Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
P	*Symphyotrichum boreale*	Boreal Aster				S3	7	20.5 ± 5.0	NS
P	*Symphyotrichum undulatum*	Wavy-leaved Aster				S3	141	12.1 ± 0.0	NS
P	*Symphyotrichum ciliolatum*	Fringed Blue Aster				S3	4	91.3 ± 1.0	NS
P	*Alnus serrulata*	Smooth Alder				S3	763	0.5 ± 0.0	NS
P	*Betula michauxii*	Michaux's Dwarf Birch				S3	44	1.9 ± 0.0	NS
P	*Cardamine parviflora*	Small-flowered Bittercress				S3	12	44.1 ± 0.0	NS
P	*Palustricodon aparinoides*	Marsh Bellflower				S3	6	65.8 ± 1.0	NS
P	*Mononeuria groenlandica*	Greenland Stitchwort				S3	142	1.3 ± 0.0	NS
P	*Sagina nodosa*	Knotted Pearlwort				S3	68	37.1 ± 5.0	NS
P	*Sagina nodosa ssp. borealis*	Knotted Pearlwort				S3	5	56.0 ± 1.0	NS
P	*Stellaria longifolia*	Long-leaved Starwort				S3	1	85.8 ± 5.0	NS
P	*Ceratophyllum echinatum*	Prickly Hornwort				S3	4	12.7 ± 0.0	NS
P	*Triosteum aurantiacum*	Orange-fruited Tinker's Weed				S3	29	85.9 ± 0.0	NS
P	*Crassula aquatica*	Water Pygmyweed				S3	2	69.9 ± 0.0	NS
P	*Empetrum eamesii*	Pink Crowberry				S3	86	67.7 ± 0.0	NS
P	*Vaccinium uliginosum*	Alpine Bilberry				S3	1	98.7 ± 0.0	NS
P	*Halenia deflexa*	Spurred Gentian				S3	3	77.9 ± 0.0	NS
P	*Geranium bicknellii*	Bicknell's Crane's-bill				S3	22	0.4 ± 0.0	NS
P	*Myriophyllum verticillatum*	Whorled Water Milfoil				S3	1	96.9 ± 3.0	NS
P	*Utricularia resupinata*	Inverted Bladderwort				S3	22	2.9 ± 0.0	NS
P	*Epilobium strictum*	Downy Willowherb				S3	6	42.7 ± 0.0	NS
P	*Polygala sanguinea*	Blood Milkwort				S3	12	12.2 ± 0.0	NS
P	*Persicaria arifolia*	Halberd-leaved Tearthumb				S3	12	23.1 ± 0.0	NS
P	*Plantago rugelii*	Rugel's Plantain				S3	8	29.1 ± 0.0	NS
P	*Primula laurentiana*	Laurentian Primrose				S3	53	69.0 ± 0.0	NS
P	*Samolus parviflorus*	Seaside Brookweed				S3	60	23.5 ± 0.0	NS
P	*Pyrola minor*	Lesser Pyrola				S3	3	75.0 ± 7.0	NS
P	*Anemone virginiana*	Virginia Anemone				S3	12	21.2 ± 0.0	NS
P	*Cephalanthus occidentalis*	Common Buttonbush				S3	1965	2.9 ± 0.0	NS
P	*Salix pedicellaris*	Bog Willow				S3	96	0.5 ± 0.0	NS
P	*Salix sericea*	Silky Willow				S3	137	12.6 ± 0.0	NS
P	*Saxifraga paniculata ssp. laestadii*	Laestadius' Saxifrage				S3	9	91.1 ± 7.0	NS
P	*Lindernia dubia*	Yellow-seeded False Pimperel				S3	13	17.5 ± 0.0	NS
P	*Laportea canadensis*	Canada Wood Nettle				S3	18	61.3 ± 0.0	NS
P	*Pilea pumila*	Dwarf Clearweed				S3	3	87.0 ± 0.0	NS
P	*Viola nephrophylla*	Northern Bog Violet				S3	2	76.5 ± 1.0	NS
P	*Carex bebbii*	Bebb's Sedge				S3	20	81.2 ± 0.0	NS
P	*Carex cryptolepis*	Hidden-scaled Sedge				S3	5	4.0 ± 0.0	NS
P	*Carex hirtifolia*	Pubescent Sedge				S3	15	87.5 ± 0.0	NS
P	*Carex lupulina*	Hop Sedge				S3	53	13.5 ± 1.0	NS
P	*Carex rosea*	Rosy Sedge				S3	23	62.5 ± 0.0	NS
P	*Carex swanii*	Swan's Sedge				S3	87	24.7 ± 0.0	NS
P	*Carex tenera*	Tender Sedge				S3	5	21.0 ± 0.0	NS
P	*Carex tribuloides*	Blunt Broom Sedge				S3	10	33.1 ± 0.0	NS
P	*Carex tuckermanii*	Tuckerman's Sedge				S3	26	82.2 ± 0.0	NS
P	*Eleocharis nitida*	Quill Spikerush				S3	14	53.7 ± 1.0	NS
P	*Eleocharis flavescens var. olivacea*	Bright-green Spikerush				S3	13	7.7 ± 0.0	NS
P	*Eriophorum gracile*	Slender Cottongrass				S3	8	58.1 ± 1.0	NS
P	*Coeloglossum viride*	Long-bracted Frog Orchid				S3	12	68.4 ± 0.0	NS
P	*Cypripedium parviflorum*	Yellow Lady's-slipper				S3	540	68.4 ± 0.0	NS
P	*Neottia bifolia*	Southern Twayblade				S3	192	16.3 ± 0.0	NS
P	*Platanthera flava*	Southern Rein-Orchid				S3	41	12.1 ± 0.0	NS
P	*Platanthera grandiflora*	Large Purple Fringed Orchid				S3	7	41.0 ± 0.0	NS
P	*Platanthera hookeri*	Hooker's Orchid				S3	26	20.9 ± 5.0	NS

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
P	*Dichanthelium linearifolium*	Narrow-leaved Panic Grass				S3	16	3.8 ± 0.0	NS
P	*Piptatheropsis canadensis*	Canada Ricegrass				S3	22	1.5 ± 0.0	NS
P	*Poa glauca*	Glaucous Blue Grass				S3	9	91.8 ± 1.0	NS
P	*Stuckenia filiformis*	Thread-leaved Pondweed				S3	1	57.1 ± 7.0	NS
P	*Potamogeton praelongus*	White-stemmed Pondweed				S3	1	75.2 ± 1.0	NS
P	*Potamogeton richardsonii*	Richardson's Pondweed				S3	6	71.0 ± 1.0	NS
P	*Potamogeton zosteriformis*	Flat-stemmed Pondweed				S3	2	74.4 ± 1.0	NS
P	*Sceptridium dissectum*	Dissected Moonwort				S3	5	21.6 ± 0.0	NS
P	*Polypodium appalachianum*	Appalachian Polypody				S3	12	11.0 ± 0.0	NS
P	*Persicaria amphibia var. emersa*	Long-root Smartweed				S3?	28	12.6 ± 0.0	NS
P	*Spiranthes ochroleuca*	Yellow Ladies'-tresses				S3?	41	7.6 ± 0.0	NS
P	*Diphasiastrum x sabinifolium*	Savin-leaved Ground-cedar				S3?	3	34.1 ± 0.0	NS
P	*Bidens vulgata*	Tall Beggarticks				S3S4	2	90.1 ± 0.0	NS
P	*Erigeron hyssopifolius*	Hyssop-leaved Fleabane				S3S4	3	78.3 ± 7.0	NS
P	*Hieracium paniculatum*	Panicled Hawkweed				S3S4	46	6.8 ± 0.0	NS
P	*Bidens beckii*	Water Beggarticks				S3S4	22	12.7 ± 0.0	NS
P	*Packera paupercula*	Balsam Groundsel				S3S4	58	81.3 ± 0.0	NS
P	*Packera paupercula var. paupercula*	Balsam Groundsel				S3S4	1	84.9 ± 0.0	NS
P	*Atriplex glabriuscula var. franktonii*	Frankton's Saltbush				S3S4	14	80.8 ± 0.0	NS
P	*Shepherdia canadensis*	Soapberry				S3S4	101	79.5 ± 0.0	NS
P	*Vaccinium boreale*	Northern Blueberry				S3S4	1	47.8 ± 0.0	NS
P	*Vaccinium cespitosum*	Dwarf Bilberry				S3S4	43	12.6 ± 0.0	NS
P	*Vaccinium corymbosum*	Highbush Blueberry				S3S4	307	6.4 ± 0.0	NS
P	*Fagus grandifolia*	American Beech				S3S4	376	2.6 ± 1.0	NS
P	*Bartonia virginica*	Yellow Bartonia				S3S4	90	2.9 ± 0.0	NS
P	*Proserpinaca pectinata*	Comb-leaved Mermaidweed				S3S4	75	1.7 ± 0.0	NS
P	*Decodon verticillatus*	Swamp Loosestrife				S3S4	256	7.7 ± 0.0	NS
P	*Nuphar microphylla*	Small Yellow Pond-lily				S3S4	7	38.2 ± 0.0	NS
P	*Persicaria pensylvanica*	Pennsylvania Smartweed				S3S4	27	31.4 ± 0.0	NS
P	*Fallopia scandens*	Climbing False Buckwheat				S3S4	11	13.1 ± 0.0	NS
P	*Pyrola asarifolia*	Pink Pyrola				S3S4	3	73.4 ± 7.0	NS
P	*Endotropis alnifolia*	alder-leaved buckthorn				S3S4	6	75.7 ± 0.0	NS
P	*Amelanchier spicata*	Running Serviceberry				S3S4	60	1.9 ± 0.0	NS
P	*Crataegus succulenta*	Fleshy Hawthorn				S3S4	1	98.2 ± 0.0	NS
P	*Fragaria vesca ssp. americana*	Woodland Strawberry				S3S4	3	86.5 ± 0.0	NS
P	*Galium aparine*	Common Bedstraw				S3S4	20	41.4 ± 0.0	NS
P	*Geocaulon lividum*	Northern Comandra				S3S4	1	64.2 ± 1.0	NS
P	*Limosella australis*	Southern Mudwort				S3S4	10	28.9 ± 0.0	NS
P	*Veronica serpyllifolia*	Thyme-Leaved Speedwell				S3S4	37	10.1 ± 0.0	NS
P	*Ulmus americana*	White Elm				S3S4	45	5.0 ± 1.0	NS
P	*Verbena hastata*	Blue Vervain				S3S4	77	15.1 ± 0.0	NS
P	*Viola sagittata var. ovata*	Arrow-Leaved Violet				S3S4	71	13.5 ± 0.0	NS
P	*Viola selkirkii*	Great-Spurred Violet				S3S4	2	91.8 ± 1.0	NS
P	*Symplocarpus foetidus*	Eastern Skunk Cabbage				S3S4	188	42.2 ± 0.0	NS
P	*Carex argyrantha*	Silvery-flowered Sedge				S3S4	29	14.6 ± 0.0	NS
P	*Sisyrinchium atlanticum*	Eastern Blue-Eyed-Grass				S3S4	204	3.6 ± 0.0	NS
P	*Triglochin gaspensis*	Gasp ├⌐ Arrowgrass				S3S4	13	27.5 ± 0.0	NS
P	*Juncus acuminatus*	Sharp-Fruit Rush				S3S4	12	9.8 ± 0.0	NS
P	*Juncus subcaudatus*	Woods-Rush				S3S4	17	34.3 ± 5.0	NS
P	*Luzula parviflora ssp. melanocarpa*	Black-fruited Woodrush				S3S4	2	73.9 ± 7.0	NS
P	*Goodyera repens*	Lesser Rattlesnake-plantain				S3S4	23	37.5 ± 0.0	NS
P	*Liparis loeselii*	Loesel's Twayblade				S3S4	11	37.9 ± 1.0	NS
P	*Platanthera obtusata*	Blunt-leaved Orchid				S3S4	5	2.9 ± 2.0	NS

