P	P	P	P	P	P	P	P	P	P		P	P		P
Green Alder	*Alnus viridis*	na	na	Secure	S5														P				P	P			
Water Foxtail	*Alopecurus geniculatus*	na	na	Exotic	SNA																						
Meadow Foxtail	*Alopecurus pratensis*	na	na	Exotic	SNA																						
Perennial Ragweed	*Ambrosia psilostachya*	na	na	Exotic	SNA																						
Canada Serviceberry	*Amelanchier canadensis*	na	na	Secure	S4?																						
Inland Serviceberry	*Amelanchier interior*	na	na	Secure	S4S5																						
Smooth Serviceberry	*Amelanchier laevis*	na	na	Secure	S5																						
a Serviceberry	*Amelanchier sp.*	na	na	na	na		P			P	P			P	P			P	P	P	P	P			P		
Running Serviceberry	*Amelanchier x intermedia*	na	na	Not Assessed	SNA																						
Pearly Everlasting	*Anaphalis margaritacea*	na	na	Secure	S5																				P		
Bog Rosemary	*Andromeda polifolia*	na	na	Secure	S5																						
Howell's Pussytoes	*Antennaria howellii ssp. neodioica*	na	na	Secure	S5																						
Large Sweet Vernal Grass	*Anthoxanthum odoratum*	na	na	Exotic	SNA																						
Spreading Dogbane	*Apocynum androsaemifolium*	na	na	Secure	S5																						
Bristly Sarsaparilla	*Aralia hispida*	na	na	Secure	S5																						
Wild Sarsaparilla	*Aralia nudicaulis*	na	na	Secure	S5	P					P					P		P	P	P	P	P		P		P	P
an Aster	*Aster sp.*	na	na	na	na															P							
Common Lady Fern	*Athyrium filix-femina*	na	na	Secure	S5	P				P	P			P		P	P	P	P	P	P	P	P		P		
Yellow Birch	*Betula alleghaniensis*	na	na	Secure	S5	P	P									P			P							P	
Paper Birch	*Betula papyrifera*	na	na	Secure	S5	P	P						P		P			P			P				P	P	P
Heart-leaved Birch	*Betula papyrifera var. cordifolia*	na	na	Secure	S5		P								P				P								
Gray Birch	*Betula populifolia*	na	na	Secure	S5		P			P		P			P				P			P			P	P	
a hybrid Birch [papyrifera X populifolia]	*Betula x caerulea*	na	na	Not Assessed	SNA																						
Devil's Beggarticks	*Bidens frondosa*	na	na	Secure	S5														P		P						
a Beggartick	*Bidens sp.*	na	na	na	na																						
Northern Shorthusk	*Brachyelytrum septentrionale*	na	na	Secure	S5													P									
Fringed Brome	*Bromus ciliatus*	na	na	Secure	S5																						
Bluejoint Reed Grass	*Calamagrostis canadensis*	na	na	Secure	S5		P	P							P	P		P	P	P	P		P	P			
Pickering's Reed Grass	*Calamagrostis pickeringii*	na	na	Secure	S4S5																						
White-tinged Sedge	*Carex albicans*	na	na	Secure	S4						P																
White-tinged Sedge	*Carex albicans var. emmonsii*	na	na	Secure	S4																						
Water Sedge	*Carex aquatilis*	na	na	Secure	S5																						
Drooping Woodland Sedge	*Carex arctata*	na	na	Secure	S5														P								
Atlantic Sedge	*Carex atlantica*	na	na	Secure	S4								P														
Brownish Sedge	*Carex brunnescens*	na	na	Secure	S5	P				P	P		P							P	P	P					
Silvery Sedge	*Carex canescens*	na	na	Secure	S5														P		P						
Fibrous-Root Sedge	*Carex communis*	na	na	Secure	S5																						
Fringed Sedge	*Carex crinita*	na	na	Secure	S5																						
White-edged Sedge	*Carex debilis*	na	na	Secure	S5																						
Two-seeded Sedge	*Carex disperma*	na	na	Secure	S5					P				P	P			P									
Star Sedge	*Carex echinata*	na	na	Secure	S5																P						
Coastal Sedge	*Carex exilis*	na	na	Secure	S4														P								
Yellow Sedge	*Carex flava*	na	na	Secure	S5																						
Hay Sedge	*Carex foenea*	na	na	Secure	S3?																						
Northern Long Sedge	*Carex folliculata*	na	na	Secure	S5																P					P	
Nodding Sedge	*Carex gynandra*	na	na	Secure	S5														P								
Bladder Sedge	*Carex intumescens*	na	na	Secure	S5																						
Slender Sedge	*Carex lasiocarpa*	na	na	Secure	S5																						
Lenticular Sedge	*Carex lenticularis*	na	na	Secure	S4																						

Table 2 Plants Recorded within Wetlands of the Study Area and Information on their Population Status

Common Name	Scientific Name	SARA / COSEWIC Rank	NS ESA Rank	NSDNR Rank	AC CDC Rank	102	104	105	106	107	109	110	111	113	114	115	116	117	118	119	120	122	125	131	132	133	134
Bristly-stalked Sedge	*Carex leptalea*	na	na	Secure	S5					P			P		P					P	P						
Finely-Nerved Sedge	*Carex leptonervia*	na	na	Secure	S5													P		P							
Sallow Sedge	*Carex lurida*	na	na	Secure	S5																P						
Boreal Bog Sedge	*Carex magellanica*	na	na	Secure	S5																						
Boreal Bog Sedge	*Carex magellanica ssp. irrigua*	na	na	Secure	S5											P											
Smooth Black Sedge	*Carex nigra*	na	na	Secure	S5																				P		
New England Sedge	*Carex novae-angliae*	na	na	Secure	S5																						
Cyperuslike Sedge	*Carex pseudocyperus*	na	na	Secure	S4S5																P						
Rough Sedge	*Carex scabrata*	na	na	Secure	S5																						
Broom Sedge	*Carex scoparia*	na	na	Secure	S5																			P			
a Sedge	*Carex sp.*	na	na	na	na		P											P							P	P	
Awl-fruited Sedge	*Carex stipata*	na	na	Secure	S5																						
Tussock Sedge	*Carex stricta*	na	na	Secure	S5											P			P		P			P			
Deep Green Sedge	*Carex tonsa*	na	na	Secure	S5																						
Three-seeded Sedge	*Carex trisperma*	na	na	Secure	S5	P	P				P		P	P	P	P	P	P	P		P					P	
Umbellate Sedge	*Carex umbellata*	na	na	Secure	S4																						
Greenish Sedge	*Carex viridula*	na	na	Secure	S4																						
Black Knapweed	*Centaurea nigra*	na	na	Exotic	SNA																		P				
Common Chickweed	*Cerastium fontanum*	na	na	Exotic	SNA																						
Leatherleaf	*Chamaedaphne calyculata*	na	na	Secure	S5								P		P						P			P			
Fireweed	*Chamerion angustifolium*	na	na	Secure	S5																						
White Turtlehead	*Chelone glabra*	na	na	Secure	S5		P								P	P			P	P	P						
White Goosefoot	*Chenopodium album*	na	na	Exotic	SNA																						
Spotted Water-Hemlock	*Cicuta maculata*	na	na	Secure	S5																						
Small Enchanter's Nightshade	*Circaea alpina*	na	na	Secure	S5												P	P									
Bull Thistle	*Cirsium vulgare*	na	na	Exotic	SNA																						
Smooth Twigrush	*Cladium mariscoides*	na	na	Secure	S5																						
Virginia Clematis	*Clematis virginiana*	na	na	Secure	S5																P						
Yellow Bluebead Lily	*Clintonia borealis*	na	na	Secure	S5																						
Sweet-fern	*Comptonia peregrina*	na	na	Secure	S5																						
Field Bindweed	*Convolvulus arvensis*	na	na	Exotic	SNA													P									
Canada Horseweed	*Conyza canadensis*	na	na	Secure	S5																						
Goldthread	*Coptis trifolia*	na	na	Secure	S5	P				P	P					P		P	P		P						P
Early Coralroot	*Corallorhiza trifida*	na	na	Secure	S3		P									P					P						
Broom Crowberry	*Corema conradii*	na	na	Secure	S4																						
Alternate-leaved Dogwood	*Cornus alternifolia*	na	na	Secure	S5													P									
Bunchberry	*Cornus canadensis*	na	na	Secure	S5	P					P				P	P		P	P	P	P					P	P
Red Osier Dogwood	*Cornus sericea*	na	na	Secure	S5																		P				
Beaked Hazel	*Corylus cornuta*	na	na	Secure	S5									P		P				P							
Fireberry Hawthorn	*Crataegus chrysocarpa*	na	na	Secure	S4S5																						
Big-Fruit Hawthorn	*Crataegus macrosperma*	na	na	Secure	S4?																						
a Hawthorn	*Crataegus sp.*	na	na	na	na																						
Fleshy Hawthorn	*Crataegus succulenta*	na	na	Undetermined	SNR																						
a Hawthorne	*Crateagus sp.*	na	na	na	na																						
Narrow-leaved Hawksbeard	*Crepis tectorum*	na	na	Exotic	SNA																						
Pink Lady's-Slipper	*Cypripedium acaule*	na	na	Secure	S5	P	P																			P	
Orchard Grass	*Dactylis glomerata*	na	na	Exotic	SNA																						
Poverty Oat Grass	*Danthonia spicata*	na	na	Secure	S5																						
Queen Anne's Lace	*Daucus carota*	na	na	Exotic	SNA																						
Eastern Hay-Scented Fern	*Dennstaedtia punctilobula*	na	na	Secure	S5	P	P											P									P
Deptford Pink	*Dianthus armeria*	na	na	Exotic	SNA																						
Woolly Panic Grass	*Dichanthelium acuminatum*	na	na	Secure	S5																						
Northern Panic Grass	*Dichanthelium boreale*	na	na	Secure	S5																						
Starved Panic Grass	*Dichanthelium depauperatum*	na	na	Secure	S4S5																						
Northern Bush Honeysuckle	*Diervilla lonicera*	na	na	Secure	S5													P		P							
Hairy Crab Grass	*Digitaria sanguinalis*	na	na	Exotic	SNA																						
False Yellowhead	*Dittrichia viscosa*	na	na	na	na																						
Hairy Flat-top White Aster	*Doellingeria umbellata*	na	na	Secure	S5					P	P		P	P	P	P	P	P	P	P	P	P		P			P
Spoon-Leaved Sundew	*Drosera intermedia*	na	na	Secure	S5																						
Round-leaved Sundew	*Drosera rotundifolia*	na	na	Secure	S5										P						P						
Mountain Wood Fern	*Dryopteris campyloptera*	na	na	Secure	S5																						
Spinulose Wood Fern	*Dryopteris carthusiana*	na	na	Secure	S5	P					P			P		P	P	P			P					P	P
Crested Wood Fern	*Dryopteris cristata*	na	na	Secure	S5	P	P			P	P				P	P		P	P		P					P	
Evergreen Wood Fern	*Dryopteris intermedia*	na	na	Secure	S5													P				P					
Marginal Wood Fern	*Dryopteris marginalis*	na	na	Secure	S5												P			P							
a Hybrid Wood-fern	*Dryopteris x boottii*	na	na	Not Assessed	SNA													P									
a Hybrid Wood-fern	*Dryopteris x triploidea*	na	na	Not Assessed	SNA																						
Three-Way Sedge	*Dulichium arundinaceum*	na	na	Secure	S5																						

