

Sechelt Inlet Marine Parks Recreation Use and Impact Study

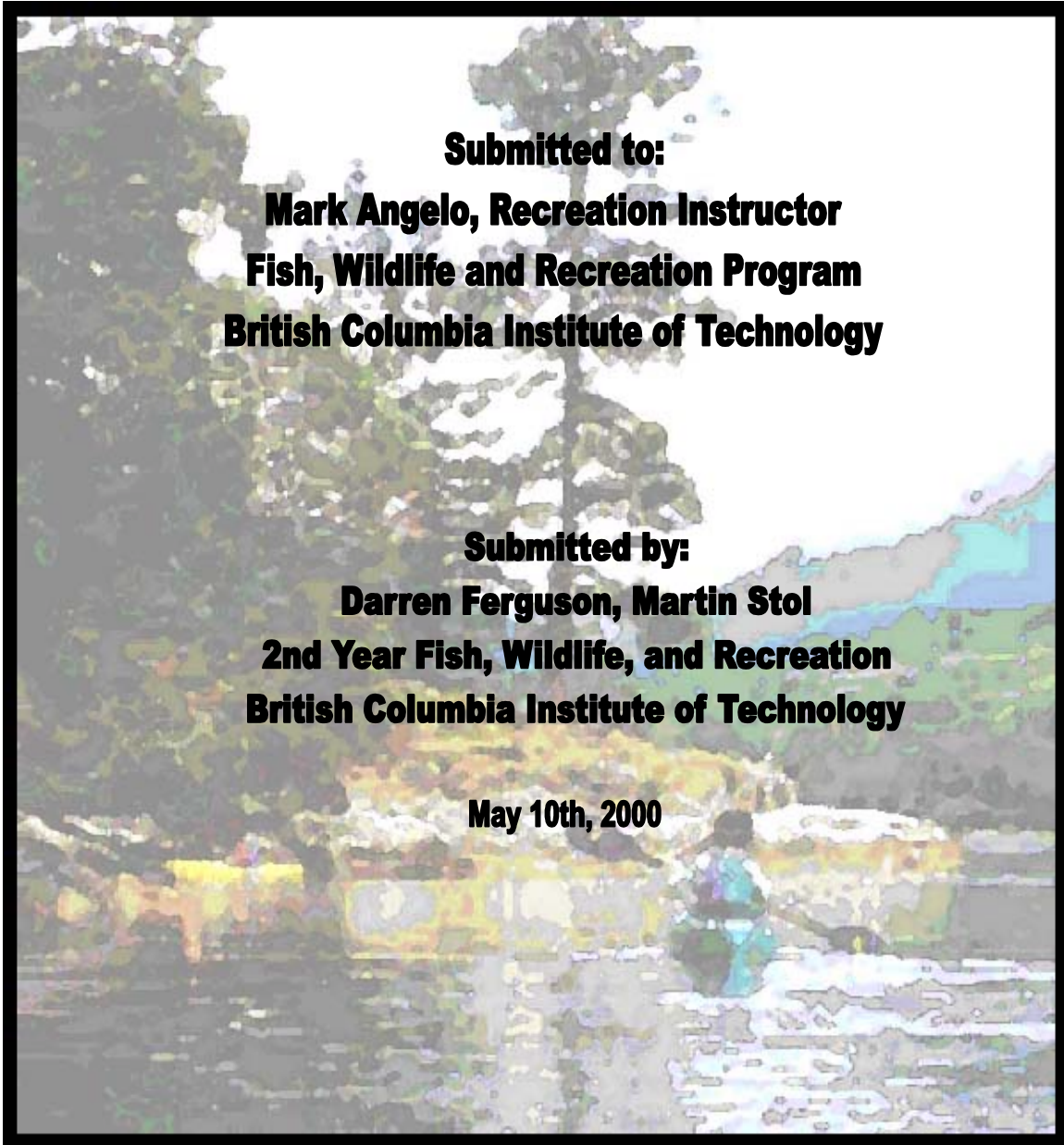
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May 10th, 2000



Abstract

Two Fish, Wildlife and Recreation students from the British Columbia Institute of Technology conducted an impact study for BC Parks, on Sechelt Inlets Marine Park. The study was completed between November 15th 1999, and April 15th 2000, with the final report submitted on May 10th 2000.

The study focused on assessing the impact that had occurred on the six Recreation Sites in the park, and three on Mt. Richardson Park shoreline. This study was conducted using the BC Parks, Backcountry Recreation Impact Monitoring methods. Campsites were also mapped, and photographed.

From the results of the BRIM analysis, it was apparent that the further distant recreation sites such as Tzoonie Narrows and Thornhill experienced much lower levels of impact. Kunechin was found to be impacted at the sites on the point, but less impacted in the bay. The other recreation sites in the Sechelt Inlet Marine Park all showed significant levels of impact and therefore should be serious considerations for future management decisions.

Acknowledgements

For sharing their knowledge with us, and making this project possible, we gratefully acknowledge the following people:

- Brian Bawtinheimer, Senior Parks Planner, BC Parks
- Al Jenkins, Area Supervisor, BC Parks
- Brandin Schultz, Resource Officer, BC Parks

- Mark Angelo, Program Head, British Columbia Institute of Technology (BCIT)
- Bob Gunn, Assistant Instructor, BCIT
- Laurie J. Smith, Projects Coordinator, BCIT
- Bruce Rothe, Equipment Manager, BCIT

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1.0 Introduction

1.1 Background

Despite Sechelt's close proximity to the large population in BC's Lower Mainland, the development of recreational opportunities has been slow. This would seem unusual considering that Sechelt, located on the Sunshine Coast, is only 36 kilometers north along highway 101 from Langdale ferry terminal. The ferry ride from Horseshoe Bay links you to the Sunshine Coast, in around 45 minutes. A map showing the location of the Sunshine Coast is provided in **(Figure1)**.



Figure 1: Map of the Sunshine Coast Showing Access From Vancouver to Sechelt(Big pacific, 2000)

Sechelt Inlets Marine Recreation Area was established in July 1980. It was established to fulfill the Parks and Outdoor Recreation Division's objectives in providing boaters with overnight and day-use facilities in small sheltered marine sites in Sechelt, Salmon, and Narrows Inlets (Sechelt Inlets Park Master Plan, 1981). The Recreation Area totaled 155 ha and was comprised of eight recreation sites ranging from less than 1ha to over 80 ha in size. These sites were retained when the Recreation Area received Class A status in the 1990's, and are shown in **(Figure 2)**.

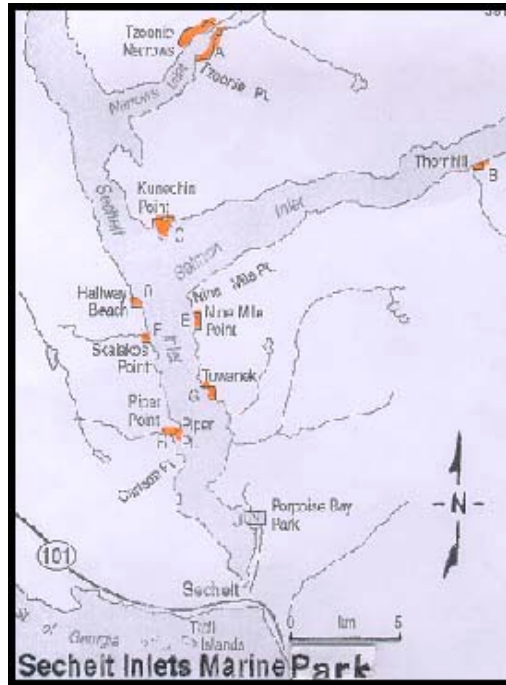


Figure 2: Map of the Sechelt Inlets Marine Park, Identifying the Study Areas(BC Parks, 1999)

Sechelt Inlets Marine Park has been operated using previous information compiled when the Recreation Area designation was upgraded to “Class A” Park status. The facilities such as fire rings, outhouses and tent pads located within the recreation sites have been retained. Generally there is one communal fire ring in each recreation site, a food cache, and one pit toilet along with running water from the neighboring small creeks.

The project coordinator from BC Parks was Brian Bawtinheimer, Senior Park Planner for the Garibaldi / Sunshine Coast District. As a BCIT Fish, Wildlife, and Recreation program graduate, Brian recognized the opportunity to have a student team participate in this study for Parks. BC Parks required this information because of the lack of studies conducted to assess whether the Sechelt Inlets Marine Parks are effectively catering to the demands of boaters. The BC Parks staff indicated that they received few complaints by park users concerning the recreation opportunities of Sechelt Inlets Marine Park. However BC Parks lacks information on these recreational opportunities.

There are commercial tourism Park Use Permit (PUP) holders running kayaking tours up the inlet, and taking benefit of the recreation sites. The number, timing, and frequency of visitors taken up the inlets were unknown to parks, making management of their activities difficult.

Recently two proponents applied for approval for the development of a trail up the west side of Sechelt Inlet. BC Parks was concerned whether the trails would include their own facilities, or whether the trail would link to the marine park campsites. The trail was in fact plotted to run through both Skaiakos Point and Halfway Beach (**Figure 2**).

1.2 Purpose

The purpose of this project was to assess user impacts on campsites, and then make recommendations on possible changes to be made on the nine recreation sites within the park. The impact assessments were intended to provide the information needed to effectively produce long term management plans, and to assess past management decisions making alterations where necessary.

Objectives for the project were:

- To identify the impact and use that has occurred on the nine existing recreation sites plus one undeveloped site, using the Backcountry Recreation Impact Monitoring (BRIM) methods.
- To provide an overview of the inlets as a kayaking circuit, stating the strengths and weaknesses of prospective trips.
- To analyze the crown land within the inlets for future potential sites.
- To combine the assessments on impacts and levels of use, and prepare recommendations concerning future management of the Sechelt Inlets Marine Park.

1.3 Scope of the Study

The scope of the research performed for BC Parks is described in detail in the Terms of Reference located in Appendix 1. This outlines the expected timeline, and methods to be used in the study.

Project work as outlined in the original Terms of Reference (appendix 1) and the objectives were not completely met. With the nature of access to the recreation sites, fieldwork could only be performed on days when weather allowed safe boating. To fit the timeline, the BRIM analysis of the campsites was the only objective completely fulfilled.

2.0 Description of Study Area

2.1 Sunshine Coast

The Sechelt Inlets is a scenic water body often called an inland sea, located on the Sunshine Coast (**Figure 2**). It is comprised of Sechelt, Salmon and Narrows Inlets. These combined inlets are a perfect recreational boating area, offering over 96 km. of coastline (Sechelt Inlet Recreation Area Master Plan, 1981) that is sheltered from the strong winds often experienced on the Strait of Georgia. Mild summer conditions are ideal for beginning kayakers and canoeists, as well as for day trips with small powerboats.

Access to the Sunshine Coast is by ferry linking Horseshoe Bay to Langdale. Highway 101 leads northwest 36 km to the town of Sechelt located on the southern tip of Sechelt Inlet. There are a variety of launch points, as the only access is by water to the recreation sites. The first is a government wharf and free boat launch ramp, located on the edge of town at the tip of the inlet (**Figure 3**). The Tillicum Marina, located four kilometers north of Porpoise Bay Provincial Park offers boat launching for a fee, and kayak rentals. Visiting recreationists with kayaks can access the water at Porpoise Bay Provincial Park, which shortens the distance to the park sites by several kilometers.

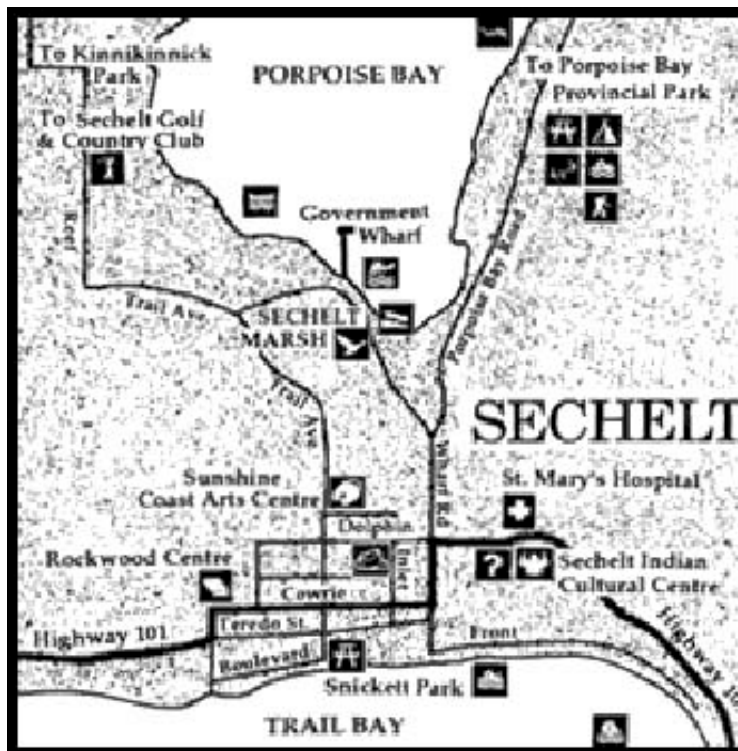


Figure 3: Boat Launch and Marine Access From Porpoise Bay

(Big Pacific, 2000)

2.2 Sechelt Inlets Marine Park Sites

In the 1990's when Sechelt Inlets Marine Recreation area became a "Class A" park, the original nine recreation sites as established in 1980 were retained unchanged. The only changes have been in incorporating two of the former sites, Tuwanek Point and Nine-Mile Point, into Mount Richardson Provincial Park. Removing these from Sechelt Inlets Marine Park reduced the total park area from the original 155 ha to 139 ha (Clover Point Cartographics Ltd., 1999). However, due to the marine access of the two Mt. Richardson recreation sites, they were included into the circuit and covered in our assessments. An additional recreation site has been identified within Mt. Richardson Park, and was also assessed for impact. The nine park sites were grouped according to their location within the inlets for assessment work.

