Supplementary Table 1: Location and general description of each of the 59 locations sampled from four physiographic regions and three burned locations in Wapusk National Park.

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| **Physiographic region** |  | **Location description** | **GPS coordinates** |
| Open coastal beach ridge | 02-A | Beach ridge north of Nestor I Research Camp; patches of *Dryas integrifolia*, calcareous pebbles and gravel on beach ridge crest; moss hummocks along sides of ridges; willows and dwarf birch in fens between ridges. | N58° 39' 59.0"; W93° 11' 15.0" |
|  | 02-B | Thompson Point at the shoreline, driftwood, fen with hummocks; willows and dwarf birch. | N58° 18' 19.6"; W92° 58' 55.8" |
|  | 02-C | Un-named Point; ~11 km NNW of Thompson Point at the shoreline; driftwood, fen with hummocks; willows and dwarf birch. | N58° 24' 26.4"; W93° 03' 38.3" |
|  | 02-D | Raised beach ridge; ~10 km inland; Calcareous sand on beach ridge, *Dryas integrifolia*; white spruce islands on the ridge. | N58° 28' 00.2"; W93° 13' 28.9" |
|  | 02-E | Raised beach ridge; ~6 km inland; calcareous pebbles on ridge; willows and dwarf birch; moss hummocks. | N58° 40' 24.0"; W93° 15' 26.1" |
|  | 02-F | North of Nestor I Research Camp mostly rocky. *Dryas* *integrifolia*, lake with vegetation around margin, willow thickets near lake, hummocks. | N58° 40' 27.4"; W93° 11' 26.9" |
|  | 02-G | Near Nestor 1, along caribou trail; low lying fen with hummocks; large boulders | N58° 41' 22.2"; W93° 09' 33.8" |
|  | 02-H | S side of lake below eastern side of Nestor I Goose Research Camp, raised beach ridge; walk to coast, along shore of Basket Bay. salt marsh near coast; shore with sea lyme grass; high tide mark; decaying seaweed; hummocks; limestone. | N58° 39'; W93° 10' |
|  | 04-D | Cape Churchill; beach ridges at shoreline; limestone pebbles and Dryas patches on crest; low-lying fens between ridges; willows | N58° 46' 01"; W93° 15' 04" |
|  | 05-A | Raised beach ridge with calcareous crest north of Nestor I near two small hills. | N58° 40’ 53.0” W93° 12’ 10.6” |
|  | 05-B | Raised beach ridges south of Nestor I; white spruce tree islands along ridge. | N58° 38’ 49.2” W93° 11’ 31.3” |
|  | 06-A | Broad River, beach ridge, willows and shallow fen.  | N58° 7’ 48.9” W92° 51’ 59.6”  |
|  | 06-B | Broad River, beach ridge and edge of lake, many sedges and moss hummocks; willows. | N58° 7’ 47.1”; W92° 51’ 52.2” |
|  | 06-C | Mouth of Broad River on the beach ridge and shoreline of Hudson Bay; Lyme grass, sand, seaweed, and driftwood. | N58° 8’ 14”; W92° 51’ 30”  |
|  | 06-D | Beach ridge with calcareous pebbles on the crest; dwarf birch and willows along the side; and fen with moss hummocks between beach ridges. | N58° 8’ 10.6”; W92° 52’ 1.5”  |
|  | 06-E | Broad River; Open forest/fen dominated by larch; river bank. | N58° 6’ 55.7”; W92° 53’ 23.5”  |
|  | 06-F | Open tundra with scattered islands of spruce; moss hummocks along side of beach ridge. | N58° 6’ 56.3”; W92° 53’ 17.5”  |
|  | 06-G | High inland beach ridge 6-7 km from the coast; dwarf birch and willow shrubs; some spruce trees; moss hummocks along side of beach ridge; pebbles on crest. | N58° 7’ 48.7”; W92° 57’ 54.9”  |
|  | 06-H | Beach ridge south of Broad River; scattered islands of white spruce trees along ridge. | N58° 3’ 26.7”; W92° 51’ 29.6”  |
|  | 06-I | Broad River, up to 2 km inland; open beach ridge with few granite boulders. | N58° 7’ 48.9”; W92° 51’ 59.6” |
|  | 07-ABC | Nestor1, beach ridge with boulders; small moss hummocks along sides, and fen with sedges; temporary pools; white spruce islands on beach ridge. | N58° 40' 10.8"; W93° 11' 22.6" |
|  | 07-D | Nester 1, east slope with dry hummocks and few granite boulders. | N58° 40' 25.7"; W93° 12' 26.6" |
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| Forested coastal beach ridge | 03-A | Near Owl River; up to 1 km from the shoreline on beach ridges with calcareous pebbles on the crests; shrubs such as willows, buffaloberry; driftwood; saline stream bank. | N57° 51' 17.3"; W92° 44' 52.1" |
|  | 03-B | Near Owl River; vegetated low-lying beach ridge. | N57° 50' 16.1"; W92° 47' 36.5" |
|  | 03-C | Near Owl River; spruce forest covering beach ridge which is not recognizable as a beach ridge. | N57° 50' 15.0"; W92° 49' 3.3" |
|  | 03-D | Near Owl River; low beach ridges with spruce-larch forest covering the crest of the beach ridge; fens with spruce and larch between the ridges. | N57° 49' 47.3"; W92° 48' 30.0" |
|  | 03-E | Near Owl River; vegetated beach ridge with caribou trail on the crest. | N57° 50' 16.1"; W92° 47' 36.5" |