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
P	*Platanthera orbiculata*	Small Round-leaved Orchid				S3S4	46	31.5 ± 0.0	NS
P	*Alopecurus aequalis*	Short-awned Foxtail				S3S4	2	61.6 ± 0.0	NS
P	*Dichanthelium clandestinum*	Deer-tongue Panic Grass				S3S4	330	13.4 ± 0.0	NS
P	*Coleataenia longifolia*	Long-leaved Panicgrass				S3S4	2155	1.8 ± 0.0	NS
P	*Panicum philadelphicum*	Philadelphia Panicgrass				S3S4	30	0.5 ± 0.0	NS
P	*Koeleria spicata*	Narrow False Oats				S3S4	6	84.8 ± 0.0	NS
P	*Asplenium trichomanes*	Maidenhair Spleenwort				S3S4	12	62.8 ± 0.0	NS
P	*Lorinseria areolata*	Netted Chain Fern				S3S4	209	28.1 ± 7.0	NS
P	*Equisetum pratense*	Meadow Horsetail				S3S4	7	57.7 ± 0.0	NS
P	*Diphasiastrum complanatum*	Northern Ground-cedar				S3S4	14	42.2 ± 1.0	NS
P	*Diphasiastrum sitchense*	Sitka Ground-cedar				S3S4	1	80.2 ± 1.0	NS
P	*Huperzia appressa*	Mountain Firmoss				S3S4	3	90.9 ± 0.0	NS
P	*Sceptridium multifidum*	Leathery Moonwort				S3S4	14	34.3 ± 0.0	NS
P	*Botrychium matricariifolium*	Daisy-leaved Moonwort				S3S4	3	59.8 ± 10.0	NS
P	*Bidens discoidea*	Swamp Beggarticks				SH	1	45.2 ± 0.0	NS
P	*Viola canadensis*	Canada Violet				SH	1	86.9 ± 0.0	NS
P	*Greeneochloa coarctata*	Small Reedgrass				SH	1	94.3 ± 6.0	NS
P	*Dichanthelium meridionale*	Matting Witchgrass				SH	1	75.8 ± 10.0	NS

5.1 SOURCE BIBLIOGRAPHY (100 km)

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

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120	Cameron, R.P. 2011. Lichen observations, 2011. Nova Scotia Environment & Labour, 731 recs.
119	Toms, B. & Neily, T.; Belliveau, A.G.; Newell, R.; Mills, A.; Clapp, H.; Staicer, C.; Anderson, F.; Gray, C.; Beals, L. 2010. Inventory of Nature Conservancy of Canada Lands in Yarmouth and Shelburne Counties. Mersey Tobeatic Research Institute, approx. 1500 recs.
110	Wilhelm, S.I. et al. 2011. Colonial Waterbird Database. Canadian Wildlife Service, Sackville, 2698 sites, 9718 recs (8192 obs).

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109	McNeil, J.A. 2020. Blanding's Turtle records, 2020. Mersey Tobeatic Research Institute.
108	e-Butterfly. 2019. Export of Maritimes records and photos. McFarland, K. (ed.) e-butterfly.org.
108	Haughian, S.R. 2018. Description of Fuscopannaria leucosticta field work in 2017. New Brunswick Museum, 314 recs.
101	MacKinnon, D.S. 2005. Coastal Plains Flora GIS theme, 1999-2000. Dept of Environment & Labour, Protected Areas Branch, 109 shp files. 109 recs.
98	Bryson, I. 2020. Nova Scotia and Newfoundland rare species observations, 2018-2020. Nova Scotia Environment.
98	Mazerolle, D.M. 2017. Atlantic Canada Conservation Data Centre Fieldwork 2017. Atlantic Canada Conservation Data Centre.
95	Breen, A. 2019. 2019 Atlantic Whitefish observations. Coastal Action, 95 recs.
95	McNeil, J.A. 2019. Eastern Painted Turtle trapping records, 2017. Mersey Tobeatic Research Institute.
93	Belliveau, A. 2013. Rare species records from Nova Scotia. Mersey Tobeatic Research Institute, 296 records. 296 recs.
93	Benjamin, L.K. (compiler). 2001. Significant Habitat & Species Database. Nova Scotia Dept of Natural Resources, 15 spp, 224 recs.
88	LaPaix, R.W.; Crowell, M.J.; MacDonald, M. 2011. Stantec rare plant records, 2010-11. Stantec Consulting, 334 recs.
86	MacDonald, E.C. 2018. CWS Piping Plover Census, 2010-2017. Canadian Wildlife Service, 672 recs.
81	Layberry, R.A. & Hall, P.W., LaFontaine, J.D. 1998. The Butterflies of Canada. University of Toronto Press. 280 pp+plates.
81	McMullin, R.T.; Anderson, F.; Clapp, H.; et al. 2019. Results from a rare lichen survey at Kejimkujik Seaside National Park in Nova Scotia, Canada. Canadian Museum of Nature, 83 recs.
79	Herman, T.B. & Power, T.D., Eaton, B. 1995. Population status of Blanding's Turtle (Emydoidea blandingii) in Nova Scotia. Can. Field-Nat., 109: 182-191. 79 recs.
78	Bryson, I.C. 2020. Nova Scotia flora and lichen observations 2020. Nova Scotia Environment, 139 recs.
78	Richardson, Leif. 2018. Maritimes Bombus records from various sources. Richardson, Leif.
77	Roland, A.E. & Smith, E.C. 1969. The Flora of Nova Scotia, 1st Ed. Nova Scotia Museum, Halifax, 743pp.
76	Parks Canada. 2021. Species at Risk observations from 2019-2020 in Kejimkujik National Park and Historic Site. Parks Canada, 76 records.
71	McNeil, J.A. 2019. Snapping Turtle records, 2019. Mersey Tobeatic Research Institute.
68	McNeil, J.A. 2017. Updates to Blanding's Turtle database, 1984-2014. Mersey Tobeatic Research Institute.
67	Staicer, C. & Bliss, S.; Achenbach, L. 2017. Occurrences of tracked breeding birds in forested wetlands. , 303 records.
66	Blaney, C.S. 2020. Sean Blaney 2020 field data. Atlantic Canada Conservation Data Centre, 4407 records.
66	NatureServe Canada. 2019. iNaturalist Maritimes Butterfly Records. iNaturalist.org and iNaturalist.ca.
65	Roland, A.E. 1976. The Coastal Plain Flora of Kejimkujik National Park. Parks Canada Report, 238 pp.
63	McNeil, J.A. 2013. Ribbonsnake (Thamnophis sauritus) sightings, 2012 . Parks Canada, 63 records of 26+ individuals.
61	Richardson, D., Anderson, F., Cameron, R, McMullin, T., Clayden, S. 2014. Field Work Report on Black Foam Lichen (Anzia colpodes). COSEWIC.
60	McLean, K. 2020. Species occurrence records from Clean Annapolis River Project fieldwork in 2020. Clean Annapolis River Project, 206 records.
60	Zinck, M. & Roland, A.E. 1998. Roland's Flora of Nova Scotia. Nova Scotia Museum, 3rd ed., rev. M. Zinck; 2 Vol., 1297 pp.
57	Blaney, C.S.; Spicer, C.D. 2001. Fieldwork 2001. Atlantic Canada Conservation Data Centre. Sackville NB, 981 recs.
56	Blaney, C.S. 2019. Sean Blaney 2019 field data. Atlantic Canada Conservation Data Centre, 4407 records.
56	Newell, R. & Neily, T.; Toms, B.; Proulx, G. et al. 2011. NCC Properties Fieldwork in NS: August-September 2010. Nature Conservancy Canada, 106 recs.
54	LaPaix, R.W.; Crowell, M.J.; MacDonald, M.; Neily, T.D.; Quinn, G. 2017. Stantec Nova Scotia rare plant records, 2012-2016. Stantec Consulting.
53	Belliveau, A.G., Churchill, J.L. 2019. Compilation of flora and fauna observation records from Isle Haute, Nova Scotia. Acadia University; Atlantic Canada Conservation Data Centre, 522 recs.
53	Churchill, J.L. 2020. Atlantic Canada Conservation Data Centre Fieldwork 2020. Atlantic Canada Conservation Data Centre, 1083 recs.
52	Nussey, Pat & NCC staff. 2019. AEI tracked species records, 2016-2019. Chapman, C.J. (ed.) Atlantic Canada Conservation Data Centre, 333.
49	Mersey Tobetic Research Institute. 2021. 2020 Monarch records from the MTRI monitoring program. Mersey Tobetic Research Institute, 72 records.
48	Chapman, C.J. 2019. Atlantic Canada Conservation Data Centre 2019 botanical fieldwork. Atlantic Canada Conservation Data Centre, 11729 recs.
48	iNaturalist. 2020. iNaturalist butterfly records selected for the Maritimes Butterfly Atlas. iNaturalist.
46	Blaney, C.S.; Spicer, C.D.; Rothfels, C. 2004. Fieldwork 2004. Atlantic Canada Conservation Data Centre. Sackville NB, 1343 recs.
45	Bayne, D.M. 2007. Atlantic Coastal Plain Flora record, 2004-06. Nova Scotia Nature Trust. Pers. comm. to C.S. Blaney, 57 recs.
44	Blaney, C.S. 2000. Fieldwork 2000. Atlantic Canada Conservation Data Centre. Sackville NB, 1265 recs.
44	McLean, K. 2019. Wood Turtle observations . Clean Annapolis River Project.
43	Patrick, A.; Horne, D.; Noseworthy, J. et. al. 2017. Field data for Nova Scotia and New Brunswick, 2015 and 2017. Nature Conservancy of Canada.
42	Chapman, C.J. 2018. Atlantic Canada Conservation Data Centre botanical fieldwork 2018. Atlantic Canada Conservation Data Centre, 11171 recs.
42	Neily, T.H. 2019. Tom Neily NS Bryophyte records (2009-2013). T.H. Neily, Atlantic Canada Conservation Data Centre, 1029 specimen records.
41	Chapman-Lam, C.J. 2021. Atlantic Canada Conservation Data Centre 2020 botanical fieldwork. Atlantic Canada Conservation Data Centre, 17309 recs.
41	MacKinnon, D.S. 1999. Fieldwork 1999. Dept of Environment and Labour, Protected Areas Branch, 48 recs.
40	Cameron, E. 2007. Canadian Gypsum Co. survey 2005-07. Dillon Consulting Ltd, 40 recs.
39	Benjamin, L.K. 2012. NSDNR fieldwork & consultant reports 2008-2012. Nova Scotia Dept Natural Resources, 196 recs.
39	MacKinnon, D.S. & Maass, O.C. 1995. Fieldwork 1995. Dept Natural Resources, Parks Division, 45 recs.
39	Mazerolle, D.M. 2018. Atlantic Canada Conservation Data Centre botanical fieldwork 2018. Atlantic Canada Conservation Data Centre, 13515 recs.
38	Atlantic Canada Conservation Data Centre. 2020. Cape LaHave Island observations from August 2020. Atlantic Canada Conservation Data Centre, 605 records.
38	Blaney, C.S. 2017. Atlantic Canada Conservation Data Centre Fieldwork 2017. Atlantic Canada Conservation Data Centre.
38	Stewart, J.I. 2010. Peregrine Falcon Surveys in New Brunswick, 2002-09. Canadian Wildlife Service, Sackville, 58 recs.
37	Newell, R.E. 2019. Crocanthemum canadense records compiled for provincial status report. pers. comm. from Ruth Newell to AC CDC.
36	Canadian Wildlife Service, Dartmouth. 2010. Piping Plover censuses 2007-09, 304 recs.
36	McNeil, J.A. 2017. Eastern Ribbonsnake (Thamnophis sauritus) sightings, 2017. Mersey Tobeatic Research Institute, 36 recs.
35	East Coast Aquatics Inc. 2021. Species at Risk records from Spicer North Mountain Quarry Expansion Environmental Assessment. East Coast Aquatics, 44 records.

