



Parks Canada Basic Impact Analysis

1. PROJECT TITLE & LOCATION

Construction of the Headquarters Seasonal Campground and Service Building, Fundy National Park.

The project site is located along the Fundy Park Chalet Road in the Headquarters Area of Fundy National Park. The project site coordinates are 45.595452°N, -64.952244°W (Figure 1 and 2 - project location).

2. PROPONENT INFORMATION

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3. PROPOSED PROJECT DATES

Planned commencement: 2017-04-10

Planned completion: 2017-11-01

4. INTERNAL PROJECT FILE

NBSouth-2017-EIA-5

5. PROJECT DESCRIPTION

Fundy National Park currently offers seasonal camping in the Headquarters Campground located just inside the eastern gateway to the park. All 29 seasonal campsites are equipped with electrical, water and sewage utilities (3-way sites). In more recent years there have been an increase in demand for 3-way site reservations. The purpose of this project is to relocate the seasonal camping offer from the Headquarters Campground to the former Fundy Park Chalet footprint located adjacent to the soccer field at 23 Fundy Park Chalet Road (Figure 1 and 2). This new development will provide new campsites for the current seasonal users and release the existing 3-way sites in Headquarters Campground for use by the general public.

The Headquarters area is located near the east entrance to Fundy National Park (Figure 2). Many of the front country facilities and services are located in this area including the

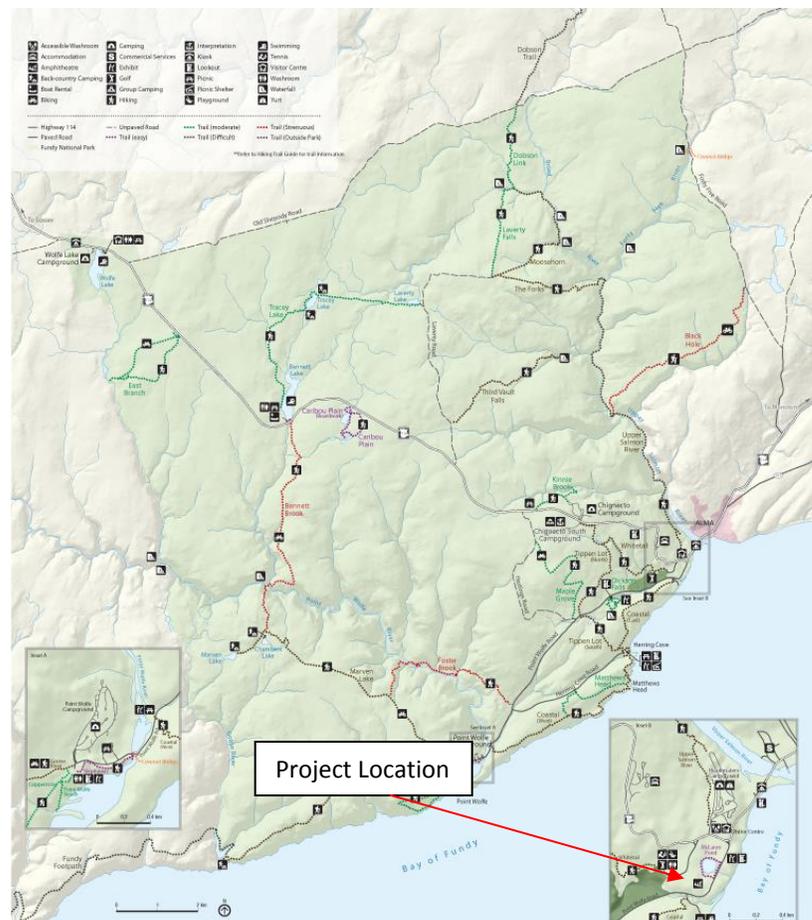
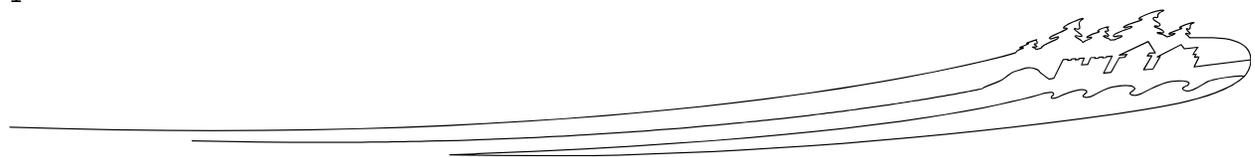


Figure 1. Project Location, Headquarters Seasonal Campground





Visitor Reception Centre, outdoor amphitheatre, viewpoints, interpretation panels, heated salt water swimming pool, playground and a 9-hole golf course. In addition, it offers easy access to hiking trails, the village of Alma, Alma beach and other recreational facilities.

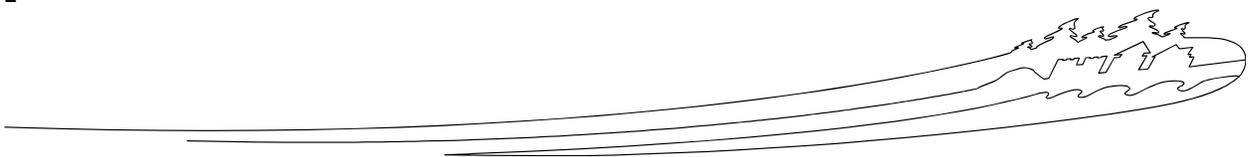


Figure 2: Proposed Location for New Headquarters Seasonal Campground

The former Fundy Park Chalet site is conveniently nestled in the Headquarters area and ideally located for the proposed new seasonal campground. The site was developed in 1949 to service and accommodate an office / gift shop and 29 chalets, small cottages fitted with sleeping quarters, kitchenette and washroom facilities (Figure 3). All chalets were connected to electrical, water and sewage utilities. The Fundy Park Chalet Road, a gravel based structure, provided access throughout the facility and to each individual chalet site.



Figure 3: Fundy Park Chalets





The former Fundy Park Chalet site is situated in a semi-wooded setting located just west of McLaren Pond and northeast of Dickson Brook. Currently, the electrical, water and sewage infrastructure from the former Chalet development is still in place (Appendix II). The proposed Headquarter Seasonal Campground development intends to utilize the existing services (water, sewer and electrical) and access road where possible. It will be necessary to modify certain aspects of the infrastructure to bring it to code and satisfy the current campground guidelines. In addition, a new washroom / shower facility will be constructed to service both the proposed campground and the outdoor amphitheatre.

Scope of Work

The work involves the design and construction of a fully serviced (water, electricity and sewer) campground of approximately 30 sites, as well as a service building containing washrooms/showers and a laundry room, roadways, pathways, and wayfinding/signage (Appendix III).

The specific work includes, but not limited to:

Seasonal Campground

- A new fully serviced seasonal campground with approximately 30 campsites.
- Each campsite will be fully serviced with water, electricity and sewer. This will include tying into the existing services. Some modifications may be required.
- Each campsite will be at least 55' feet long to accommodate a recreational vehicle (RV) of up to 35' in length and a car/pickup truck.
- Select site clearing for the construction of campsite pads.
- Installation of proposed gravel trail to service building and adjacent amphitheatre.

Service Building (This building will not be part of the 2017 construction. A temporary washroom will be provided for the 2017 season).

- The service building will be for the primary use of the seasonal campground users. However, it will also serve visitors using adjacent facilities such as the recreational fields, playground, and the outdoor amphitheatre.
- The building footprint is approximately 160 m².
- The building will be designed with separate male-female washrooms and showers.
- Hot water will be available. Domestic water will be provided to each section of the building from the water distribution system.
- The service building will be barrier free, and one shower stall and washroom stall being wheelchair accessible in both the male and female sections.
- The service building will not be winterized.
- Allocation for four parking stalls.

Roadways and pathways/landscaping

- It is anticipated that the existing roadway will be maintained with the exception of a portion of roadway to the west of the site that will be decommissioned. This may include the removal of the asphalt entrance and reinstatement with topsoil/sod or gravel.
- Landscaping, including planting of short hedges.





Project Integration

- Wayfinding will be included in the overall campground and service building design.

Project Timing

The project is expected to go to tender in late March or early April 2017. Following the tender period the successful contractor will provide a more detailed construction schedule. There is an identified sensitive period associated with the tree removal and grubbing to avoid nesting birds, this portion of the project may proceed in advance of the larger construction project to avoid the most critical period of the migratory bird breeding season, which is May 1st through August 31st. Mitigation measures are in place to ensure no adverse effects. The anticipated construction dates will be from April 2017 until July 2017.

Indigenous Setting

Fundy National Park falls within traditional Mi'gmaq territory called Siknikteiwag ("drain-age area"). The Mi'gmaq, Wolastoqiyik (Maliseet) and Passamaquoddy Aboriginal peoples have a long history in Fundy National Park and its greater ecosystem region and consider the area part of their traditional territory. There is currently no documented evidence of Aboriginal presence within the park, possibly due to European settlements being built on top of previously occupied Aboriginal settlements. (Fundy National Park Management Plan, 2011).

The Project location, New Brunswick, is located in lands governed under the Peace and Friendship Treaties of 1725-1779. On July 15, 1976, the Mi'gmaq and Maliseet Indians of New Brunswick petitioned Her Majesty Queen Elizabeth regarding their traditional Aboriginal rights and lands. At that time, Canada was already funding research for the New Brunswick Indians' asserted claim, but it was not accepted for negotiation until after the 1999 Marshall decision. On September 17, 1999, the Supreme Court of Canada found that the Treaties of 1760-61 affirmed the rights of the Mi'kmaq and Maliseet signatories to hunt, fish and gather to the extent of a "moderate livelihood". Canada subsequently resolved to begin a long-term process that considered both the Aboriginal and treaty rights of the First Nations in New Brunswick. (ATRIS)

The closest First Nation Reserve (Soegae Indian Reserve NO.35) is located approximately 55km North Northwest of Fundy National Park. Soegae is one of two lands belonging to the Elsipogtog Mi'kmaq First Nation Community. The project is not anticipated to have any potential infringement on Aboriginal rights and interest due to its limited scope of work.