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Needle Spikerush	*Eleocharis acicularis*	na	na	Secure	S5																						
Blunt Spikerush	*Eleocharis obtusa*	na	na	Secure	S5																						
a Spikerush	*Eleocharis sp.*	na	na	na	na																						
Slender Spikerush	*Eleocharis tenuis*	na	na	Secure	S5																						
Black Crowberry	*Empetrum nigrum*	na	na	Secure	S5																						
Trailing Arbutus	*Epigaea repens*	na	na	Secure	S5																						
Northern Willowherb	*Epilobium ciliatum*	na	na	Secure	S5													P			P				P		
Hairy Willowherb	*Epilobium hirsutum*	na	na	Exotic	SNA																			P			
Bog Willowherb	*Epilobium leptophyllum*	na	na	Secure	S5																						
Marsh Willowherb	*Epilobium palustre*	na	na	Secure	S5											P									P		
Willow-Herb	*Epilobium sp.*	na	na	na	na											P			P								
Field Horsetail	*Equisetum arvense*	na	na	Secure	S5																	P	P	P	P		
Water Horsetail	*Equisetum fluviatile*	na	na	Secure	S5																			P			
Woodland Horsetail	*Equisetum sylvaticum*	na	na	Secure	S5																P						
Variegated Horsetail	*Equisetum variegatum*	na	na	Secure	S3																						
a Hybrid Horsetail	*Equisetum x litorale*	na	na	Not Assessed	SNA																						
Eastern Burnweed	*Erechtites hieraciifolia*	na	na	Secure	S5																						
Annual Fleabane	*Erigeron annuus*	na	na	Secure	S4S5																						
Rough Fleabane	*Erigeron strigosus*	na	na	Secure	S5			P																			
White Buttons	*Eriocaulon aquaticum*	na	na	Secure	S5																						
Tussock Cottongrass	*Eriophorum vaginatum*	na	na	Secure	S5																						
Tawny Cotton-Grass	*Eriophorum virginicum*	na	na	Secure	S5																						
Worm-seeded Wallflower	*Erysimum cheiranthoides*	na	na	Exotic	SNR																						
Spotted Joe-pye-weed	*Eupatorium maculatum*	na	na	Secure	S5																						
Common Boneset	*Eupatorium perfoliatum*	na	na	Secure	S5																						
Common Eyebright	*Euphrasia nemorosa*	na	na	Secure	S5																						
Stiff Eyebright	*Euphrasia stricta*	na	na	Exotic	SNA																						
Low Rough Aster	*Eurybia radula*	na	na	Secure	S5		P								P	P			P		P						
Slender Fragrant Goldenrod	*Euthamia caroliniana*	na	na	Secure	S4																						
Grass-leaved Goldenrod	*Euthamia graminifolia*	na	na	Secure	S5																						
American Beech	*Fagus grandifolia*	na	na	Secure	S5																						
Hair Fescue	*Festuca filiformis*	na	na	Exotic	SNA																						
Red Fescue	*Festuca rubra*	na	na	Secure	S5																						
Woodland Strawberry	*Fragaria vesca*	na	na	Secure	S4															P							
Wild Strawberry	*Fragaria virginiana*	na	na	Secure	S5													P	P		P	P					
Glossy Buckthorn	*Frangula alnus*	na	na	Exotic	SNA	P													P								
White Ash	*Fraxinus americana*	na	na	Secure	S5									P	P	P		P	P	P	P	P	P	P			
European Ash	*Fraxinus excelsior*	na	na	Exotic	SNA																						
Black Ash	*Fraxinus nigra*	na	na	Sensitive	S2S3														P								
Common Hemp-nettle	*Galeopsis tetrahit*	na	na	Exotic	SNA																						
Smooth Bedstraw	*Galium mollugo*	na	na	Exotic	SNA																						
Common Marsh Bedstraw	*Galium palustre*	na	na	Secure	S5																			P			
a Bedstraw	*Galium sp.*	na	na	na	na												P		P		P				P		
Dyer's Bedstraw	*Galium tinctorium*	na	na	Secure	S5																P			P			
Three-petaled Bedstraw	*Galium trifidum*	na	na	Secure	S5																						
Creeping Snowberry	*Gaultheria hispidula*	na	na	Secure	S5		P																				
Eastern Teaberry	*Gaultheria procumbens*	na	na	Secure	S5						P																
Black Huckleberry	*Gaylussacia baccata*	na	na	Secure	S5					P	P	P		P	P			P	P		P			P	P	P	P
Bigelow's Huckleberry	*Gaylussacia bigeloviana*	na	na	Secure	S5																						
Yellow Avens	*Geum aleppicum*	na	na	Secure	S5																						
Rough Avens	*Geum laciniatum*	na	na	Secure	S5																						
an Avens	*Geum sp.*	na	na	na	na																						
Northern Manna Grass	*Glyceria borealis*	na	na	Secure	S5																P						
Canada Manna Grass	*Glyceria canadensis*	na	na	Secure	S5										P	P			P		P	P		P			
Common Tall Manna Grass	*Glyceria grandis*	na	na	Secure	S4S5																			P		P	
Northern Mannagrass	*Glyceria laxa*	na	na	Secure	S4?																						
Atlantic Manna Grass	*Glyceria obtusa*	na	na	Secure	S4														P		P						
a Mannagrass	*Glyceria sp.*	na	na	na	na	P	P																			P	
Fowl Manna Grass	*Glyceria striata*	na	na	Secure	S5																P					P	
Marsh Cudweed	*Gnaphalium uliginosum*	na	na	Exotic	SNA																						
American Witch-Hazel	*Hamamelis virginiana*	na	na	Secure	S5	P				P				P				P									
Jerusalem Artichoke	*Helianthus tuberosus*	na	na	Exotic	SNA																						
Field Hawkweed	*Hieracium caespitosum*	na	na	Exotic	SNA																						
Canada Hawkweed	*Hieracium canadense*	na	na	Secure	S4S5																						
Kalm's Hawkweed	*Hieracium kalmii*	na	na	Undetermined	S2?																						
Common Hawkweed	*Hieracium lachenalii*	na	na	Exotic	SNA																						
Wall Hawkweed	*Hieracium murorum*	na	na	Exotic	SNA																						
Mouse-ear Hawkweed	*Hieracium pilosella*	na	na	Exotic	SNA																						

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Common Name	Scientific Name	SARA / COSEWIC Rank	NS ESA Rank	NSDNR Rank	AC CDC Rank	102	104	105	106	107	109	110	111	113	114	115	116	117	118	119	120	122	125	131	132	133	134
Tall Hawkweed	*Hieracium piloselloides*	na	na	Exotic	SNA																						
a Hawkweed	*Hieracium sp.*	na	na	na	na										P			P		P	P				P		P
Whiplash Hawkweed	*Hieracium x flagellare*	na	na	Exotic	SNA																						
Smoothish Hawkweed	*Hieracium x floribundum*	na	na	Exotic	SNA																				P		
Canada St. John's-wort	*Hypericum canadense*	na	na	Secure	S5																						
Large St. John's-wort	*Hypericum majus*	na	na	May Be At Risk	S1																						
Common St. John's-wort	*Hypericum perforatum*	na	na	Exotic	SNA																		P				
Hairy Cat's-ear	*Hypochaeris radicata*	na	na	Exotic	SNA																						
Inkberry	*Ilex glabra*	na	na	Secure	S5																						
Common Winterberry	*Ilex verticillata*	na	na	Secure	S5	P	P					P				P			P	P		P		P			
Spotted Jewelweed	*Impatiens capensis*	na	na	Secure	S5												P		P	P	P						
Harlequin Blue Flag	*Iris versicolor*	na	na	Secure	S5		P						P		P	P			P		P					P	
Jointed Rush	*Juncus articulatus*	na	na	Secure	S5																						
Arctic Rush	*Juncus balticus*	na	na	Secure	S5																						
Short-tailed Rush	*Juncus brevicaudatus*	na	na	Secure	S5																						
Toad Rush	*Juncus bufonius*	na	na	Secure	S5																						
Canada Rush	*Juncus canadensis*	na	na	Secure	S5																P						
Soft Rush	*Juncus effusus*	na	na	Secure	S5														P				P		P	P	
Soft Rush	*Juncus effusus var. solutus*	na	na	Secure	S5																			P			
Brown-Fruited Rush	*Juncus pelocarpus*	na	na	Secure	S5																						
a Rush	*Juncus sp.*	na	na	na	na														P		P						
Path Rush	*Juncus tenuis*	na	na	Secure	S5																						
Common Juniper	*Juniperus communis*	na	na	Secure	S5																						
Sheep Laurel	*Kalmia angustifolia*	na	na	Secure	S5	P	P				P	P	P		P	P		P	P		P					P	P
Pale Bog Laurel	*Kalmia polifolia*	na	na	Secure	S5																						
Tall Blue Lettuce	*Lactuca biennis*	na	na	Secure	S5																						
Tamarack	*Larix laricina*	na	na	Secure	S5	P		P					P			P			P		P					P	
Large-pod Pinweed	*Lechea intermedia*	na	na	Secure	S4																						
Large-pod Pinweed	*Lechea intermedia var. juniperina*	na	na	Secure	S4																						
Common Labrador Tea	*Ledum groenlandicum*	na	na	Secure	S5	P							P						P		P					P	
Rice Cut Grass	*Leersia oryzoides*	na	na	Secure	S5																						
Lesser Duckweed	*Lemna minor*	na	na	na	SNA																						
Fall Dandelion	*Leontodon autumnalis*	na	na	Exotic	SNA																						
Oxeye Daisy	*Leucanthemum vulgare*	na	na	Exotic	SNA																						
Butter-And-Eggs	*Linaria vulgaris*	na	na	Exotic	SNA																						
Twinflower	*Linnaea borealis*	na	na	Secure	S5													P									
Southern Twayblade	*Listera australis*	na	na	May Be At Risk	S2																						
Heart-leaved Twayblade	*Listera cordata*	na	na	Secure	S4																						
Water Lobelia	*Lobelia dortmanna*	na	na	Secure	S5																						
Tall Fescue	*Lolium arundinaceum*	na	na	Exotic	SNA																						
Meadow Fescue	*Lolium pratense*	na	na	Exotic	SNA																						
Canada Fly Honeysuckle	*Lonicera canadensis*	na	na	Secure	S5				P	P									P								
Tartarian Honeysuckle	*Lonicera tatarica*	na	na	Exotic	SNA																						
Mountain Fly Honeysuckle	*Lonicera villosa*	na	na	Secure	S4S5								P		P				P			P					
Garden Bird's-foot Trefoil	*Lotus corniculatus*	na	na	Exotic	SNA																						
Marsh Seedbox	*Ludwigia palustris*	na	na	Secure	S5																						
Large-Leaved Lupine	*Lupinus polyphyllus*	na	na	Exotic	SNA																						
Common Woodrush	*Luzula multiflora*	na	na	Secure	S5																						
Stiff Clubmoss	*Lycopodium annotinum*	na	na	Secure	S5																						
Running Clubmoss	*Lycopodium clavatum*	na	na	Secure	S5																						
Flat-branched Tree-clubmoss	*Lycopodium obscurum*	na	na	Secure	S4S5																						
American Water Horehound	*Lycopus americanus*	na	na	Secure	S5														P						P		
Northern Water Horehound	*Lycopus uniflorus*	na	na	Secure	S5														P	P	P			P			
Fringed Yellow Loosestrife	*Lysimachia ciliata*	na	na	Secure	S4																						
Creeping Yellow Loosestrife	*Lysimachia nummularia*	na	na	Exotic	SNA																						
Swamp Yellow Loosestrife	*Lysimachia terrestris*	na	na	Secure	S5										P			P		P	P				P		
Tufted Yellow Loosestrife	*Lysimachia thyrsiflora*	na	na	Secure	S4																						
Purple Loosestrife	*Lythrum salicaria*	na	na	Exotic	SNA																			P			
Wild Lily-of-The-Valley	*Maianthemum canadense*	na	na	Secure	S5						P	P	P	P	P	P	P	P	P	P	P	P				P	P
Large False Solomon's Seal	*Maianthemum racemosum*	na	na	Secure	S4S5					P																	
Three-leaved False Soloman's Seal	*Maianthemum trifolium*	na	na	Secure	S5	P	P						P		P	P			P		P					P	
Common Apple	*Malus pumila*	na	na	Exotic	SNA																						
Ostrich Fern	*Matteuccia struthiopteris*	na	na	Secure	S5															P							
Indian Cucumber Root	*Medeola virginiana*	na	na	Secure	S5																						
American Cow Wheat	*Melampyrum lineare*	na	na	Secure	S5																						
White Sweet-clover	*Melilotus albus*	na	na	Exotic	SNA																						
Wild Mint	*Mentha arvensis*	na	na	Secure	S5																						
Tall Millet Grass	*Milium effusum*	na	na	Secure	S4																						

Table 2 Plants Recorded within Wetlands of the Study Area and Information on their Population Status

Common Name	Scientific Name	SARA / COSEWIC Rank	NS ESA Rank	NSDNR Rank	AC CDC Rank	102	104	105	106	107	109	110	111	113	114	115	116	117	118	119	120	122	125	131	132	133	134
Partridgeberry	*Mitchella repens*	na	na	Secure	S5		P			P						P										P	
One-flowered Wintergreen	*Moneses uniflora*	na	na	Secure	S5					P																	
Indian Pipe	*Monotropa uniflora*	na	na	Secure	S5		P														P						
Northern Bayberry	*Morella pensylvanica*	na	na	Secure	S5																P			P			
Small Forget-Me-Not	*Myosotis laxa*	na	na	Secure	S5																						
a Forget-Me-Not	*Myosotis sp.*	na	na	na	na																				P		
Sweet Gale	*Myrica gale*	na	na	Secure	S5										P	P			P		P						
Mountain Holly	*Nemopanthus mucronata*	na	na	Secure	S5																						
Mountain Holly	*Nemopanthus mucronatus*	na	na	Secure	S5		P			P		P	P		P	P			P		P					P	
Variegated Pond-lily	*Nuphar lutea*	na	na	Secure	S5														P		P						
Red-disked Yellow Pond-lily	*Nuphar lutea ssp. rubrodisca*	na	na	Secure	S4																						
Fragrant Water-lily	*Nymphaea odorata*	na	na	Secure	S5														P		P						
Whorled Wood Aster	*Oclemena acuminata*	na	na	Secure	S5	P				P	P			P	P	P		P	P	P						P	P
Bog Aster	*Oclemena nemoralis*	na	na	Secure	S5																P						
a hybrid White Panicled American-Aster	*Oclemena x blakei*	na	na	Secure	S4S5	P	P								P						P					P	
Red Bartsia	*Odontites vernus*	na	na	Exotic	SNA																						
Common Evening Primrose	*Oenothera biennis*	na	na	Secure	S5																						
Perennial Evening Primrose	*Oenothera perennis*	na	na	Secure	S5																						
a Primrose	*Oenothera sp.*	na	na	na	na																				P		
Woodland Cudweed	*Omalotheca sylvatica*	na	na	Secure	S4S5																						
Sensitive Fern	*Onoclea sensibilis*	na	na	Secure	S5	P									P	P	P	P	P		P	P	P	P	P		
White-grained Mountain Rice	*Oryzopsis asperifolia*	na	na	Secure	S5																						
Hairy Sweet Cicely	*Osmorhiza claytonii*	na	na	Secure	S4											P					P						
Cinnamon Fern	*Osmunda cinnamomea*	na	na	Secure	S5	P	P			P	P	P	P		P	P		P	P		P	P		P		P	
Interrupted Fern	*Osmunda claytoniana*	na	na	Secure	S5		P			P	P			P								P					
Royal Fern	*Osmunda regalis*	na	na	Secure	S5	P							P						P	P	P			P			
Common Wood Sorrel	*Oxalis montana*	na	na	Secure	S5											P		P									
European Wood Sorrel	*Oxalis stricta*	na	na	Secure	S5																						
Golden Groundsel	*Packera aurea*	na	na	Secure	S4																						
Schweinitz's Groundsel	*Packera schweinitziana*	na	na	Secure	S4																						
Common Witch Grass	*Panicum capillare*	na	na	Exotic	SNA																						
Fall Panic Grass	*Panicum dichotomiflorum*	na	na	Secure	S5																						
a Panic-grass	*Panicum sp.*	na	na	na	na																						
Reed Canary Grass	*Phalaris arundinacea*	na	na	Secure	S5																		P	P			
Northern Beech Fern	*Phegopteris connectilis*	na	na	Secure	S5													P									
Amur cork tree	*Phellodendron amurense*	na	na	na	na																						
Common Timothy	*Phleum pratense*	na	na	Exotic	SNA																						
Purple Chokeberry	*Photinia floribunda*	na	na	Secure	S5																P						
Black Chokeberry	*Photinia melanocarpa*	na	na	Secure	S5						P		P						P		P						
Red Chokeberry	*Photinia pyrifolia*	na	na	Secure	S4?																			P		P	
White Spruce	*Picea glauca*	na	na	Secure	S5																						
Black Spruce	*Picea mariana*	na	na	Secure	S5	P	P			P			P			P		P	P	P	P					P	P
Red Spruce	*Picea rubens*	na	na	Secure	S5												P	P									
Red Pine	*Pinus resinosa*	na	na	Secure	S4S5																						
Eastern White Pine	*Pinus strobus*	na	na	Secure	S5										P				P						P	P	
Scotch Pine	*Pinus sylvestris*	na	na	Exotic	SNA																						
English Plantain	*Plantago lanceolata*	na	na	Exotic	SNA																						
Common Plantain	*Plantago major*	na	na	Exotic	SNA																						
Seaside Plantain	*Plantago maritima*	na	na	Secure	S5																						
Tall Northern Green Orchid	*Platanthera aquilonis*	na	na	Secure	S4?																						
Club Spur Orchid	*Platanthera clavellata*	na	na	Secure	S5					P																	
an Orchid	*Platanthera sp.*	na	na	na	na														P	P							
Annual Blue Grass	*Poa annua*	na	na	Exotic	SNA																						
Canada Blue Grass	*Poa compressa*	na	na	Exotic	SNA																						
Fowl Blue Grass	*Poa palustris*	na	na	Secure	S5																			P			
Kentucky Blue Grass	*Poa pratensis*	na	na	Secure	S5																						
Rose Pogonia	*Pogonia ophioglossoides*	na	na	Secure	S4																						
Blood Milkwort	*Polygala sanguinea*	na	na	Sensitive	S2S3																						
Fringed Black Bindweed	*Polygonum cilinode*	na	na	Secure	S5									P				P			P	P		P			
Japanese Knotweed	*Polygonum cuspidatum*	na	na	Exotic	SNA																						
False Waterpepper	*Polygonum hydropiperoides*	na	na	Secure	S5																P						
Pale Smartweed	*Polygonum lapathifolium*	na	na	Secure	S5																						
Spotted Lady's-thumb	*Polygonum persicaria*	na	na	Exotic	SNA																P						
Arrow-leaved Smartweed	*Polygonum sagittatum*	na	na	Secure	S5																P			P			
Bindweed	*Polygonum sp.*	na	na	na	na																						
Rock Polypody	*Polypodium virginianum*	na	na	Secure	S5																						P
Christmas Fern	*Polystichum acrostichoides*	na	na	Secure	S5													P		P							
Pickerelweed	*Pontederia cordata*	na	na	Secure	S5														P		P						