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35	Roland, A.E. 1980. Checklist of Vascular Plants of Kejimkujik National Park in Lichens, Liverworts, Mosses and Flowering Plants of Kejimkujik National Park. Roland, A.E. (ed.) Parks Canada Report, pp. 52-140, 160 pp.
33	McNeil, J.A. 2018. Wood Turtle records, 2018. Mersey Tobeatic Research Institute, 68 recs.
33	Phinney, L. 2019. Little Brown Myotis maternal colony counts and birdSAR, 2019. Mersey Tobeatic Research Institute.
33	Taylor, P.D. 2006. Long-term monitoring of Listera australis in southwestern Nova Scotia; summary report for 2006, year 3. Acadia University, 33.
31	MacKinnon, D.S. 2001. Fieldwork 2001. Dept of Environment & Labour, Protected Areas Branch, 43 recs.
31	Porter, C.J.M. 2014. Field work data 2007-2014. Nova Scotia Nature Trust, 96 recs.
30	Frittaion, C. 2012. NSNT 2012 Field Observations. Nova Scotia Nature Trust, Pers comm. to S. Blaney Feb. 7, 34 recs.
30	Klymko, J.J.D.; Robinson, S.L. 2014. 2013 field data. Atlantic Canada Conservation Data Centre.
29	Wilhelm, S.I. et al. 2019. Colonial Waterbird Database. Canadian Wildlife Service.
28	Klymko, J.J.D. 2018. 2017 field data. Atlantic Canada Conservation Data Centre.
26	Ferguson, D.C. 1954. The Lepidoptera of Nova Scotia. Part I, macrolepidoptera. Proceedings of the Nova Scotian Institute of Science, 23(3), 161-375.
26	McLean, K. 2020. Wood Turtle observations . Clean Annapolis River Project.
26	Neily, T.H. 2013. Email communication to Sean Blaney regarding Listera australis observations made from 2007 to 2011 in Nova Scotia. , 50.
25	Benjamin, L.K. 2011. NSDNR fieldwork & consultant reports 1997, 2009-10. Nova Scotia Dept Natural Resources, 85 recs.
25	Burnie, B. 2013. 2013 Scirpus longii field data. Mount Saint Vincent University, 51 recs.
25	McNeil, J.A. 2019. Snapping Turtle records, 2017. Mersey Tobeatic Research Institute.
25	Richardson, D., Anderson, F., Cameron, R, Pepper, C., Clayden, S. 2015. Field Work Report on the Wrinkled Shingle lichen (Pannaria lurida). COSEWIC.
25	Sollows, M.C,. 2008. NBM Science Collections databases: mammals. New Brunswick Museum, Saint John NB, download Jan. 2008, 4983 recs.
24	Bayne, D.M., Cameron, R.C. 2014. 2014 Lichen records near Little Bon Mature Lake, Queens NS. NS Department of Natural Resources.
24	Belliveau, A.G. 2021. New Black ash site records near Kentville, NS. Acadia University, 47 records.
24	Broders, H.G. 2006. Unpublished data. , 24 recs.
23	Cameron, R.P. 2018. Degelia plumbea records. Nova Scotia Environment.
23	McLean, K. 2019. Species At Risk observations. Clean Annapolis River Project.
22	Breen, A. 2018. 2018 Atlantic Whitefish observations. Coastal Action.
22	Munro, Marian K. Nova Scotia Provincial Museum of Natural History Herbarium Database. Nova Scotia Provincial Museum of Natural History, Halifax, Nova Scotia. 2014.
22	Nelly, T.H. 2006. Cypripedium arietinum in Hants Co. Pers. comm. to C.S. Blaney. 22 recs, 22 recs.
21	Basquill, S.P., Porter, C. 2019. Bryophyte and lichen specimens submitted to the E.C. Smith Herbarium. NS Department of Lands and Forestry.
21	MacKinnon, D.S. & O'Brien, M.K.H.; Cameron, R.P. 2002. Fieldwork 2000. Dept of Environment & Labour, Protected Areas Branch, 252 recs.
21	Robinson, S.L. 2014. 2013 Field Data. Atlantic Canada Conservation Data Centre.
20	O'Grady, Sally. 2010. Water Pennywort in Kejimkujik National Park, 2010. Parks Canada, 20 shapefiles.
19	Klymko, J.J.D.; Robinson, S.L. 2012. 2012 field data. Atlantic Canada Conservation Data Centre, 447 recs.
18	Basquill, S.; Sam, D. 2019. Crocanthemum canadense observations near Greenwood, NS, 2015-2019. pers. commun. from Nova Scotia Department of Lands and Forestry to AC CDC, 18 recs.
18	Cameron, R.P. 2017. 2017 rare species field data. Nova Scotia Environment, 64 recs.
17	Basquill, S.P. 2003. Fieldwork 2003. Atlantic Canada Conservation Data Centre, Sackville NB, 69 recs.
17	NS DNR. 2017. Black Ash records from NS DNR Permanent Sample Plots (PSPs), 1965-2016. NS Dept of Natural Resources.
17	Oldham, M.J. 2000. Oldham database records from Maritime provinces. Oldham, M.J; ONHIC, 487 recs.
16	Catling, P.M. 1981. Taxonomy of autumn-flowering Spiranthes species of southern Nova Scotia in Can. J. Bot. , 59:1250-1273. 30 recs.
16	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.
16	Hunsinger, J. 2021. Species at Risk records from Medway Community Forest Cooperative monitoring plots and baited game cameras, 2019-2020. Medway Community Forest Cooperative, 16 records.
16	MacKinnon, D.S. 2000. Fieldwork 2000. Dept of Environment and Labour, Protected Areas Branch, 17 recs.
15	Basquill, S.P. 2011 vascular plant field data. Nova Scotia Department of Natural Resources, 37 recs.
15	Klymko, J.J.D. 2012. Odonata specimens & observations, 2010. Atlantic Canada Conservation Data Centre, 425 recs.
15	Manthorne, A. 2019. Incidental aerial insectivore observations. Birds Canada.
15	Ogden, J. NS DNR Butterfly Collection Dataset. Nova Scotia Department of Natural Resources. 2014.
15	Ogden, K. Nova Scotia Museum butterfly specimen database. Nova Scotia Museum. 2017.
15	Toms, Brad. 2011. Species at Risk data from 2011 field surveys. Mersey Tobeatic Research Institute, 17 recs.
14	Cameron, R.P. 2013. 2013 rare species field data. Nova Scotia Department of Environment, 71 recs.
14	McNeil, J.A. 2018. Snapping Turtle records, 2018. Mersey Tobeatic Research Institute.
14	Nova Scotia Nature Trust. 2013. Nova Scotia Nature Trust 2013 Species records. Nova Scotia Nature Trust, 95 recs.
14	Pepper, C. 2013. 2013 rare bird and plant observations in Nova Scotia. , 181 records.
13	Boyne, A.W. & Grecian, V.D. 1999. Tern Surveys. Canadian Wildlife Service, Sackville, unpublished data. 23 recs.
13	e-Butterfly. 2018. Selected Maritimes butterfly records from 2016 and 2017. Maxim Larrivee, Sambo Zhang (ed.) e-butterfly.org.
13	G.Proulx, R. Newell, A. Mills, D. Bayne. 2018. Selaginella rupestris records, Digby Co. Nova Scotia Lands and Forestry, 1387601 recs.
13	MacKinnon, D.S. 1998. Ponhook Lake survey map & notes. Dept of Environment and Labour, Protected Areas Branch, 13 recs.
13	Nova Scotia Nature Trust. 2014. Ladyslipper records from Saint Croix Nova Scotia, JLC Ed. Nova Scotia Nature Trust.
12	Adams, J. & Herman, T.B. 1998. Thesis, Unpublished map of C. insculpta sightings. Acadia University, Wolfville NS, 88 recs.
12	Parks Canada. 2010. Specimens in or near National Parks in Atlantic Canada. Canadian National Museum, 3925 recs.
11	Basquill, S.P. 2009. 2009 field observations. Nova Scotia Dept of Natural Resources.