The Sechelt Inlet east shoreline recreation sites are:

- Tuwanek
- Middle Beach
- Nine Mile Point

The Sechelt Inlet west shoreline recreation sites are:

- Piper Point
- Skaiakos Point
- Halfway Beach

The Salmon Inlet recreation sites are:

- Kunechin
- Thornhill

The Narrows Inlet site is:

- Tzoonie Narrows

2.3 Sechelt Inlet East Shoreline Recreation Sites

There were two sites located along the east side of the lower Sechelt Inlet, Tuwanek Point and Nine Mile Point. Both of these sites were incorporated into Mount Richardson Park, but their marine access within the circuit still included them in our study. There was one additional site that kayakers had been using along the Mount Richardson Park shoreline. This site was also assessed for its current impacts as well as facility development potential.

2.3.1 Tuwanek

Tuwanek was a 7.4 ha. recreation site that was formed in 1980 when the original Sechelt Inlet Recreation Area was created, and had since been incorporated into Mt. Richardson Park (Figure 4). A beach at low tide was available for bringing boats ashore, and for swimming. The rock bluff that extended into the water on the north end of the beach was reputed to be covered in sea anemones making for some interesting snorkeling at low tide (Park Master Plan, 1981). There was a running creek that flowed through the campsites that can be boiled or treated for drinking water. A pit toilet was provided and was located above the campsites. There were five established campsites with one communal fire pit. The forest above rose quite steeply up into coastal western hemlock forest, from the mixed forest on the bench with the campsites.

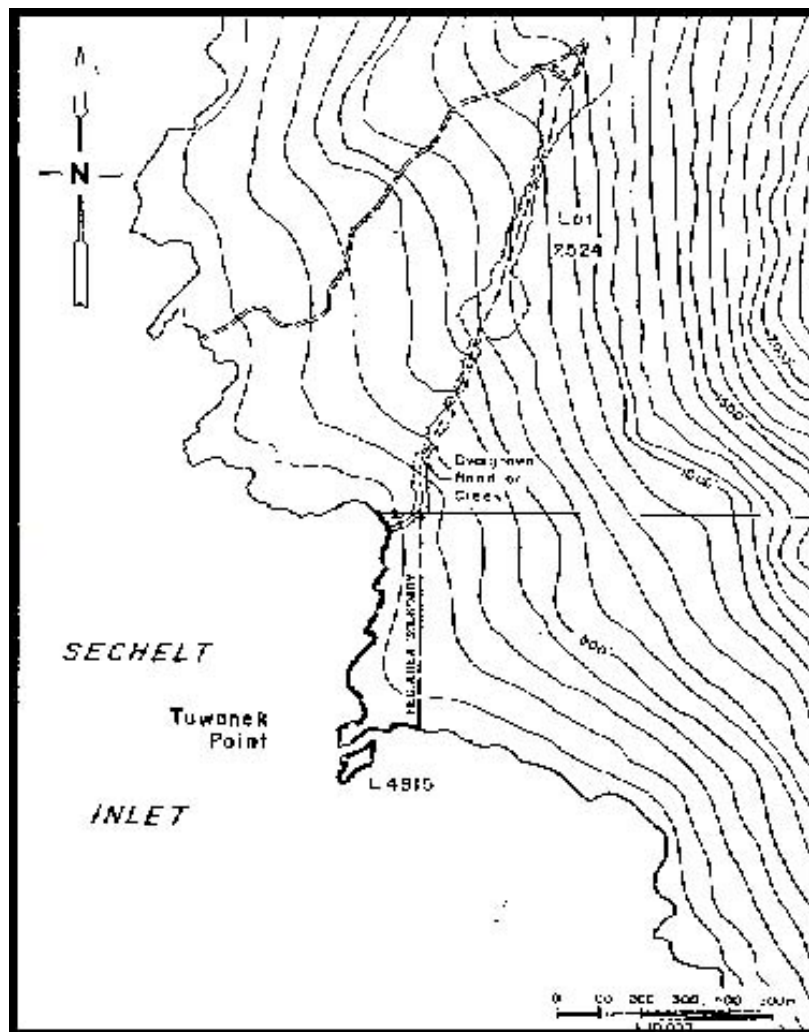


Figure 4: Tuwanek Recreation Site Topographic map showing boundaries

2.3.2 Middle Beach

The middle beach site was located within Mount Richardson Park (**Figure 5**). Although the site was not yet officially developed for park users, remnants of past use from fish farms existed and could still be seen. The site was located on a terrace above the high water line. There were three general campsites that appeared to be used. A fire pit had been established with log benches set around it. An unnamed creek flowed through the site. The forest was mixed deciduous and coniferous rising steeply uphill from the terrace up the slope above.

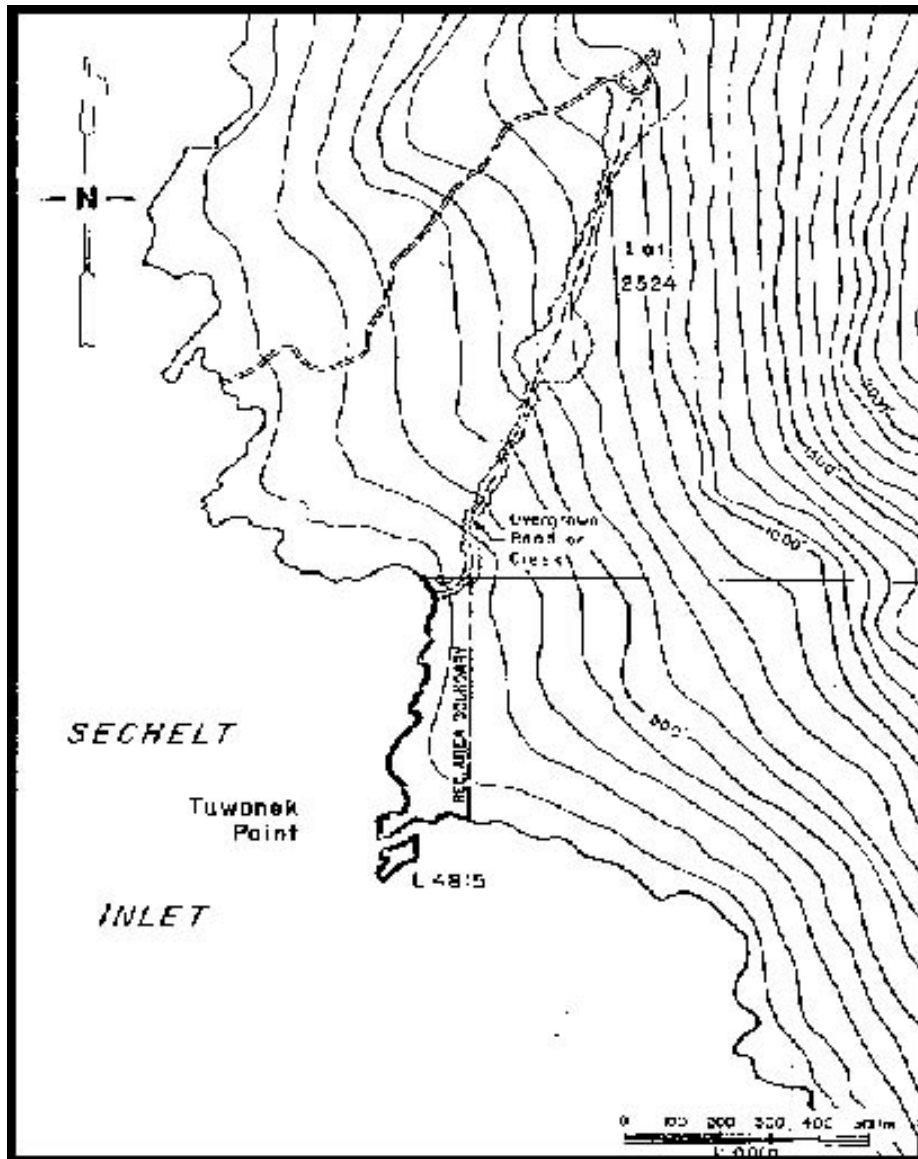
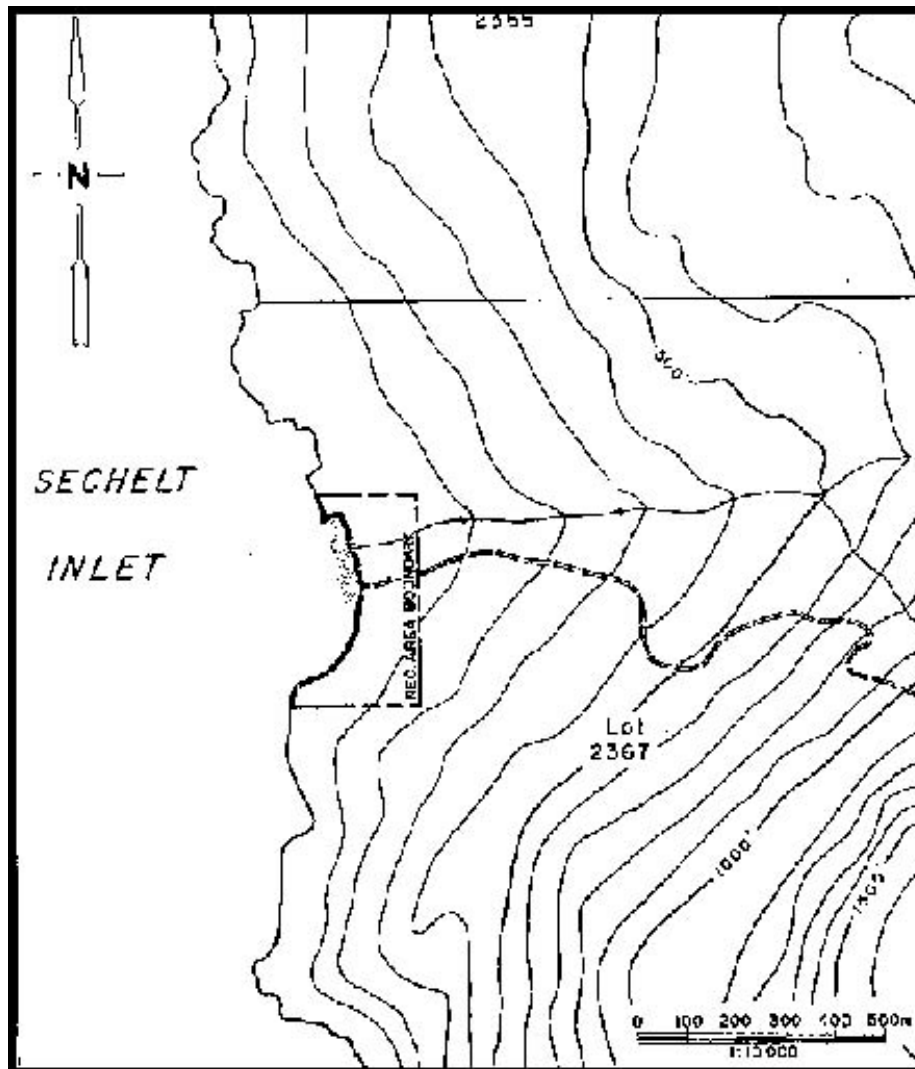


Figure 5: The Middle Beach Recreation Site Topographic map showing boundaries

2.3.3 Nine Mile Point

Nine-Mile Point was a 6.1 ha. recreation site that had been incorporated into Mt. Richardson Park (**Figure 6**). There was a beach at low tide for bringing boats ashore, and for swimming. A creek flowed through the site bisecting the campsites. A pit toilet was provided and was located above the campsites. There were five established campsites with two communal fire pits. The beach was once used as a log dump and skid road trailhead. There were overgrown trails leading uphill into the coastal western hemlock forest above, from the mixed forest on the bench with the campsites on either side of the creek.