Other Departments Involved

There are no other Federal Departments involved in this project.

6. VALUED COMPONENTS LIKELY TO BE AFFECTED

The Effects Identification Matrix located in Appendix I identifies environmental components likely to be affected by this project. The components most likely to be impacted include soil/landforms, air, flora, fauna, water, cultural resources and visitor experience.

Soil/Landforms

Located in the Maritime Acadian Highland Region of Canada, Fundy National Park encompasses seven different biophysical land classifications, a system used to differentiate ecologically significant segments of the land surface with similar patterns of landscape, vegetation and drainage (Hirvonen and Madill, 1978). The Headquarters area of Fundy National Park falls predominately within the Outwash Terraces land system which is known to have thick terraces and valley gravel deposits of glaciofluvial origin.





GEMTEC conducted a geotechnical investigation at the site in 2012 using boreholes. Six boreholes were drilled to assess soil conditions across the site. The soil conditions encountered at the borehole locations generally consist of topsoil underlain by sand and gravel with boulders. Fill was encountered at BH 12-1, having a thickness of 2.74 m. Bedrock was not encountered within the borehole depths. Groundwater seepage was not encountered within the borehole depths.

Mean annual temperature in the area (Alma, NB) is 5.7°C with a mean annual precipitation of 1227mm.

Flora

With new species being identified each year, Fundy National Park is now home to some 650 plus species of vascular plants (fern, clubmosses, flowering plants), 270 plus bryophytes species (mosses and liverworts), and more than 400 species of lichens. The park and project site is within the Maritime Acadian Highlands Natural Region and the Maritime Upland Ecoregion. Mature and over mature red spruce (*Picea rubens*) is the dominant forest cover in the immediate area of the proposed Headquarters Seasonal Campground. Other species include balsam fir (*Abies balsamea*), white birch (*Betula papyrifera*), yellow birch (*Betula alleghaniensis*), trembling aspen (*Populus tremuloides*) and red pine (*Pinus resinosa*). Jack pine (*Pinus banksiana*), a non-native species can be found within the project limits. Understory consist mainly of ground vegetation and a few shrubs. Due to the history of disturbance in the headquarters area, the largest number of trembling aspen and white spruce in the park are found here, as well as specimens of grey birch.

No rare plant species have been identified in the area of the proposed works. However, three invasive plant species including reed canary grass (*Phalaris arundinacea*), woodland angelica (*Angelica sylvestris*) and glossy buckthorn (*Frangula alnus*) are found within 150 m of the project site. Fundy National Park is currently monitoring the abundance, distribution and spread of these species. All three species are considered highly invasive given their potential treat to spread and outcompete native vegetation (Figure 4).

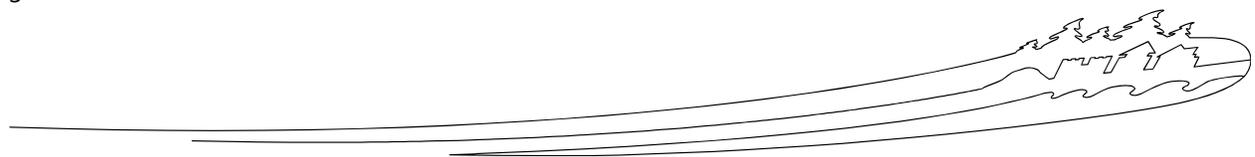


Figure 4: Invasive Plant Species Found Adjacent to Project Site

Fauna

Mammals and Avifauna

Over 38 species of mammals reside in Fundy National Park. These mammal populations are diverse and are representative of the natural food chain, with animals ranging from top carnivores to lower herbivores and scavengers. The terrestrial animals that are most likely to be encountered include moose (*Alces alces*), coyote (*Canis latrans*), white-tailed deer (*Odocoileus virginianus*), black bear (*Ursus americanus*),





beaver (*Castor canadensis*), muskrats (*Ondatra zibethicus*), marten (*Martes americana*), porcupine (*Erethizon dorsatum*), bobcat (*Lynx rufus*), mink (*Mustela vison*), and fishers (*Martes pennanti*). Additionally, Fundy National Park is well positioned on the Atlantic migration route, and over 260 bird species have been identified in the park or on the adjacent bay (Parks Canada, 2007), 95 of these species are known to nest in the park.

Herpetofauna and Fish

Eighteen species of reptiles and amphibians have been identified in the park. Five of these species are considered rare; these include the Leopard frog (*Lithobates pipiens*), the Ring-neck snake (*Diadophis punctatus*), the Four-toed salamander (*Notophthalmus viridescens*), northern Dusky salamander (*Desmognathus fuscus*), and the blue-spotted salamander (*Ambystoma laterale*). Other aquatic species found in adjacent watercourses include brook trout (*Salvelinus fontinalis*), american eel (*Anguilla rostrata*) and Atlantic salmon (*Salmo salar*).

Species at Risk

An Atlantic Canada Conservation Data Centre (ACCDC) 5-km radius search was conducted on March 24th, 2017 and the following is a list of species with a known Species at Risk (SAR) or Committee on the Status of Endangered Wildlife in Canada (COSEWIC) status. The information in Table 1 below was obtained from the SARA and COSEWIC websites.

Table 1: Known Species at Risk

Scientific Name	Common Name	ACCDC Species Rank	General Description	Status
<i>Hirundo rustica</i>	Barn Swallow	S3B	Before European settlement, the Barn Swallow's nesting habitat was mainly characterized by natural features such as caves, holes, crevices, and ledges associated with rocky cliff faces. Although Barn Swallows continue to nest in traditional natural situations, they are now most closely associated with human situations in rural areas. Such nesting sites include a variety of artificial structures that provide either a horizontal nesting surface (e.g., a ledge) or a vertical face, often with some sort of overhang that provides shelter.	COSEWIC: Threatened
<i>Contopus cooperi</i>	Olive-sided Flycatcher	S3S4B	The Olive-sided Flycatcher is most often associated with open areas containing tall live trees or snags for perching. These vantage points are required for foraging. In the boreal forest, suitable habitat is more likely to be in or near wetland areas. Olive-sided Flycatchers arrive in Canada to breed between April and June, predominantly in mid- to late May. Females choose the nest site, construct the nest (usually in a conifer) from twigs and rootlets, and lay one egg per day for an average clutch size of three (range of two to five). A single brood is raised each year. The fall migration begins in late July, with most birds travelling to the wintering grounds between mid-August and early September.	SARA: Schedule 1 Threatened
<i>Coccothraustes vespertinus</i>	Evening Grosbeak	S3S4B, S4S5N	In the Maritimes, the Evening Grosbeak is generally associated with older coniferous and mixed forests. It is widely distributed across the Maritimes, but its largest areas of abundance are in NB's Northern Uplands and in Western NS, where substantial tracts of mature forests are available, but it	COSEWIC: Special Concern



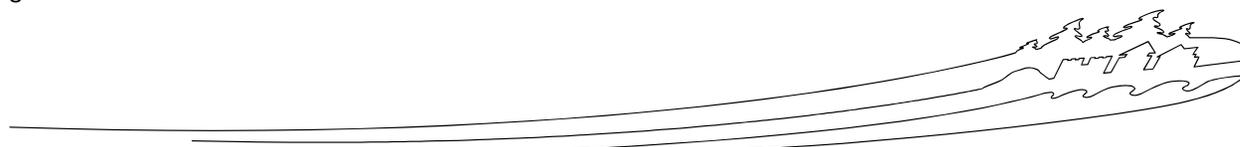


Scientific Name	Common Name	ACCDC Species Rank	General Description	Status
			can take advantage of many habitats, especially if insects such as beetles and moth larvae are abundant.	
<i>Wilsonia canadensis</i>	Canada Warbler	S3S4B	The Canada Warbler is found in a variety of forest types, but it is most abundant in wet, mixed deciduous-coniferous forest with a well-developed shrub layer. It is also found in riparian shrub forests on slopes and in ravines and in old-growth forests with canopy openings and a high density of shrubs, as well as in stands regenerating after natural disturbances, such as forest fires, or anthropogenic disturbances, such as logging. The Canada Warbler builds its nest on or very close to the ground, often in dense ferns or fallen logs.	SARA: Schedule 1 Threatened
<i>Contopus virens</i>	Eastern Wood-Pewee	S4B	In the Maritimes, an analysis of breeding bird atlas point count data suggests that pewees are strongly associated with mature poplar and hardwood forest, with weaker associations with older pine, hemlock and other forest. At the landscape scale in the Maritimes, pewees are associated with the presence of marshes, lakes, ponds and rivers, and negatively associated with harvested forest, human-occupied areas and roads. In Canada, adults arrive on the breeding grounds mostly from mid-May to the end of May. Pair formation and nest building start soon after arrival. Nests are usually located on top of a horizontal limb in a living tree at heights between 2 and 21 m. Clutch size averages 3 eggs. Incubation lasts about 12 to 13 days, and nestlings fledge after about 16 to 18 days. Up to two broods can be produced per year. Generation time is estimated to be 2-3 years.	COSEWIC: Special Concern
<i>Chaetura pelagica</i>	Chimney Swift	S2S3B	The Maritimes Canadian Chimney Swift population is estimated at 900. The Chimney Swift spends the major part of the day in flight feeding on insects. Flocks can often be seen near bodies of water due to the abundance of insects. Prior to the arrival of European settlers in North America, Chimney Swifts nested mainly in the trunks of large, hollow trees, and occasionally on cave walls or in rocky crevices. However, due to the land clearing associated with colonization, hollow trees became increasingly rare, which led Chimney Swifts to move into house chimneys. However, it is likely that a small portion of the population continues to use hollow trees.	SARA: Schedule 1 Threatened
<i>Catharus bicknelli</i>	Bicknell's Thrush	S2S3B	The thrush breeds mainly in high elevation, dense and stunted fir/spruce forests. Most populations are confined to altitudes of 914 m to the tree line on rocky peaks, but some scattered pairs breed down to 762 m. The subalpine forests favoured by this species are characterized by a wet, cool, windy climate that increases in severity with elevation. Average canopy height ranges from 3-7 m in New Brunswick. The species is an above-ground nester, building bulky, well-constructed nests in small or medium-sized spruce and fir (and sometimes, in alder, birch or striped maple). Most nests are	COSEWIC: Threatened SARA: Schedule 1, Threatened