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11	Brunelle, P.-M. (compiler). 2010. ADIP/MDDS Odonata Database: NB, NS Update 1900-09. Atlantic Dragonfly Inventory Program (ADIP), 935 recs.
11	Neily, T.H. Tom Neily NS Sphagnum records (2009-2014). T.H. Neily, Atlantic Canada Conservation Data Centre. 2019.
11	Plissner, J.H. & Haig, S.M. 1997. 1996 International piping plover census. US Geological Survey, Corvallis OR, 231 pp.
10	Belliveau, A.G. & Vail, Cole; King, Katie. 2020. New Allium tricoccum locations, Cornwallis River. Chapman, C.J. (ed.) Acadia University.
10	Benedict, B. Connell Herbarium Specimens (Data) . University New Brunswick, Fredericton. 2003.
10	Benjamin, L.K. 2009. Boreal Felt Lichen, Mountain Avens, Orchid and other recent records. Nova Scotia Dept Natural Resources, 105 recs.
10	Edsall, J. 2007. Personal Butterfly Collection: specimens collected in the Canadian Maritimes, 1961-2007. J. Edsall, unpubl. report, 137 recs.
10	Klymko, J. 2019. Atlantic Canada Conservation Data Centre zoological fieldwork 2018. Atlantic Canada Conservation Data Centre.
10	Neily, T. H. 2018. Lichen and Bryophyte records, AEI 2017-2018. Tom Neily; Atlantic Canada Conservation Data Centre.
10	Newell, R.E. 2000. Eleocharis tuberculosa records in NS, 1994-99. Acadia University, Wolfville NS, Pers. comm. to S.H. Gerriets, Feb. 11. 32 recs.
10	Parker, M.S.R. 2011. Hampton Wind Farm 2010: significant floral/faunal observations. , 13 recs.
10	Pepper, C. 2021. Rare bird, plant and mammal observations in Nova Scotia, 2017-2021.
10	Phinney, Lori; Toms, Brad; et. al. 2016. Bank Swallows (Riparia riparia) in Nova Scotia: inventory and assessment of colonies. Merset Tobeiatc Research Institute, 25 recs.
9	Blaney, C.S.; Mazerolle, D.M.; Hill, N.M. 2011. Fieldwork for Sabatia kennedyana & Coreopsis rosea COSEWIC status reports.
9	Blaney, C.S.; Spicer, C.D.; Mazerolle, D.M. 2005. Fieldwork 2005. Atlantic Canada Conservation Data Centre. Sackville NB, 2333 recs.
9	MacKinnon, D.S. & Maass, O.C. 1996. Fieldwork 1996. Dept Natural Resources, Parks Division, 9 recs.
9	O'Grady, Sally. 2010. Piping Plover Nesting in Kejimkujik Seaside Annex, 2008-10. Parks Canada, 9 recs.
8	King, Katie; Jean, Samuel. 2021. Black ash observations near Booklyn, NS. E.C. Smith Herbarium.
8	Klymko, J. Butterfly records at the Nova Scotia Museum not yet accessioned by the museum. Atlantic Canada Conservation Data Centre. 2017.
8	McKendry, Karen. 2016. Rare species observations, 2016. Nova Scotia Nature Trust, 19 recs.
8	Neily, T.H. & Anderson, F. 2011. Lichen observations from NRC site at Sandy Cove. , 97.
8	Neily, T.H. & Pepper, C.; Toms, B. 2018. Nova Scotia lichen database Update. Mersey Tobeatic Research Institute, 14 recs.
8	Neily, T.H. 2010. Erioderma Pedicellatum records 2005-09. Mersey Tobiatic Research Institute, 67 recs.
7	Cameron, R.P. 2009. Erioderma pedicellatum database, 1979-2008. Dept Environment & Labour, 103 recs.
7	Cameron, R.P. 2009. Nova Scotia nonvascular plant observations, 1995-2007. Nova Scotia Dept Natural Resources, 27 recs.
7	Kennedy, B.; Cron, C. 2019. observations of Poison Sumac andButtonbush, Nova Scotia. pers. commun to AC CDC.
7	Misc. rare species records gathered by NSDNR staff or communicated to NSDNR and forwared to ACCDC
6	Bateman, M.C. 2001. Coastal Waterfowl Surveys Database, 1965-2001. Canadian Wildlife Service, Sackville, 667 recs.
6	Belliveau, A. 2013. email to Sean Blaney regarding Listera australis observations in SW Nova Scotia. Mersey Tobeatic Research Institute, 8.
6	Benjamin, L.K. 2006. Cypripedium arietinum. Pers. comm. to D. Mazerolle. 9 recs, 9 recs.
6	Brazner, J.; Hill, N. 2018. Plant observations along the Cornwallis River, Nova Scotia. Nova Scotia Department of Lands and Forestry.
6	Bredin, K.A. 2002. NS Freshwater Mussel Fieldwork. Atlantic Canada Conservation Data Centere, 30 recs.
6	Christie, D.S. 2000. Christmas Bird Count Data, 1997-2000. Nature NB, 54 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	McMullin, Troy. 2021. Anzia colpodes observations near Kejimkujik National Park. Canadian Museum of Nature.
6	Patrick, Allison. 2021. Animal and plant records from NCC properties from 2019 and 2020. Nature Conservancy Canada.
5	Basquill, S.P. 2012. 2012 rare vascular plant field data. Nova Scotia Department of Natural Resources, 37 recs.
5	Blaney, C.S. 1999. Fieldwork 1999. Atlantic Canada Conservation Data Centre. Sackville NB, 292 recs.
5	Carter, Jeff; Churchill, J.; Churchill, I.; Churchill, L. 2020. Bank Swallow colony Scots Bay, NS. Atlantic Canada Conservation Data Centre.
5	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.
5	Downes, C. 1998-2000. Breeding Bird Survey Data. Canadian Wildlife Service, Ottawa, 111 recs.
5	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.
5	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.
5	Porter, K. 2013. 2013 rare and non-rare vascular plant field data. St. Mary's University, 57 recs.
5	Whittam, R.M. 1999. Status Report on the Roseate Tern (update) in Canada. Committee on the Status of Endangered Wildlife in Canada, 36 recs.
4	Anon. Dataset of butterfly records for the Maritime provinces. Museum of Comparative Zoology, Harvard University. 2017.
4	Cameron, R.P. 2014. 2013-14 rare species field data. Nova Scotia Department of Environment, 35 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. 2011. Insect fieldwork & submissions, 2010. Atlantic Canada Conservation Data Centre. Sackville NB, 742 recs.
4	Mills, Pamela. 2007. Iva frutescens records. Nova Scotia Dept of Natural Resources, Wildlife Div. Pers. comm. to S. Basquil, 4 recs.
4	Smith, T.W. 2009. Eleocharis tuberculosa records in Yarmouth, Shelburne Count. COSEWIC. Pers. comm. to D.M. Mazerolle, 10 recs.
4	Toms, B. 2015. Lophiola aurea (Goldencrest) records from Molega Lake. Mersey Tobeatic Research Institute, 4 records.
4	Toms, B. 2016. Email list of four GPS locations of Golden Crest (Lophiola aurea) from the previously documented site on Molega Lake, NS. Mersey Tobeatic Research Institute, 4 records.
4	Wood, E.W. 2011. Sabatia kennedyana locations in Nova Scotia. Pers. comm. to C.S. Blaney. Gray Herbarium, Harvard University, 8 recs.
3	Austin-Smith, P. 2014. 2014 Common Nighthawk personal communication report, NS. NS Department of Natural Resources.
3	Blaney, C.S. 2003. Fieldwork 2003. Atlantic Canada Conservation Data Centre. Sackville NB, 1042 recs.
3	Bradford, R. 2004. Coregonus huntsmani locations. Dept of Fisheries & Oceans, Atlantic Region, Pers. comm. to K. Bredin. 4 recs.