Figure 6: Nine Mile Point Recreation Site Topographic map showing



boundaries

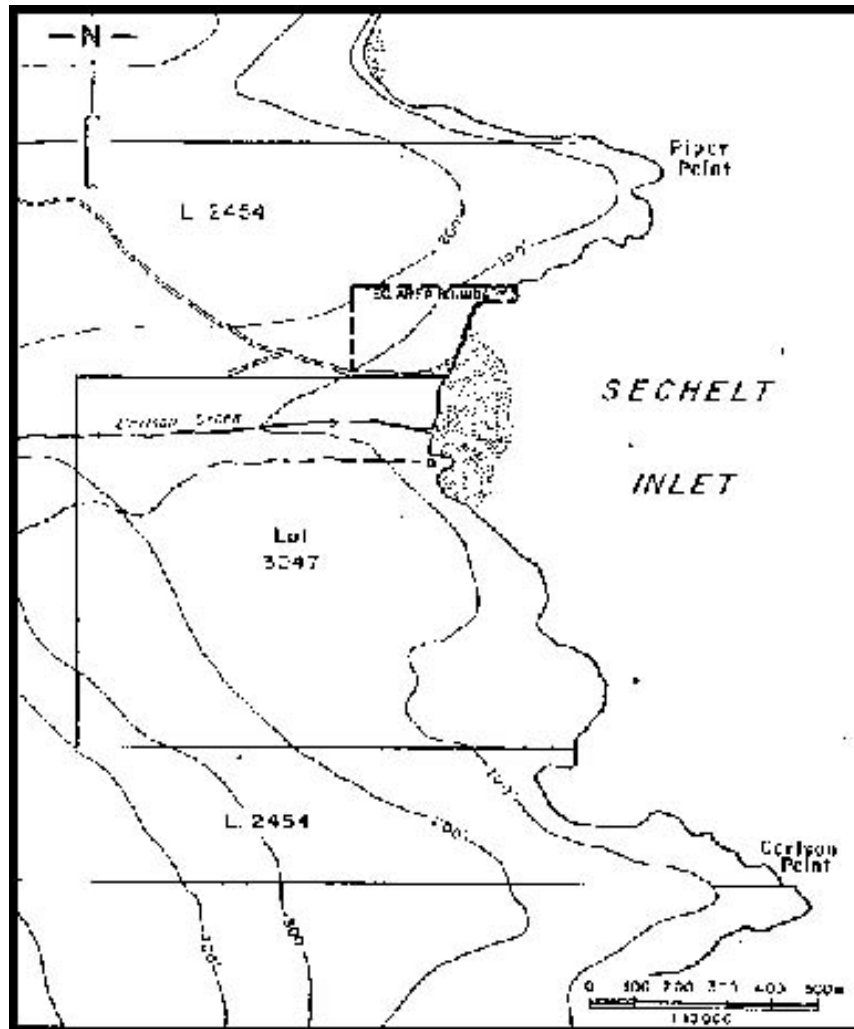
2.4 Sechelt Inlet West Shoreline Recreation Sites

On the western side of the inlet there were three recreation sites; Piper Point, Skaiakos Point, and Halfway Beach.

2.4.1 Piper Point

Piper Point was a 5.5 ha. recreation site (**Figure 7**). A beach at low tide was available for bringing boats ashore, and for swimming. There was no fresh water at this site, as Carlson Creek flowed through the adjacent private land. A pit toilet was provided and was located north of the campsite. There was one established campsite without a fire pit; this was due to the fact that this site was intended more for day use than for over night trips. Above the beach there appeared to be a shell midden. The forest here was mixed deciduous and coastal western hemlock forest.

Figure 7: Piper Point Recreation Area Topographic map showing



boundaries

2.4.2 Skaiakos Point

Skaiakos Point was a 0.5 ha. recreation site (**Figure 8**). The site itself was undeveloped and the level ground usable for camping overgrown with rose (*Rosa nutkana*). The level ground was a gravel bench used as a landing for past logging operations. There was still an open logging skid road leading uphill to the east out of the southern portion of the landing. There was a rusted steel barge on the landing, but otherwise the site was free of trash and debris. The adjacent land to the north of the creek had several areas of noticeable camping activity. There were, however, large amounts of waste there including a van, tractor, pipes, wells, a concrete pad, and loose metal throughout the area. Due to the lack of campsite development and recent use, BRIM analyses were not applied.

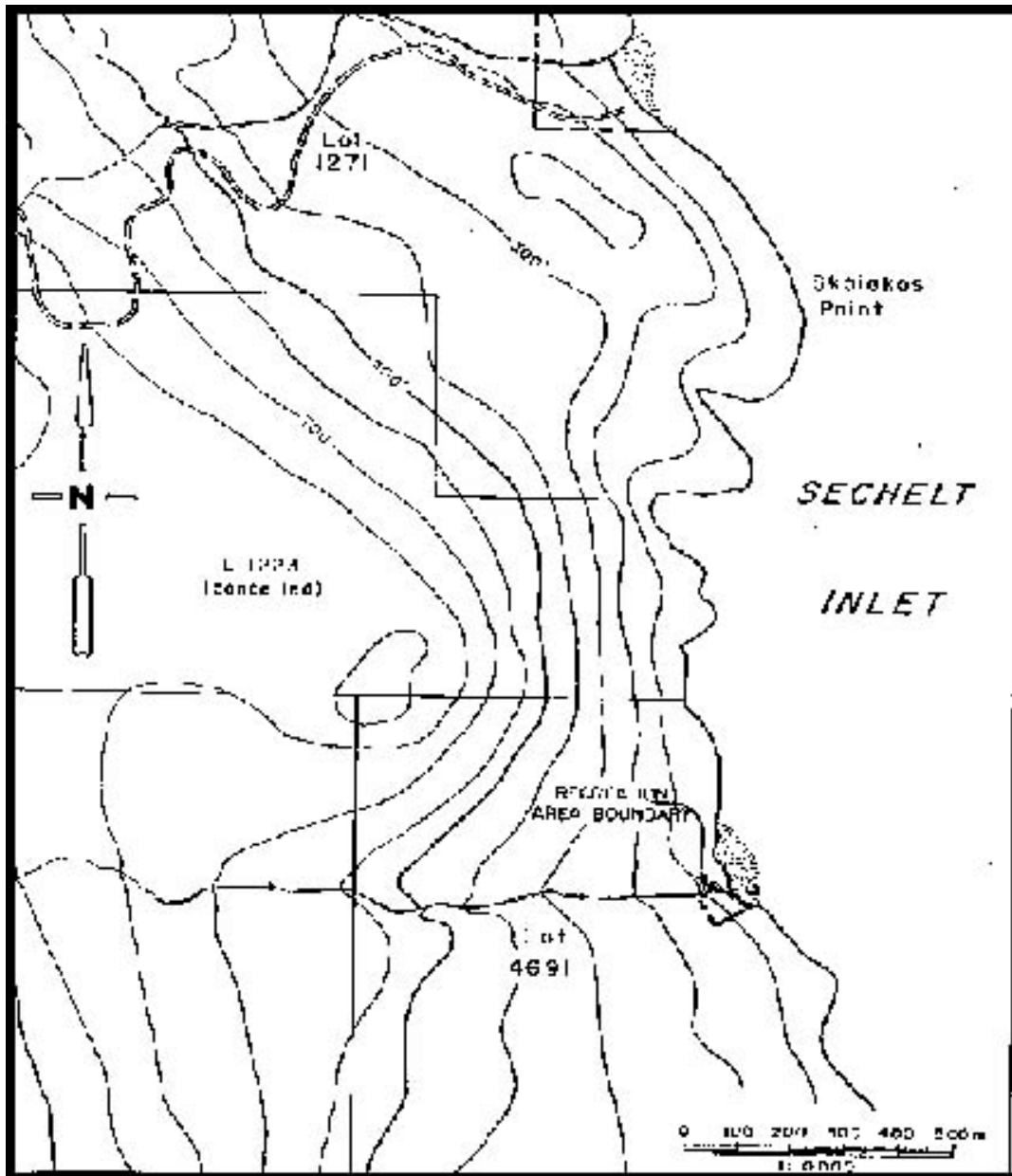


Figure 8: Skaiakos Point Recreation Area Topographic map showing boundaries

2.4.3 Halfway Beach

Halfway Beach was a 3.6 ha. recreation site (**Figure 9**). A beach at low tide was available for bringing boats ashore, and for swimming. There was water available from a creek that flowed through the north edge of the campsites. A pit toilet was provided and was located west of the campsite. This site had a level bench above the beach that had some tree cover. The beach was once used as a log dump and skid road trailhead. This had left it fairly open and able to sustain many campers.

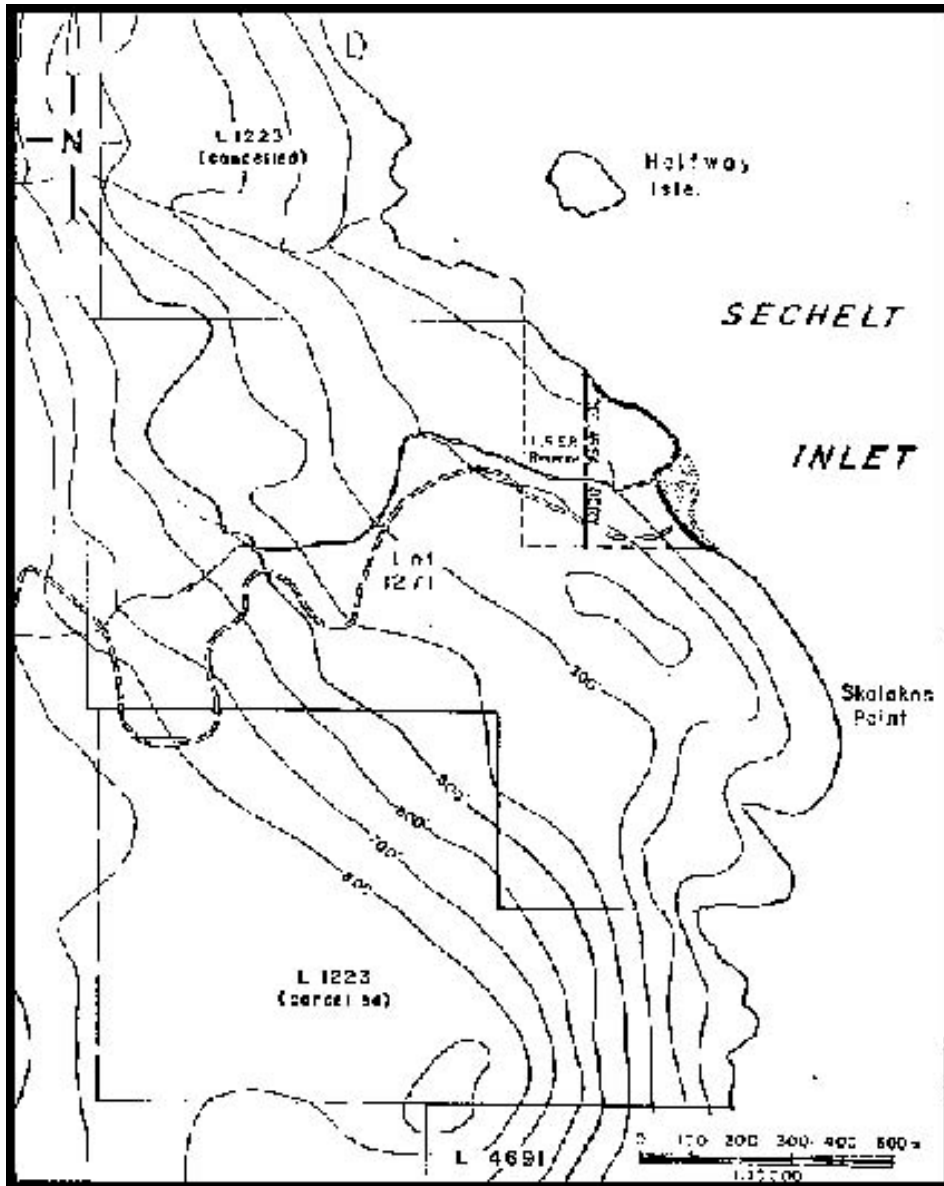


Figure 9: Halfway Beach Recreation Area Topographic map showing boundaries

2.5 Salmon Inlet Recreation Sites

Salmon Inlet was a fiord that ran east from its intersection with Sechelt Inlet. There was one site up Salmon Inlet, Thornhill, and the other was at the tip of where the two inlets met (**Figure 2**).

2.5.1 Kunechin Point

Kunechin Point was a 43.9 ha. recreation site (**Figure 10**). The campsites were dispersed over two areas, on the point, and within the bay on the northeast side. The Kunechin Islets had some signs of day use, but ‘No Camping’ signs were posted. The impacts to the islets were minimal, and therefore the BRIM analysis was not applied.

The point was very dry, rocky, and wind swept. The vegetation was mostly short, twisted shore pine (*Pinus contorta*), stunted Douglas fir (*Pseudotsuga menziesii*), and a thick salal (*Gaultheria shallon*) shrub layer. There was wooden tent pads set up on two of the campsites but no BC Parks fire rings on the point. One pit toilet was provided a short distance north of the campsites.

The bay within the park supported taller trees and thicker growth. The richer soil supported big leaf maple (*Acer macrophyllum*), and an under story of sword fern (*Polisticum munitum*). There was also a creek flowing into the bay. One BC Parks steel fire ring was installed in the lower campsite adjacent to the beach. A pit toilet was located west of the campsites.