Scientific Name	Common Name	ACCDC Species Rank	General Description	Status
			built relatively close to the ground (1-4.5 m above ground level). Nest construction occurs in early June, shortly after the birds arrive on the breeding grounds. Clutches of 3-4 greenish-blue eggs, lightly spotted with brown, are laid around mid-June and are incubated solely by the females.	
<i>Myotis lucifugus</i>	Little Brown Myotis	S1	Little brown myotis is the most widely distributed Canadian bat species. They roost in buildings, tree cavities, or any other dark, warm area they can find. They forage at night on flying insects and roost during the day. The population of little brown myotis in Canada has been reduced by over 75% in the last number of years as a result of White Nose Syndrome, caused by a fungus likely from Europe. Bats hibernate between October and May.	COSEWIC: Endangered SARA: Schedule 1, Endangered
<i>Chordeiles minor</i>	Common Nighthawk	S3B	The Common Nighthawk nests in a wide range of open, vegetation-free habitats, including dunes, beaches, recently harvested forests, burnt-over areas, logged areas, rocky outcrops, rocky barrens, grasslands, pastures, peat bogs, marshes, lakeshores, and river banks. This species also inhabits mixed and coniferous forests. The Common Nighthawk arrives in Canada from early May to mid-June, where it produces one clutch per year. The species migrates to South America between mid-August and mid-September.	COSEWIC: Threatened SARA: Schedule 1, Threatened
<i>Danaus plexippus</i>	Monarch	S3B	Monarchs in Canada exist primarily wherever milkweed (<i>Asclepius</i>) and wildflowers (such as Goldenrod, asters, and Purple Loosestrife) exist. This includes abandoned farmland, along roadsides, and other open spaces where these plants grow. The eastern and western populations of the Monarch annually migrate south, beginning in August and continuing until mid-October.	COSEWIC: Endangered SARA: Schedule 1, Special Concern
<i>Falco peregrinus anatum/tundrius</i>	Peregrine Falcon	S1B	The Peregrine Falcon is found in various types of habitats, from Arctic tundra to coastal areas and from prairies to urban centres. It usually nests alone on cliff ledges or crevices, preferably 50 to 200 m in height, but sometimes on the ledges of tall buildings or bridges, always near good foraging areas. Suitable nesting sites are usually dispersed, but can be common locally in some areas. In addition, structures built by humans in both rural and urban areas provide the Peregrine Falcon with other potential nesting sites. In the fall, most Peregrine Falcons migrate to the southern United States, Mexico, Central America and South America. However, some couples in coastal and northern areas may remain at the nesting site all winter if there is an abundant supply of food. This is particularly true for anatum Peregrine Falcons that nest in urban areas in Eastern Canada.	COSEWIC: Special Concern SARA: Schedule 1, Special Concern





Scientific Name	Common Name	ACCDC Species Rank	General Description	Status
<i>Hylocichla mustelina</i>	Wood Thrush		In Canada, the Wood Thrush nests mainly in second-growth and mature deciduous and mixed forests, with saplings and well-developed understory layers. This species prefers large forest mosaics, but may also nest in small forest fragments. Wintering habitat is characterized primarily by undisturbed to moderately disturbed wet primary lowland forests. In Canada, most breeding adults arrive on the breeding grounds from mid-late May. Fledglings remain on their natal home range for 24-33 days before departing to the wintering range between mid-August and mid-September.	COSEWIC: Threatened
<i>Euphagus carolinus</i>	Rusty Blackbird	S3B	The Rusty Blackbird nests in the boreal forest and favours the shores of wetlands such as slow-moving streams, peat bogs, marshes, swamps, beaver ponds and pasture edges. In wooded areas, the Rusty Blackbird only rarely enters the forest interior. During the winter, the Rusty Blackbird mainly frequents damp forests and, to a lesser extent, cultivated fields. Migration begins in late August and lasts until early October.	COSEWIC: Special Concern SARA: Schedule 1, Special Concern
<i>Riparia riparia</i>	Bank Swallow	S3B	Bank swallows can be found in coastal areas, rivers, streams, and reservoirs. They nest in burrows in vertical banks where they form colonies. They are insectivorous, feeding in the air.	COSEWIC: Threatened
<i>Dolichonyx oryzivorus</i>	Bobolink	S3S4B	Bobolink nest primarily in field of forage crops (e.g., hayfields and pastures) dominated by a variety of species, such as clover, timothy, tall grasses, and broadleaved plants. Hayfields and associated pastures are its preferred habitat due to the plant cover present at the start of the nesting season. The bobolink is also known to use sites that have been restored to grassland habitat.	COSEWIC: Threatened

Water

The project site is located approximately 100 m south west of McLaren Pond and between 70 and 100 m north and north east of Dickson Brook (Figure 5). Although no definite drainage channel flows from the project site into these waterbodies, it is possible that surface drainage could indirectly impact these areas. Dickson Brook contains Inner Bay of Fundy Salmon (*Salmo salar*), a species which is listed as endangered under the Species at Risk Act. As part of the Atlantic Salmon Recovery program,



Figure 5: Location of McLaren Pond and Dickson Brook





Fundy National Park used Dickson Brook has salmon rearing habitat and have released 106 000 fry since 2012. Efforts have been taken to recapture the salmon broodstock but it is likely that some individuals still remain in the brook. Future salmon recovery plans include more fry releases for Dickson Brook. A healthy population of Brook trout (*Salvelinus fontinalis*) is found in Dickson Brook and American eel (*Anguilla rostrata*) which is listed as threatened by COSEWIC.

McLaren Pond has the smallest surface area (0.67 hectare) of all park lakes, but it is the deepest lake with a maximum depth of 12.5 m. For many years storm water from the road system emptied directly into McLaren Pond however recent modification to the system now collects and disperse storm water away from the pond. Although there are no known fish species present, the pond provides habitat for many other aquatic species. Currently an activity beaver colony occupies McLaren Pond.

Cultural/Aboriginal Resources

Although Fundy National Park falls within the traditional territory of both the Mi'kmaq and Wolastoqiyik (Maliseet) people, no physical evidence related to their use or occupation of the park has been found. The Mi'kmaq, Wolastoqiyik (Maliseet), and Passamaquoddy Aboriginal peoples have a long history in Fundy National Park and its greater ecosystem (Fundy Biosphere) region and consider the area as part of their traditional territory, a landscape woven by a labyrinth of water, over which they travelled extensively on its rivers, lakes and coastlines. These people co-occupied the region in permanent villages and semi-permanent, seasonal encampments, for purposes such as salmon fishing. To date, little archaeological evidence of past aboriginal use has been found in the park perhaps largely due to the fact that the sites preferred for traditional encampments in this rugged landscape were also the same sites appropriated for construction of logging mills and modern communities whose activities have obliterated the archaeological record. In addition, other nearby locations, known to have been used until well within living memory, such as Indian Island near Mary's Point, are slowly being lost to coastal erosion and sea-level rise (Cook and McKay, 2010).

An Archaeology Overview Assessment (AOA) (Appendix III) was conducted by Parks Canada Agency in 2017 for the proposed work. The AOA indicates that there is no known archaeological resources situated in proximity to be impacted by the rehabilitation of Headquarters Seasonal Campground facilities and related works. However, there is moderate to low potential that construction activities may yield Aboriginal and/or historical artifacts, particularly in the footprint of extant buildings and former chalets sites. This area was presumably disturbed by the construction of the chalets, roads and campsites, sewers, septic tanks and electrical system for the chalets and the surrounding areas of gift shop and golf cart storage shelter. The AOA identified no archaeological concern with the design concept for Headquarters Seasonal Campground and related works. Furthermore, the AOA recommends that an Archeological Impact Assessment (AIA) is not required for this project. Mitigations measures identified in the AOA are included in this BIA to minimize potential impacts to archeological resources. A review of the Cultural Resource Impact Analysis request indicated that the project would not impact known cultural resources and the potential for archaeological resources has been determined to be low according to the appropriate archaeological assessment(s) therefore a Statement of Cultural Resources Impact Analysis is not required.

The Fundy Park Chalets and gift shop were constructed in 1949 and 1950 (Figure 6). At that time private companies were responsible for providing tourist accommodation in national parks. However, due to the lack of interest from the public, the chalets and gift shop were constructed by the New Brunswick Department of Resources and Development. The chalets were leased to a concessionaire in 1950. In 1957, the entire complex was sold to the operator.