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3	Cameron, R.P. 2012. Additional rare plant records, 2009. , 7 recs.
3	Canadian Wildlife Service, Atlantic Region. 2010. Piping Plover censuses 2006-09. , 35 recs.
3	Chaput, G. 2002. Atlantic Salmon: Maritime Provinces Overview for 2001. Dept of Fisheries & Oceans, Atlantic Region, Science Stock Status Report D3-14. 39 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	Hill, N. 1995. Rare & Uncommon Plants of the Kejimkujic Seaside Adjunct. Biology Dept., Mount Saint Vincent University, 15 recs.
3	Hill, N. and D. Patriquin. 2013. 2013 rare plant observations in Williams Lake Backlands area. Fern Hill Institute of Plant Conservation, Berwick, Nova Scotia, 3 records.
3	Hill, N.M., Myra, M. 2017. Email to Sean Blaney regarding rich intervale flora on Nictaux River. Fern Hill Institute, 3 records.
3	Holder, M.L.; Kingsley, A.L. 2000. Kinglsey and Holder observations from 2000 field work.
3	Hope, P. 2002. Field survey of Goodyera pubescens population at Kejimkujik National Park. Kejimkujik National Park, 3 recs.
3	Layberry, R.A. 2012. Lepidopteran records for the Maritimes, 1974-2008. Layberry Collection, 1060 recs.
3	Mills, Pamela. 2008. Clethra alnifolia at Mudflat Lake. Nova Scotia Dept of Natural Resources, Wildlife Div. Pers. comm. to D.M. Mazerolle, 4 recs.
3	Nova Scotia Department of Lands and Forestry. 2018. Wood Turtle observations in, or near, the cornwallis River watershed. NS DLF, pers. comm. to AC CDC.
3	Olsen, R. Herbarium Specimens. Nova Scotia Agricultural College, Truro. 2003.
3	Powell, B.C. 1967. Female sexual cycles of Chrysemy spicta & Clemmys insculpta in Nova Scotia. Can. Field-Nat., 81:134-139. 26 recs.
3	Riley, J. 2020. Digby County Pannaria lurida observations. Pers. comm. to J.L. Churchill.
3	Sollows, M.C. 2008. NBM Science Collections databases: herpetiles. New Brunswick Museum, Saint John NB, download Jan. 2008, 8636 recs.
3	Staicer, C. 2013. Personal communication concerning Hirundo rustica nesting in and around Kejimkujik NP, NS. Pers. comm.
3	White, S. 2019. Notable species sightings, 2018. East Coast Aquatics.
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	Anon. 2017. Export of Maritimes Butterfly records. Global Biodiversity Information Facility (GBIF).
2	Archibald, D.R. 2003. NS Freshwater Mussel Fieldwork. Nova Scotia Dept Natural Resources, 213 recs.
2	Basquill, S.P. 2011. Field observations & specimen collections, 2010. Nova Scotia Department of Natural Resources, Pers. comm. , 8 Recs.
2	Basquill, S.P. 2018. Various specimens, NS DNR field work. NS Department of Natural Resources, 10.
2	Brunelle, P.-M. 2009. NS Power odonata records for Mersey, Tusket & Sissiboo systems. Nova Scotia Power, 218 recs.
2	Chapman, Cody. Unreported Species at Risk Records across Nova Scotia. Chapman, Cody, 5 records.
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	Hill, N.M. 2019. Observation of Crocanthemum canadense near Auburn, Annapolis Co. NS on May 29, 2019. Fern Hill Institute, 2 recs.
2	Kennedy, B. & Cron, C.; Patriquin, D. 2018. Email to Sean Blaney on observations of Trichostema dichotomum at Shingle Lake, Nova Scotia. , 2 records.
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APPENDIX E

NOVA SCOTIA MUSEUM REPORT

HERITAGE AND BIOLOGICAL RESOURCES

NOVA SCOTIA

Communities, Culture, Tourism and Heritage

1741 Brunswick Street
3rd Floor
P.O. Box 456
Halifax, NS
B3J 2R5

Date: April 26th, 2022

To: Hayley Doyle, Envirosphere Consultants Limited

From: Coordinator Special Places, Culture and Heritage Development

Subject: Colpton Quarry

Staff of the Department of Communities, Culture, Tourism, and Heritage has reviewed the Colpton Quarry Project mapping and have provided the following comments:

Archaeology

CCTH Staff have completed their review of ES 2022-03-29a Envirosphere - Colpton Quarry. There are a significant number of watercourses throughout the immediate vicinity which may have sections of banks that are elevated and better drained, indicating areas of higher potential for encountering archaeological resources. Given the numerous water courses in the vicinity, archaeological potential is elevated. An ARIA is recommended for the development area. The ARIA should include a thorough desktop study, an exercise in predictive modelling, and field reconnaissance. Exploratory shovel testing may be a possibility however, the decision to shovel test will depend on what the archaeology consultant observes in the field.

Botany

Staff reviewed the sections of the EA document pertaining to botany.

Environmental Screening - Colpton Quarry (N 44.4379, W -64.7935)

- There are no specimens of rare or at-risk species in the NSM database with the location name “Colpton”.
- The forested wetlands around shingle lake (1.5 km south) are known to host at-risk lichens, such as *Pannaria lurida* and *Fuscopannaria leucosticta*. If the study area contains forested wetlands, they should be inspected for at-risk lichens.

Table 1: Species records from the Atlas of Rare Plants of Nova Scotia, within 10 km of the study area

Latin name	S-rank	Provincial
Alnus serrulata	S3	yellow

Mononeuria groenlandica	S3	yellow
Betula michauxii	S3	yellow
Cephalanthus occidentalis	S3	Yellow
Lophiola aurea	S2	Red
Podostemon ceratophyllum	S1	Orange
Salix pedicellaris	S3	Yellow
Salix sericea	S3	Orange
Scirpus longii	S3	yellow
Woodwardia areolata	S3S4	Yellow

Table 2: Species records according to iNaturalist observations, within 5 km of the study area

Latin name	**S-rank**	**COSEWIC**	**SARA**
Trichostema dichotomum	S1		
Lophiola aurea	S2	Special concern	Special concern
Pannaria lurida	S2S3		
Betula michauxii	S3		
Geranium bicknellii	S3		
Mononeuria groenlandica	S3		
Neottia bifolia	S3		
Scirpus longii	S3	Special concern	Special concern
Utricularia resupinata	S3		
Anaptychia palmulata	S3S4		
Proserpinaca pectinata	S3S4		

Literature Cited:

Cameron, R. P. & T. Neily, 2008. Heuristic model for identifying the habitats of Erioderma pedicellatum and other rare cyanolichens in Nova Scotia, Canada. The Bryologist, 111: 650–658.

Palaeontology

The bedrock geology of the area is the Goldenville Formation is not expected to be a source of significant fossil resources. Similarly, the surficial geology is not expected to be a source for preservation of fossils.

Zoology

No CCH staff were available to review the sections relating to zoology.

APPENDIX F

LABORATORY RESULTS

TSS & pH

Envirosphere Consultants Limited

Unit 5—120 Morison Drive, Box 2906, Windsor, Nova Scotia, B0N 2T0

ph: (902) 798-4022, fax: (902) 798-2614, e-mail: enviroco@ns.sympatico.ca, website: www.envirosphere.ca

Envirosphere Consultants
unit 5 - 120 Morison Drive
Windsor, NS | B0N 2T0

Environmental Sample Analysis Report

Report Date: 20-Mar-23 Report Number: A0914

Lab #	Sample ID	Sample Details	Sample Material	Date Received	Date Analyzed	pH	Type of Sample	Detection Limit	Sample Comments
L2022-50	C1	Colpton Quarry	surface water	07/07/2022	07/07/2022	6.2	REG	0.1	
L2022-50	P1	Colpton Quarry	surface water	07/07/2022	07/07/2022	8.1	REG	0.1	
L2022-50	P1 (dup)	Colpton Quarry	surface water	07/07/2022	07/07/2022	8.1	DUP	0.1	
L2022-50	WS1	Colpton Quarry	surface water	07/07/2022	07/07/2022	7.0	REG	0.1	
L2022-50	WS2	Colpton Quarry	surface water	07/07/2022	07/07/2022	6.5	REG	0.1	
L2022-50	CRM	Colpton Quarry	CRM	07/07/2022	07/07/2022	7.0	STD	0.1	CRM pH = 7.00

Name of Analyst: Baker Analyses reviewed by: Director / Lab Manager (circle one)

This laboratory applies standard practice in conformance with ISO/IEC 17025:2017, "General Requirements for the Competence of Testing and Calibration Laboratories".

Validation Range: 3-10 units ***The results in this report relate only to the items tested.*** ***More information is available upon request.***

The quality of the results is dependent on the quality of sample provided.

Comment: Samples for pH should be kept cool until delivery to the lab unless the samples are analyzed immediately. Preferably samples should be analyzed within 24 hours. Hach manual recommends filling bottle completely and capping tightly; cooling to 4°C for storage and analyzing within 6 hours. If this can't be done, Hach manual recommends reporting the holding time with results.

Method: Standard Methods for the Examination of Water and Wastewater 23rd Edition. 2017 and online version., 4500-HB. Electrometric measurement of pH. ECL Method 8, pH.

Type of Sample: REG = regular; STD = standard; DUP = duplicate; CRM = certified reference material.

Sample Comments: BDL = Below Detection limit; QR = Qualified result; NR = No result, damaged or insufficient sample; MAC = Maximum Allowable Concentration.

Envirosphere Consultants Limited

Unit 5—120 Morison Drive, Box 2906, Windsor, Nova Scotia, B0N 2T0

ph: (902) 798-4022, fax: (902) 798-2614, e-mail: enviroco@ns.sympatico.ca, website: www.envirosphere.ca

Environmental Sample Analysis Report

Report Date: 29-Jul-22 Report Number: A0918

Envirosphere Consultants Ltd
Unit 5 - 120 Morison Drive
Windsor, NS | B0N 2T0

Lab #	Sample ID	Sample Details	Sample Material	Date Received	Date Analyzed	TSS (mg/L)	Type of Sample	Detection Limit	Sample Comments
L2022-50	C1	Colpton Quarry	surface water	07/07/2022	14/07/2022	8.0	REG	0.5 mg/L	
L2022-50	P1	Colpton Quarry	surface water	07/07/2022	14/07/2022	2.0	REG	0.5 mg/L	
L2022-50	WS1	Colpton Quarry	surface water	07/07/2022	14/07/2022	10.0	REG	0.5 mg/L	
L2022-50	WS2	Colpton Quarry	surface water	07/07/2022	14/07/2022	54.0	REG	0.5 mg/L	
L2022-50	Blank	Colpton Quarry	dH2O	07/07/2022	14/07/2022	<0.5	BLANK	0.5 mg/L	dH20
L2022-50	CRM	Colpton Quarry	CRM	07/07/2022	14/07/2022	211.0	STD	0.5 mg/L	CRM 209 mg/L

Name of Analyst: _____ Analyses reviewed by: _____ Director/ Lab Manager (circle one)

This laboratory applies standard practice in conformance with ISO/IEC 17025:2017, "General Requirements for the Competence of Testing and Calibration Laboratories".