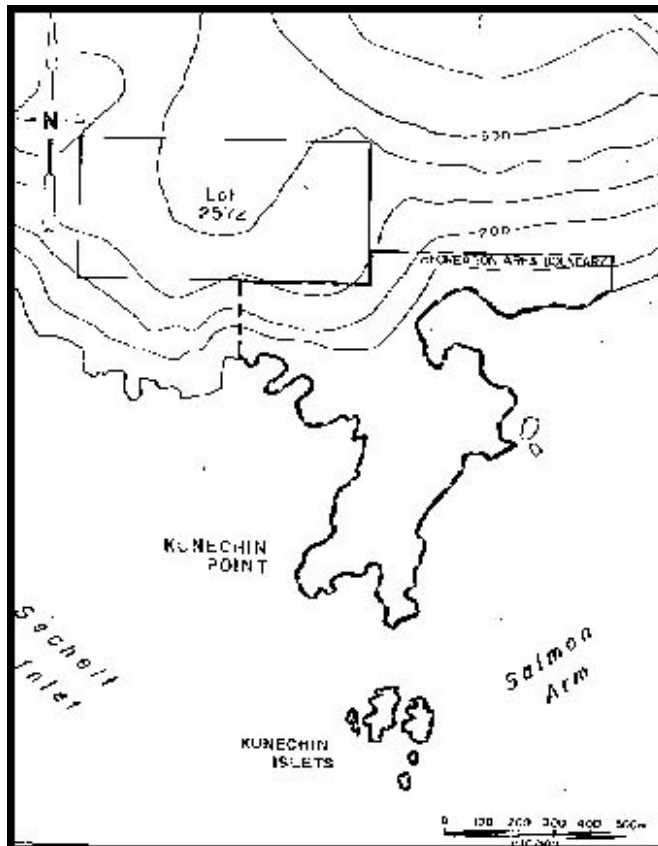


Figure 10: Kunechin Point Recreation Area Topographic map showing boundaries

2.5.2 Thornhill

Thornhill was a 4.2 ha. recreation site (**Figure 11**). A beach at low tide was available for bringing boats ashore, and for swimming. A creek flowed past the campsites. A pit toilet was provided and was located above the campsites. There were two established campsites with one communal fire pit. The beach was once used as a log dump and skid road trailhead. The site had a north aspect and had a BC Hydro Right Of Way (ROW) cross ahead of the beach. The view across the inlet was compromised by the visual impact of the BC Hydro ROW on the north side. There was an overgrown trail leading uphill into the coastal western hemlock (*Tsuga heterophylla*) forest above, from the mixed forest on the bench with the campsites on either side of the creek.

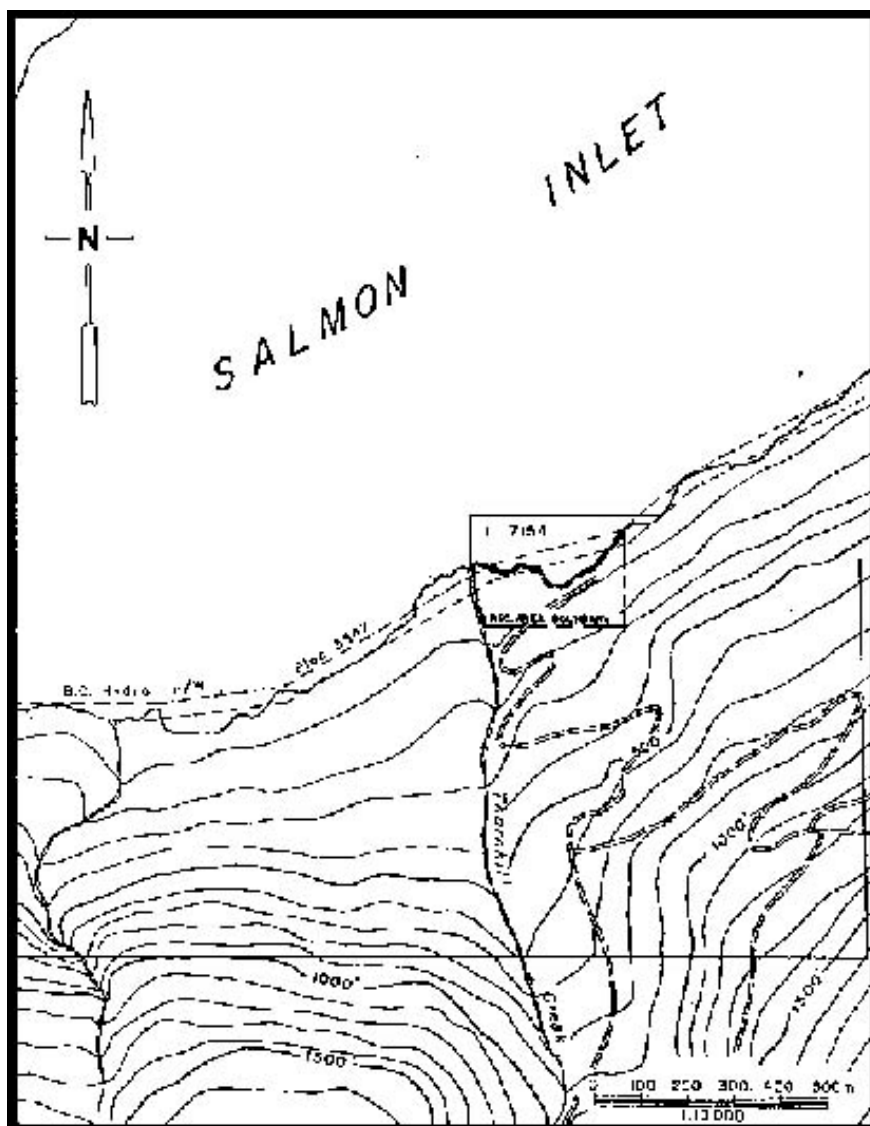


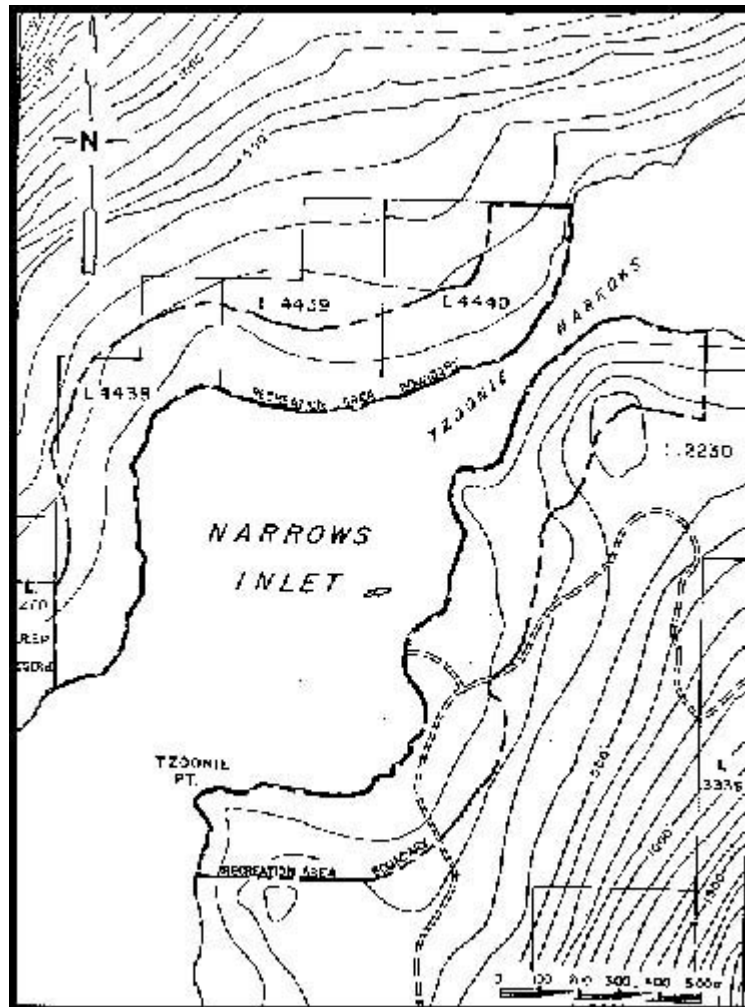
Figure 11: Thornhill Recreation Site Topographic map showing boundaries

2.6 Narrows Inlet Recreational Site

2.6.1 Tzoonie Narrows

Tzoonie Narrows was an 81.2 ha. recreation site, split into two halves by the inlet (**Figure 12**). There was a creek that flowed adjacent to the campsites on the south section of the park. A pit toilet was provided and was located above the campsites. There were several established campsites along the broad trails with two communal fire pits. The beach was once used as a log dump and skid road trailhead. Old machinery was still at the site, providing historic value. An overgrown trail provided access to the coastal western hemlock (*Tsuga heterophylla*) forest above, from the mixed forest on the bench with the campsites. The section of park on the north side of the inlet remained undeveloped. Although this inlet had experienced extensive logging operations in past, the hills around Tzoonie Narrows did not show any visible signs.

Figure 12: Tzoonie Narrows Recreation Site Topographic map



showing boundaries

3.0 Materials and Methods

3.1 Materials

With the project being located outside of the Vancouver area in Sechelt, a number of transportation sources had to be utilized. For the transportation to and from the study area, the following means of transportation were used:

- Cargo Van
- BC Parks Jeep
- Langdale Ferry
- BC Parks ranger's power boat
- BCIT Zodiac & motor

The materials used to complete the project were as follows:

- BRIM methods
- Compass
- Notebook & Pencil
- 35mm SLR camera with a 50mm lens
- 50m Eslon tape

3.2 BRIM Methods

The Backcountry Recreation Impact Monitoring methods are a set of site assessment procedures used to determine the impact that had occurred on a given "site." A "site" as defined in the BRIM procedures, is the area of an individual campsite and was comprised of the area, which had visible signs of being used or impacted (BRIM Methods, 1994). The BRIM procedures pertained to both campsites and trails with similar procedures for assessing each. For the purposes of this assessment, only the campsite procedures were used.

The Backcountry Recreation Impact Monitoring methods were used on the nine recreation sites in the Marine Park. The Brim methods were performed during the subsequent visits between November 10th 1999, and April 15th 2000. Though site assessments were best done in the spring or summer, these nine sites were assessed during the winter because of the study time frame of the student crew.

The BRIM procedures for campsites consisted of a three-page form see Appendix 2 for an example. On the top of the form the evaluators name, date of evaluation and the park and site name/# were recorded. There were four main objectives for the procedures,

- Location of Site
- Site Description
- Photo Documentation
- Camping Impact Analysis.

3.2.1 Location of Site

The general location of the study area was recorded (ex. Sechelt Inlet, Salmon Inlet, Narrows Inlet) as well as the recreation site location (ex. Nine-Mile Point, Halfway Beach, Thornhill). Within each recreation site, separate “campsites” for the purpose of the BRIM methods were established and recorded as Site A, Site B, Site C, etc. These sites had four types of information collected on them for future reference, NTS map # and UTM coordinates if available, and a location description.

Each “recreation site” was given a site location to ensure that in future assessments, the exact location of the site could be determined. A Center Point (CP) for each of these sites was established and tied in with a Tie In Point (TP). The TP was established using an azimuth and corresponding distance from the CP. Generally the TP was a significantly recognizable structure or landmark, usually the largest or most species distinct tree in the vicinity of the site. Once the site had been tied in, the BRIM procedures for Site Description were used.

3.2.2 Site Description

The site was documented for its specific features and design. Features such as trails, Tie In Points, Vegetation lines, Fire Pits, along with design characteristics mainly the shape of the site. These features were incorporated into a site sketch map outlining what the site looked like.

The site diagram was a simple sketch of the site. Measurements were taken radiating around the site from the center point, and then sketched to scale. Special features such as fire pits, seats, and large woody debris were also sketched. All sketch maps were oriented north with the site Tie In Point location stated.

3.2.3 Photo Documentation

Photos were taken of each site for photographic documentation. The site was photographed from recorded points on the sketch map, and showed all areas of the site. The photo directions were also recorded on the sketch map, so that duplicate picture could be taken in future assessments from the same location and in the same direction. The photographs showed where impact had occurred, and can be used in subsequent assessments as a comparison.

3.2.4 Camping Impact Analysis

The BRIM methods included a form that rated the impact that occurred on a specific site. The form allocated a rating system of 0 to 5 for the degree of each type of impact to show the severity of the impact. Each of the specific types of impacts could have also been weighted to emphasize the levels of impact, but were not, because weighing is preferably done only after several years of assessments on the site. The rating system generally has the lowest impact at 1, with the most extreme impacts at 5. The following is a general description of the rating system.

- 1 - For levels of impact that are barely visible
- 2 - For levels of impact that are more evident
- 3 - For levels of impact that are visible
- 4 - For levels of impact that are great visible
- 5 - For levels of impact that are extremely visible

The parameters assessed with the BRIM methods included;

1. (VDW) ⇒ Vegetation Density/Wear
2. (VC) ⇒ Vegetation Composition
3. (BSA) ⇒ Bare Soil Area
4. (FLSS) ⇒ Forest Litter/Surface Soil
5. (TD) ⇒ Tree Damage
6. (TRE) ⇒ Tree Root Exposure
7. (NF) ⇒ Natural Fuels
8. (SA) ⇒ Site Alteration
9. (CS) ⇒ Cleanliness & Sanitation
10. (STD) ⇒ Social Trail Development
11. (RD) ⇒ Riparian Damage

Each parameter had a set of criteria used to determine the level of impact (Appendix 2).