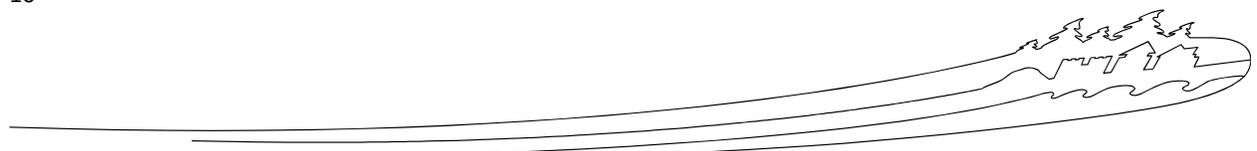




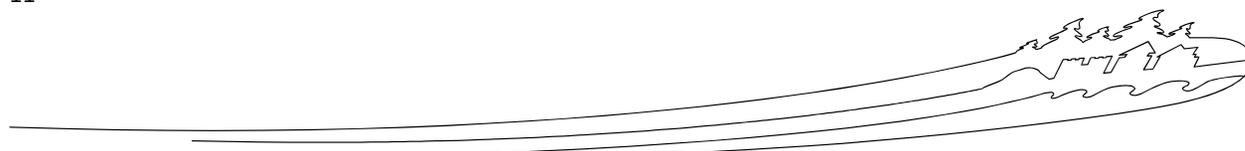
Figure 6. Amphitheatre with Chalets in background (Early 1950's)

In July 2007 Fundy National Park launched a major project to enhance visitor experience. In conjunction with these efforts, park management negotiated an agreement to purchase the Fundy Park Chalets. Parks Canada obtained ownership of the group of 30 buildings on November 30, 2017. In 2008, all 30 buildings (29 chalets and office / gift shop) were evaluated by the Federal Heritage Review Office (FEBRO). The results of the assessment indicated that all building were designated to have no cultural value. Since that time all 29 chalets have been removed or demolished. The future of the office / gift shop is unknown at this time. Fundy National Park has operated the golf course pro shop from this building since 2008. However, it is likely that the building will either be removed or demolished to accommodate space for the new campground. A bat assessment must be conducted on this building prior to any work to determine the presence or evidence of bat activity. This work must follow the guidelines set out in the Parks Canada Best Management Practices for Management of Bats in Built Assets. In addition, if the building is scheduled for decommissioning a hazardous materials assessment must be conducted prior to any work. Any hazardous materials must be properly removed and disposed of at an approved waste management facility. The land must be rehabilitated after the building removal or demolition.

Visitor experience

Currently there are 29 seasonal serviced campsites in the Headquarters Campground. Each year seasonal campsite permit holders occupy their designated sites between Victoria Day and Thanksgiving resulting in 4,367 campsite night in 2016. All 29 sites have been filled to capacity since being operated under seasonal occupancy. In addition, a waiting list of names are carried over for those seeking to obtain a seasonal site. All current occupants of seasonal sites in the Headquarters Campground will be relocated to the new Headquarters Seasonal Campground. As a result, the existing 29 sites will be incorporated into the pool of available sites for use by other park visitors.

Centrally located in the hub of the Headquarters area of the park the proposed new Headquarters Seasonal Campground is located adjacent to the outdoor amphitheatre, playground, soccer field, Salt and Fir Centre, golf course pro shop and number 1 tee. These facilities accommodate many scheduled and





spontaneous activities. Construction activities could potential impact scheduled activities, create noise disturbance or interrupt the flow of traffic.

7. EFFECTS ANALYSIS

Described below is a list of effects that could potentially impact the identified components at risk.

Air

- Exhaust emissions from vehicles, equipment and small gas operated equipment could potential have an effect on air quality
- Dust particle pollution

Soil/Landforms

- Potential runoff, erosion, sedimentation and soil compaction from movement of machinery
- Potential loss or damage of native flora
- Potential loss or damage of native fauna
- Potential impact to landscape and visual aesthetic
- Introduction of building materials potentially harmful to the environment
- Potential contamination of soil and/or water
- Introduction of non-native or invasive species

Water

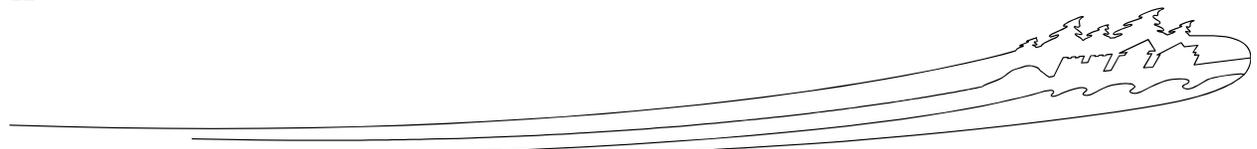
- Potential runoff, erosion and sediment release into Dickson Brook and McLaren Pond
- Potential contamination of groundwater during excavation activities adjacent to sewage lines
- Potential contamination of water if vehicles and equipment leak fluids
- Introduction of dust particles and debris during construction activities

Flora

- Possible loss or damage of native flora during construction
- Potential decrease in flora diversity
- Possible disturbance, destruction or fragmentation to habitat
- Introduction or spread of non-native or invasive species
- Potential contamination of soil and water
- Air pollution from exhaust or movement of dust particles

Fauna

- Possible damage or loss of native fauna during construction
- Potential decrease in fauna diversity
- Possible disturbance, destruction or fragmentation to aquatic and terrestrial habitat
- Possible loss of food supply
- Air pollution from exhaust or movement of dust particles
- Noise disturbance
- Wildlife corridor disruption
- Potential contamination of soil and water





Cultural/Aboriginal Resources

- Unidentified cultural/aboriginal resources could be directly impacted by construction activities

Visitor Experience

- Construction activities, especially during peak season can have an adverse effect on visitor experience.
- A portion of the grounds in the Headquarters area will be closed to the public and occupied by the contractor as a staging area and for construction activities.
- Inadequate signage, alerting visitors of construction activities, can affect visitor experience and create safety concerns. Without barriers, visitors may wander into an active construction site without knowing the dangers and safety concerns.

8. MITIGATION MEASURES

GENERAL

- The Project Manager is responsible to ensure all parties (i.e. Park Staff, Contractor, etc.) receive a copy of this Basic Impact Analysis (BIA) prior to project start up.
- The conditions presented in this BIA will be considered part of the project. Failure to comply may result in work being suspended pending rectification of problem(s).
- All activities must conform to relevant Occupational Health and Safety Guidelines and to all relevant Municipal, Provincial and Federal regulations.
- All activities pursuant to the project shall be governed by and carried out in accordance with the Canada National Parks Act and Regulations and with all other laws of Canada and the Province of New Brunswick.
- Before commencing construction activities or delivery of materials to site, the contractor must submit an Environmental Protection Plan (EPP) for review and approval by PSPC and Parks Canada. The EPP must include a comprehensive overview of known or potential environmental issues to be addressed during construction.
- The Contractor is required to provide for approval ten (10) working days before start-up to PSPC and Parks Canada an erosion and sedimentation control plan, as part of the Environmental Protection Plan. The plan shall incorporate all necessary silt fences, silt traps, plastic lined trenches and ditches as approved by PSPC and Parks Canada.
- The Contractor/Project Lead is required to notify the Project Manager of the proposed work schedule at least one week in advance of potential start up.
- A pre-construction meeting will be held on-site and attended by the Contractor/Project Lead, Project Manager, and the PC Environmental Assessment Officer. The meeting is to ensure construction personnel are aware of the environmental concerns, laws, rules and regulations in Fundy National Park.
- Emergency contact list with phone numbers to be compiled and posted in a conspicuous location at the construction/project site.
- A designated PC Environmental Assessment Officer shall be kept informed of project scheduling and will be notified of changes at all times.





- The Contractor must be aware that they are working in a National Park whose emphasis is on ecological/cultural integrity and resource protection.

Vegetation and Soil

- Equipment operators shall take extreme caution to avoid striking vegetation, including trees and tree bark that is outside of the construction corridor. Efforts will also be taken to minimize damage to tree roots. Equipment shall be stored within the project limits.
- The contractor must set project limits prior to the start of construction. No trees and vegetation will be cut or removed outside these limits. Tree removal will be limited to individuals within the construction site that have been identified by the park representative.
- Measures shall be taken to protect vegetation remaining on the site and not intended for removal. The park representative must be informed if there is a requirement to remove unmarked vegetation. Removal shall only commence with the approval of the park representative. Root systems shall be left intact whenever possible.
- Disturbance of soil and vegetation must be kept to an absolute minimum. This will minimize disturbance and disruption to plants and wildlife communities and habitat.
- All exposed soils must be stabilized as soon as possible in order to control sediment runoff during and after construction.
- Clearing of riparian vegetation should be kept to a minimum: use existing trails, roads or cut lines wherever possible to avoid disturbance to the riparian vegetation and prevent soil compaction. When practicable, prune or top the vegetation instead of grubbing/uprooting.
- Trim trees designated to be left standing within cleared areas of dead branches 4 cm or more in diameter. Prune limbs close to the tree trunk. For a clean cut, make a shallow undercut first, then follow with the top cut. This prevents the limb from peeling bark off the tree as it falls. Do not use an ax for pruning. Cut limbs and branches to be trimmed close to bole of tree or main branches.
- If over half of a tree needs pruning, it is recommended to cut it down. Trees should be cut at ground level and do not leave pointed stumps.
- Any required re-planting for landscaping purposes must utilize native species approved by park representative.
- Minimize equipment travel outside of construction corridor.
- Slash generated from vegetation removal shall be disposed of in an appropriate manner. All work will be done with the goal of having a low aesthetic impact on the landscape.
- All salvageable wood is the property of Parks Canada and must be removed to a pre-determined location. The remaining non-salvageable woody material (e.g. stumps, etc) will be removed by the contractor from the National Park and disposed of at a provincially approved site.
- Cover devegetated areas if heavy rains are expected in erosion prone locations.
- Keep excavation to a minimum and reduce disturbance to ground surface and vegetation.
- Organic materials removed during project construction activities must be removed from the project site.