	Summary of 2013/2014 Wetland Assessments - Significant Wetland Functions from NovaWET (3.0)																												
Tertiary Watershed	SF1 Watershed condition - M				SF2 Proportion of Wetland area in watershed and opportunity for floodwater detention - M																								
Wetland Number	General condition/ integrity	Adjacent land condition/ integrity	WSS?	Commercial/recreational fish/ shellfish?	Species of Concern	Conservation/ compensation agreements/activity?	Calcareous fen, black ash, cedar swamp, or wild rice marsh?	Designated Water Suppy?	In floodplain and upstream or within populated area?	Fed/Prov/Municipal area of interest?	Hydrologic condition	Stormwater/wastewater/agric. Runoff detention or coastal storm surge	WL important for maintaining stream flow?	WL ability to detain surface water	Wetland improves water quality?	Significant flood/stormwater attenuation	Evidence of excess nutrient loading/ contamination?	WL contributes to water quality in downstream resources	WL likely serves as a recharge site	WL likely serves as a discharge site	WL ability to stabilize shoreline / Fringing wetland	Unique or rare plant community	Contains a diversity of plant communities?	Overall integrity/ quality of plant community?	Rare or endangered plant species?	Does WL associated with fish/ fish habitat?	Rare or endangered fish/ wildlife species in WL?	Overall fish and wildlife habitat quality	Community use/ value
Function	SF3	SF4	SF5	SF6	SF7	SF8	SF9	0	SF11	SF12	SF13	SF13a	SF14	SF15	SF16	SF16a	SF17	SF18	SF19	0	SF21	SF22	SF23	SF24	SF25	SF26	SF27	SF28	SF29
WL-2013-01	M	M	No	No	No	No	No	No	No	No	Nat	No	No	L	No	No	L	L	No	Yes	L	No	L	H	No	No	No	L	L
WL-2013-02	M	M	No	No	Thr	No	No	No	No	No	Mod	No	No	M	No	No	L	L	No	Yes	L	No	L	H	No	No	No	M	L
WL-2013-03	H	H	No	No	Thr	No	No	No	No	No	Nat	No	No	M	No	No	L	L	No	Yes	L	No	L	H	No	No	No	M	L
WL-2013-04	H	H	No	No	No	No	No	No	No	No	Nat	No	No	M	Yes	No	L	M	No	Yes	M	No	L	H	No	No	No	L	L
WL-2013-05	H	H	No	No	No	No	No	No	No	No	Nat	No	No	L	Yes	No	L	L	No	Yes	L	No	L	H	No	No	No	L	L
WL-2013-06	H	H	No	No	No	No	No	No	No	No	Nat	No	No	M	Yes	No	L	M	No	Yes	M	No	L	H	No	Yes	No	L	L
Wrights Bk Riparian	H	H	No	No	SpC	No	No	No	No	No	Nat	No	No	M	No	No	L	L	No	Yes	L	No	L	H	No	Yes	No	M	L
WL-2013-07	M	H	No	No	No	No	No	No	No	No	Mod	No	No	M	Yes	No	L	L	No	Yes	L	No	L	H	No	No	No	L	L
WL-2014-01	H	H	No	No	No	No	No	No	No	No	Nat	No	No	M	Yes	No	L	L	No	Yes	L	No	L	H	No	Yes	No	L	L
Pond	M	M	No	No	End	No	No	No	No	No	SiM	No	No	M	Yes	No	M	L	No	Yes	L	No	H	H	No	No	No	M	L
WL-2013-08	M	M	No	No	No	No	No	No	No	No	Nat	No	No	M	Yes	No	L	L	No	Yes	L	No	L	H	No	No	No	L	L
WL-2013-09	M	M	No	No	No	No	No	No	No	No	Nat	No	No	M	Yes	No	L	L	No	Yes	L	No	L	H	No	No	No	L	L
WL-2013-10	H	H	No	No	Thr	No	No	No	No	No	Nat	No	No	M	Yes	No	L	L	No	Yes	L	No	L	H	No	No	No	M	L
WL-2013-11	M	M	No	No	No	No	No	No	No	No	Nat	No	No	M	Yes	No	L	L	No	Yes	L	No	L	H	No	No	No	L	L
WL-2013-12	M	M	No	No	Thr	No	No	No	No	No	Nat	No	Yes?	M	Yes	No	L	M	No	Yes	M	No	M	H	No	Yes	No	M	L
WL-2013-13	M	M	No	No	No	No	No	No	No	No	Nat	No	No	M	Yes	No	L	L	No	Yes	L	No	L	H	No	No	No	L	L
WL-2013-14	M	M	No	No	No	No	No	No	No	No	Nat	No	No	M	Yes	No	L	L	No	Yes	L	No	L	H	No	No	No	L	L
WL-2013-15	M	M	No	No	No	No	No	No	No	No	Nat	No	No	M	Yes	No	L	L	No	Yes	L	No	L	H	No	No	No	L	L
WL-2013-17	M	M	No	No	No	No	No	No	No	No	Nat	No	No	M	Yes	No	L	L	No	Yes	L	No	L	H	No	No	No	L	L
WL-2013-18	M	M	No	No	No	No	No	No	No	No	Nat	No	No	M	Yes	No	L	L	No	Yes	L	No	L	H	No	No	No	L	L
WL-2013-20	M	M	No	No	No	No	No	No	No	No	Nat	No	No	M	Yes	No	L	L	No	Yes	L	No	L	H	No	No	No	L	L
WL-2013-21	H	H	No	No	Thr, S3+	No	No	No	No	No	Nat	No	No	L	Yes	No	L	L	No	Yes	L	No	L	H	No	No	No	M	L
WL-2014-05	H	H	No	No	No	No	No	No	No	No	Nat	No	No	M	Yes	No	L	L	No	Yes	L	No	L	H	No	No	No	L	L
WL-2014-04	H	H	No	No	No	No	No	No	No	No	Nat	No	No	M	Yes	No	L	L	No	Yes	L	No	L	H	No	No	No	L	L
WL-2014-08	M	M	No	No	No	No	No	No	No	No	Nat	No	No	M	Yes	No	L	L	No	Yes	L	No	L	H	No	No	No	L	L
WL-2014-13	H	H	No	No	No	No	No	No	No	No	Nat	No	No	M	Yes	No	L	L	No	Yes	L	No	L	H	No	No	No	L	L
WL-2013-24	H	H	No	No	Thr	No	No	No	No	No	Nat	No	No	M	Yes	No	L	L	No	Yes	L	No	L	H	No	No	No	M	L
WL-2013-26	H	H	No	No	No	No	No	No	No	No	Nat	No	No	M	Yes	No	L	L	No	Yes	L	No	L	H	No	No	No	L	L
WL-2013-27	H	H	No	No	No	No	No	No	No	No	Nat	No	No	M	Yes	No	L	L	No	Yes	L	No	L	H	No	No	No	L	L
WL-2014-14	H	H	No	No	S3+	No	No	No	No	No	Nat	No	No	M	Yes	No	L	L	No	Yes	L	No	L	H	No	No	No	L	L
WL-2013-28	H	H	No	No	No	No	No	No	No	No	Nat	No	No	M	Yes	No	L	L	No	Yes	L	No	L	H	No	No	No	L	L

L Low M Moderate H High; Yes? partially meets condition; End Endangered Thr Threatened SpC Special Concern AR Provincial at risk or may be at risk Se Provincial Sensitive S-Rank S1 extremely rare S2 rare S3 uncommon; Nat Natural Mod Modified SiM Significantly Modified SHADED critical or degraded wetland function

Appendix F
Plant Data

Appendix F 2013 and 2014 and 2016 Plant List Highway 107

Surveys: September 16-19, 2013, September 30 2013, June 25-27, 2014, August 11-13, 2014, June 2-3, 2016

Botanist: Tom Neily

Species	Common Name	S Rank / General Status*	Upland	Power Corridor / Disturbed	Swamps	Bogs	Pond Shore~
Abies balsamea	Balsam fir	S5/Secure	P	P	P	P	P
Acer pensylvanicum	Striped maple	S5/Secure	P		P		
Acer rubrum	Red maple	S5/Secure		P	P	P	DS
Alnus incana	Speckled alder	S5/Secure	P				DS
Alnus viridis	Green alder	S5/Secure	P				
Amelanchier sp	Amelanchier sp	not a sp at risk		P			
Andromeda polifolia	Bog-rosemary	S5/Secure				P	
Aralia nudicaulis	Wild sarsaparilla	S5/Secure			P		
Aster acuminatus	Wood aster	S5/Secure				P	
Betula papyrifera	Paper birch	S5/Secure	P		P		
Betula populifolia	Gray birch	S5/Secure	P		P	P	
Brachyelytrum septentrionale	Bearded short-husk	S5/Secure	P		P		
Calamagrostis canadensis	Blue-joint reedgrass	S5/Secure			P	P	
Carex arctata	Black sedge	S5/Secure	P	P			
Carex echinata	Little prickly sedge	S5/Secure	P	P	P		AL
Carex folliculata	Long sedge	S5/Secure			P		DS
Carex gynandra	A sedge	S5/Secure			P		
Carex lurida	Shallow sedge	S5/Secure		P	P		DS,AL
Carex stricta	Tussock sedge	S5/Secure				P	
Carex trisperma	Three-Seed sedge	S5/Secure			P	P	
Chamaedaphne calyculata	Leatherleaf	S5/Secure			P	P	
Comptonia peregrina	Sweetfern	S5/Secure	P	P		P	
Coptis trifolia	Goldthread	S5/Secure			P	P	
Cornus canadensis	Dwarf dogwood	S5/Secure	P		P		
Dennstaedtia punctilobula	Eastern hay-scented fern	S5/Secure	P	P			
Diervilla lonicera	Northern bush-honeysuckle	S5/Secure	P				
Drosera rotundifolia	Roundleaf sundew	S5/Secure			P		AL
Eleocharis obtusa	Blunt spike-rush	S5/Secure		P			
Empetrum nigrum	Black crowberry	S5/Secure	P	P			
Epigaea repens	Trailing arbutus	S5/Secure	P				
Frangula alnus	Glossy buckthorn	**Exotic**					DS
Fraxinus americana	White ash	S5/Secure		P	P		
Gaultheria procumbens	Teaberry	S5/Secure	P				
Gaylussacia baccata	Black huckleberry	S5/Secure	P	P	P	P	AL.DS
Glyceria canadensis	Canada manna-grass	S5/Secure			P		P
Hamamelis virginiana	American witch-hazel	S5/Secure	P				
Hieracium pilosella	Mouseear	**Exotic**		P			
Ilex verticillata	Black holly	S5/Secure			P	P	

Appendix F 2013 and 2014 and 2016 Plant List Highway 107

Surveys: September 16-19, 2013, September 30 2013, June 25-27, 2014, August 11-13, 2014, June 2-3, 2016