4.0 Results and Discussion

To assess the impact and use that has occurred on the eight existing recreation sites plus the one undeveloped site, the BRIM methods were applied (**Table I**), the data set for the campsites is incomplete; however, the assessments for two of the sites on the east shoreline of Sechelt Inlet have nearly been completed. Once a complete data set is formed for each of the park sites, complete analysis of visitor impact can be formed.

Table I. Recreation Site Locations

Location	Recreation Site	Site	NTS Map #	UTM Coordinates	GPS
Sechelt In. E	Tuwanek	1	N/A	N/A	N/A
Sechelt In. E	Middle Beach	2	N/A	N/A	N/A
Sechelt In. E	Nine-Mile Point	3	N/A	N/A	N/A
Sechelt In. W	Piper Point	4	N/A	N/A	N/A
Sechelt In. W	Skaiakos	5	N/A	N/A	N/A
Sechelt In. W	Halfway Beach	6	N/A	N/A	N/A
Salmon In.	Kunechin Point	7	N/A	N/A	N/A
Salmon In.	Thornhill	8	N/A	N/A	N/A
Narrows In.	Tzoonie Point	9	N/A	N/A	N/A

4.1 Sechelt Inlet East Shoreline Recreation Sites

4.1.1 Tuwanek Recreation Site

The results of the campsite impact assessments at Tuwanek sites A, B, C, D, E, F are shown in (**Table II**).

Table II. Tuwanek BRIM Methods Data

Site	VDW	VC	BSA	FLSS	TD	TRE	NF	SA	CS	STD	RD
A	5	N/A	5	N/A	2	5	0	0	2	1	N/A
B	4	4	4	N/A	1	3	1	4	1	1	N/A
C	5	N/A	5	N/A	2	1	1	4	1	0	N/A
D	4	3	4	N/A	1	3	2	0	0	1	N/A
E	5	N/A	5	N/A	0	1	0	3	1	1	N/A
F	5	N/A	5	N/A	1	0	0	0	0	2	5

Rating (1 minor impact occurring ⇔ 5 extreme impact occurring)

- (VDW) ⇒ Vegetation Density/Wear
- (VC) ⇒ Vegetation Composition
- (BSA) ⇒ Bare Soil Area
- (FLSS) ⇒ Forest Litter/Surface Soil
- (TD) ⇒ Tree Damage
- (TRE) ⇒ Tree Root Exposure
- (NF) ⇒ Natural Fuels
- (SA) ⇒ Site Alteration
- (CS) ⇒ Cleanliness & Sanitation
- (STD) ⇒ Social Trail Development
- (RD) ⇒ Riparian Damage