- If soil becomes saturated during extreme wet weather, operations shall be suspended until soil conditions are more favourable.
- To minimize the introduction of invasive species, all construction material must be clean and free of any contaminants and non-native species (refer to invasive plant section below).
- Excavated soil that is suspected of or known to be contaminated (i.e. fuel, oil) is to be placed in covered bins or stockpiled and covered with plastic until the material can be transported to a provincially approved waste management facility.
- All soils brought on site from an outside source must be pre-approved by Parks Canada through inspection at the source location to ensure there are no invasive plants.
- All topsoil material removed during the project and that is not reused in the project will be disposed of outside the National Park at a provincially approved site.
- The use of chemical vegetation control is not permitted.
- Fires and burning of rubbish on site is not permitted.

Hydrology/Water Quality

- Do not use watercourse beds for borrow material.
- Do not skid logs or construction materials across waterways.
- Do not operate construction equipment in waterways.
- No rock, silt, cement, grout, asphalt, petroleum product, lumber, domestic waste, or any deleterious substance shall be placed or allowed to disperse into any stream, river, pond, wetland, lake or other water course.
- Mitigation measures must be in place to reduce the introduction of sediment into any drainage channels.

Mammals/Birds/Fish

- Feeding wildlife is not permitted. All work sites must be kept free of edible and other garbage that could attract or harm wildlife.
- To avoid the risk of nest destruction, the proponent shall avoid vegetation clearing during the most critical period of the migratory bird breeding season, which is May 1st through August 31st.
- In the event that vegetation clearing is to take place inside the May 1st to August 31st window, a qualified biologist must inspect the area prior to potential disturbance or loss of habitat activities to ensure there will be no adverse impacts to birds and wildlife.
- Before cutting of trees, rap their trunks repeatedly with a stick (or similar object) to awaken hibernating mammals.
- All construction activities shall be designed to have minimum effect on fish and fish habitat.
- Develop and implement an Erosion and Sediment Control Plan, as part of the Environmental Protection Plan for the site. Erosion and sediment control measures should be maintained until all disturbed ground has been permanently stabilized. The plan should, where applicable, include:
 - Installation of effective erosion and sediment control measures before starting work to prevent sediment from entering any water body.





- Measures for managing water flowing onto the site, as well as water being pumped/diverted from the site such that sediment is filtered out prior to the water entering a waterbody. For example, pumping/diversion of water to a vegetated area, construction of a settling basin or other filtration system.
- Regular inspection and maintenance of erosion and sediment control measures and structures during the course of construction. The structures should be maintained by repairing structural problems or damage and by removing accumulated sediment at regular intervals and disposing the sediment at an approved location
- Removal of non-biodegradable erosion and sediment control materials once site is stabilized.
- The contractor will maintain a stockpile of appropriate erosion and environmental protection materials (e.g. silt fences, straw bales, wood chips, clean rock fill and aggregate base course) on site at all times.
- Remove all construction materials from site upon project completion.
- Ensure that machinery arrives on site in a clean condition and is maintained free of fluid leaks, invasive species and noxious weeds.
- Wash, refuel and service machinery and store fuel and other materials for the machinery in such a way as to prevent any deleterious substances from entering the water.

Invasive Plants

- Construction equipment may facilitate the movement and spread of invasive plants by moving invasive plant seeds from infested areas. Contractors/construction operators are responsible to pressure wash equipment before entering the park or moving from an infested area within the park.
- Hand tools and footwear should be cleaned between work sites to prevent cross contamination and reduce the risk of invasive species introduction.
- Materials to be used on construction projects should be stored in areas free of invasive plant species.
- Freshly disturbed ground created by construction equipment during construction activities provide suitable habitat for invasive plants. Ensure that exposed soil is planted with native vegetation species as soon as feasible to reduce the risk of invasive species invasion.
- Reduce the spread of invasive plants by prohibiting the movement of soil, vegetation and materials from infested areas.

Machinery / Storage and Handling of Fuels and Dangerous Fluids

- For all contractors, a Spill Response Kit (absorbent materials, etc.) must be on site at all times and the employees trained in its use. In the event of any spill, the offending party (Parks Canada or Contractor) is responsible for containing and cleaning up the spill. The offending party is required by law to report all toxic spills and petroleum spills >20 litres to Environmental Emergency 1-800-565-1633. In addition, for any spill, the Project Manager (506-887-6386) and/or the Environmental Assessment Officer (506-227-7428) must be notified immediately. If unavailable contact Jasper Dispatch (1-877-852-3100).





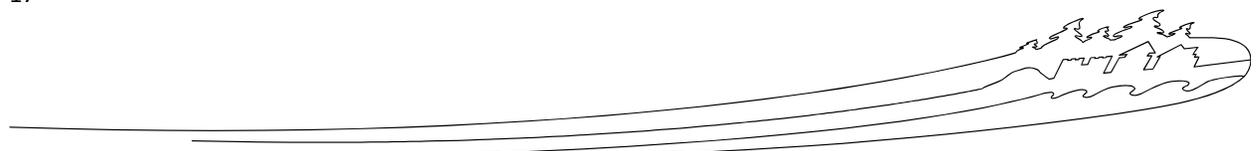
- All mechanical construction equipment should be properly maintained, in good operating order, and fitted with standard air emission control devices. Detection of leaks or exhaust issues shall be fixed immediately or work is suspended until repairs can be made.
- Daylight operation of all mechanized equipment will be respected.
- Gas or diesel operated equipment shall be shut down if not needed for a period greater than 5 minutes to reduce noise and emissions.
- Cleanup, repair and rehabilitation resulting from any spill shall be to the satisfaction of the PC Environmental Assessment Officer.
- The refuelling or parking of equipment, if required, shall be at a location pre-approved by the Project Manager/Parks Canada and will not take place within 30 m of a waterway or critical habitat.
- Refueling shall not take place in locations where runoff could carry contaminants into drainage pathways. An absorbent pad should be placed beneath the machine to capture small spills.
- Minimize quantity of hazardous materials on site to that absolutely necessary to perform the work.
- Disposal of debris or waste into any drain, and/or waterway, is strictly prohibited.
- Any hazardous material/waste is to be stored, handled, transported and disposed of in compliance with Transportation of Dangerous Goods legislation and WHMIS labeling. Disposal shall be at an approved provincial waste management site and proof of disposal provided to the Project Manager.
- Dispose of all waste materials at an appropriate provincial waste/recycle facility.

Cultural Resources

- If there are any changes to the proposed plans, all additional information and construction drawings must be submitted to Parks Canada's Terrestrial Branch for further review.
- Vehicular access routes and staging areas will be restricted to present-day roadways, parking lots, and significantly disturbed areas. If this is not possible, the use of protective covering such as geotextile protective mats with a wood chip lift or granular "A" gravel is required. All protective measures employed must be removed following construction and the area restored to a pre-construction state. Excavation is not permitted during installation or removal of protective covering.
- If significant features (i.e., structural remains and/or high artifact concentrations) are encountered during construction activities, excavation should cease in the immediate area, and the Parks Canada project manager will be informed. The project manager will contact Parks Canada's Terrestrial Archaeology section for advice and assessment of significance, which will in turn determine the requirements to mitigate the find.

Access

- Access for emergency response, fire suppression and site maintenance should be reflected in safety plan for the site.
- Whenever possible, only existing roadways or disturbed areas shall be used for site access.





Facilities

- Leave No Trace wilderness ethic principles shall be communicated to/observed by all of the construction crew.
- During the construction phase, store food, garbage and other smelling products in sealed containers. Pack all garbage out form the site daily, unless permanent garbage facilities exist at the site. Garbage structures shall minimize the opportunity for wildlife to feed from the garbage.
- Daily maintenance of the site shall be done to ensure that it is free from accumulations of waste, debris and garbage.
- Remove all construction materials from site upon project completion.
- A complete site cleanup including restoration of exposed and damaged areas, shall be required to the satisfaction of the park representative, before the site is vacated after project completion.
- Fires are only permitted in approved structures at designated sites within the park.

Safety

- Work crews on site must comply with all applicable health/safety regulations, including use of appropriate protective equipment.
- A project safety plan must be in place before project commences.
- The Project Manager is responsible to take all necessary precautions to ensure there is no safety concerns related to visitors of the Park.
- The contractor shall determine the exact location of all existing buried utilities before commencing work.
- The contractor must provide and maintain signs, flashing warning lights and other devices required to indicate construction activities or other temporary and unusual conditions resulting from the Project.
- Blasting is not permitted.
- Care and appropriate measures must be taken to ensure dust and other air borne particulates do not reach a level that would compromise air quality or impact vegetation/wildlife.

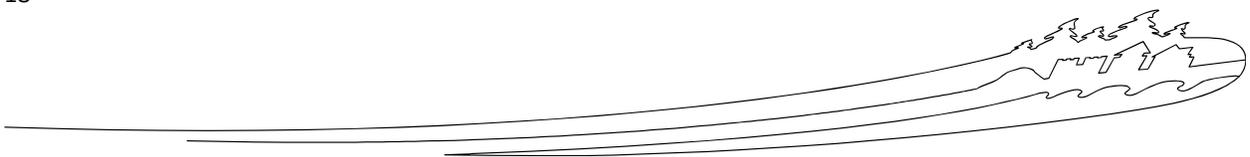
9. OTHER CONSIDERATIONS

Check all that apply. Briefly describe what was done, how the results were incorporated into the BIA and/or outline plans for what is needed.

Public/stakeholder engagement – **Public/Stakeholder engagement will not be undertaken for this project.**

Aboriginal engagement or consultation – **Aboriginal engagement or consultation will not be undertaken for this project as it is not anticipated to have any POTENTIAL INFRINGEMENT ON ABORIGINAL RIGHTS AND INTEREST.**

SARA Notification – **SARA notification is not required for this project since there are no anticipated interactions or adverse impacts predicted.**





10. SIGNIFICANCE OF RESIDUAL ADVERSE EFFECTS

If mitigation measures, described in this report, are followed and carried out, all environmental effects are likely to be minor in nature, reversible and have an insignificant impact. Although the potential exist for short term environmental effects during the project, the level of disturbance is expected to be localized and of low magnitude. Parks Canada concludes that this project is not likely to contribute to significant adverse environmental effects in the short or long term.