Validation Range: 1-1000 mg/L The results in this report relate only to the items tested. More information is available upon request.

The quality of the results is dependent on the quality of sample provided.

Samples for TSS analysis should be kept cool until delivery to the lab unless they are analyzed immediately. A minimum sample volume of 500 ml is preferred. Place sample in a clean plastic container free of cracks or contamination. Fill the bottle to the top and then cap. Samples should reach the lab within 24 hours of sampling, but will be accepted up to 7 days.

Methods: Modified from Standard Methods for the Examination of Water and Wastewater 23rd Edition. 2017 and online version. 2540D. Total Suspended Solids. ECL method 3, Total Suspended Solids.

Type of Sample: REG = regular; STD = standard; DUP = duplicate; CRM = certified reference material.

Sample Comments: BDL = Below Detection limit; QR = Qualified result; NR = No result, damaged or insufficient sample; MAC = Maximum Allowable Concentration.

APPENDIX E
CULTURAL RESOURCE MANAGEMENT REPORT LETTER
(Nova Scotia Communities, Culture and Heritage, 2022)

Environmental Assessment Registration Document:
Colpton Quarry Expansion
Colpton, Lunenburg County
Nova Scotia

NOVA SCOTIA
Communities, Culture and Heritage
Culture and Heritage Development

1741 Brunswick Street, 3rd Floor
PO Box 456, STN Central
Halifax, NS B3J 2R5
902-424-8443

February 24, 2023

Logan Robertson
Cultural Resource Management Group Limited
Ten Mile House
1519 Bedford Highway
Bedford, Nova Scotia
B4A 1E3

Dear Logan Robertson:

RE: Heritage Research Permit Report
A2022NS073 – Colpton Quarry Expansion Archaeological Resource Impact Assessment, Screening & Reconnaissance

We have received and reviewed the report on work conducted under the terms of Heritage Research Permit A2022NS073 for archaeological resource impact assessment of the Colpton Quarry Expansion Archaeological Resource Impact Assessment, Screening & Reconnaissance Project in Lunenburg County, Nova Scotia.

Dexter is planning to expand the existing quarry situated approximately 780 m south of Highway 325. The study area encompassed approximately 77 ha on two PIDs (60320637 & 60321213) and the existing quarry. Dexter is planning to register an Environmental Assessment with Nova Scotia Environment and Climate Change to expand an existing quarry. This ARIA involved Mi'kmaq engagement, background and historical research, a review of previous work conducted in the area, and field reconnaissance.

Background research showed the area to have been occupied by the Mi'kmaq for many thousands of years prior to the arrival of Europeans. This is evidenced by Indigenous oral tradition, historical documentation, numerous Mi'kmaq placenames in the area and archaeological evidence. A search of archaeological sites in the area showed no registered sites within the study area and two registered Precontact archaeological sites within 8.5 km. Wildcat Indian Reserve No. 12 of Acadia First Nation is situated 11.48 km to the southwest. European settlement in the area began in the early 17th century.

Field reconnaissance showed the area to be primarily heavily sloping terrain marked with numerous glacial erratics and thin soil deposits. Much of the proposed development is within an existing quarry and wetland. The study area is not situated near any significant water sources and historic roadways and no evidence of previous occupation was encountered. No areas of

moderate to high archaeological potential were identified within the proposed development area and the area was ascribed low archaeological potential.

Based on the above, CRM Group offered the following recommendations:

1. It is recommended that the study area, as defined and depicted in this report be cleared of any requirement for further archaeological investigation.

2. If any further changes are made to the layout of the study area beyond the area assessed in this report, it is recommended that those proposed areas be subjected to an Archaeological Resource Impact Assessment.

3. In the event that archaeological deposits or human remains are encountered during construction activities associated with the study area, all work in the associated area(s) should be halted and immediate contact made with the Special Places Program (John Cormier: 902-229-3159).

CCH Staff have reviewed the report and find it acceptable as submitted. Please do not hesitate to contact me with any questions or concerns.

Sincerely,

John Cormier
Coordinator, Special Places

APPENDIX F
WATER BALANCE ASSESSMENT
(Consulting Hydrogeologist J. Fraser, 2023)

Environmental Assessment Registration Document:
Colpton Quarry Expansion
Colpton, Lunenburg County
Nova Scotia

PROPOSED COLPTON QUARRY EXPANSION

WATER BALANCE ASSESSMENT

Prepared by Mr. Jim Fraser, M.A.SC, P. Geo,

Date: August 15, 2023

1.0 INTRODUCTION

This document outlines the Water Balance Assessment undertaken for the proposed Colpton Quarry Expansion Project, located in Colpton, Highway #325, Lunenburg County, Nova Scotia. Dexter Construction Company Limited (Dexter) operates a Nova Scotia Environment and Climate Change (NSECC) approved quarry of less than 4 hectares. The Quarry serves as a strategic source of construction aggregate to support local construction and roadwork, as well as Nova Scotia Department of Public Works projects in the area. The existing 3.86-hecatre Quarry is proposed to be expanded by 38.2-hectares to a maximum of 42.0-hectares. The proposed quarry expansion is intended to provide additional aggregate reserves to support the long-term sustainability of the site. It is anticipated that the rate of quarry development will progress gradually, at a rate consistent with aggregate demand in the area and growth of the local market.

The water balance presented herein is an assessment of the estimated effects on surrounding surface water features resulting from the proposed quarry expansion. The methodology used for this water balance assessment is consistent with the approach used recently to assess similar quarry expansion projects undergoing Environmental Assessment.

For this water balance assessment four (4) site conditions were analyzed; existing (baseline) conditions, quarry mid-development conditions, quarry full development conditions, and reclaimed quarry conditions. Existing conditions include a gravel covered quarry area of approximately 3.86-hectares, which includes the quarry highwall and crusher set-up and stockpile areas. Quarry mid-development assumes an area of 21.4-hectares, whereas full development conditions consider the quarry at 42.0-hectares. Reclamation conditions are representative of the site upon removal of all construction equipment and buildings, after re-contouring, and following the re-introduction of vegetative cover over the Quarry areas.

Progressive reclamation will occur throughout the development and operation phases of the quarry, as per the established Reclamation Plan for the site. As the site is developed and aggregate reserves are depleted, disturbed areas no longer required for aggregate production or site related activities will be progressively rehabilitated. This includes using grubbing material originating onsite for site grading, slope construction, and re-vegetation efforts. Temporarily stockpiling and then re-use of overburden as a growing medium for the establishment of vegetation is anticipated to simulate pre-development conditions. Areas that have been progressively rehabilitated would be expected to have reduced surface water runoff and increased infiltration, reflective of natural conditions in the area. This water balance assessment does not account for progressive reclamation, so the development scenarios presented represent the worst-case for each scenario with respect to runoff quantity.

Due to the range of infiltration rates possible, the water balance was completed for two (2) infiltration scenarios. The two infiltration scenarios represent the range of possible outcomes from existing/natural infiltration (most likely) to 100% impervious (worst case, no infiltration).

1.1 Data Collection

1.1.1 Topographic Data

The existing quarry is located on a topographic prominence, which reaches a maximum elevation of 120 meters above sea level at the south end of the site, with a minimum elevation of approximately 92 meters

above sea level at the northeastern portion of the site. The surrounding land slopes to the south, west and north with all surface water remaining within the larger watershed, eventually draining to Shingle Lake. The proposed quarry expansion area contains four (4) individual Catchment Areas (A, B, C and D) within the watershed. Catchment Areas B and D are sub-catchments within Catchment A and C respectively. Catchment Area B initially drains to the northwest to Barrens Meadow Brook, which subsequently drains south into Shingle Lake. Catchment Area D drains to the southwest to a small unnamed brook which flows into Fox Lake, which subsequently also drains into Shingle Lake. The soil in the area consists of shallow sandy loam, with numerous bedrock outcrops. Mixed forests form the predominant cover, however recent logging has created numerous areas of clear cut.

A LiDAR digital elevation model (DEM) was prepared using available LiDAR data from the province. Catchment areas were manually determined using a 5-meter contour interval from the LiDAR DEM. A 2-meter contour interval from the LiDAR DEM was then used to validate and confirm the catchment areas.

1.1.2 Climate Data

Precipitation and temperature data were collected from the Bridgewater Climate Station (1981-2010), which is located approximately 20 kilometers (km) from the Quarry. Monthly lake evaporation data was obtained from the Environment Canada Truro Station (1981-2010). The Truro station is the closest climate station to the Project Site that collects lake evaporation data and is located approximately 160 km away from the Quarry. Monthly potential evapotranspiration data was calculated using the Hamon equation (1961) (Lu, et al., 2005). The Hamon equation requires monthly average hours of daylight and monthly average temperature as input. Monthly average hours of daylight were calculated for the site using the Sunrise and Sunset Calculator (https://www.timeanddate.com/sun/, last accessed on August 4, 2023).

Table 1 -Climate Normal Data

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	TOTAL
Temperature[1] (°C)	-5.2	-4.3	-0.5	5.0	10.5	15.6	19.0	18.9	14.7	8.9	3.9	-1.7	-
Precipitation[1] (mm)	143.7	119.5	156.3	127.0	127.5	103.6	96.5	100.0	111.5	137.2	165.2	147.6	1,536
Lake Evaporation[2] (mm)	0.0	0.0	0.0	0.0	89.9	102.0	117.8	96.1	69.0	40.3	0.0	0.0	515
PET[3] (mm)	0.0	0.0	0.0	37.7	59.0	84.5	101.1	93.0	64.7	39.6	25.2	0.0	505

[1] Values obtained from the Bridgewater Climate Station

[2] Values obtained from the Truro Climate Station

[3] Potential Evapotranspiration was calculated using the Hamon equation (1961), Lu, et al., 2005) Average Daylight Hours from https://www.timeand.com/ (Colpton, NS)

2.0 METHODOLOGY

The water balance assessment for the Colpton Quarry was prepared to assess predicted changes in local flow characteristics during an average year for the four site conditions (existing/mid-quarry/full development/reclaimed quarry) and two infiltration scenarios (pervious/impervious). The methodology used for this water balance assessment is consistent with the approach used recently to assess similar quarry expansion projects undergoing Environmental Assessment.