Botanist: Tom Neily

Species	Common Name	S Rank / General Status*	Upland	Power Corridor / Disturbed	Swamps	Bogs	Pond Shore~
Iris versicolor	Blueflag	S5/Secure					DS
Juncus effusus	Soft rush	S5/Secure	P	P	P		AL,DS
Kalmia angustifolia	Sheep-laurel	S5/Secure	P	P	P	P	DS
Larix laricina	American larch	S5/Secure	P		P	P	
Ledum groenlandicum	Common Labrador tea	S5/Secure			P	P	
Linnaea borealis	Twinflower	S5/Secure	P				
Listera australis	Southern twayblade	***S2 / May be at risk***			P		
Ludwigia palustris	Marsh seedbox	S5/Secure					DS
Lycopus uniflorus	Northern bugleweed	S5/Secure			P		
Lysimachia terrestris	Swamp loosestrife	S5/Secure					DS
Maianthemum canadense	Wild lily-of-the-valley	S5/Secure	P	P	P	P	
Maianthemum trifolium	Three-leaf solomon's-plume	S5/Secure	P	P	P	P	
Melampyrum lineare	American cow-wheat	S5/Secure	P	P			
Minuartia groenlandica	Mountain sandwort/stitchwort	***S3/ Sensitive***	P	P			
Myrica gale	Sweet bayberry	S5/Secure				P	
Myrica pensylvanica	Northern bayberry	S5/Secure		P		P	
Nemopanthus mucronatus	Mountain holly	S5/Secure	P		P		
Nuphar lutea	Cow-lily	S5/Secure				P	
Nymphaea odorata	American water-lily	S5/Secure					AL,DS
Oclemena acuminata	Whorled aster	S5/Secure	P				
Onoclea sensibilis	Sensitive fern	S5/Secure					DS
Osmunda cinnamomea	Cinnamon fern	S5/Secure			P	P	
Osmunda regalis	Royal fern	S5/Secure			P	P	DS
Pannicum boreale	Northern panic grass	S5/Secure		P			
Phalaris arundinacea	Reed canary grass	S5/Secure					DS
Photinia melanocarpa	Black chokeberry	S5/Secure		P		P	
Picea mariana	Black spruce	S5/Secure	P		P		
Picea rubens	Red spruce	S5/Secure		P	P		
Pinus banksiana	Jack pine	S4/Secure	P				
Pinus resinosa	Red pine	S5/Secure	P				
Pinus strobus	Eastern white pine	S5/Secure	P	P		P	
Populus grandidentata	Large-tooth aspen	S5/Secure	P				
Populus tremuloides	Trembling aspen	S5/Secure	P	P			
Prenanthes trifoliolata	Three-leaved rattlesnake-root	S5/Secure	P				
Pteridium aquilinum	Bracken fern	S5/Secure	P	P	P		
Osmunda cinnamomea	Cinnamon fern	S5/Secure		P	P	P	

Appendix F 2013 and 2014 and 2016 Plant List Highway 107

Surveys: September 16-19, 2013, September 30 2013, June 25-27, 2014, August 11-13, 2014, June 2-3, 2016
Botanist: Tom Neily

Species	Common Name	S Rank / General Status*	Upland	Power Corridor / Disturbed	Swamps	Bogs	Pond Shore~
Quercus rubra	Northern red oak	S5/Secure	P		P		
Ranunculus acris	Tall butter-cup	S5/Secure		P			
Rhododendron canadense	Rhodora	S5/Secure				P	
Rubus allegheniensis	Allegheny blackberry	S5/Secure	P	P			
Rubus hispidus	Bristly dewberry	S5/Secure			P	P	
Salix bebbiana	Bebb's willow	S5/Secure					DS
Salix discolor	Pussy willow	S5/Secure					P
Sarracenia purpurea	Northern pitcher-plant	S5/Secure				P	
Schoenoplectus tabernaemontani	Soft-stem bulrush	S5/Secure					DS
Scirpus cyperinus	Cottongrass bulrush	S5/Secure		P	P		DS
Sibbaldiopsis tridentata	Three-toothed cinquefoil	S5/Secure	P	P			
Solanum dulcamara	Climbing nightshade	**Exotic**					DS
Sparganium americanum	American bur-reed	S5/Secure					AL,DS
Spiraea alba	Narrow-leaved meadow-sweet	S5/Secure					DS
Thalictrum pubescens	Tall meadow-rue	S5/Secure			P		DS
Thelypteris noveboracensis	New York fern	S5/Secure			P		
Thelypteris palustris	Marsh fern	S5/Secure			P		DS
Toxicodendron radicans	Eastern poison ivy	S4/Secure			P		
Trientalis borealis	Northern starflower	S5/Secure	P		P	P	
Typha latifolia	Broad-leaf cattail	S5/Secure					DS
Utricularia purpurea	Purple bladderwort	S5/Secure					AL
Vaccinium angustifolium	Late lowbush blueberry	S5/Secure	P	P			
Vaccinium myrtilloides	Velvetleaf blueberry	S5/Secure	P				
Veronica officinalis	Gypsy-weed	S5/Secure	P	P			
Viburnum nudum	Possum-haw viburnum	S5/Secure	P	P	P	P	AL,DS

Additional mosses
Sphagnum compactum (S4? / Secure), *Dicranum polysetum* (S5 / Secure), *D.spurium* (S4? / Secire), *D.undulatum* (S5 / Secure), *Gymnocolea inflata* (S? / Undetermined), *Bryum pseudotriquetrum* (S5 / Secure), *Schistidium apocarpum* (S5 / Secure), *Pohlia nutans* (S5 / Secure), *Leucobryum glaucum* (S5 / Secure) and *Andreaea rupestris* (S5 / Secure).

- ~ AL Pond South of Anderson Lake; DS Pond south along Duke Street
- * Status as of July 2016

S-rank - S1 Extremely rare in province; S2 Rare in the province; S3 Uncommon in the province; S4 Widespread, common and apparently secure in province; S5 Widespread, abundant and secure in the province.

General Status - "Sensitive" indicating they are potentially susceptible to human activities or natural events.

"May be at Risk" therefore considered here to be of high conservation concern within the province.

"Undetermined" indicating that there is currently insufficient data, information, or knowledge available to evaluate its status.

Appendix G
2013-2016 Bird Survey Data
(September 10, 2013, May 15, 2014 (Night), June 9 2014, June 17 2014, June 24 2014, May 12 2016, June 16 2016, June 17, 2016)

Nova Scotia Transportation
and Infrastructure Renewal

HIGHWAY 107 BURNSIDE TO BEDFORD
ENVIRONMENTAL ASSESSMENT

FIGURE G - 1
BIRD SURVEY LOCATIONS

NOVA SCOTIA

# 2016 AVIAN SURVEY LOCATION	HIGHWAY	APPROXIMATE RIGHT OF WAY	WETLAND (NSDNR DATABSE)
# 2014 AVIAN SURVEY LOCATION	OTHER ROAD	OPEN WATER	APPROXIMATE RIGHT OF WAY STUDY AREA (AS PER NSTIR MAY 2017)
PROPOSED HIGHWAY 107 ALIGNMENT	WATERCOURSE	WETLAND (TOPOGRAPHIC DATABASE)	BUFFERED CENTRELINE STUDY AREA (75 M)

DILLON CONSULTING

MAP DRAWING INFORMATION:
DATA PROVIDED BY GeoNova, NSDNR

MAP CREATED BY: SCM
MAP CHECKED BY: KLM
MAP PROJECTION: NAD 1983 UTM Zone 20N

0 125 250 500 750 Metres

N W E S

FINAL

PROJECT: 13-8348

Date: Jun 28 2017

Table 1 - Bird Species for Highway 107

Bird Species	Common Name	Preferred Nesting Habitat	Nesting Period	Priority / SAR Ranking	Stantec Northern Alignment June 6 June 8 2011	Sept. 14 2013	May 15 2014	June 9 2014	June 17 2014	June 24 2014	May 12 2016	June 16 2016	June 17 2016
Gavia immer	Common Loon	Islands in lakes.	May-Aug.	**S3B,S4N - may be at risk**	3						3		
Anas crecca	Green-winged Teal	Fertile wetlands.	Mid May-July	S4S5B - secure	3						3		
Anas rubripes	American Black Duck	Wetlands, including freshwater and saltmarshes.	Early April-late Aug.	S5 - secure	30	2			2		34		
Anas platyrhynchos	Mallard	Open ponds, wetlands, lakes.	Early May-late July.	S5 - secure	7	2		1					
Aix sponsa	Wood Duck	Ponds, wetlands, lakes, streams.	April - mid Aug.	S4S5B - Secure	1	1						1	
Aythya collaris	Ring-necked Duck	Lake, pond.	May-July.	S5B - secure	3								
Branta canadensis	Canada Goose	Open protected areas.	Mid Apr. - June.	SNAB,S4N - secure	9						9		2
Phasianus colchicus	Ring-necked Pheasant	Mixed forests, agricultural areas.	Late April-mid Aug.	SNA - exotic	6			2	2		10		
Fulica americana	American Coot	Lakes, ponds, marshes, and streams.	Mid May - mid July	S1B - undetermined							1		
Ardea herodias	Great Blue Heron	Trees, coastal, inland lakes.	Mid April-late July	S4B - secure		1		3		1			
Lophodytes cucullatus	Hooded Merganser	Forested wetlands.	early May - Aug.	S4S5B - secure	1								
Pandion haliaetus	Osprey	Coastal areas, near shallow water, near inland lakes,	Early May-Late Aug.	S5B - secure	11		1	1	1	2	16	1	1
Haliaeetus leucocephalus	Bald Eagle	Large trees, near open water.	Late March-mid Aug.	S4 - secure				1					
Buteo platypterus	Broad-winged Hawk	Mixed forests, hardwood trees.	Mid May-Early Aug.	S4S5B - secure	2					2	4		
Accipiter striatus	Sharp-Shinned Hawk	Conifer forests.	mid May-early Sept.	S4S5B - Secure		1							

Table 1 - Bird Species for Highway 107

Bird Species	Common Name	Preferred Nesting Habitat	Nesting Period	Priority / SAR Ranking	Stantec Northern Alignment June 6 June 8 2011	Sept. 14 2013	May 15 2014	June 9 2014	June 17 2014	June 24 2014	May 12 2016	June 16 2016	June 17 2016
Bonasa umbellus	Ruffed Grouse	Broadleaf forest.	Late Apr.-July.	S4S5 - secure	4								
Charadrius vociferus	Killdeer	Open areas.	May-July.	**S3S4B - sensitive**	3								
Actitis macularius	Spotted Sandpiper	Open areas.	Late May-July.	**S3S4B - sensitive**	2								
Porzana carolina	Sora	Fertile freshwater marshes, aquatic	Late May-Mid Aug.	S4S5B - secure					1				
Scolopax minor	American Woodcock	Broad-leafed forests, in dense tree or shrub	Mid Apr.-late May.	S4S5B - secure	1								
Tringa flavipes	Lesser yellowlegs	Transient.	-	S5M - Secure		1							
Larus argentatus	Herring Gull	Inland and coastal areas, islands, landfills and urban areas.	Mid April-early Aug.	S4S5 - secure	7	10		1	2	1		5	
Larus marinus	Great Black-backed Gull	Coastal, islands, some inland	Mid April-early Aug.	S4 - secure				3					
Larus delawarensis	Ring-billed Gull	Inland and coastal areas, islands, landfills and urban areas.	Mid May-early July	**S1?B,S5N - secure**		30							
Sterna hirunda	Common Tern	Inland lakes and coastal areas.	Late May-early Aug.	**S3B - sensitive**	3					1 (Fly Over)	3	1	
Zenaida Macroura	Mourning Dove	Trees, open-grown conifers (e.g. windbreaks)	Early April-Late Sept.	S5 - secure	6	2		13	1	1	23	4	6
Columba livia	Rock Pigeon	Mixed forests, agricultural areas, urban areas and	Early Jan.-late Oct.	SNA - exotic	5			5				1	

Table 1 - Bird Species for Highway 107

Bird Species	Common Name	Preferred Nesting Habitat	Nesting Period	Priority / SAR Ranking	Stantec Northern Alignment June 6 June 8 2011	Sept. 14 2013	May 15 2014	June 9 2014	June 17 2014	June 24 2014	May 12 2016	June 16 2016	June 17 2016
Strix varia	Barred Owl	Hardwood and mixed forests, hollow trees and nest boxes.	Late March-early July	S5 - secure	1		1						
Chordeiles minor	Common Nighthawk	Grassland, open forests, coastal sand dunes/beaches, rural and urban	Mid May-mid Aug.	**COSEWIC Threatened NSESA Threatened S3B**	5								
Archilochus colubris	Ruby-throated Hummingbird	Urban.	June-July.	S5B - secure	2								
Ceryle alcyon	Belted Kingfisher	Salt and freshwater areas, earth banks, trees along shorelines.	Mid May-late July	S5B - secure	6					1			
Picoides arcticus	Black-backed Woodpecker	Conifer forests.	Mid. May-mid July.	S3S4 - **sensitive**	1								
Picoides pubescens	Downy Woodpecker	Open woodlands, particularly among deciduous trees and brushy or	Mid May-late July	S5 - secure	7			3		3	13		
Picoides villosus	Hairy Woodpecker	Mature forests, woodlots, forest edges, open woodlands (particularly oak and pine forests).	Early May-mid July	S5 - secure	7	4		7	6	3	27	2	
Dryocopus pileatus	Pileated Woodpecker	Mature deciduous or mixed forests.	April - June.	S5 - secure							0		1

Table 1 - Bird Species for Highway 107

Bird Species	Common Name	Preferred Nesting Habitat	Nesting Period	Priority / SAR Ranking	Stantec Northern Alignment June 6 June 8 2011	Sept. 14 2013	May 15 2014	June 9 2014	June 17 2014	June 24 2014	May 12 2016	June 16 2016	June 17 2016
Colaptes auratus	Northern Flicker	Cavities.	Early May-early Aug.	S5B - secure	15	8		3	3	6	35	6	2
Contopus virens	Eastern Wood-Pewee	Broad leafed trees, edge habitats.	Mid June-early Sept.	**COSEWIC Special Concern NSESA Vulnerable S3S4B - sensitive**	8			5		3			
Empidonax flaviventris	Yellow-bellied Flycatcher	Ground in conifer moss.	Mid June-early Aug.	**S3S4B - sensitive**	1			2		19		3	4
Empidonax alnorum	Alder Flycatcher	Wet thickets.	Mid-June-mid-Aug.	S5B - secure	27			70	48	36		39	33
Myiarchus crinitus	Great Crested Flycatcher	Open broad-leafed or mixed	early June-early Aug.	**S2B - may be at risk**	4								
Empidonax minimus	Least Flycatcher	Broad-leafed woods.	Early June-mid Aug.	S4B - secure	6							3	5
Vireo solitarius	Solitary Vireo (Blue-headed)	Mixed forests and coniferous dominant edge	Late May-early Aug.	S5B - secure	9			6	13	21	49	2	11
Vireo olivaceus	Red-eyed Vireo	Deciduous dominant mature forests, broad-	Mid June-early Aug.	S5B - secure	34			46	6	52		18	10
Cardinalis cardinalis	Northern Cardinal	Shrubbery.	early June-mid July.	S3S4 - secure							0		1
Cyanocitta cristata	Blue Jay	Forest edges.	Mid May-late July	S5 - secure	24	14		4	2	10	54	7	4
Troglodytes troglodytes	Winter Wren	Damp coniferous forest.	Mid May - late July.	S5B - secure	3								
Corvus brachyrhyncho	American Crow	Mature trees.	Early April-mid July	S5 - secure		25		3	6	9	43	8	5
Corvus corax	Common Raven	Open areas, developed and disturbed.	Late March-late July	S5 - secure	4	5		1	3	2			
Tachycineta bicolor	Tree Swallow	Cavities near lakes.	May-July	**S4B - sensitive**	20				1	36			