4.1.1.1 Campsite A: Photo Documentation, Sketch Maps



Figure 13: Tent pad in Campsite A, Tuwanek Recreation Site

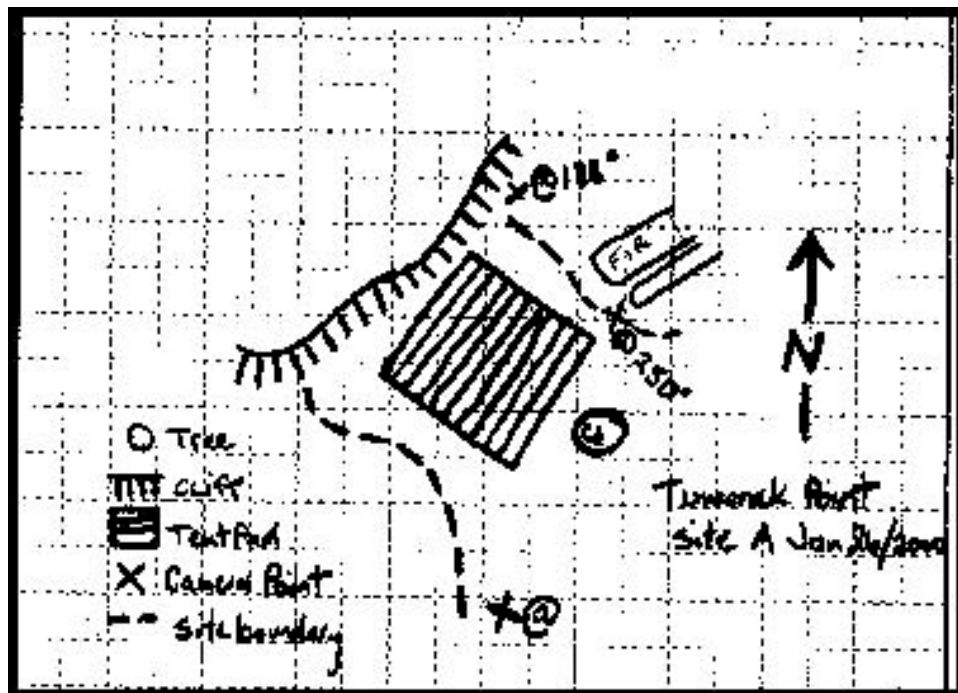


Figure 14: Sketch map of Campsite A, Tuwanek Recreation Site

4.1.1.2 Campsite B: Photo Documentation, Sketch Maps



Figure 15: Fire pit in Campsite B, Tuwanek Recreation Site

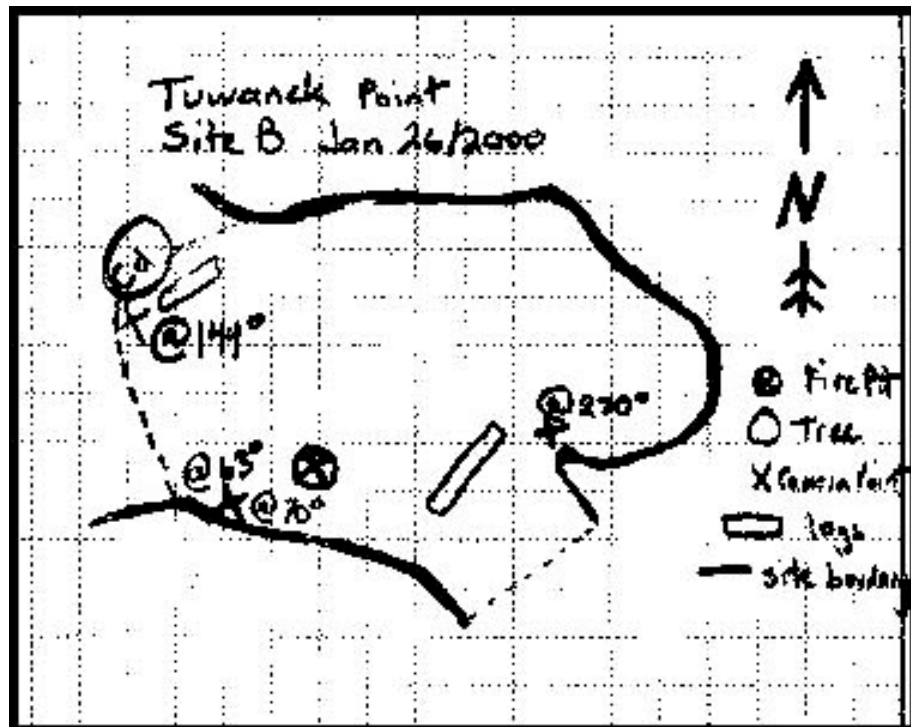


Figure 16: Sketch map of Campsite B, Tuwanek Recreation Site

4.1.1.3 Campsite C: Photo Documentation, Sketch Maps



Figure 17: Communal fire ring at Campsite C, Tuwanek Recreation Site

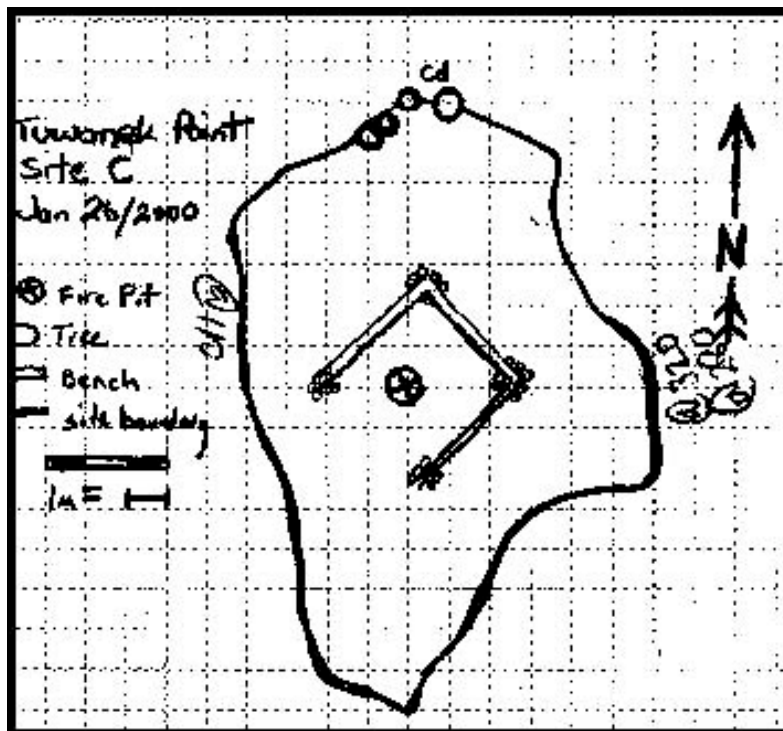


Figure 18: Sketch map of Campsite C, Tuwanek Recreation Site

4.1.1.4 Campsite D: Photo Documentation, Sketch Maps



Figure 19: Campsite D, Tuwanek Recreation Site

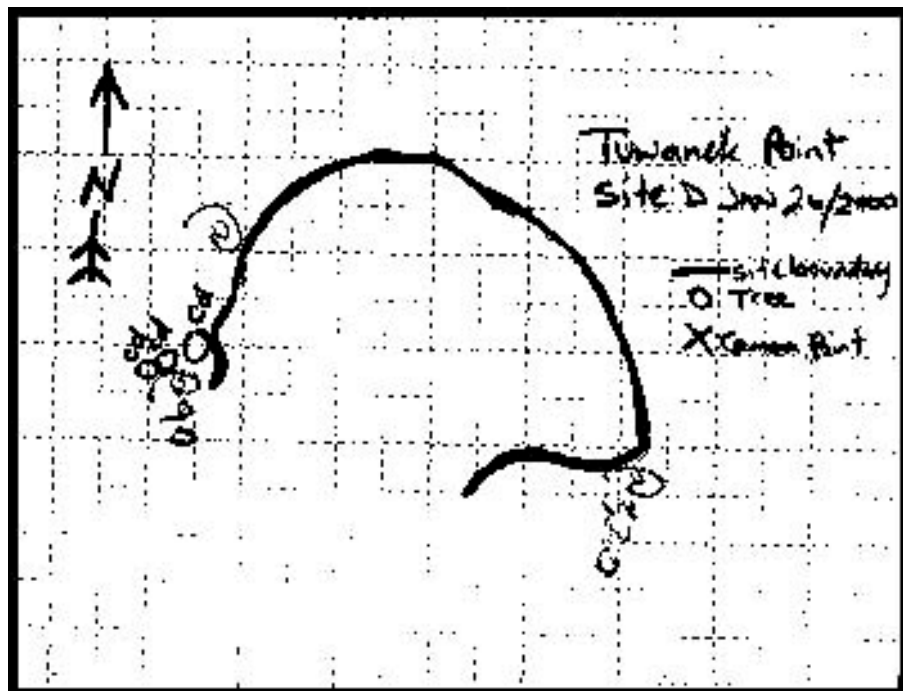


Figure 20: Sketch map of Campsite D, Tuwanek Recreation Site

4.1.1.5 Campsite E: Photo Documentation, Sketch Maps



Figure 21: Campsite E, Tuwanek Recreation Site

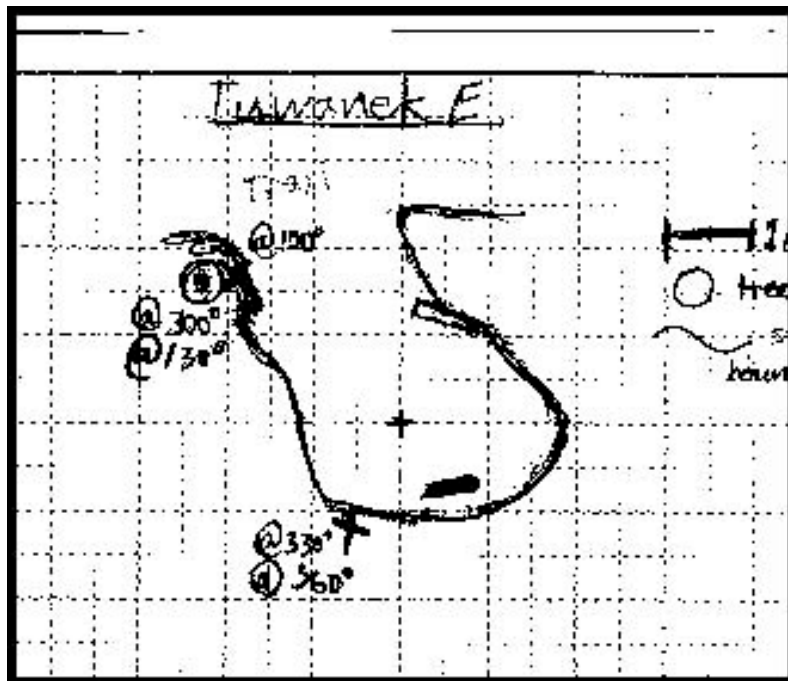


Figure 22: Sketch map of Campsite E, Tuwanek Recreation Site

4.1.1.6 Campsite F: Photo Documentation, Sketch Maps



Figure 23: Campsite F, Tuwanek Recreation Site

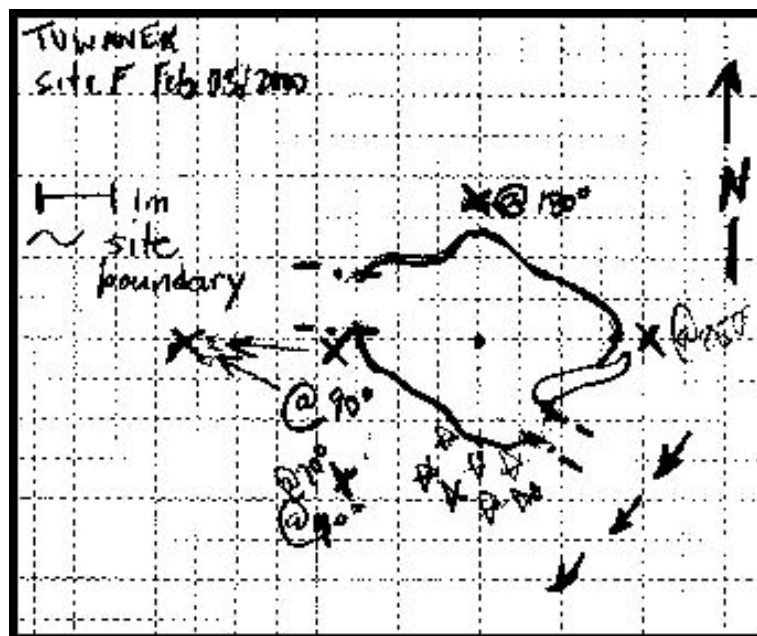


Figure 24: Sketch map of Campsite F, Tuwanek Recreation Site

4.1.1.7 Tuwanek Discussion

Tuwanek showed high ratings in Vegetation Density Wear, Bare Soil Area and Tree Root exposure. The close proximity to Sechelt allowed easy access and therefore higher amounts use. All the campsites were mostly denuded of vegetation resulting in a higher Bare Soil Area, and Tree Root exposure becoming more apparent. One tent pad had been previously installed to concentrate impacts in one location, additional tent pads would allow the sites to rejuvenate with vegetation and prevent further expansion of the campsites. The fire ring present was installed by BC Parks and seemed substantial enough to support the entire recreation site. Tuwanek showed site development associated with the fire ring, but increased the effect of it being a communal fire ring. The installed pit toilet was located adequately for the entire recreation site, but was of concern because of its close proximity to the nearby creek that was the only water source.

4.1.2 Middle Beach Recreation Site

The Middle Beach sites A, B, C had the BRIM methods done, and (**Table III**) shows the results of the methods.

Table III. Middle Beach BRIM Methods Results

Site	VDW	VC	BSA	FLSS	TD	TRE	NF	SA	CS	STD	RD
A	5	N/A	4	N/A	1	2	1	0	5	1	N/A
B	5	N/A	5	N/A	4	1	2	4	4	2	N/A
C	4	1	5	N/A	0	0	0	0	3	1	N/A

Rating (1 minor impact occurring ⇔ 5 extreme impact occurring)

- (VDW) ⇒ Vegetation Density/Wear
- (VC) ⇒ Vegetation Composition
- (BSA) ⇒ Bare Soil Area
- (FLSS) ⇒ Forest Litter/Surface Soil
- (TD) ⇒ Tree Damage
- (TRE) ⇒ Tree Root Exposure
- (NF) ⇒ Natural Fuels
- (SA) ⇒ Site Alteration
- (CS) ⇒ Cleanliness & Sanitation
- (STD) ⇒ Social Trail Development
- (RD) ⇒ Riparian Damage

4.1.2.1 Campsite A: Photo Documentation, Sketch Maps



Figure 25: Campsite A, Middle Beach Recreation Site

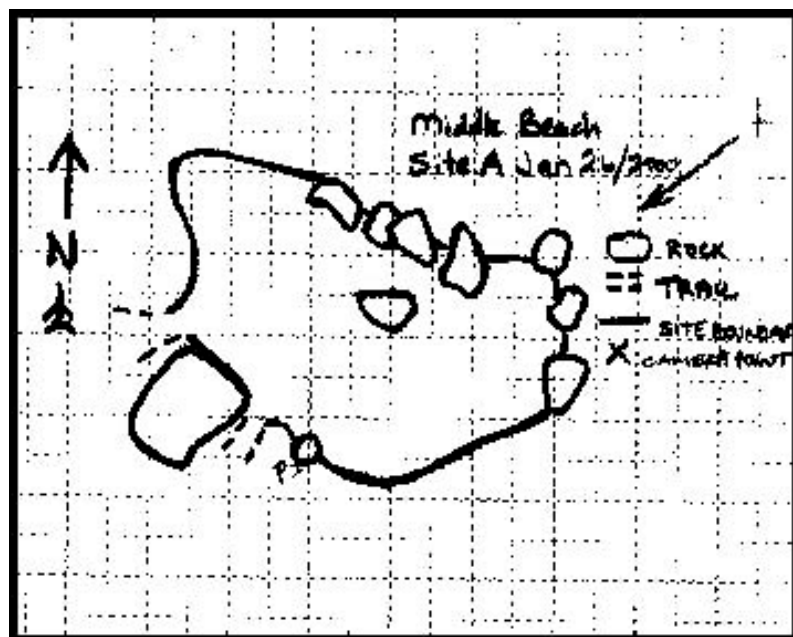


Figure 26: Sketch map of Campsite A, Middle Beach Recreation Site

4.1.2.2 Campsite B: Photo Documentation, Sketch Maps



Figure 27: Campsite B, Middle Beach Recreation Site

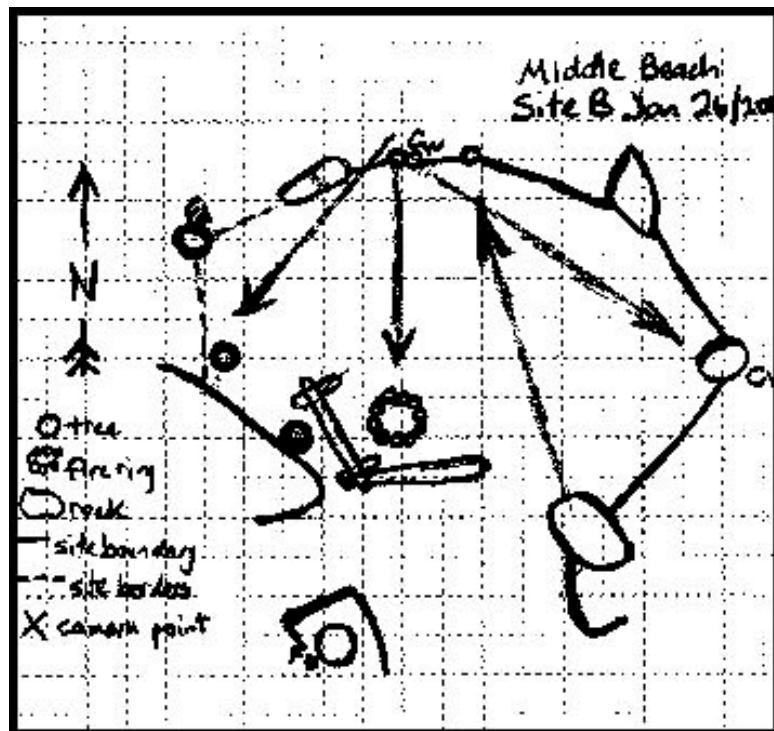


Figure 28: Sketch map of Campsite B, Middle Beach Recreation Site

4.1.2.3 Campsite C: Photo Documentation, Sketch Maps



Figure 29: Campsite C, Middle Beach Recreation Site

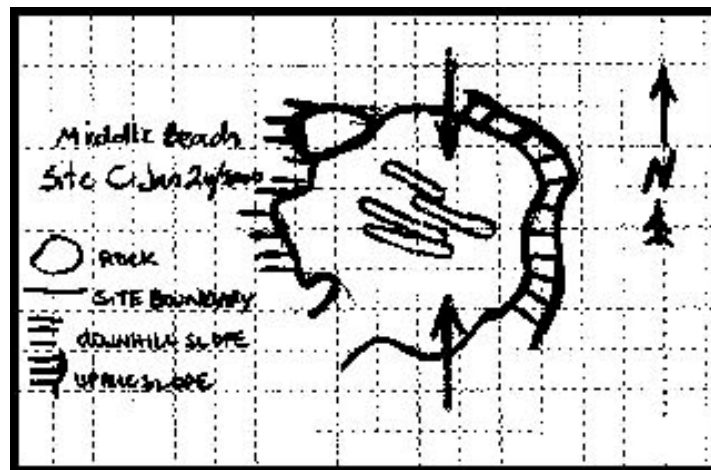


Figure 30: Sketch map of Campsite C, Middle Beach Recreation Site

4.1.2.4 Middle Beach Discussion

Middle Beach had high ratings of soil impact and lacked large amounts of ground vegetation. The previous usage of the site for aquaculture had left many areas denude of vegetation, and large amounts of garbage. There were large amounts of half buried pipes, metal, broken glass and nets on the foreshore. The garbage needs to be removed to bring the site up to a park level. The lack of vegetation was throughout the site, and was heavily impacted. The removal of the buried pipes and other site clean up would further impact these soils, therefore management of rejuvenating these soils are only required, once these practices have taken place. The distances between Middle Beach and the recreation sites on either side (Tuwanek, Nine-Mile Point), are short enough that they would accommodate for Middle Beach if it were closed for improvements.

4.1.3 Nine-Mile Point Recreation Site

The Nine-Mile Point sites A, C, D, E, F had the BRIM methods done, and the results are in the following (Table IV).

Table IV. Nine-Mile Point BRIM Methods Results

Site	VDW	VC	BSA	FLSS	TD	TRE	NF	SA	CS	STD	RD
A	5	N/A	4	N/A	1	3	2	3	2	3	0
B	4	3	3	N/A	2	0	3	4	3	0	5
C	5	N/A	5	N/A	4	4	3	5	2	2	3
D	5	N/A	5	N/A	3	2	4	0	1	3	N/A
E	3	4	2	N/A	2	0	1	0	1	1	N/A
F	5	N/A	5	N/A	1	1	1	3	1	1	N/A

Rating (1 minor impact occurring \leftrightarrow 5 extreme impact occurring)

- (VDW) \Rightarrow Vegetation Density/Wear
- (VC) \Rightarrow Vegetation Composition
- (BSA) \Rightarrow Bare Soil Area
- (FLSS) \Rightarrow Forest Litter/Surface Soil
- (TD) \Rightarrow Tree Damage
- (TRE) \Rightarrow Tree Root Exposure
- (NF) \Rightarrow Natural Fuels
- (SA) \Rightarrow Site Alteration
- (CS) \Rightarrow Cleanliness & Sanitation
- (STD) \Rightarrow Social Trail Development
- (RD) \Rightarrow Riparian Damage