2.1 Watershed Delineation

Pre and post development catchment areas were established at select points of interest around the proposed Colpton Quarry Expansion. A summary of the pre and post development catchment areas is presented in Table 2.

Table 2 -Pre and Post Development Catchment Area Summary

Catchment Area	Pre-Development Area (ha)	Mid-Development Area (ha)	Post-Development Area (ha)	Change (ha)	Change (%)
A	682.8	682.8	691.8	9.0	1.3%
B	139.8	150.3	161.4	21.6	15.5%
C	244.3	244.3	235.3	-9.0	-3.7%
D	39.9	39.9	32.8	-7.1	-17.8%

Given the relatively minor change in Catchment Area A (1.3%) and Catchment Area C (-3.7%) as a result of the proposed quarry expansion, further assessment of these Catchment Areas was not carried through to the Water Balance Assessment.

The area potentially affected by the proposed quarry expansion involves two individual sub-catchments of Catchment Areas A and C, defined as the "Colpton Quarry Catchment Areas" – Catchments B and D. These catchment areas encompass a total of 139.8 and 39.9 ha, respectively. The disturbed area associated with the existing quarry of approximately 3.86 ha is contained within Catchment Area B. Catchment Area B initially drains to the northwest to Barrens Meadow Brook, which subsequently drains south into Shingle Lake. Catchment Area D drains to the southwest to a small unnamed brook which flows into Fox Lake, which subsequently also drains into Shingle Lake.

Since there is no change in Catchment Area C from pre-development to mid-development, the mid-development scenario for Catchment Area C was eliminated from the Water Balance Assessment.

The catchment area delineations, boundary of existing quarry operations, and the proposed quarry expansion area are presented on **Figure 1, Figure 2, and Figure 3**.

2.2 Evaporation and Evapotranspiration Potential

Evaporation (E) describes the process of the return of moisture to the atmosphere from open water and land surfaces. Evaporation from plant surfaces is referred to as evapotranspiration (ET). The magnitude of evaporation and evapotranspiration over time is a function of the climate, soil, and vegetation in the area. Evaporation rates tend to peak in the summer months when temperatures are the highest, daylight hours are the longest, sun intensity is greatest, and the growing season is at its peak.

Lake evaporation (LE) is the amount of evaporation from an open body of water. In Atlantic Canada, the lake evaporation rate is greater than the standard evaporation rate because of the constant availability of water. Based on aerial photos and available wetland mapping it is noted that open water sources and/or identified wetlands within the quarry catchment areas are similar for both Catchment Areas, so for this water balance assessment lake evaporation has been determined to be 8.7% of available water for Catchment Area B (122,000m^2/1,398,000m^2) and 8.0% for Catchment Area D (32,000m^2/399,000m^2)

Evapotranspiration rates were calculated using the Hamon equation (1961), which is based on average monthly temperatures and daylight hours. Potential evapotranspiration rates for the 4 months of January through March and December were set to zero due to low temperatures resulting in minimal potential

for evapotranspiration. The total potential evapotranspiration used for this water balance is 505 mm/year. July represents the month with the highest PET at 101.1 mm. **Table 1** includes a summary of the potential evapotranspiration rates used as a water loss parameter in the water balance assessment.

2.3 Infiltration Factor

Water storage/infiltration has been estimated using the infiltration factors taken from Table 3.1 of the Ontario Ministry of Environment, Conservation and Parks (OMECP) Stormwater Management Planning and Design Manual (2003). Calculations using the OMECP Table 3.1 account for slope, soil types and vegetation cover when estimating the water holding capacity for an area. The slope, soil type, and vegetative cover within the quarry catchment area was used to determine the appropriate infiltration factor. Using this procedure, as outlined in Appendix 1 – Quarry Water Balance Factors, the quarry catchment area was determined to be flat (0.3), with partial woodland (0.15) and sandy loam soil (0.15) derived from local bedrock sources (Stea et al., 1992).

Two scenarios were assessed for the infiltration conditions during existing, mid-quarry and quarry full development conditions; (1) an impervious quarry floor where no infiltration occurred through the floor of the quarry; and (2) a pervious quarry floor consisting of similar infiltration capabilities as existing surficial soils (sandy loam). Due to the nature of the surficial soils and the presence of bedrock near the ground surface, it is unlikely the soil will have greater infiltration at the floor of the quarry than the existing surface. In this regard therefore, these two scenarios represent the maximum and minimum values for expected infiltration in the quarry. These two scenarios provide a range of potential outcomes resulting from quarry development. New infiltration factors for these scenarios were calculated using an area-ratio method.

Reclamation conditions were expected to be similar to pre-development conditions, with the exception of Flat Land (0.3) in the area where the quarry was located. An area-ratio method was applied to determine the appropriate infiltration factor for the slope and land use in the quarry catchment areas.

Runoff volumes for this water balance were assumed to equal the total precipitation less the potential evapotranspiration, lake evaporation, and infiltration. Infiltration includes groundwater recharge and groundwater that contributes to surface water resources as baseflow. This Water Balance Assessment does not distinguish between the two, and as such groundwater recharge was not included in this water balance assessment. The proposed quarry expansion is not planned to enter the deep bedrock groundwater table, and overall is not anticipated to significantly impact or alter groundwater. If future quarry operations are required to enter the water table, a hydrological study will be prepared to assess potential impacts to groundwater, and prior approval from NSECC will be obtained.

3.0 WATER BALANCE ANALYSIS

3.1 Colpton Quarry Catchment Area

The existing quarry conditions include a 3.86-hectare fully quarry located within Catchment Area A, and partially located within Catchment Area B. The existing Quarry is proposed to be expanded to a maximum 42.0-ha. Surface water runoff from the existing quarry and proposed expansion area will follow the local topography, ultimately discharging north to Barrens Meadow Brook before following local topography and watercourses and flowing south into Shingle Lake. **Table 3** summarizes the details of the Water

Balance Assessment for the quarry catchment area under the four development scenarios considered (existing/mid-quarry, full development/reclaimed quarry) and two infiltration (pervious/impervious) scenarios.

Table 3 – Water Balance – Colpton Quarry Catchment Area

Quarry Catchment Area B	Area *(ha)*	Available Water *(m^3)*	Lake Evaporation *(m^3)*	PET *(m^3)*	Infiltration *(m^3)*	Runoff *(m^3)*	Change in Infiltration from Existing Conditions	Change in Runoff from Existing Conditions
Existing Conditions: Impervious Quarry Floor	139.8	2,146,769	62,842	644,101	641,742	798,083	-	-
Quarry Mid-Development: Impervious Quarry Floor	150.3	2,308,007	62,842	697,103	662,793	885,268	3.3%	10.9%
Quarry Full Development: Impervious Quarry Floor	161.4	2,478,458	62,842	753,134	683,224	979,257	6.5%	22.7%
Existing Conditions: Pervious Quarry Floor	139.8	2,146,769	62,842	644,101	647,921	791,904	-	-
Quarry Mid-Development: Pervious Quarry Floor	150.3	2,308,007	62,842	697,103	696,627	851,434	7.5%	7.5%
Quarry Full Development: Pervious Quarry Floor	161.4	2,478,458	62,842	753,134	748,117	914,365	15.5%	15.5%
Quarry Reclamation: Pervious Quarry Floor	161.4	2,478,458	62,842	753,134	748,117	914,365	15.5%	15.5%
Quarry Catchment Area D								
Existing Conditions	39.9	612,704	16,483	185,255	184,935	226,031	-	-
Quarry Full Development	32.8	503,677	16,483	149,415	152,000	185,778	-17.8%	-17.8%
Quarry Reclamation	32.8	503,677	16,483	149,415	152,000	185,778	-17.8%	-17.8%

Based on the results of the water balance assessment it is estimated that the change in infiltration for Catchment Area B from Existing Conditions ranges between 3.3% (Quarry Mid-Development, Impervious Quarry Floor) to 15.5% (Full Development/Reclamation, Pervious Quarry Floor). It is estimated that the change in runoff for Catchment Area B from Existing Conditions ranges from 7.5% (Mid-Development, Pervious Quarry Floor) to 22.7% (Full Development, Impervious Quarry Floor).

With respect to Catchment Area D, based on the results of the water balance assessment it is estimated that the change in both infiltration and runoff is –17.8% under Full Development/Reclamation scenarios.

4.0 SUMMARY

The Colpton Quarry water balance assessment was prepared to estimate potential changes in surface water flow and assess the potential impact of the proposed quarry expansion on the local hydrological regime. The methodology used for this water balance assessment is consistent with the approach used recently to assess similar quarry expansion projects undergoing Environmental Assessment.

Based on the results of the water balance assessment it is estimated that the change in infiltration for Catchment Area B from Existing Conditions ranges between 3.3% (Quarry Mid-Development, Impervious Quarry Floor) to 15.5% (Full Development/Reclamation, Pervious Quarry Floor). It is estimated that the

change in runoff for Catchment Area B from Existing Conditions ranges from 7.5% (Mid-Development, Pervious Quarry Floor) to 22.7% (Full Development, Impervious Quarry Floor).

With respect to Catchment Area D, since the proposed quarry expansion will not change the catchment area until after mid-life conditions, there will be no impact on Catchment D until the quarry footprint expands beyond the mid-development scenario. Based on the results of the water balance assessment it is estimated that the change in both infiltration and runoff is –17.8% under Full Development/Reclamation scenarios.

It is noted that the quarry is only operated on an as-needed basis to supply aggregate for local construction projects. The continued development and expansion of the site is expected to be gradual, with rock incrementally removed from the highwall as needed. The estimated changes in infiltration and runoff would slowly occur over the next several decades, which will allow for field data to be collected to measure any actual changes and provide the local environment an opportunity to adapt to any changes.