Table 1 - Bird Species for Highway 107

Bird Species	Common Name	Preferred Nesting Habitat	Nesting Period	Priority / SAR Ranking	Stantec Northern Alignment June 6 June 8 2011	Sept. 14 2013	May 15 2014	June 9 2014	June 17 2014	June 24 2014	May 12 2016	June 16 2016	June 17 2016
Hirundo rustica	Barn Swallow	Buildings and man-made structures.	Mid May-early Sept.	**COSEWIC Threatened NSESA Endanger**	4					1			
Parus atricapillus	Black-capped Chickadee	Nest cavities in rotted tree	Early May – mid Aug.	S5 - secure	27	14		17	12	8	78	18	4
Sitta canadensis	Red-breasted Nuthatch	Conifer dominant matures forests, and young regen	Mid May-Early Aug.	S4S5 - secure	4					1			
Certhia americana	Brown Creeper	Mature or managed mixed	Mid May-mid July	S5 - secure	18	1			2	2			
Regulus satrapa	Golden-crowned Kinglet	Coniferous forest.	Mid-May-late July	**S4 - sensitive**	8				7		15		2
Regulus calendula	Ruby-crowned Kinglet	Conifers.	Mid May-early July	**S4B - sensitive**	7				2		9	1	1
Catharus fuscescens	Veery	Mixed forest-deciduous	Mid May-early Aug.	S4B - secure	4			15	9			2	40
Catharus ustulatus	Swainson's Thrush	Dense woodlands.	Late May-late July	S4S5B - secure	4			1	1	12		2	3
Catharus guttatus	Hermit Thrush	Ground.	Mid May-late Aug.	S5B - secure	34	3		20	10	38	105	26	37
Turdus migratorius	American Robin	Everywhere.	Late Apr.-mid Sept.	S5B - secure	47	9		35	22	25	138	24	12
Sturnus vulgaris	European Starling	Urban areas and agricultural areas. Cavities, tree holes, urban	Late April-Late July	SNA - exotic	41			10	16	15	82	41	5
Dumetella carolinensis	Gray Catbird	Shrubbery.	Late May-early Aug.	**S3B - may be at risk**	2								
Bombycilla cedrorum	Cedar Waxwing	Open mixed forests, road edges, forest	Mid June-mid Sept.	S5B - secure	27			6	13	2		19	

Table 1 - Bird Species for Highway 107

Bird Species	Common Name	Preferred Nesting Habitat	Nesting Period	Priority / SAR Ranking	Stantec Northern Alignment June 6 June 8 2011	Sept. 14 2013	May 15 2014	June 9 2014	June 17 2014	June 24 2014	May 12 2016	June 16 2016	June 17 2016
Seiurus aurocapilla	Ovenbird	Closed-canopy forests, particularly deciduous and	Late May-late July	S5B - secure	72			17	7	21	117	27	5
Seiurus noveboracensis	Northern Waterthrush	Forests near water.	May-July.	S4B - secure	1								2
Vermivora peregrina	Tennessee Warbler	Forest.	June-July	**S3S4B - sensitive**	3				1			2	4
Vermivora ruficapilla	Nashville Warbler	Open woods/shrubs.	Late May-late July	S5B - secure	31			6	5			6	4
Dendroica pensylvanica	Chestnut-sided Warbler	Low shrubs, raspberry canes,	Early June-late July	S5B - secure	32			60	22	24		98	19
Parula americana	Northern Parula	Young, coniferous dominant forests,	Late May-early Aug.	S5B - secure	22			3	6	9		3	11
Cendroica petechia	Yellow Warbler	Shrubby thickets and woods, particularly along watercourses and	Late May-early Aug.	S5B - secure	18			32	21			1	1
Dendroica magnolia	Magnolia Warbler	Coniferous and mixed forests.	Late May-early Aug.	S5B - secure	17			6	10	5		3	5
Dendroica caerulescens	Black-throated Blue Warbler	Mature deciduous or	early June-mid July.	S5B - secure	12						12		
Dendroica coronata	Yellow-rumped Warbler (Myrtle)	Forest with conifers.	Early May-early June	S5B - secure	31	3		11	9	12	66	4	3
Dendroica tigrina	Cape May Warbler	Mature conifers.	Early June-late July.	**S3?B - sensitive**	2								
Dendroica virens	Black-throated Green Warbler	Mixed or coniferous forest.	EarlyJune-mid July	S4S5B - secure	21			8	14	16	59	7	8
Dendroica fusca	Blackburnian Warbler	Dense, mixed and coniferous dominant forests.	Mid June-late July	S4B - secure				3		8			1

Table 1 - Bird Species for Highway 107

Bird Species	Common Name	Preferred Nesting Habitat	Nesting Period	Priority / SAR Ranking	Stantec Northern Alignment June 6 June 8 2011	Sept. 14 2013	May 15 2014	June 9 2014	June 17 2014	June 24 2014	May 12 2016	June 16 2016	June 17 2016
Dendroica palmarum	Palm Warbler	Bogs and wetlands, low coniferous forest and shrub cover.	Mid May-late July	S5B - secure	3				1		4		
Mniotilta varia	Black-and-white Warbler	Ground among tree roots.	Early June-mid July	S4S5B - secure	57			21	8	13	99	23	11
Setophaga ruticilla	American Redstart	Small trees.	Late May-late July	S5B - secure	30			15	31	1		75	20
Geothlypis trichas	Common Yellowthroat	Shrubs, marshes, wetlands, forest cut-overs, edge habitats, stream	Late May-late July	S5B - secure	59	21		65	36	34		27	43
Wilsonia canadensis	Canada Warbler	Broad-leafed trees and shrubs, dense understory habitats, shrub wetlands.	Early June-early July	**COSEWIC Threatened NSESA Endangered S3B**	21			5	3	3			1
Spizella passerina	Chipping Sparrow	Open woodlands, edge habitats, gardens.	Mid May-mid Aug.	S4S5B - secure				1					
Spizella arborea	Tree Sparrow	Shrubs, on or near ground.	Mid May-late July	S5N - secure				3			3		
Melospiza melodia	Song Sparrow	Brushy edges and waterside	Early May-late Aug.	S5B - secure	30	4		10	8	2	54	8	10
Melospiza georgiana	Swamp Sparrow	Wetlands with tall, shrubby	Mid May-July	S5B - secure	17			2	14	2	35		14
Zonotrichia albicollis	White-throated Sparrow	Ground at forest edge.	Mid May-mid Aug.	S5B - secure	65			45	13	34	162	43	28
Passerculus sandwichensis	Savannah Sparrow	Open vegetated areas, ground.	Mid May-August.	S4B - Secure	1	2					3		
Junco hyemalis	Dark-eyed Junco	Forest edge.	Early May-late Aug.	S4S5 - secure	30	2		10	4	12	58	5	7
Pheucticus ludovicianus	Rose-breasted Grosbeak	Mature, coniferous	Early June-late July	**S3S4B - sensitive**	1				1				2
Agelaius phoeniceus	Red-winged Blackbird	Freshwater marshes, cattails, bulrushes, and	Early May-Mid Aug.	S4S5B - secure	18			16	12	12	58		

Table 1 - Bird Species for Highway 107]

Bird Species	Common Name	Preferred Nesting Habitat	Nesting Period	Priority / SAR Ranking	Stantec Northern Alignment June 6 June 8 2011	Sept. 14 2013	May 15 2014	June 9 2014	June 17 2014	June 24 2014	May 12 2016	June 16 2016	June 17 2016
Quiscalus quiscula	Common Grackle	Urban areas and agricultural areas, low shrubs, open	Late April-late July.	S5B - secure	29			9	8	4	50	7	2
Carpodacus purpureus	Purple Finch	Conifers.	Early June-mid Aug.	S4S5 - secure	16			6	7	6	35	10	12
Coccothraustes vespertinus	Evening Grosbeak	Southern boreal forest, high in spruce tree.	Late June-August.	S4B,S5N - secure	2								
Carduelis pinus	Pine Siskin	Coniferous dominant forests.	Late April-early Aug.	**S3S4B,S5N -**				6	2		8	1	
Carduelis tristis	American Goldfinch	Open.	Late June-mid Sept.	S5 - secure	42	15		6	28	7	98	16	7

S-rank - S1 Extremely rare in province; S2 Rare in the province; S3 Uncommon in the province; S4 Widespread, common and apparently secure in province; S5 Widespread, abundant and secure in the province.
General Status - “Sensitive” indicating they are potentially susceptible to human activities or natural events.
“May be at Risk” therefore considered here to be of high conservation concern within the province.
“Undetermined” indicating that there is currently insufficient data, information, or knowledge available to evaluate its status.

*Status as of May 2017

Table 2 - Breeding Bird Surveys May / June 2014

Species	Softwoods	Hardwoods/ Semi-barrens	Mixed Forest	Disturbed/Residential Area	Wetlands	Fly Over	Total
Alder Flycatcher	3	10	23		71		**135**
American Black Duck					6		**9**
American Crow	4	2	3		8		**20**
American Goldfinch		3	8		26		**40**
American Green-winged Teal					2		**4**
American Redstart		2	9		26		**47**
American Robin	5	11	5	5	34		**68**
Bald Eagle					1		**2**
Barn Swallow					1		**1**
Barred Owl			1		0		**1**
Belted Kingfisher			1		0		**1**
Black-and-White Warbler	2	6	18		19		**51**
Blackburnian Warbler		2	2		5		**9**
Black-capped Chickadee	2	4	9		19		**46**
Black-throated Green Warbler	1	5	9		19		**35**
Blue Jay	1	7	6	2	1		**17**
Blue-headed Vireo		5	11		22		**38**
Broad-winged Hawk		2			0		**2**
Brown Creeper			3		0		**3**
Canada Warbler					7		**11**
Cedar Waxwing		2	7		9		**18**
Chestnut-sided Warbler		7	50		44		**121**
Chipping Sparrow					1		**2**
Common Grackle			2	7	6		**17**
Common Raven				2	4		**6**
Common Tern					1		**1**
Common Yellowthroat	1	6	46		96		**199**
Dark-eyed Junco	2	4	12		8		**29**
Downy Woodpecker			7		2		**9**
Eastern Wood-Pewee			5		3		**8**
European Starling		22		13	5		**40**
Golden-crowned Kinglet			1		6		**7**
Great Black Backed Gull					0	3	**3**
Great Blue Heron					1		**1**
Hairy Woodpecker	2	4	8		0		**14**
Hermit Thrush	1	7	9		47		**72**
Herring Gull					0	4	**4**
Magnolia Warbler		4	9		6		**20**
Mallard					8		**16**
Mourning Dove		2	2	10	1		**16**
Nashville Warbler		1	6		2		**9**
Northern Flicker		1	3		6		**11**
Northern Parula		2	4		11		**17**
Osprey		1	1	1	2		**5**
Ovenbird	1	9	16		19		**49**
Palm Warbler					1		**1**
Purple Finch		4	6		8		**18**
Red-breasted Nuthatch					1		**1**
Red-eyed Vireo	2	11	35		53		**121**
Red-winged Blackbird					39		**55**
Ring-necked Pheasant			2		2		**6**
Rock Pigeon				5	1		**6**
Rose-breasted Grosbeak		1			0		**1**
Ruby-crowned Kinglet		1			1		**2**
Song Sparrow		2	9	2	7		**23**
Sora					1		**1**
Swainson's Thrush		2	1		11		**15**
Swamp Sparrow					13		**15**
Tennessee Warbler					1		**1**
Tree Sparrow			1		0		**1**
Tree Swallow		1			8		**11**
Veery		4	1		19		**39**
White-throated Sparrow	3	3	15		38		**69**
Yellow Warbler		1	12		32		**65**
Yellow-bellied Flycatcher	1	5	4		14		**26**
Yellow-rumped Warbler	1	3	15		12		**31**

Table 3 - Area Survey of Bird Species for Highway 107 Study Area: 14 September 2013

Bird Species	Common Name	AS-1	AS-2	AS-3	AS-4	AS-5	Total No. of Individuals
Accipiter striatus	Sharp-shinned Hawk	1					1
Aix sponsa	Wood Duck					1	1
Anas platyrhynchos	Mallard		2				2
Anas rubripes	American Black Duck		1			1	2
Ardea herodias	Great Blue Heron		1				1
Carduelis tristis	American Goldfinch	6	1			8	15
Catharus guttatus	Hermit Thrush			1	2		3
Certhia americana	Brown Creeper			1			1
Colaptes auratus	Northern Flicker	8					8
Corvus brachyrhynchos	American Crow	20				5	25
Corvus corax	Common Raven	1	1			3	5
Cyanocitta cristata	Blue Jay	10		1		3	14
Dendroica coronata	Yellow-rumped Warbler (Myrtle)	1			2		3
Geothlypis trichas	Common Yellowthroat	20			1		21
Junco hyemalis	Dark-eyed Junco	2					2
Larus argentatus	Herring Gull	10					10
Larus delawarensis	Ring-billed Gull	30					30
Melospiza melodia	Song Sparrow	3				1	4
Parus atricapillus	Black-capped Chickadee	5	5	2	2		14
Passerculus sandwichensis	Savannah Sparrow	2					2
Picoides villosus	Hairy Woodpecker	3	1				4
Tringa flavipes	Lesser Yellowlegs		1				1
Turdus migratorius	American Robin	6	3				9
Zenaida Macroura	Mourning Dove					2	2