11. EXPERTS CONSULTED

Department/Agency/Institution: Parks Canada Agency	Date of Request: February 3rd, 2017
Expert's Name & Contact Information: Shirley Butland Shirley.butland@pc.gc.ca	Title: A/ Environmental Assessment Officer
Department/Agency/Institution: Public Services and Procurement Canada	Date of Request: Various times throughout February and March 2017
Expert's Name & Contact Information: Matt Walsh Mathew.walsh@pwgsc.gc.ca	Title: Project Manager
Expertise Requested: 1) Historical Information, 2) Environmental Information 3) Building Details	
Response: 1) Historical Information by SB, 2) Environmental Information by SB 3) Building Detail by MW	

12. ATTACHMENTS

- Appendix I: Environmental Impact Analysis Tool: Effects Identification Matrix
- Appendix II: Existing Site Conditions at the Proposed Headquarters Seasonal Campground
- Appendix III: Proposed Site Work at Headquarters Seasonal Campground
- Appendix IV: Archaeology Overview Assessment

13. AUTHOR

Prepared by: Janielle Forrester Environmental Specialist, PSPC janielle.forrester@pwgsc.gc.ca/902-368-0610	Date: March 24, 2017
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14. SURVEILLANCE

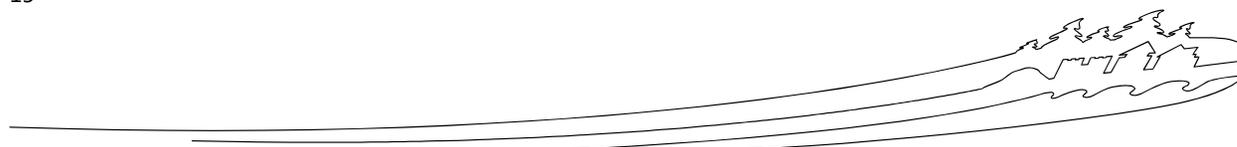
Document whether surveillance (also referred to as compliance monitoring or site inspection) will be required to verify that required mitigation measures are implemented.

- Surveillance is not required
- Surveillance is required (Daily surveillance is required for this project with focus on water protection, erosion control, cultural resource protection, flora and fauna protection, construction within the allowable footprint, equipment use and maintenance, impact to visitor experience and public safety)

15. FOLLOW-UP MONITORING

Follow-up monitoring is:

- not required





- required by legislation or policy (indicate basis of requirement – e.g. required by the *Species at Risk Act*; *Fisheries Act*, or the *Parks Canada Cultural Resource Management Policy*)
- required to evaluate effectiveness of mitigation measures and/or assess restoration success

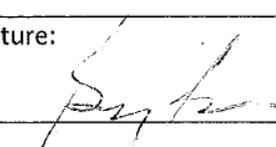
16. DECISION

Taking into account implementation of mitigation measures outlined in the analysis, the project is:

- not likely to cause significant adverse environmental effects.
- likely to cause significant adverse environmental effects.

NOTE: If the project is identified as likely to cause significant adverse effects, CEAA 2012 prohibits approval of the project unless the Governor in Council (Cabinet) determines that the effects are justified in the circumstances. A finding of significant effects therefore means the project CANNOT go ahead as proposed.

17. RECOMMENDATION AND APPROVAL (Parks Canada Responsibility)

Reviewed by: Shirley Butland, Acting Environmental Assessment Officer (EAO)	Date: 06/04/2017
EIA Specialist Comments: The A / EAO assisted with the preparation, review and edit of this document. Pertinent information regarding potential environmental impacts are identified in this BIA including the necessary mitigation measures required to reduce the risk of negative impacts.	
Recommended by: Doug Watson, Senior Project Manager	Date: 07/04/2017
Approved by: Beverly Boyd, NB South Field Unit Superintendent	Date: 11/04/2017
Signature: 	

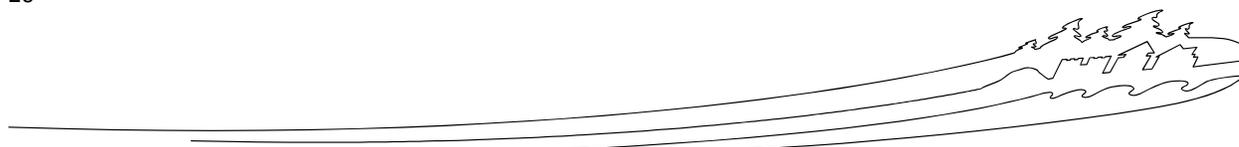
18. NATIONAL IMPACT ASSESSMENT TRACKING SYSTEM (Parks Canada Responsibility)

The project must be registered in the Parks Canada National Impact Assessment Tracking System within the fiscal year the project took place. If the project is on hold, was cancelled, or was determined to be likely to cause significant adverse effects and did not proceed, please indicate this information in the tracking system (see selections in the *Assessment Status/Decision* field).

- Project registered in tracking system
- Not yet registered (*CEAA 2012 requires PCA submit a report to Parliament annually. EIAs must be entered in the tracking system by the end of April to enable reporting.*)

19. References

ATRIS website, Indigenous and Northern Affairs Canada





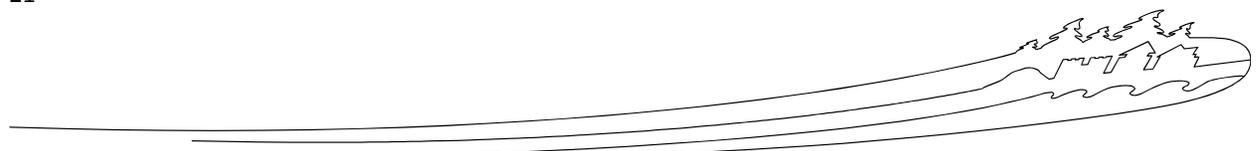
Environment and Climate Change Canada Website, Canadian Climate Normals 1981-2010 Station Data, Alma, NB

GEMTEC. 2012. Geotechnical Investigation Report Headquarters Area

Parks Canada Agency Basic Impact Analysis, NBSouth-2016-EIA-22

Parks Canada, Fundy National Park Management Plan, 2011

SARA Public Registry Website, A to Z Species Index





Appendix I: Effects Identification Matrix

Direct Effects										
		Valued components potentially directly affected by the proposed project								
		Natural Resources					Cultural Resources	Visitor Experience		
		Air	Soil & landforms	Water (surface, ground, crossings, etc.)	Flora (trees and shrubs)	Fauna (mammals, birds and fish).	Cultural Resources of Local Value	Recreational opportunities	Viewscape and soundscapes	Visitor Safety
Phase	Examples of Associated Activities									
Project Components	Preparation / Construction / Operation / Decommissioning	Supply and storage of materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Burning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Clearing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Demolition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Disposal of waste	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Blasting/ Drilling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Dredging	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Drainage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Excavation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		Grading	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		Backfilling	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		Use of machinery	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		Transport of materials/ equipment	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		Building of fire breaks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Use of Chemicals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Set up of temporary facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		





Direct effects continued											
		Valued components potentially affected by the proposed project									
		Natural Resources					Cultural Resources	Visitor Experience			
		Air	Soil & landforms	Water (surface, ground, crossings, etc.)	Flora (trees and shrubs)	Fauna (mammals, birds and fish)	Cultural Resources of Local Value	Recreational opportunities	Viewscales and soundscapes	Visitor Safety	
Phase	Examples of Associated Activities										
Project Components	Preparation / Construction / Operation / Decommissioning	Waste disposal	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Wastewater disposal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Maintenance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Use/Removal of temporary facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Use of Chemicals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Active fire stage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Prescribed burn cleanup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Planting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Culling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Vehicle Traffic	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Other...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>





B. Indirect Effects (all phases)							
		Impacts as a result of changes to the environment					
		With respect to non-Aboriginal peoples:		With respect to Aboriginal peoples:		With respect to visitor experience	
		Health and socio-economic conditions	Health & socio-economic conditions	Current use of lands and resources for traditional purposes	Access & services	Recreation & accommod'n opportunities	Safety
Phase	Natural resource components affected by the project						
Preparation /construction operation/implementation/decommissioning	Could impacts to <u>air</u> lead to adverse effects on...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Could impacts to <u>soils and landforms</u> lead to adverse effects on...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Could impacts to <u>water</u> (e.g. surface, ground water and water crossings) lead to adverse effects on...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Could impacts to <u>flora</u> (including SAR) lead to adverse effects on...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Could impacts to <u>fauna</u> (including SAR) lead to adverse effects on...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<u>Other...</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>





Appendix II: Existing Site Conditions at the Proposed Headquarters Seasonal Campground





Appendix IV: Archaeology Overview Assessment

**PARKS CANADA AGENCY
ARCHAEOLOGY AND HISTORY BRANCH
INDIGENOUS AFFAIRS AND CULTURAL HERITAGE DIRECTORATE**

**ARCHAEOLOGICAL OVERVIEW ASSESSMENT (AOA)
FUNDY NATIONAL PARK - FUNDY PARK HEADQUARTERS CAMPGROUND**

André MILLER
FII Project Archaeologist, IACHD
National Office, Gatineau

ABSTRACT

Parks Canada Agency (PCA) has proposed the enhancement of Headquarters Campground in Fundy National Park. The current project involves the consolidation and improvement of Headquarters campground facilities (Parks Canada 2017). This Archaeological Overview Assessment (AOA) will evaluate the archaeological potential of the project area and the potential impacts of the proposed work on known or potential archaeological resources. This AOA will determine if an Archaeological Impact Assessment and/or mitigation measures are required.