4.1.3.1 Campsite A: Photo Documentation, Sketch Maps



Figure 31: Campsite A, Nine-Mile Point Recreation Site

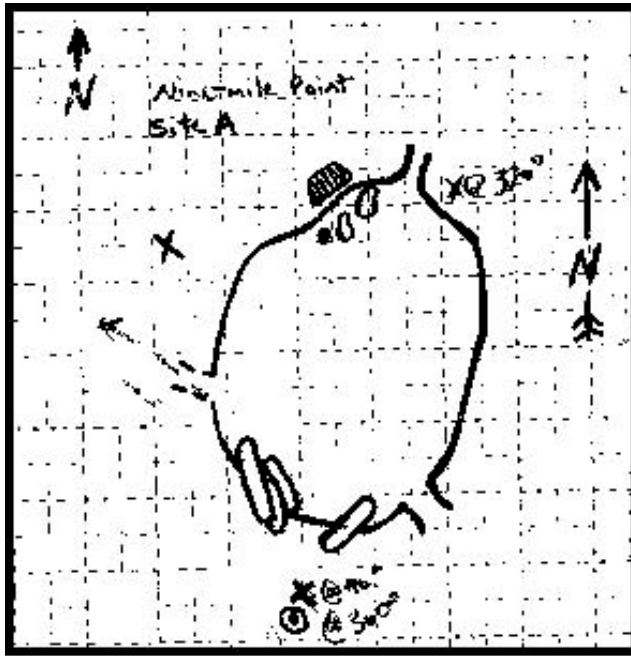


Figure 32: Sketch map of Campsite A, Nine-Mile Point Recreation Site

4.1.3.2 Campsite B: Photo Documentation, Sketch Maps



Figure 33: Campsite B, Nine-Mile Point Recreation Site

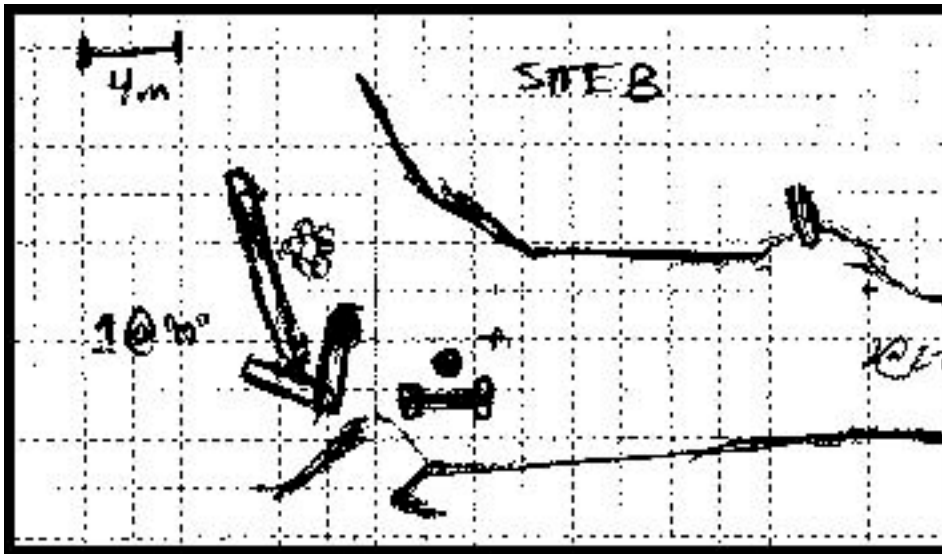


Figure 34: Sketch map of Campsite B, Nine-Mile Point Recreation Site

4.1.3.3 Campsite C: Photo Documentation, Sketch Maps



Figure 35: Campsite C, Nine-Mile Point Recreation Site

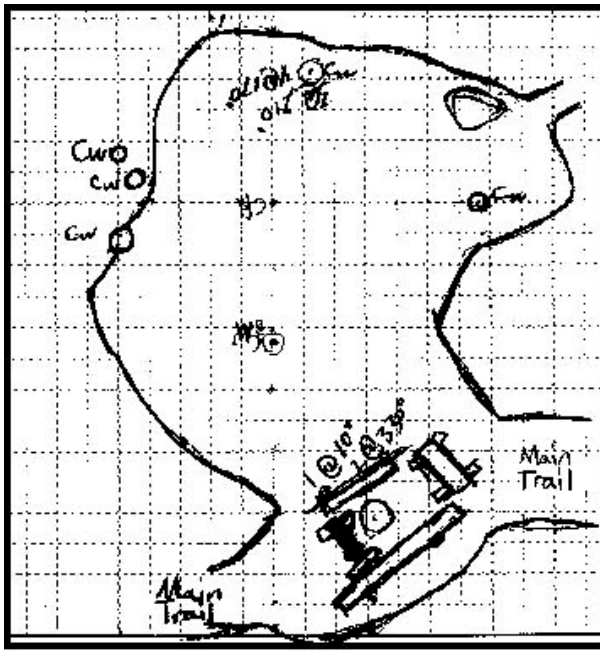


Figure 36: Sketch map of Campsite C, Nine-Mile Point Recreation Site

4.1.3.4 Campsite D: Photo Documentation, Sketch Maps



Figure 37: Campsite D, Nine-Mile Point Recreation Site

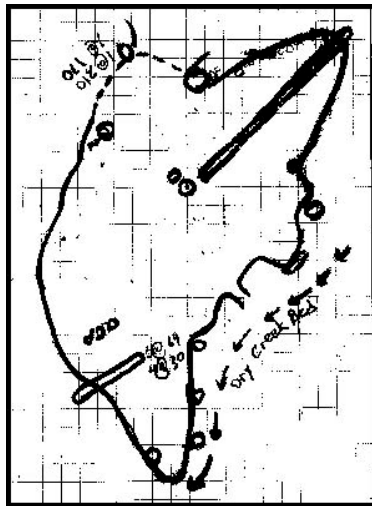


Figure 38: Sketch map of Campsite D, Nine-Mile Point Recreation Site

4.1.3.5 Campsite E: Photo Documentation, Sketch Maps



Figure 39: Campsite E, Nine-Mile Point Recreation Site

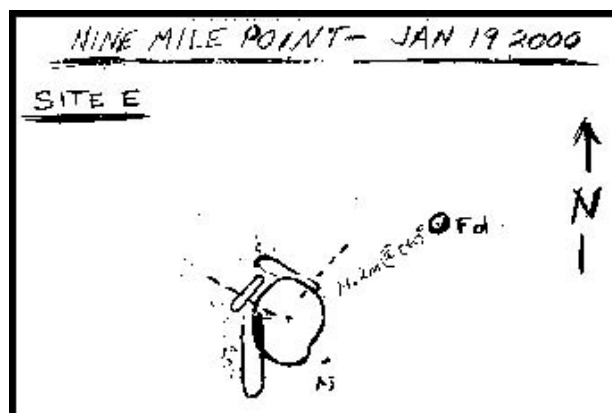


Figure 40: Sketch map of Campsite E, Nine-Mile Point Recreation Site

4.1.3.6 Campsite F: Photo Documentation, Sketch Maps



Figure 41: Campsite F, Nine-Mile Point Recreation Site

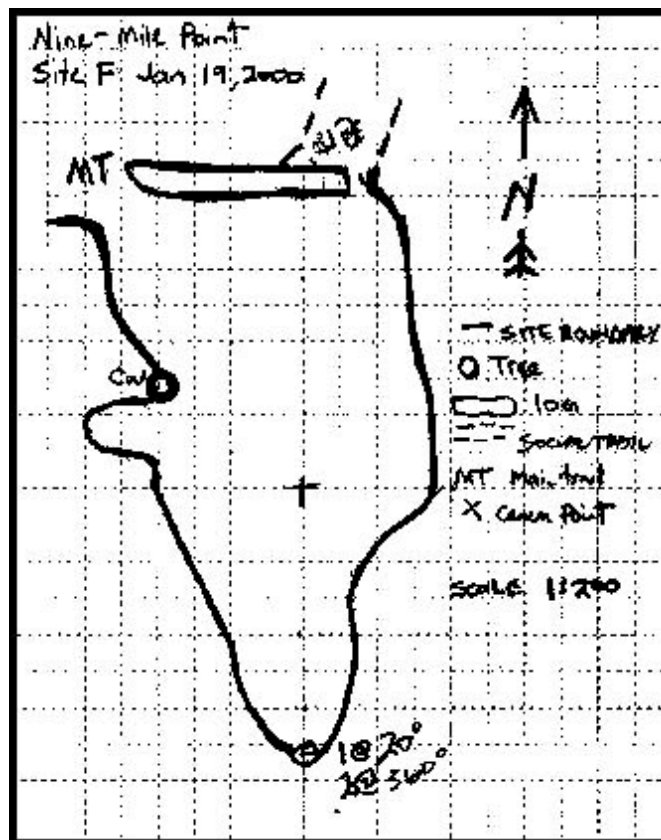


Figure 42: Sketch map of Campsite F, Nine-Mile Point Recreation Site

4.1.3.7 Nine-Mile Point Discussion

Nine-Mile Point was the largest of the recreation sites. Large amounts of use were visible, which resulted in large areas denude of vegetation and large amounts of bare soil area. The campsites would benefit from tent pads being installed because of high levels of mucking and root exposure. BC Parks installed two-fire rings, with one on either side of the creek. These fire rings seemed to be properly spaced, and accommodated most of the campsites. The pit toilet was centrally located to provide short distances to all campsites, but limited use for the two campsites on the opposite side of the creek. The creek crossing was inadequate to provide comfortable safe passage and resulted in large amounts of riparian damage. A food cache was provided up the trail from the campsites, but was not a far enough distance away from the closest site to be effective. Nine-Mile Point provided campsites to accommodate all sizes of parties.

4.2 Sechelt Inlet West Shoreline Recreation Sites

4.2.1 Piper Point Recreation Site

The result of the assessment at Piper Point site A is shown in (Table V).

Table V. Piper Point BRIM Methods Data

Site	VDW	VC	BSA	FLSS	TD	TRE	NF	SA	CS	STD	RD
A	5	N/A	5	N/A	3	5	2	2	3	4	N/A

Rating (1 minor impact occurring \leftrightarrow 5 extreme impact occurring)

- (VDW) \Rightarrow Vegetation Density/Wear
- (VC) \Rightarrow Vegetation Composition
- (BSA) \Rightarrow Bare Soil Area
- (FLSS) \Rightarrow Forest Litter/Surface Soil
- (TD) \Rightarrow Tree Damage
- (TRE) \Rightarrow Tree Root Exposure
- (NF) \Rightarrow Natural Fuels
- (SA) \Rightarrow Site Alteration
- (CS) \Rightarrow Cleanliness & Sanitation
- (STD) \Rightarrow Social Trail Development
- (RD) \Rightarrow Riparian Damage

4.2.1.1 Campsite A: Photo Documentation, Sketch Maps



Figure 43: Campsite A, Piper Point Recreation Site

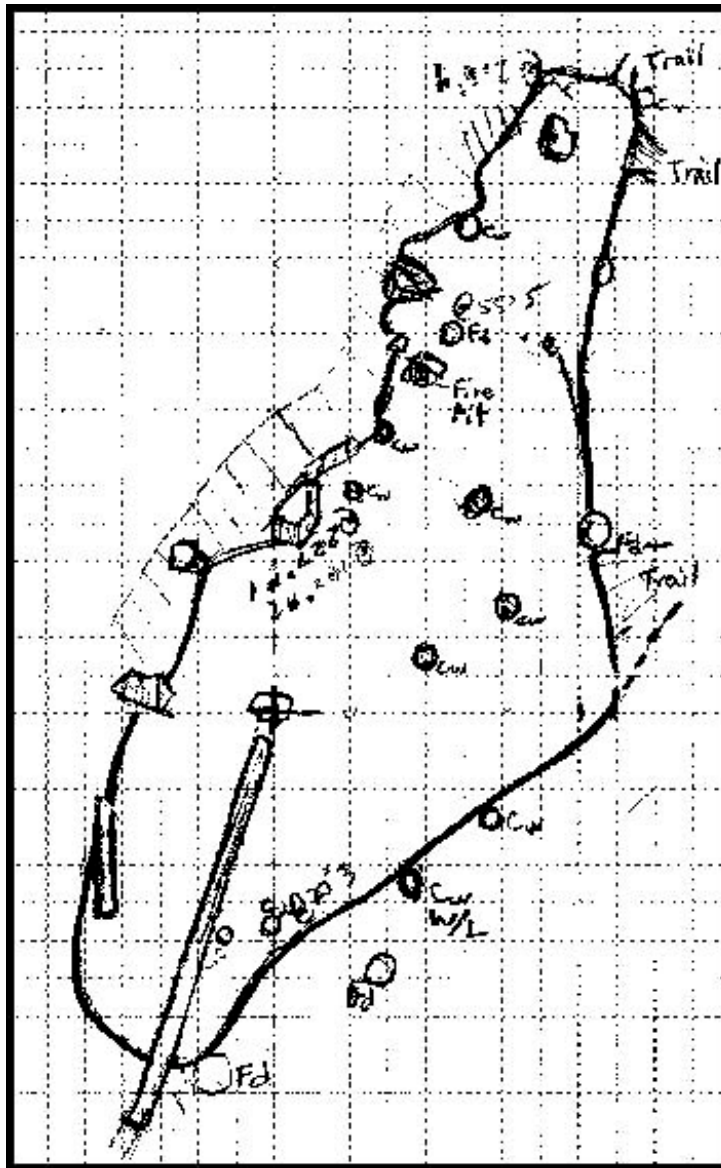


Figure 44: Sketch map of Campsite A, Piper Point Recreation Site

4.2.1.2 Piper Point Discussion

The Piper Point site was located on a bench above the high water mark next to the beach. The area showed high amounts of denude vegetation and bare soil areas. Any increase in visitation would also increase the tree root exposure, which was already rated high. Most of the vegetation within the site had been stripped as can be seen in (Figure 44). Several of the trees had multiple minor damage occurrences. Although this site was fairly open and spacious, there would likely be some more expansion to the cliff to the south, and towards the pit toilet to the north. Piper Point only had one campsite; therefore, the only social trails existing were beach access trails. Several well-developed trails were noted, and were likely for access to boats tied at different points along the beach.