Area Survey Method - 1 hour

Table 4 - Highway 107 EA - 2014 Breeding Bird Area Searches (Surveyor: Fulton Lavender) June 9, 2014

Bird Species	**Common Name**	**1**	**2**	**3**	**4**	**5**	**6**	**Total No. of Individuals**
Anas rubripes	American Black Duck		2			1		**3**
Anas platyrhynchos	Mallard					1		**1**
Pandion haliaetus	Osprey						1	**1**
Haliaeetus leucocephalus	Bald Eagle					1		**1**
Phasianus colchicus	Ring-necked Pheasant	2						**2**
Larus argentatus	Herring Gull	1						**1**
Larus marinus	Great Black-backed Gull	3						**3**
Zenaida Macroura	Mourning Dove	1		10		2		**13**
Columba livia	Rock Pigeon			5				**5**
Picoides pubescens	Downy Woodpecker			1	2			**3**
Picoides villosus	Hairy Woodpecker		2		5			**7**
Colaptes auratus	Northern Flicker	1			1	1		**3**
Contopus virens	Eastern Wood-Pewee				5			**5**
Empidonax flaviventris	Yellow-bellied Flycatcher	2						**2**
Empidonax alnorum	Alder Flycatcher	20		5	25	20		**70**
Cyanocitta cristata	Blue Jay			2		2		**4**
Corvus brachyrhynchos	American Crow	3						**3**
Corvus corax	Common Raven		1					**1**
Parus atricapillus	Black-capped Chickadee	2			15			**17**
Catharus fuscescens	Veery	15						**15**
Catharus ustulatus	Swainson’s Thrush	1						**1**

Table 4 - Highway 107 EA - 2014 Breeding Bird Area Searches (Surveyor: Fulton Lavender) June 9, 2014

Bird Species	Common Name	1	2	3	4	5	6	Total No. of Individuals
Catharus guttatus	Hermit Thrush	3			10	5	2	**20**
Turdus migratorius	American Robin	5		5	20	5		**35**
Bombycilla cedrorum	Cedar Waxwing			1	5			**6**
Sturnus vulgaris	European Starling	5			5			**10**
Vireo solitarius	Solitary Vireo (Blue-headed)					4	2	**6**
Vireo olivaceus	Red-eyed Vireo	20		5	20		1	**46**
Vermivora ruficapilla	Nashville Warbler				2	4		**6**
Parula americana	Northern Parula Warbler					3		**3**
Cendroica petechia	Yellow Warbler	20		10	2			**32**
Dendroica pensylvanica	Chestnut-sided Warbler	20			25	15		**60**
Dendroica magnolia	Magnolia Warbler	1			2	2	1	**6**
Dendroica coronata	Yellow-rumped Warbler (Myrtle)				2	5	4	**11**
Dendroica virens	Black-throated Green Warbler	1				5	2	**8**
Dendroica fusca	Blackburnian Warbler	2		1				**3**
Mniotilta varia	Black-and-white Warbler				10	10	1	**21**
Setophaga ruticilla	American Redstart	10		5				**15**
Seiurus aurocapilla	Ovenbird	2		2	5	5	3	**17**
Geothlypis trichas	Common Yellowthroat	10		5	25	20	5	**65**
Wilsonia canadensis	Canada Warbler				1	4		**5**
Spizella passerina	Chipping Sparrow		1					**1**
Spizella arborea	Tree Sparrow	2					1	**3**

Table 4 - Highway 107 EA - 2014 Breeding Bird Area Searches (Surveyor: Fulton Lavender) June 9, 2014

Bird Species	**Common Name**	**1**	**2**	**3**	**4**	**5**	**6**	**Total No. of Individuals**
Melospiza melodia	Song Sparrow	3		3		3	1	**10**
Melospiza georgiana	Swamp Sparrow	2						**2**
Zonotrichia albicollis	White-throated Sparrow	10			25	10		**45**
Junco hyemalis	Dark-eyed Junco	3		2		5		**10**
Agelaius phoeniceus	Red-winged Blackbird		1	15				**16**
Quiscalus quiscula	Common Grackle		5			4		**9**
Carpodacus purpureus	Purple Finch				3	3		**6**
Carduelis tristis	American Goldfinch	2		2		2		**6**

Table 5 - Highway 107 EA - 2014 Breeding Bird Area Searches (Surveyor: Fulton Lavender) June 17, 2014

Bird Species	Common Name	1	4	5	6	7	2	3	8	9	10	11	Total No. of Individuals
Anas rubripes	American Black Duck							2					2
Pandion haliaetus	Osprey									1			1
Phasianus colchicus	Ring-necked Pheasant			1	1								2
Porzana carolina	Sora							1					1
Larus argentatus	Herring Gull									2			2
Zenaida Macroura	Mourning Dove							1					1
Picoides villosus	Hairy Woodpecker						2	2				2	6
Colaptes auratus	Northern Flicker					1				2			3
Empidonax flaviventris	Yellow-bellied Flycatcher		2				2			1			5
Empidonax alnorum	Alder Flycatcher		3	6	2	2	2	20	5	6	2		48
Tachycineta bicolor	Tree Swallow	3					1						4
Cyanocitta cristata	Blue Jay				1				1				2
Corvus brachyrhynchos	American Crow		1		2	2		1					6
Corvus corax	Common Raven	1								2			3
Parus atricapillus	Black-capped Chickadee		2			1		2	3	2		2	12
Certhia americana	Brown Creeper					1			1				2
Regulus satrapa	Golden-crowned Kinglet			6	1								7
Regulus calendula	Ruby-crowned Kinglet											2	2
Catharus fuscescens	Veery					1	4	3		1			9
Catharus ustulatus	Swainson's Thrush					1							1
Catharus guttatus	Hermit Thrush		2	2					1	5			10
Turdus migratorius	American Robin	1		6	2	2	2	2		6		1	22
Bombycilla cedrorum	Cedar Waxwing		3			1	1		2	5		1	13
Sturnus vulgaris	European Starling	8		1			2	5					16
Vireo solitarius	Solitary Vireo (Blue-headed)			3	2	1			2	5			13
Vireo olivaceus	Red-eyed Vireo	1		2	1	1	1						6
Vermivora peregrina	Tennessee Warbler					1							1
Vermivora ruficapilla	Nashville Warbler					1			2		1	1	5
Dendroica pensylvanica	Chestnut-sided Warbler			1					2	5	12	2	22

Table 5 - Highway 107 EA - 2014 Breeding Bird Area Searches (Surveyor: Fulton Lavender) June 17, 2014

Bird Species	**Common Name**	**1**	**4**	**5**	**6**	**7**	**2**	**3**	**8**	**9**	**10**	**11**	**Total No. of Individuals**
Parula americana	Northern Parula Warbler			4					1	1			6
Cendroica petechia	Yellow Warbler	2	3	1	4		2	8		1			21
Dendroica magnolia	Magnolia Warbler		1	2	2			2	2	1			10
Dendroica coronata	Yellow-rumped Warbler (Myrtle)			5		1	1			2			9
Dendroica virens	Black-throated Green Warbler		1	1	1	1		1	2	2	5		14
Dendroica palmarum	Palm Warbler			1									1
Mniotilta varia	Black-and-white Warbler		1	1				2	2	1	1		8
Setophaga ruticilla	American Redstart	2	2	8	3	4	2	5	5				31
Seiurus aurocapilla	Ovenbird	1			2	2				1		1	7
Geothlypis trichas	Common Yellowthroat	2		5	2	4	1	4	3	8	7		36
Wilsonia canadensis	Canada Warbler								1			2	3
Pheucticus ludovicianus	Rose-breasted Grosbeak							1					1
Melospiza melodia	Song Sparrow	1		2			1	2		2			8
Melospiza georgiana	Swamp Sparrow			1		1		1	4	5	2		14
Zonotrichia albicollis	White-throated Sparrow		1	3				1	3	2	3		13
Junco hyemalis	Dark-eyed Junco				1		1			1	1		4
Agelaius phoeniceus	Red-winged Blackbird	10					1	1					12
Quiscalus quiscula	Common Grackle	2					1	5					8
Carpodacus purpureus	Purple Finch		2						1	3	1		7
Carduelis pinus	Pine Siskin					1	1						2
Carduelis tristis	American Goldfinch	2	4	3	2	2	4	4	2	4	1		28

Table 6 - Highway 107 EA - 2014 Breeding Bird Area Searches (Surveyor: Fulton Lavender) June 24, 2014

Bird Species	Common Name	449	450	453	455	460	462	463	465	563	567	568	571	572	441	Total No. Of Individuals
Ardea herodias	Great Blue Heron												1			1
Pandion haliaetus	Osprey					1			1							2
Buteo platypterus	Broad-winged Hawk								2							2
Larus argentatus	Herring Gull	1														1
Sterna hirunda	Common Tern											1 (fo)				0
Zenaida Macroura	Mourning Dove												1			1
Ceryle alcyon	Belted Kingfisher												1			1
Picoides pubescens	Downy Woodpecker		1								2					3
Picoides villosus	Hairy Woodpecker						2						1			3
Colaptes auratus	Northern Flicker	2	2	1							1					6
Contopus virens	Eastern Wood-Pewee										3					3
Empidonax flaviventris	Yellow-bellied Flycatcher	2	1	4	2		2	2	1	1	1		2	1		19
Empidonax alnorum	Alder Flycatcher			15	7	6	4	3					1			36
Tachycineta bicolor	Tree Swallow											4				4
Hirundo rustica	Barn Swallow											1				1
Cyanocitta cristata	Blue Jay	2		2		1	1	1	1				1	1		10
Corvus brachyrhynchos	American Crow	1	1				5	1			1					9
Corvus corax	Common Raven										2					2
Parus atricapillus	Black-capped Chickadee		2						1	2	1		1	1		8
Sitta canadensis	Red-breasted Nuthatch		1													1
Certhia americana	Brown Creeper												2			2
Catharus ustulatus	Swainson's Thrush		3	1	4	1					3					12
Catharus guttatus	Hermit Thrush	1		1	6	3	6	4	4	2	5		4	2		38
Turdus migratorius	American Robin	4	2	2	2	2	6	2		1	1	1	2			25
Bombycilla cedrorum	Cedar Waxwing					1			1							2
Sturnus vulgaris	European Starling											15				15
Vireo solitarius	Solitary Vireo (Blue-headed)	4	1	6	5			1		1	1				2	21
Vireo olivaceus	Red-eyed Vireo	6	5	5	4	5	8	4	2	1	4	4	2	1	1	52
Parula americana	Northern Parula Warbler		1	2		2					4					9
Dendroica pensylvanica	Chestnut-sided Warbler	4	3	5	3	3		1	1	1	1				2	24
Dendroica magnolia	Magnolia Warbler	1	1	1		1							1			5
Dendroica coronata	Yellow-rumped Warbler (Myrtle)	1	1	2			3	1		1			1		2	12
Dendroica virens	Black-throated Green Warbler	1	2	3	1					2	4		1		2	16
Dendroica fusca	Blackburnian Warbler		2							4	2					8
Mniotilta varia	Black-and-white Warbler	2	2	1		2	1	1	1				2		1	13
Setophaga ruticilla	American Redstart	1														1
Seiurus aurocapilla	Ovenbird	2	1	2	2	2	1	1	2	4	3		1			21
Geothlypis trichas	Common Yellowthroat	5	3	5	4	5	3			1			1	3	4	34
Wilsonia canadensis	Canada Warbler	2				1										3
Melospiza melodia	Song Sparrow											1		1		2
Melospiza georgiana	Swamp Sparrow											2				2
Zonotrichia albicollis	White-throated Sparrow	3	3	4	5	5	4	3	4					2	1	34
Junco hyemalis	Dark-eyed Junco	2	2	2	1		2	1	1					1		12
Agelaius phoeniceus	Red-winged Blackbird											12				12
Quiscalus quiscula	Common Grackle											4				4
Carpodacus purpureus	Purple Finch	1		1				2	1						1	6
Carduelis tristis	American Goldfinch	2	2								1		1	1		7

Table 7 - Highway 107 EA - 2014 Breeding Bird Area Searches (Surveyor: Fulton Lavender) May 12, 2016

Bird Species	Common Name	484	486	487	489	490	492	496	Total No. of Individuals
Gavia immer	Common Loon				2	1			**3**
Anas crecca	Green-winged Teal		1						**1**
Anas rubripes	American Black Duck	2				1			**3**
Branta canadensis	Canada Goose	1			2				**3**
Phasianus colchicus	Ring-necked Pheasant	1	1						**2**
Fulica americana	American Coot						1		**1**
Pandion haliaetus	Osprey	2				2			**4**
Buteo platypterus	Broad-winged Hawk						2		**2**
Accipiter striatus	Sharp-Shinned Hawk								
Sterna hirunda	Common Tern				3	1		1	**5**
Zenaida Macroura	Mourning Dove		2		1	1	4	2	**10**
Picoides pubescens	Downy Woodpecker		1					1	**2**
Picoides villosus	Hairy Woodpecker		1		2				**3**
Dryocopus pileatus	Pileated Woodpecker				2	1			**3**
Colaptes auratus	Northern Flicker	1	2	4	3	2			**12**
Vireo solitarius	Solitary Vireo (Blue-headed)					4	6		**10**
Cardinalis cardinalis	Northern Cardinal							1	**1**
Cyanocitta cristata	Blue Jay			1	2	1	5		**9**
Corvus brachyrhynchos	American Crow	2		1			1		**4**
Parus atricapillus	Black-capped Chickadee	3	3	5	4	9	15	3	**42**
Regulus satrapa	Golden-crowned Kinglet					1			**1**
Regulus calendula	Ruby-crowned Kinglet					3	4		**7**
Catharus guttatus	Hermit Thrush		15	3	10	5	7		**40**
Turdus migratorius	American Robin	4	5	3	3	3	5		**23**
Sturnus vulgaris	European Starling							2	**2**
Seiurus aurocapilla	Ovenbird	1	2	2	4	2			**11**
Dendroica caerulescens	Black-throated Blue Warbler						1		**1**
Dendroica coronata	Yellow-rumped Warbler (Myrtle)			4	5	11	10		**30**
Dendroica virens	Black-throated Green Warbler					2			**2**
Dendroica palmarum	Palm Warbler				1	1			**2**
Mniotilta varia	Black-and-white Warbler		2			7	8		**17**
Spizella arborea	Tree Sparrow						1		**1**
Melospiza melodia	Song Sparrow	2			3			2	**7**
Melospiza georgiana	Swamp Sparrow					2			**2**
Zonotrichia albicollis	White-throated Sparrow	1	10	5	5		20	2	**43**
Passerculus sandwichensis	Savannah Sparrow							1	**1**
Junco hyemalis	Dark-eyed Junco	2	2	1	2	5	6		**18**
Agelaius phoeniceus	Red-winged Blackbird							2	**2**
Quiscalus quiscula	Common Grackle				2	3			**5**
Carpodacus purpureus	Purple Finch	2	1	2	1	4	3	1	**14**
Carduelis pinus	Pine Siskin					1		1	**2**
Carduelis tristis	American Goldfinch		1	2	4	5	10	3	**25**