PROJECT INTRODUCTION

The Fundy Park Campground Phase 1 project is to design the Headquarters Seasonal Campground consisting of 28-34 full service camp sites large enough to accommodate recreational vehicles (RVs) up to 35' in length on the former Fundy Chalets site (Figure 1). Water spigots and sewer connections and electrical pedestals will be provided at each campsite. The design of sewer system and water system upgrades is included. Locating signage and a group fire pit is also part of the design task. The project entailed consolidation and improvement of group campground facilities.

ASSESSMENT METHODOLOGY

This assessment is based on a review of documentation provided by Fundy NP Field Unit, online resources and existing documentation at PCA Terrestrial Archaeology Branch, National Office, Gatineau, Quebec.

HISTORICAL AND ENVIRONMENTAL BACKGROUND

The site was previously developed for Chalets (Figure 2), existing infrastructure will be re-used. The site is near McLaren Pond, Upper Salmon River and Bay of Fundy. Some tree clear is needed in this area. Most of the trees are fairly old and some weather damage was noted at the site. This project repurposes under used assets in the Chalet area. The sewer and water systems were sized to accommodate a similar number of users when constructed for the chalets (Figure 3). So only a marginal (if any) increase in electrical demand, water demand and sewer loading is expected. Upstream and downstream infrastructure improvements are not anticipated. PWGSC and Parks Canada indicated the property line along the golf course is critical and encroachment into this area should be avoided. Expansion to the other areas of the park outside the "Chalet property" is acceptable and necessary. The site requirements also include: a visitor parking, a site for future service building, a way finding signage and site lighting (Figures 4-5).

In the 50's, North of Fundy Park Chalet Road across the future Headquarters Campground, a large area was landscaped and made available for outdoor sports (Parks Canada 1976). The whole terrace and flat area are on glacial outwash deposits and it has lately been changed during construction of the park facilities. The soil conditions encountered at the borehole locations (Figure 6) generally consist of topsoil underlain by sand and gravel with boulders. Fill was encountered at BH 12-1, having a thickness of 2.74 metres. Bedrock and Groundwater seepage was not encountered within the borehole depths (GEMTEC 2012).





PREVIOUS ARCHAEOLOGICAL WORK AT FUNDY NATIONAL PARK

Although physical evidence of Indigenous use or occupation within Fundy NP has not been located to date, the area is within traditional territory of the Mi'kmaq, Wolastokiyik (Maliseet), and Passamaquoddy peoples. Archaeological and historical research has identified many cultural resources related to European settlement and use of the park area, in general. There is limited knowledge of the condition of the park's cultural resources (further evaluations and inventories are required) and that cultural resource research and information has not been consolidated yet. The park has a fair understanding of the inventory of the cultural resources; however, a cultural resource management strategy and monitoring program for cultural resources in Fundy NP has not been developed to date. (Parks Canada 2011)

ARCHAEOLOGICAL POTENTIAL

Previously there was no archaeological investigations in the immediate area of this project at Fundy National Park. There is no known archaeological resources situated at proximity to be impacted by the rehabilitation of Headquarters Campground facilities and related works. However, there is moderate to low potential that construction activities may yield Aboriginal and/or historical artifacts, particularly in the footprint of extant buildings and former Chalets sites. Those area was presumably disturbed by the construction of Chalets, roads and campsites, sewers, septic tanks and electrical system for the Chalets and the surrounding area of Gift Shop and Golf Cart Storage Shelter. Therefore, an Archaeological Impact Assessment (AIA) is not required for this project.

ASSESSMENT OF PROPOSED DEVELOPMENT IMPACT ON POTENTIAL ARCHAEOLOGICAL RESOURCES

After reviewing documents, designs and plans provided by Fundy NP, there is a moderate to low potential of archaeological find in the project area. Most of the parts of the project area is disturbed resulting of the history development of the site, with buildings, campsites and roads construction. The present AOA is based on a review of the drawings and designs provided (Parks Canada 2016). There is no archaeological concern with the design concept for Headquarters Campground and related works (Figures 4-5).

ARCHAEOLOGICAL REQUIREMENTS

The following mitigation measures have been identified to ensure the construction activities, as outlined in the documents and plans, will not have an impact on archaeological resources:

1. If there are any changes to the plans, all additional information and construction drawings must be submitted to Parks Canada's Terrestrial Branch for further review.
2. Vehicular access routes and staging areas will be restricted to present-day roadways, parking lots, and significantly disturbed areas. If this is not possible, the use of protective covering such as geotextile protective mats with a wood chip lift or granular "A" gravel is required. All protective measures employed must be removed following construction and the area restored to a pre-construction state. Excavation is not permitted during installation or removal of protective covering.
3. If significant features (i.e., structural remains and/or high artifact concentrations) are encountered during construction activities, excavation should cease in the immediate area, and the Parks Canada project manager will be informed. The project manager should then contact Parks Canada's Terrestrial Archaeology section for advice and assessment of significance, which will in turn determine the requirements to mitigate the find.





OTHER CONSIDERATIONS:

Much of the impact area for this project will and have been previously disturbed, but the modern facilities (Administration building, Amphitheatre, Chalet sites, etc.) are located on some of the best landscape within the park. In this context this is referring to easy access to the Bay and River, flatter and more usable land for occupations, which we may assume increases the potential for its use in the pre-contact era; and the potential for discovery of Indigenous artifacts or contexts is higher in these zones.

REFERENCES

GEMTEC

2012 Geotechnical Investigation Fixed Roof Accommodations Fundy National Park, New Brunswick November 19, 2012. Prepared for Fundy National Park, Project No. 6596.01 – R01 (On file at Parks Canada, Gatineau, Quebec).

Parks Canada Agency

2017 Request for Cultural Resource Impact Analysis (CRIA), Fundy Park Headquarters Campground. (On file at Parks Canada, Gatineau, Quebec).

2016a Frontcountry Camping Design Guidelines, July 2016, 95% Draft. (On file at Parks Canada, Gatineau, Quebec).

2016b Guidelines and Specifications for Outdoor Lightings at Parks Canada, March 2008 (Revised: February 2016). (On file at Parks Canada, Gatineau, Quebec).

2011 Fundy National Park of Canada, Management Plan. (On file at Parks Canada, Gatineau, Quebec).

2005 Fundy National Park of Canada, Management Plan. (On file at Parks Canada, Gatineau, Quebec).

1976 History of the National Parks of Canada, Fundy National Park, Vol. 1, p. 104-110. (On file at Parks Canada, Gatineau, Quebec).

PWGSC

2016 Fundy Park Headquarters Campground – Required Services 1 Report, Prepared by CBCL for PWGSC (On file at Parks Canada, Gatineau, Quebec).





Figure 1. Location of Fundy Park Headquarters Seasonal Campground (Google Earth - Digital Files).



Figure 2. View of Amphitheatre and Chalets in the background on site of future Headquarters Campground. (Amphitheatre and Chalets postcard - Pre-1920 - Parks Canada - Digital Files).



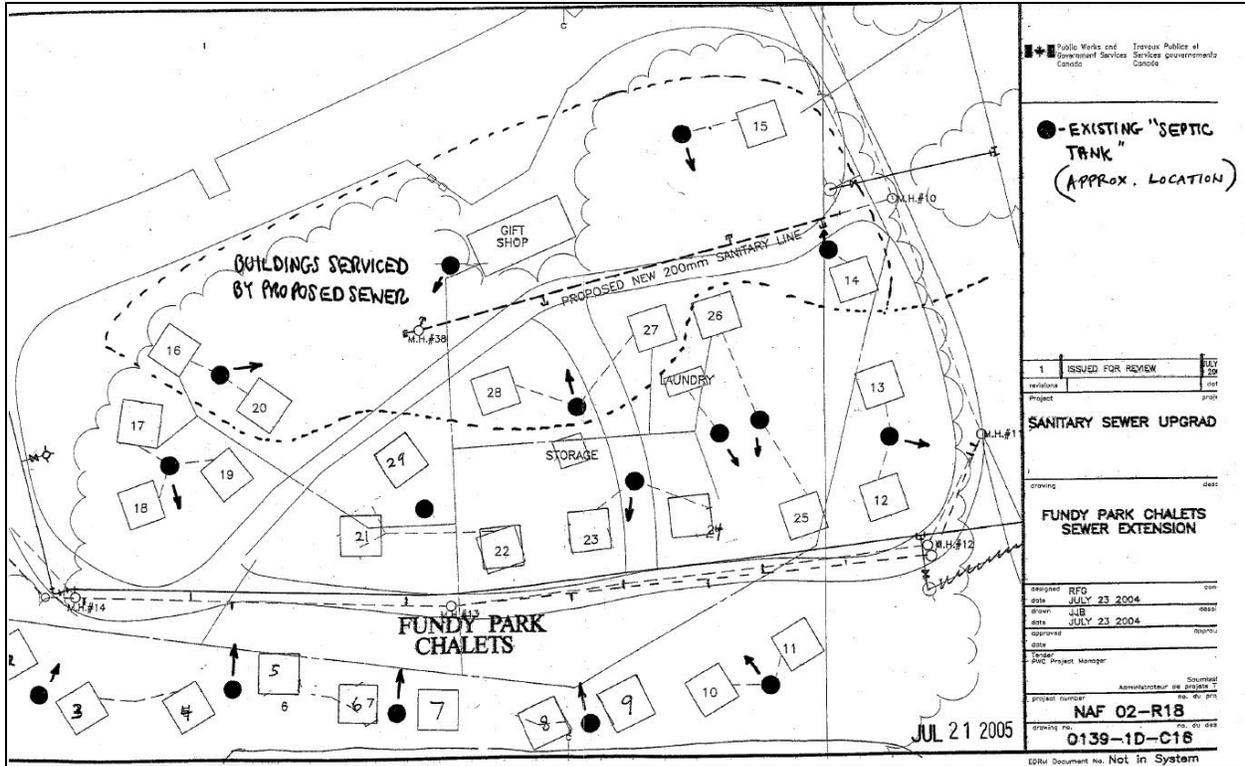


Figure 3. Approximate locations of former Chalets, Sewers and Septic Tanks at Headquarters Campground (Parks Canada - Digital Files).