|  | 05-D | Near Rupert Creek. Open rocky gravel flat projecting into the river with pebbles and boulders; shrubs and black spruce-larch stand. | N57° 34’ 21.6”; W92° 38’ 15.5” |
|  | 05-H | Mouth of small creek; many birds, driftwood, and low lying willows at the shoreline. | N57° 18’ 41.8”; W92° 25’ 53.3” |
|  | 10-A | Vegetated beach ridge adjacent to a lake; fen with black spruce and larch. (Located in south end of PPB but put in F-CRF for analysis.) | N57 15’ 59.7”; W92 59’ 22.7” |
|  | 10-B | Mouth of Rupert Creek at the shoreline with shrubs of willow and dwarf birch. | N57 32’ 26.3”; W92 33’ 27.6” |
|  | 10-E | Open beach ridge near Owl River; calcareous pebbles and some *Dryas integrifolia* on the crest. | N57° 50'; W92° 47' |
|  | 10-F | Vegetated beach ridge with exposed sandy patches on crest. (Located in south end of PPB but put in F-CRF for analysis.) | N57 10’ 4.3”; W93 01’ 1.0” |
|  | 10-H | Forested beach ridge with *Ledum* spp., scattered black spruce trees and seedlings. | N57 20’ 10”; W92 43’ 45.7” |
|  | 10-J | Coastal beach ridges south of the Owl River mouth; patches of calcareous gravel and *Dryas integrifolia*. | N57 40’ 24.1”; W92 38’ 0.4” |
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| Peat plateau bog | 04-A | Skidmore Lake, open well formed peat polygons with narrow troughs and standing water; lakeshore with pebbles and rocks; dwarf birch and willows; surrounding bands of black spruce. | N57° 47' 11.9"; W93° 22' 26.8" |
|  | 04-B | Skidmore Lake, well formed peat polygons and adjacent lake. | N57° 47' 11.0"; W93° 22' 25.0" |
|  | 05-G | South of Noochewayuan Creek; open peat polygons with stunted spruce islands; open black spruce forests, moss hummocks, and temporary pools. | N57° 14’ 24.1”; W93° 12’ 1.4” |
|  | 07-E | Fletcher Lake; peat polygons with no standing water in the troughs; dwarf birth; spruce stand around lake margin. | N58 10' 27.5"; W93 50' 13.5" |
|  | 07-F | Fletcher Lake; polygons; open dry patch of pebbles and grasses. | N58 10' 27.3"; W93 50' 15.4" |
|  | 07-G | Mary Lake; open spruce-larch forest and peat polygons. | N58° 24’ 9.4”; W93° 23” 46” |
|  | 08-A | NE of Mary Lake; open peat plateau with moss hummocks; scattered black spruce and larch; *Empetrum* sp. | N58 23’ 51.5”; W93 24’ 41.9” |
|  | 08-B | East of Sutton Lake; peat polygons; dwarf birch. | N58 16’ 52.9”; W93 29’ 37.4” |
|  | 08-C | Northwest of Brown Lake; well developed peat polygons with standing water in troughs; temporary pools; patches of open spruce-larch stands. | N58 24’ 13.3”; W93 33’ 53.9” |
|  | 08-D | Napper Lake; large vegetated beach ridge adjacent to lake; scattered spruce and larch trees; hummocks; open fen with peat palsas. | N58 19’ 51.8”; W93 18’ 46.1” |
|  | 08-E | North end of Klohn Lake; black spruce and larch stand near lake margin; peat plateau dominated by *Cladonia stellaris*. | N58 30’ 37.7”; W93 28’ 16.4” |
|  | 08-F | Open peat plateau surrounding unnamed lake; poorly defined polygons with *Sphagnum*-filled troughs; border of black spruce, larch and willows around lake.  | N58 31’ 16.6”; W93 34’ 22.9” |
|  | 09-H | SW of Skidmore Lake; peat polygons; spruce and larch forest. | N57 40’ 54.3”; W93 45’ 29.9” |
|  | 10-C | Rupert Creek surrounded by spruce stand on a forested beach ridge; gravel flat extending into river. | N57 35’ 0.2”; W92 42’ 23.7” |
|  | 10-I | Noochewaywun Creek, peat plateau with peat palsas and surrounding dense black spruce stand. | N57 15’ 24.3”; W92 41’ 14.1” |
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| Boreal transition forest | 09-A | Lee Lake black spruce forest. | N57 36’ 50.8”; W93 58’ 7.5” |
|  | 09-B | Lee Lake; black spruce forest; palsas, *Sphagnum* hummocks and wet fen | N57 14’ 19.6”; W93 42’ 35.8” |
|  | 09-D | Beach ridge with spruce forest and open sand patches on the crest of the ridge; juniper patches; fen with Sphagnum between beach ridges. | N57 34’ 32.5”; W93 52’ 12.8” |
|  | 09-E | Large esker near the Owl River; spruce forest and patches of sand on ridge crest. | N57 31’ 20.0”; W93 47’ 7.6” |
|  | 09-G | Lee Lake. | N57 36’ 50.8”; W93 58’ 7.5” |
|  | 09-I | Spruce forest and peat polygons. (Located in PPB but put in BTF for analysis) | N57 28’ 40.8”; W93 14’ 33.5” |
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| **Locations burned within 20-30 years** |  |
| Boreal transition forest burned  | 09-C | Burned polygon adjacent to unburned peat polygons and spruce forest. | N57 13’ 51.1”; W93 48’ 48.4” |
| Boreal transition forest burned | 09-F  | Near Owl River inland; burned peat polygons; open. | N57 30’ 32.3”; W93 44’ 2.7” |
| Peat plateau bog burned | 05-C | Near Woodcock Creek; open peat plateau, scattered black spruce. | N57° 5’ 40.5”; W92° 48’ 31.7” |
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