Table 8 - Highway 107 EA - 2014 Breeding Bird Area Searches (Surveyor: Fulton Lavender) June 16, 2016

Bird Species	Common Name	WP8 Quarry Access Road	WP9 Quarry Access Road	WP10 WL-2014-15	WP11 WL-2014-14	WP12 WL-2013-24	WP13 WL-2013-22	WP14 Anderson Lake	WP15 Pond south of Anderson Lake	WP16 WL24	WP17 Overlooking Duke St NW of Drysdale Ave	Total No. of Individuals
Aix sponsa	Wood Duck								1			**1**
Pandion haliaetus	Osprey										1	**1**
Larus argentatus	Herring Gull							1	3	1		**5**
Sterna hirunda	Common Tern							1				**1**
Zenaida Macroura	Mourning Dove	1					1		2			**4**
Columba livia	Rock Pigeon									1		**1**
Picoides villosus	Hairy Woodpecker								1	1		**2**
Colaptes auratus	Northern Flicker			2				1	1	2		**6**
Empidonax flaviventris	Yellow-bellied Flycatcher					2			1			**3**
Empidonax alnorum	Alder Flycatcher	9	7	5	5	4						**30**
Empidonax minimus	Least Flycatcher	2					1					**3**
Vireo solitarius	Solitary Vireo (Blue-headed)					1		1				**2**
Vireo olivaceus	Red-eyed Vireo			3	3	4	2	3		1	2	**18**
Cyanocitta cristata	Blue Jay					3		2	1	1		**7**
Corvus brachyrhynchos	American Crow					3						**3**
Parus atricapillus	Black-capped Chickadee	8		4	2		1	2		1		**18**
Regulus calendula	Ruby-crowned Kinglet							1				**1**
Catharus fuscescens	Veery			2								**2**
Catharus ustulatus	Swainson's Thrush				1		1					**2**
Catharus guttatus	Hermit Thrush	13		1	3	1						**18**
Turdus migratorius	American Robin	15	4		2	1						**22**
Sturnus vulgaris	European Starling									40	1	**41**
Bombycilla cedrorum	Cedar Waxwing					1			1		17	**19**
Seiurus aurocapilla	Ovenbird	2	6	5	5	3	3	1	2			**27**
Vermivora peregrina	Tennessee Warbler			1			1					**2**
Vermivora ruficapilla	Nashville Warbler			2	1	1		1	1			**6**
Dendroica pensylvanica	Chestnut-sided Warbler	45	20	10	9		3	6	5			**98**
Parula americana	Northern Parula						2		1			**3**
Cendroica petechia	Yellow Warbler									1		**1**
Dendroica magnolia	Magnolia Warbler							1	2			**3**
Dendroica coronata	Yellow-rumped Warbler (Myrtle)					1		2	1			**4**
Dendroica virens	Black-throated Green Warbler	2	2						3			**7**
Mniotilta varia	Black-and-white Warbler	10	1	4	1	4		4				**24**
Setophaga ruticilla	American Redstart	40	25	3	2	2		2	1			**75**
Geothlypis trichas	Common Yellowthroat	9	5		1	3	2	6	1			**27**
Melospiza melodia	Song Sparrow							5		1		**6**
Melospiza georgiana	Swamp Sparrow											
Zonotrichia albicollis	White-throated Sparrow	9	4	4	8	7	3	5	3			**43**
Junco hyemalis	Dark-eyed Junco		1		1	2			1			**5**
Quiscalus quiscula	Common Grackle		1				1	2	3			**7**
Carpodacus purpureus	Purple Finch		3		1	1		1	3	1		**10**
Coccothraustes vespertinus	Evening Grosbeak											
Carduelis pinus	Pine Siskin				1							**1**
Carduelis tristis	American Goldfinch			2	3	3		1		4	3	**16**

Table 8 - Highway 107 EA - 2014 Breeding Bird Area Searches (Surveyor: Fulton Lavender) June 16, 2016

Bird Species	**Common Name**	**Preferred Nesting Habitat**	**Nesting Period**	**WP8 Quarry Access Road**	**WP9 Quarry Access Road**	**WP10 WL-2014-15**	**WP11 WL-2014-14**	**WP12 WL-2013-24**	**WP13 WL-2013-22**	**WP14 Anderson Lake**	**WP15 Pond south of Anderson Lake**	**WP16 WL24**	**WP17 Overlooking Duke St NW of Drysdale Ave**
Carduelis pinus	Pine Siskin	Coniferous dominant forests.	Late April-early Aug.				1						
Carduelis tristis	American Goldfinch	Open.	Late June-mid Sept.			2	3	3		1		4	3

Table 9 - Highway 107 EA - 2014 Breeding Bird Area Searches (Surveyor: Fulton Lavender) June 17, 2016

Bird Species	Common Name	WP20 SE of penitentiary	WP21 SW of WL118	WP22 S of WL-2013-01	WP23 N end of WL-2013-03	WP24 S end of WL-2013-03	WP26 WL-2013-12	Total No. of Individuals
Branta canadensis	Canada Goose	2						**2**
Pandion haliaetus	Osprey			1				**1**
Zenaida Macroura	Mourning Dove	2	2		1	1		**6**
Dryocopus pileatus	Pileated Woodpecker						1	**1**
Colaptes auratus	Northern Flicker			2				**2**
Empidonax flaviventris	Yellow-bellied Flycatcher	1	2	1		1		**5**
Empidonax alnorum	Alder Flycatcher	15	11	6				**32**
Empidonax minimus	Least Flycatcher		3	1	1			**5**
Vireo solitarius	Solitary Vireo (Blue-headed)			7		3	1	**11**
Vireo olivaceus	Red-eyed Vireo	2	2	4	1	1		**10**
Cardinalis cardinalis	Northern Cardinal		1					**1**
Cyanocitta cristata	Blue Jay		2		1		1	**4**
Corvus brachyrhynchos	American Crow		2	2	1			**5**
Parus atricapillus	Black-capped Chickadee			3	1			**4**
Regulus satrapa	Golden-crowned Kinglet					2		**2**
Regulus calendula	Ruby-crowned Kinglet			1				**1**
Catharus fuscescens	Veery	5	31	3	1			**40**
Catharus ustulatus	Swainson's Thrush		2	1				**3**
Catharus guttatus	Hermit Thrush		15	11	4	5	2	**37**
Turdus migratorius	American Robin	10	2					**12**
Sturnus vulgaris	European Starling		5					**5**
Seiurus aurocapilla	Ovenbird	1		1	1		2	**5**
Seiurus noveboracensis	Northern Waterthrush	1	1					**2**

Table 9 - Highway 107 EA - 2014 Breeding Bird Area Searches (Surveyor: Fulton Lavender) June 17, 2016

Bird Species	Common Name	WP20 SE of penitentiary	WP21 SW of WL118	WP22 S of WL-2013-01	WP23 N end of WL-2013-03	WP24 S end of WL-2013-03	WP26 WL-2013-12	Total No. of Individuals
Vermivora peregrina	Tennessee Warbler	2					2	**4**
Vermivora ruficapilla	Nashville Warbler		1	2			1	**4**
Dendroica pensylvanica	Chestnut-sided Warbler	3	3	7	3		3	**19**
Parula americana	Northern Parula	5	2	2	1	1		**11**
Cendroica petechia	Yellow Warbler		1					**1**
Dendroica magnolia	Magnolia Warbler		5				1	**6**
Dendroica coronata	Yellow-rumped Warbler (Myrtle)	2		1				**3**
Dendroica virens	Black-throated Green Warbler	3		2		2	1	**8**
Dendroica fusca	Blackburnian Warbler	1						**1**
Mniotilta varia	Black-and-white Warbler	5	3		2	1		**11**
Setophaga ruticilla	American Redstart	5	5	8	2			**20**
Geothlypis trichas	Common Yellowthroat	10	22	7	2			**41**
Wilsonia canadensis	Canada Warbler						1	**1**
Melospiza melodia	Song Sparrow		8					**8**
Melospiza georgiana	Swamp Sparrow	3	6	5				**14**
Zonotrichia albicollis	White-throated Sparrow	17	7			2	2	**28**
Junco hyemalis	Dark-eyed Junco	2	2	2			1	**7**
Pheucticus ludovicianus	Rose-breasted Grosbeak		1	1				**2**
Quiscalus quiscula	Common Grackle				1	1		**2**
Carpodacus purpureus	Purple Finch		8	4				**12**
Carduelis tristis	American Goldfinch		3	2		2		**7**

Table 10: Field Conditions Summary

Date:	**14-Sep-13**					**15-May-14**				
Start Time:	7:45					22:30	0:05	0:30	0:50	1:15
Sky:	80/20 Mainly Overcast	Drizzle/fog[1]	Drizzle/fog[1]	Drizzle/fog[1]	Drizzle/fog[1]	Clear (full moon)	Clear (full moon)	Clear (full moon)	Clear (full moon)	Clear (full moon)
Precipitation:	Drizzle[1]	Drizzle[1]	Drizzle[1]	Drizzle[1]	Drizzle[1]	No	No	No	No	No
Wind Speed:	SW 15 km/hr	14 km/hr[1]	14 km/hr[1]	14 km/hr[1]	14 km/hr[1]	5 km/h	5 km/h	5 km/h	5 km/h	5 km/h
Temperature:	13°C	17°C[1]	17°C[1]	17°C[1]	17°C[1]	7°C	7°C	7°C	7°C	6°C
Background Noise:	Light/steady (road traffic)	Light/steady (road traffic)	Light/steady (road traffic)	Light/steady (road traffic)	Light/steady (road traffic)	Light/steady (road traffic)	Light/steady (road traffic)	Light/steady (road traffic)	Light/steady (road traffic)	Light/steady (road traffic)
Habitat:	Clear cut area, disturbed, not a fly-through corridor[3].	Pond W of Pewter Lane	Mature, mixed forest, HW dominant (Oak)	Large open water, wetland (bog), mature mixed forest.	Mature forest, mixed (Red Oak, White Pine, Tamarack). Water course ~2m wide inflow into Lilly Lake flowing SW.[2]	Edge habitat, open water, mature mixed forest, some small rock barrens.	Previous cutover area, open water, young deciduous shrubs.	Edge habitat, mixed residential/ commercial buildings, large open water area	Edge habitat, mixed residential/ commercial buildings, large open water area	Edge habitat, mixed residential/ commercial buildings, large open water area

Notes:

1. Data from Environment Canada (Halifax Intl Airport Station)

2. NE end of Lilly Lake is the best habitat in the Little Lakes Area, recommend tree searched for duck nests prior to any clearing any time of year

3. Unlikely to be rare sp

Table 10: Field Conditions Summary

Area 1	Area 2	Area 3	Area 4	Area 5	Area 6	1	2	3	4
9-Jun-14						**17-Jun-14**			
5:15	5:55	6:30	7:10	9:20	10:30	5:46	6:04	6:32	6:48
Clear	Clear	Clear	Clear	Clear	Clear	sun/clouds	sun/clouds	sun/clouds	mainly overcast
No	No	No	No	No	No	None	None	None	None
7 km/h	7 km/h	3 km/h	3 km/h	2 km/h	7 km/h	light	light	<5 km/hr	<5 km/hr
8°C	8°C	8°C	11°C	17°C	21°C	9°C	10°C	10°C	10°C
Light/steady (road traffic)	Light/steady (road traffic)	Light/steady (road traffic)	Light/steady (road traffic)	Light/steady (road traffic)	Light/steady (road traffic)	Light/steady (road traffic)	Light/steady (road traffic)	Light/steady (road traffic)	Light/steady (road traffic)
Edge habitat, commercial building structures, wetlands - small, open.	Edge habitat, cut lines, cut over area, young deciduous shrubs, wetlands - small, open.	Large, open water habitat, mature mixed forest, small treed swamps.	Large, open water habitat, residential, edge habitat and power line infrastructure.	Small treed wetlands, edge habitat, gravel travel and rocky outcrops, regenerating mixed forest.	Small treed wetlands, edge habitat, gravel travel and rocky outcrops, regenerating mixed forest.	WL	WL/HW dom PC btw WL 122 and WL 125	WL/HW dom long, narrow WL system, open water, cattails WL/HW	open water, narrow wetland system, running water

Table 10: Field Conditions Summary

5	6	7	8	9	10	11
17-Jun-14						
7:16	7:45	8:29	9:17	10:10	11:15	11:34
sun/clouds	sun/clouds	mostly cloudy[1]	sun/clouds	sun/clouds	sun	sun/clouds
None	None	No	No	No	No	No
4 km/hr[1]	<5 km/hr	<5 km/hr	<5 km/hr	11 km/hr[1]	<5 km/hr	<5 km/hr
11.6°C[1]	11°C	12°C	14°C	18°C	20°C	20°C
Light/steady (road traffic)	Light/steady (road traffic)	Light/steady (road traffic)	Light/steady (road traffic)	Light/steady (road traffic)	Light/steady (road traffic)	Light/steady (road traffic)
large open water wetland, 100mX150m, PC taken on SE side of WL	WL/ mixed F	WL/mixed just N of flat pond	W/L, treed swamp, mature forest	open water WL	dry wetland area. WL/mixed	wetland, fairly dry conditions. WL/HW[2].