The results of the water balance analysis will be used to form the basis of further analysis and design of surface water management infrastructure at the Quarry in the future. It is anticipated that conditions of any Environmental Assessment approval issued for the proposed quarry expansion will require a detailed surface water monitoring plan, groundwater monitoring plan, and erosion and sediment control plan. These items will be developed following Environmental Assessment approval for the project, as part of the subsequent Industrial Approval amendment process. The water management and monitoring plans will be used to validate the findings of the water balance assessment.

5.0 CONCLUSION

The Colpton Quarry water balance assessment was prepared to estimate changes in surface water flow and assess the potential impact of the proposed quarry expansion on the local hydrological regime. The methodology used for this water balance assessment is consistent with the approach used recently to assess similar quarry expansion projects undergoing Environmental Assessment.

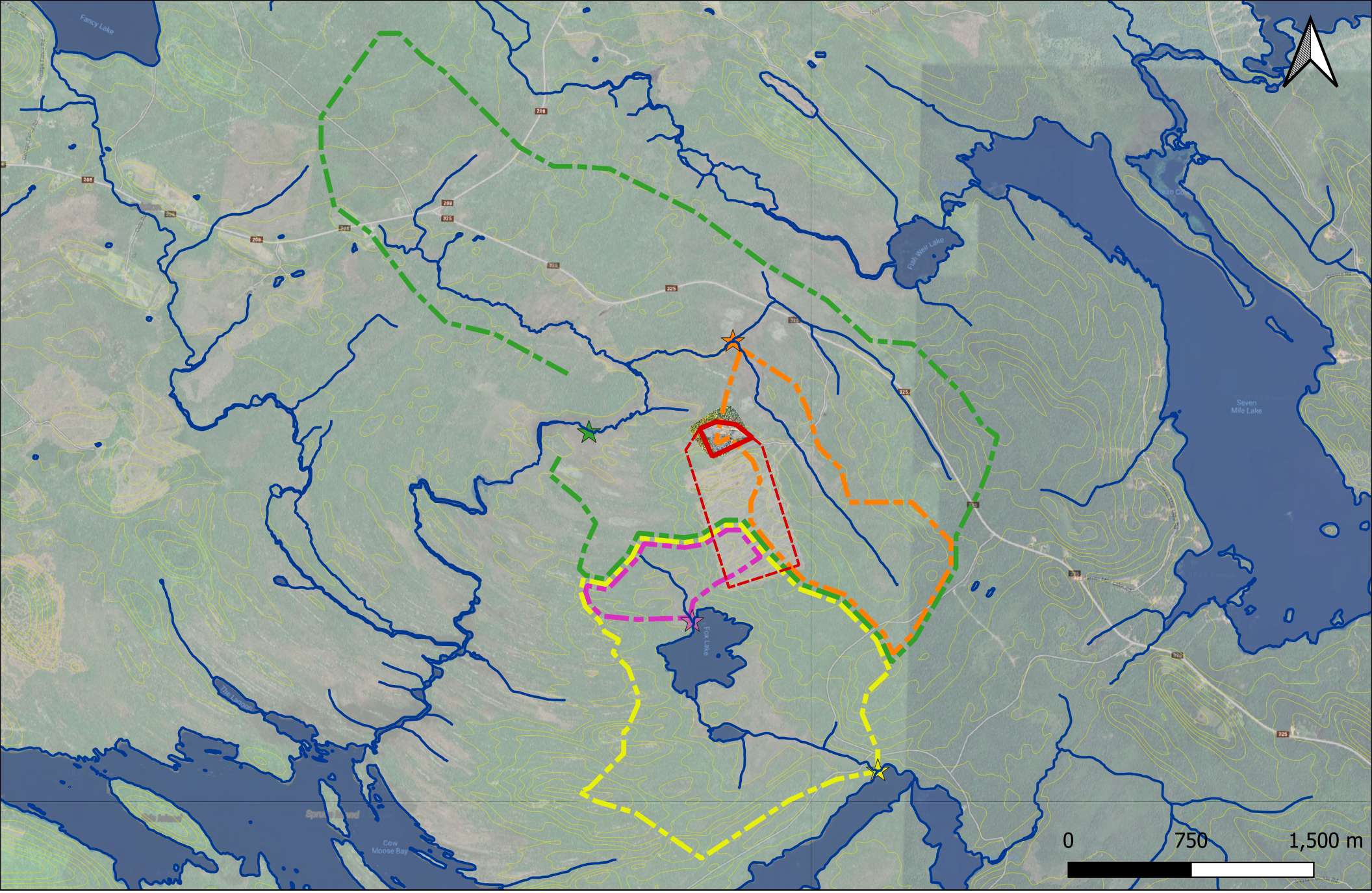
Water management and monitoring plans will be implemented as part of the Industrial Approval process to validate the findings of the water balance assessment.

6.0 REFERENCES

Lu et al. (2005). “A Comparison of Six Potential Evapotranspiration Methods for Regional Use in the Southeastern United States”. Journal of the American Water Resources Association, 41, 621-633.

Ontario Ministry of the Environment. (2003). Stormwater Management Planning and Design Manual.

Climate Normal Data (Data taken from Bridgewater and Truro Environment Canada Stations).



Colpton Quarry Expansion Project
Water Balance Assessment
Pre-Expansion Catchment Areas

Sketch Date: July 28, 2023

Legend

- NSE Approved Permit Area (3.86 ha)
- Proposed Expansion Area (42.0 ha)
- Topo Lines (1:10,000)
- Watercourses (1:10,000)
- Catchment A (682.8 ha)
- Catchment B (139.8 ha)
- Catchment C (244.3 ha)
- Catchment D (39.9 ha)

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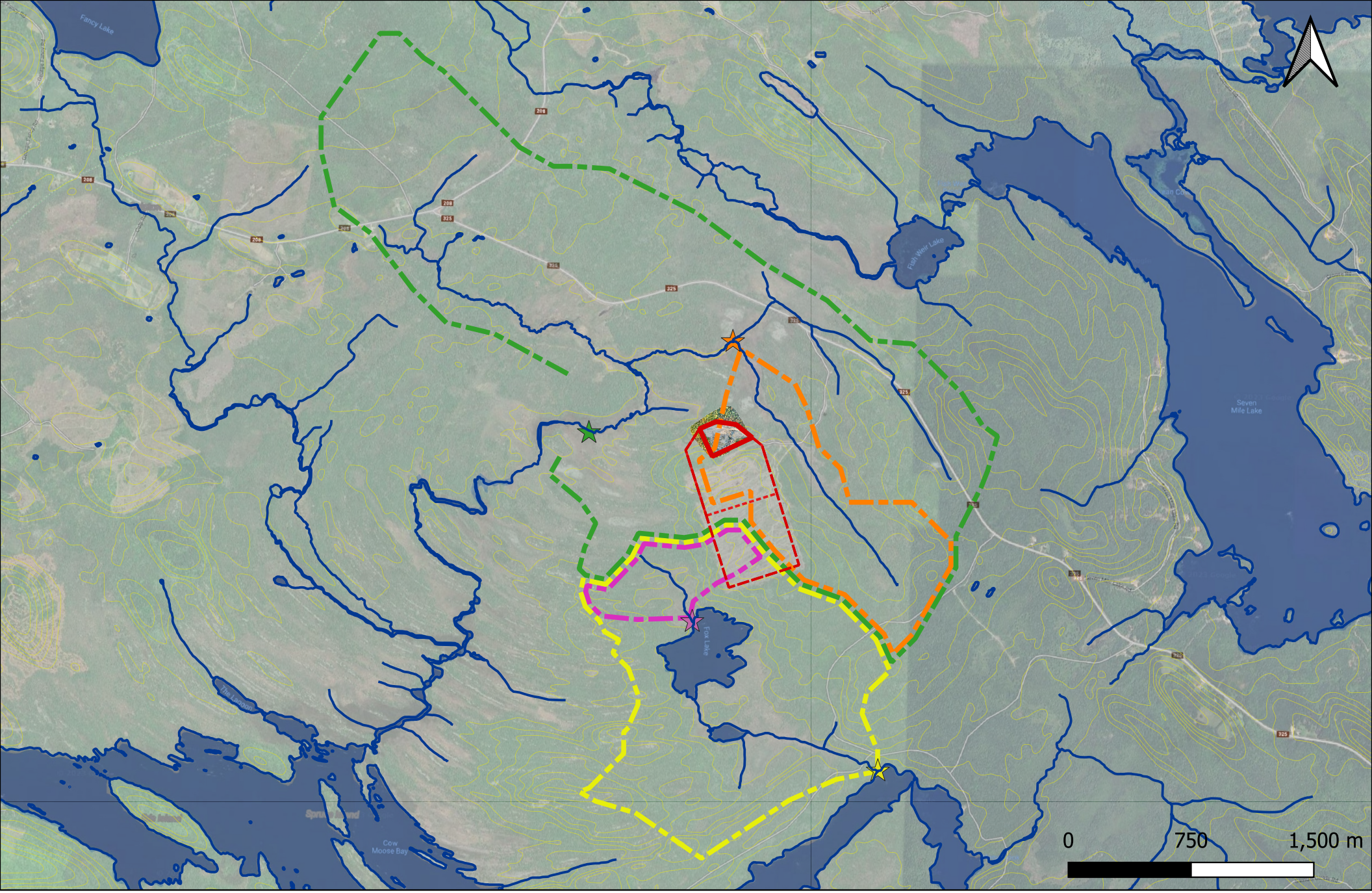

Colpton Quarry Expansion Project
Water Balance Assessment
Mid-Development Catchment Areas

Sketch Date: July 28, 2023

DEXTER
DEXTER CONSTRUCTION COMPANY LIMITED

Legend

- NSE Approved Permit Area (3.86 ha)
- Proposed Expansion Area (42.0 ha)
- Mid-Development Phase (21.4 ha)
- Topo Lines (1:10,000)
- Watercourses (1:10,000)
- Catchment A (682.8 ha)
- Catchment B (150.3 ha)
- Catchment C (244.3 ha)
- Catchment D (39.9 ha)