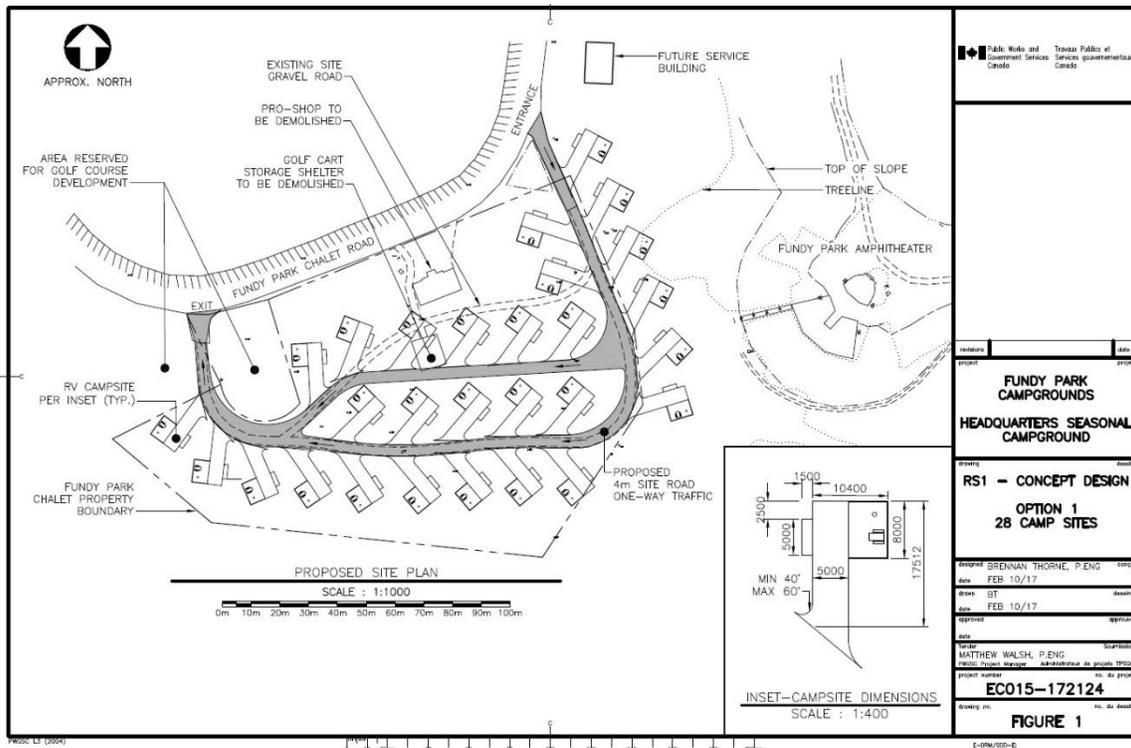


Figure 4. Details of proposed Option 1 for 28 Camp Sites (PWGSC/Parks Canada - Digital Files).



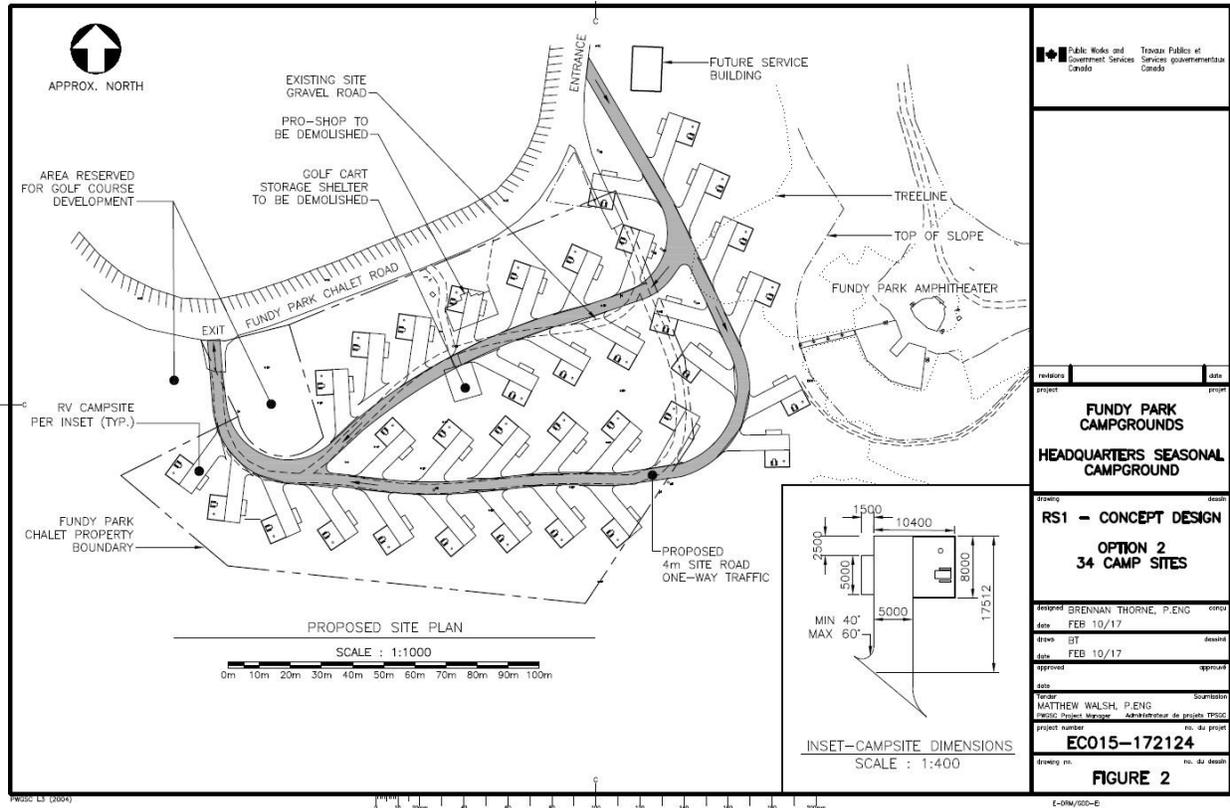


Figure 5. Details of proposed Option 2 for 34 Camp Sites (PWGSC/Parks Canada - Digital Files).

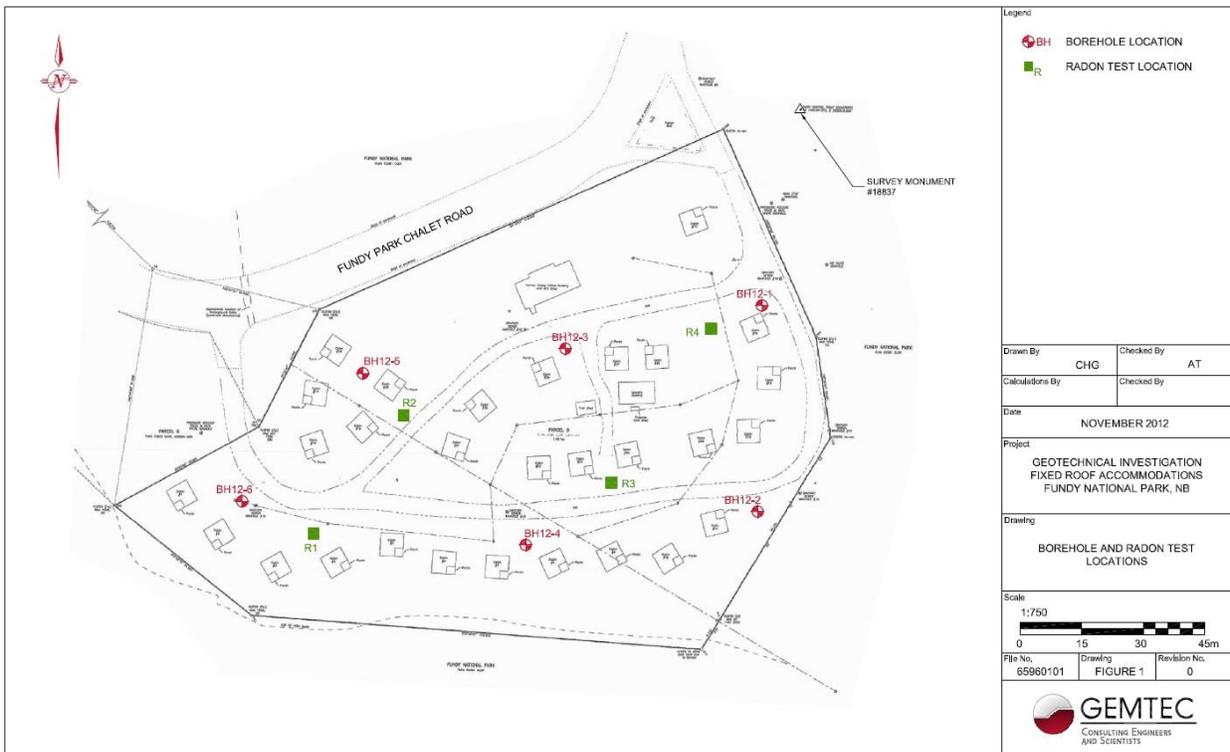


Figure 6. 2012 Map of boreholes and Radon test locations (GEMTEC, PWGCS/Parks Canada - Digital Files).