Table 10: Field Conditions Summary

449	450	453	455	460	462	463	465	563	567	568
24-Jun-14										
6:17	6:37	6:59	7:16	7:35	7:59	8:15	8:38	9:09	9:33	9:57
clear	clear	clear	sun/clear	sun/clear	sun/clouds, light fog	sun/clouds	sun/clouds	sun/clouds	sun/clouds	sun/clouds
No	No	No	No	No	No	No	No	No	No	No
<5 km/hr	<5 km/hr	<5 km/hr	<5 km/hr	5 km/hr	<5 km/hr	<5 km/hr	<5 km/hr	<5 km/hr	6 km/hr	7 km/hr
12°C	12°C	13°C	13°C	13°C	14°C	15°C	15°C	16°C	17°C	18°C
Light/steady (road traffic)	Light/steady (road traffic)	Light/steady (road traffic)	Light/steady (road traffic)	Light/steady (road traffic)	Light/steady (road traffic)	Light/steady (road traffic)	Light/steady (road traffic)	Light/steady (road traffic)	Light/steady (road traffic)	Light/steady (road traffic)
WL/mixed/SWW of tributary on powerline corridor	cattail marsh WL/mixed	forrested black spruce swamp, WL/HW (treed swamp/ wetlands)	WL/HW narrow treed WL, no ponding water. PC taken on ROW btw WL2013-17 and WL2013-18 and includes WL2013-16 (100m S)	WL/mixed	Treed wetland, no ponding. WL/SW	long narrow wetlands, ferns, treed, relativley dry conditions WL/HW	low flow channel, intermittent fern dominant understory, deciduous treed swamp WL/HW	WL/HW small, treed wetland, deciduous and sparse red spruce, white pine. Watercourse at wp# 566 (1m wide)	large wetland complex, treed deciduous and fern. PC location is ~100m SE of N end of Lilly Lake	open water, wetland, large WL/HW

Table 10: Field Conditions Summary

571	572	441	485	486	487	489	490	492	496
24-Jun-14			**12-May-16**						
10:58	11:34	11:53	5:00	5:45	6:15	7:00	7:30	8:45	9:45
mostly cloudy[1]	sun/clouds	sun/clouds	Mainly clear	Mainly clear		Mainly sunny		Sun	Sun
No	No	No	None	None	None	None	None	None	None
22 km/hr[1]	<10 km/hr	light	17 km/h WSW	17 km/h WSW		21 km/h W		16 km/h WNW	23-33km/h NW
20°C[1]	20°C	21°C[1]	5.3	5.3	5.3	5.3	5.3	6.2	9
Light/steady (road traffic)	Light/steady (road traffic)	Light/steady (road traffic)							
large pond/ wetland adjacent to trail.road to Anderson Lake	shrub bog, sparce deciduous trees, ferns, peat	long, narrow edge wetland (shrub, ferns, peat) fairly dry WL/mixed							

Table 10: Field Conditions Summary

WP8 Quarry Access Road	WP9 Quarry Access Road	WP10 WL-2014-15	WP11 WL-2014-14	WP12 WL-2013-24	WP13 WL-2013-22	WP14 Anderson Lake
16-Jun-16						
4:50	5:15	5:55	6:22	6:43	7:11	8:14
Overcast	Overcast	Overcast	Overcast	Overcast	Overcast	Mainly clear
None	None	None	None	None	None	None
5 km/h	5 km/h	5 km/h	5 km/h	5 km/h	5 km/h	5 km/h
10	10	10	10	10	11	11
Low traffic	Med. Traffic	Low	-	-	-	-
Grey granite barren boulders Red maple/white birch scrub forest Quarry road	Alder wetland surrounded by dense white birch regen	Mixed wood forest Granite barren rock Alder wetland Along powerline	Mixed wood forest Downy alders Granite barren rocks Wet areas Along powerline	Granite with heath broom Med. Mixed wood forest Granit boulders Along powerline	Mature mixed wood forest Along powerline	Anderson Lake Mature mixed wood forest

Table 10: Field Conditions Summary

WP15 Pond south of Anderson Lake	WP16 WL24	WP17 Overlooking Duke St NW of Drysdale Ave	WP20 SE of penitentiary	WP21 SW of WL118	WP22 S of WL-2013-01	WP23 N end of WL-2013-03
16-Jun-16			**17-Jun-16**			
8:37	9:10	9:30	4:50	5:29	6:19	7:50
Mainly clear	Mainly clear	Mainly clear	Mainly clear	Mainly clear	Mainly clear	Clear
None	None	None	None	None	None	None
5 km/h	5 km/h	5 km/h	5 km/h	5 km/h	2 km/h	5 km/h
11	12	12	8	9	9	9
-	Low traffic	Low traffic	-	Low	Medium traffic	Medium traffic
Small pond surrounded by swamp Mature mixed wood forest Crossroad of powerline and road to Anderson Lake	Suburban/greenbelt Disturbed environment	Suburban/greenbelt Disturbed environment	Edge of disturbed area overlooking bog in greenbelt surrounded by mature mixed wood forest	Behind industrial area Overlooking regen/mature mixed woods Streams and wetlands	Off of railroad behind industrial park Wetland Mature and regen mixed woods	Med/mature mixed wood forest

Table 10: Field Conditions Summary

WP24 S end of WL-2013-03	WP26 WL-2013-12
17-Jun-16	
8:07	9:20
None	None
10 km/h	20 km/h
11	10
Low traffic	High traffic and wind
Wetland surrounded by med/mature mixed wood forest	Overlooking rocky outcrop Mixed wood and scrub forest Distant wetland WNW

Appendix H
Animal Data

H Potential Terrestrial Wildlife Species (excluding birds) in Study Area and Observation Summary (as of Spring 2016)

Common Name+	Scientific Name	S Rank*	General Status*	Habitat	Distribution	Observation[1]	Estimated Abund-ance[2]
Deer mouse	*Peromyscus maniculatus*	S5	Secure	forests, fields	common in NS, locally except SW coast	N/A	A
Woodland jumping mouse	*Napaeozapus insignis*	S5	Secure	forest, edge	common throughout NS	N/A	A
White footed mouse	*Peromyscus leucopus*	S5	Secure	forests	disjunct in NS most likely in Atlantic Interior	N/A	Unlikely but identified in 2002
Meadow jumping mouse	*Zapus hudsonius*	S5	Secure	wet field, bog, forest	locally throughout NS	N/A	L
Meadow vole	*Microtus pennsylvanicus*	S5	Secure	fields	throughout NS in habitat	WL25, WL131	L
Cinerous shrew	*Sorex cinereus*	S5	Secure	forests, field barrens - near water	abundant throughout NS	N/A	A
Smoky shrew	*Sorex fumeus*	S5	Secure	mixed and deciduous forest	uncommon mainland NS	N/A	Unlikely based on distribution
Star-nosed mole	*Condylura cristata*	S5	Secure	low, wet, soft soil near watercourse	locally throughout NS	N/A	P
Gapper's red-backed vole	*Clethrionomys gapperi*	S5	Secure	forests, edge	abundant throughout NS	N/A	A
American water shrew	*Sorex palustris*	S3S4	Secure	river, stream bank in forest, floodplain	locally throughout NS	N/A	Unlikely based on habitat
Short-tailed shrew	*Blarina brevicauda*	S5	Secure	forests, most areas	common to abundant throughout NS	N/A	A
Eastern chipmunk	*Tamias striatus*	S5	Secure	forests or edges or gardens	throughout NS	N/A	L
Red squirrel	*Tamiasciurus hudsonicus*	S5	Secure	softwood and mixed wood forests, edges	common throughout NS	WL25	A
Snowshoe hare	*Lepus americanus*	S5	Secure	conifer thickets or alder swamps	common throughout NS	N/A	A
Beaver	*Castor canadensis*	S5	Secure	slow-flowing streams, lakes, rivers, marshes and coastal wetlands	throughout NS	N/A	Unlikely based on habitat
Muskrat	*Ondatra zibethicus*	S5	Secure	marshes, lakes, rivers	throughout NS	WL131	Unlikely based on habitat
Red fox	*Vulpes vulpes*	S5	Secure	agricultural areas intermixed with woods	throughout NS	N/A	L
Eastern coyote	*Canis latrans*	S5	Secure	wooded areas to farmland	throughout NS	N/A	A
Black bear	*Ursus americanus*	S5	Secure	forest, wooded areas, swamps	scattered throughout NS	N/A	A
Raccoon	*Procyon lotor*	S5	Secure	edges of streams, marshes; urban areas	throughout NS	N/A	L
Bobcat	*Felis rufus*	S5	Secure	coniferous stands	throughout NS	N/A	L
Porcupine	*Erithizon dorsatum*	S5	Secure	all forest types	common on mainland	N/A	L

H Potential Terrestrial Wildlife Species (excluding birds) in Study Area and Observation Summary (as of Spring 2016)

Common Name+	Scientific Name	S Rank*	General Status*	Habitat	Distribution	Observation[1]	Estimated Abund-ance[2]
Striped skunk	*Mephitis mephitis*	S5	Secure	semi-opened forest areas & agricultural lands	uncommon in western counties, absent on CB	N/A	P
White-tailed deer	*Odocoileus virginianus*	S5	Secure	forest edges, fields & cutovers	common throughout NS	WL131	A
Moose - **SAR**	*Alces alces*	**S1**	**At Risk**	young forest, wet sites near lakes and swamps	**SAR on mainland NS (NSESEA Endangered)**	N/A	P
Mink	*Mustela vison*	S5	Secure	wetland habitat	throughout NS	N/A	Unlikely based on habitat
Short-tailed weasel	*Mustela erminea*	S5	Secure	forest	common throughout NS.	N/A	L
Woodchuck	*Marmota monax*	S5	Secure	fields, wood edge, rocky slopes	mainland NS	N/A	P
Northern flying squirrel	*Glaucomys sabrinus*	S5	Secure	mature softwood and mixed wood	common throughout NS	N/A	L
Little brown myotis (bat) - **SAR**	*Myotis lucifugus*	**S1**	**At Risk**	forage over water fields and roads, forest roosts	**SAR – NSESA/SARA Endangered** throughout NS - summer	N/A	L summer
Northern myotis (bat) - **SAR**	*Myotis septentrionalis*	**S1**	**At Risk**	forage over water fields and roads, forest roosts	**SAR – NSESA/SARA Endangered** throughout NS - summer	N/A	L summer
Yellow-spotted salamander	*Ambystoma maculatum*	S5	Secure	woods, near breeding sites, bogs, ponds, vegetated lakes	common throughout NS.	N/A	L
Eastern redback salamander (redback & lead back phase)	*Plethodon cinereus*	S5	Secure	moist forest floors	common throughout NS	N/A	A
Blue-spotted salamander	*Salamander Ambystoma laterale*	S5	Secure	woods near breeding sites, swamps, ponds, slow streams	occasional Northern NS	N/A	P
Red-spotted newt	*Notophthalmus viridescens*	S5	Secure	woods near aquatic sites	common NS	N/A	L
Eastern American Toad	*Bufo americanus americanus*	S5	Secure	shores of ponds, lakes, streams adjacent woods	scattered throughout NS	N/A	L
Northern spring peeper	*Hyla crucifer crucifer*	S5	Secure	woods, breeding ponds, marshes	common throughout NS	WL20, WL120	A
Bullfrog	*Rana catesbeiana*	S5	Secure	vegetated pond or lake cove, boggy stream	locally southwestern NS, scattered elsewhere	WL118	P
Green frog	*Rana clamitans melanota*	S5	Secure	lakes, ponds, streams	common throughout NS	WL20, WL25, WL114, WL118, WL120, WL131	L
Northern leopard frog	*Rana pipiens*	S5	Secure	grassy wet areas	common throughout NS	N/A	L

H Potential Terrestrial Wildlife Species (excluding birds) in Study Area and Observation Summary (as of Spring 2016)

Common Name+	Scientific Name	S Rank*	General Status*	Habitat	Distribution	Observation[1]	Estimated Abund-ance[2]
Pickerel frog	*Rana palustris*	S5	Secure	stream, lakeshore	common throughout NS	N/A	L
Mink frog	*Rana septentrianalis*	S5	Secure	near pond, cove of lake or quiet stream with aquatic vegetation	scattered throughout NS	N/A	P
Wood frog	*Rana sylvatica*	S5	Secure	damp woods	common through NS	WL117	L
Northern redbelly Snake	*Storeria ocipitomaculata*	S5	Secure	grassy, heath areas	scattered throughout NS	N/A	L
Maritime garter snake	*Thomnophis sirtalis pallidula*	S5	Secure	edges of fields, shores or woods	common throughout NS	WL25	A
Eastern smooth green snake	*Opheodrys vernalis vernalis*	S4	Secure	grassy shrubby areas, near aquatic habitat	common throughout NS	N/A	A
Ring-necked snake	*Diadophis punctatus*	S5	Secure	Woodlands, near shores of ponds, streams and bogs	Generally southwest and northeast mainland	Near Anderson Lake	P
Common snapping turtle – **SAR**	*Chelydra serpentina*	**S3**	**Sensitive**	near watercourse, nest on gravel	**SAR in NS – Special Concern/Vulnerable** throughout NS	N/A	P
Wood turtle – **SAR**	*Clemmys insculpta*	**S2**	**Sensitive**	river, nest on gravel	**SAR in NS – NSESA/SARA Threatened** throughout NS	N/A	Unlikely based on habitat

NOTES

+ SAR Species see Report

* Status as of July 2016

1. Observed based on animal or animal sign (Stantec 2011 and this assessment). N/A location not available.
2. P Present; L Local; A Abundant

S-rank - S1 Extremely rare in province; S2 Rare in the province; S3 Uncommon in the province; S4 Widespread, common and apparently secure in province; S5 Widespread, abundant and secure in the province.

General Status - "Sensitive" indicating they are potentially susceptible to human activities or natural events

"May be at Risk" therefore considered here to be of high conservation concern within the province.

"Undetermined" indicating that there is currently insufficient data, information, or knowledge available to evaluate its status.

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1. Sched. under SARA – Species at Risk Act; **NSESA** – Nova Scotia Endangered Species Act Legally Listed Species; **COSEWIC** - Committee on the Status of Endangered Wildlife in Canada assessed species Endangered; Threatened/Vulnerable: A wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction; Special Concern: Sensitive but not endangered or threatened.