4.2.2 Skaiakos Recreation Site



Figure 45: Skaiakos Recreation Site

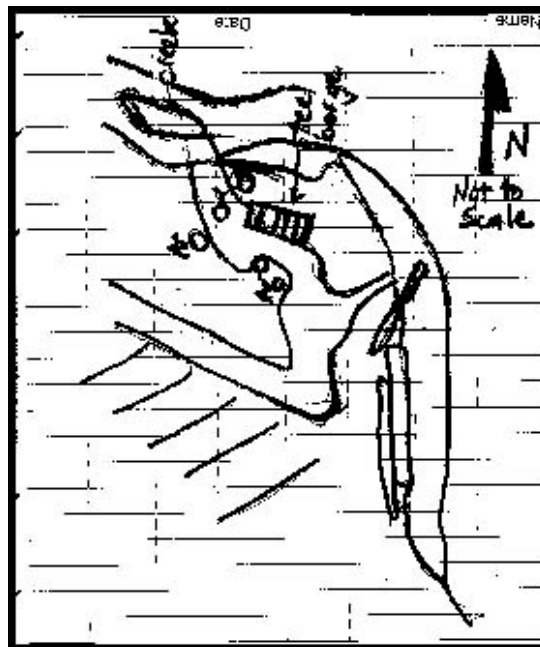


Figure 46: Sketch map of Skaiakos Recreation Site

4.2.2.1 Skaiakos Discussion

Skaiakos did not have the BRIM methods applied, as there were no signs distinct signs of overnight use. The lands adjacent to the recreation site had campsites, but were not assessed because they were not located within park boundaries. The site had level ground, and would be suitable for camping if some of the overgrown under brush was cleared. There was no pit toilet or fire pit available for use. The lands adjacent to the park were better suited for campsite use, and would be assets, to the park if they were included. If they were included site clean up would have to be completed to remove the remains of the past aquaculture use that had existed in the past.

4.2.3 Halfway Beach Recreation Site

The results of the assessments at Halfway Beach sites A, B, C, D are shown in (Table VI).

Table VI. Halfway Beach BRIM Methods Data

Site	VDW	VC	BSA	FLSS	TD	TRE	NF	SA	CS	STD	RD
A	5	N/A	4	N/A	0	1	1	0	2	1	N/A
B	5	N/A	4	N/A	5	1	3	5	3	5	N/A
C	4	4	0	N/A	3	1	2	0	1	1	N/A
D	4	4	0	N/A	0	2	2	0	2	4	N/A

Rating (1 minor impact occurring ⇔ 5 extreme impact occurring)

- (VDW) ⇒ Vegetation Density/Wear
- (VC) ⇒ Vegetation Composition
- (BSA) ⇒ Bare Soil Area
- (FLSS) ⇒ Forest Litter/Surface Soil
- (TD) ⇒ Tree Damage
- (TRE) ⇒ Tree Root Exposure
- (NF) ⇒ Natural Fuels
- (SA) ⇒ Site Alteration
- (CS) ⇒ Cleanliness & Sanitation
- (STD) ⇒ Social Trail Development
- (RD) ⇒ Riparian Damage

4.2.3.1 Campsite A: Photo Documentation, Sketch Maps



Figure 47: Campsite A, Halfway Beach Recreation Site

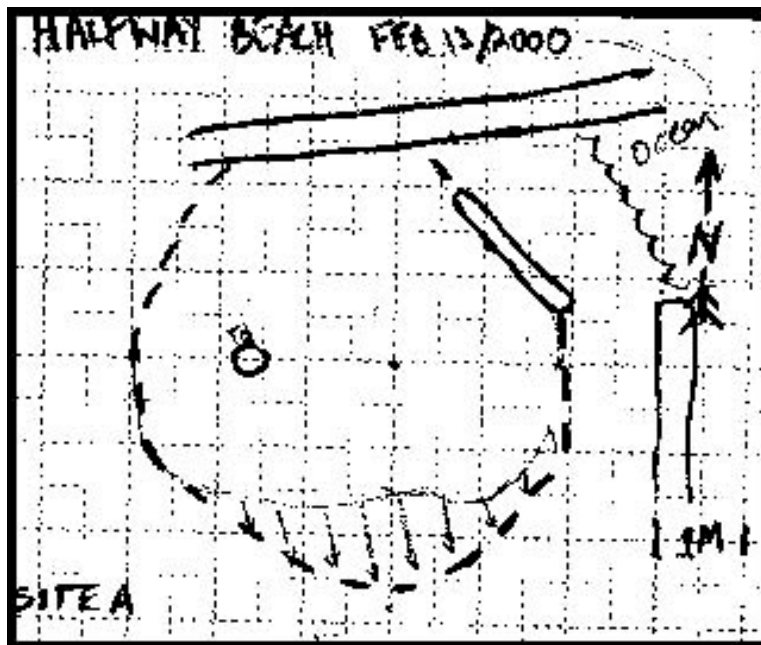


Figure 48: Sketch map of Campsite A, Halfway Beach Recreation Site

4.2.3.2 Campsite B: Photo Documentation, Sketch Maps



Figure 49: Campsite B, Halfway Beach Recreation Site

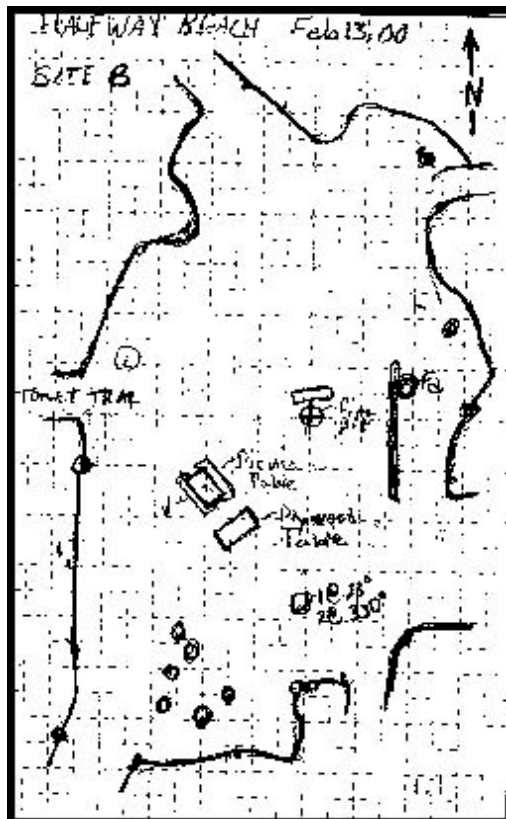


Figure 50: Sketch map of Campsite B, Halfway Beach Recreation Site

4.2.3.3 Campsite C: Photo Documentation, Sketch Maps



Figure 51: Campsite C, Halfway Beach Recreation Site

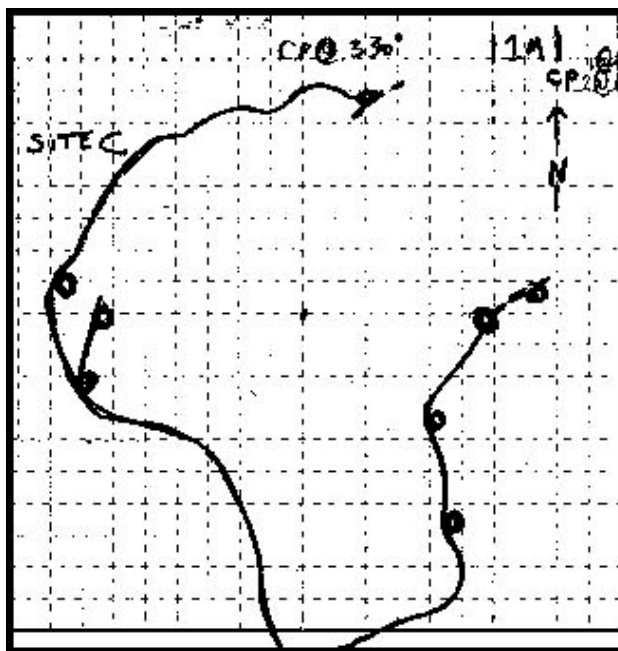


Figure 52: Sketch map of Campsite C, Halfway Beach Recreation Site

4.2.3.4 Campsite D: Photo Documentation, Sketch Maps



Figure 53: Campsite D, Halfway Beach Recreation Site

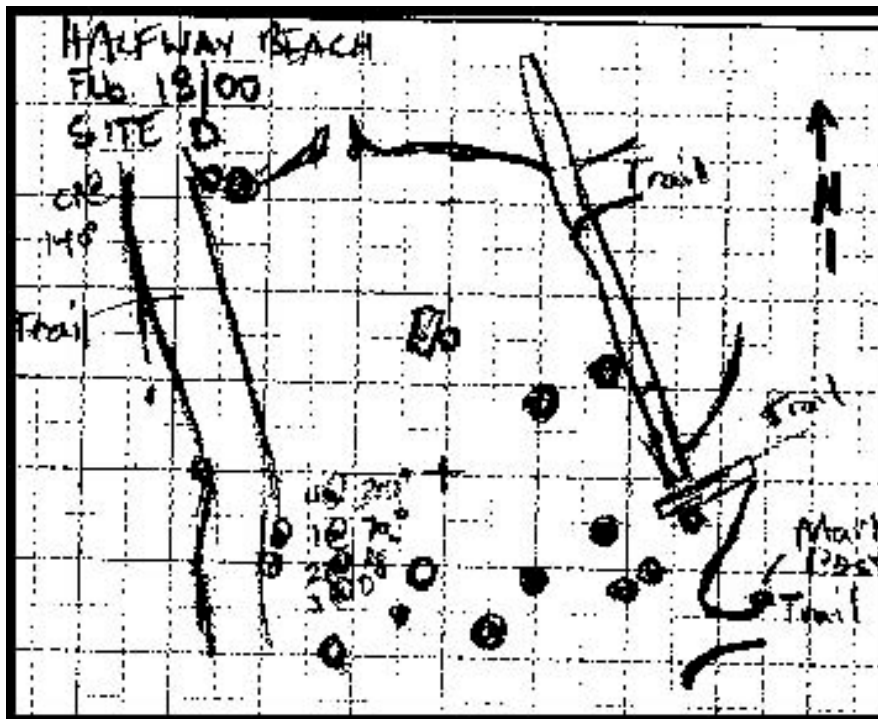


Figure 54: Sketch map of Campsite D, Halfway Beach Recreation Site

4.2.3.5 Halfway Beach Discussion

The Halfway Beach recreation site was set up for overnight trips, and was large enough to accommodate group camping. All of the campsites in Halfway Beach had high impacts to vegetation density. Levels of camper use, and camp maintenance have prevented revegetation. The majority of the trees in Halfway Beach were young, smooth barked alder. A large amount of tree damage was noted, especially in the form of carvings, chop marks, nails, and broken branches. The natural fuels at Halfway Beach were mostly in place and in abundance. The mixed forest around the recreation site provided natural fuels to replace any that had been removed. All the sites were connected by a trail system, which followed the water the length of the recreation site. Higher ratings were found with campsites that had more than one access point to the trail or beach.

4.3 Salmon Inlet Recreation Sites

4.3.1 Kunechin Point Recreation Site

The results of the assessment at Kunechin Point are shown in (Table VII).

Table VII. Kunechin Point BRIM Methods Data

Site	VDW	VC	BSA	FLSS	TD	TRE	NF	SA	CS	STD	RD
A	4	2	3	N/A	2	3	2	5	4	4	N/A
B	5	N/A	4	N/A	0	3	2	4	1	4	N/A
C	5	N/A	4	N/A	2	1	1	2	5	0	N/A
D	2	3	0	N/A	0	0	1	1	0	1	N/A
E	5	N/A	4	N/A	2	4	1	5	1	0	N/A

Rating (1 minor impact occurring ⇔ 5 extreme impact occurring)

- (VDW) ⇒ Vegetation Density/Wear
- (VC) ⇒ Vegetation Composition
- (BSA) ⇒ Bare Soil Area
- (FLSS) ⇒ Forest Litter/Surface Soil
- (TD) ⇒ Tree Damage
- (TRE) ⇒ Tree Root Exposure
- (NF) ⇒ Natural Fuels
- (SA) ⇒ Site Alteration
- (CS) ⇒ Cleanliness & Sanitation
- (STD) ⇒ Social Trail Development
- (RD) ⇒ Riparian Damage

4.3.1.1 Campsite A: Photo Documentation, Sketch Maps



Figure 55: Campsite A, Kunechin Point Recreation Site

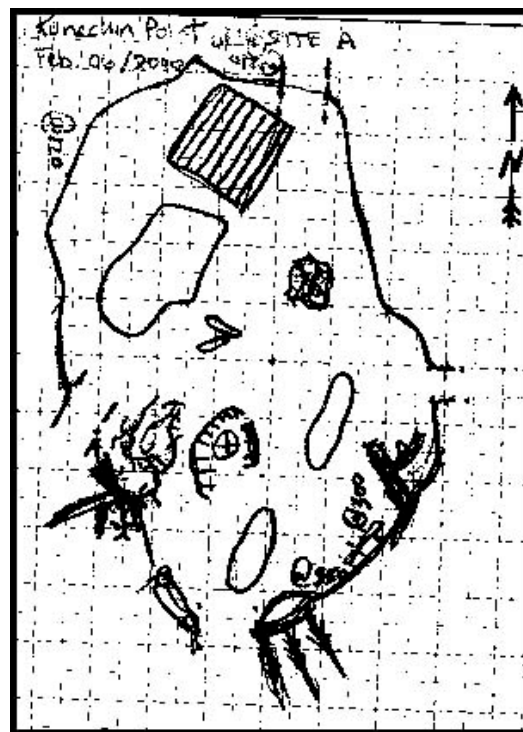


Figure 56: Sketch map of Campsite A, Kunechin Point Recreation Site

4.3.1.2 Campsite B: Photo Documentation, Sketch Maps



Figure 57: Campsite B, Kunechin Point Recreation Site

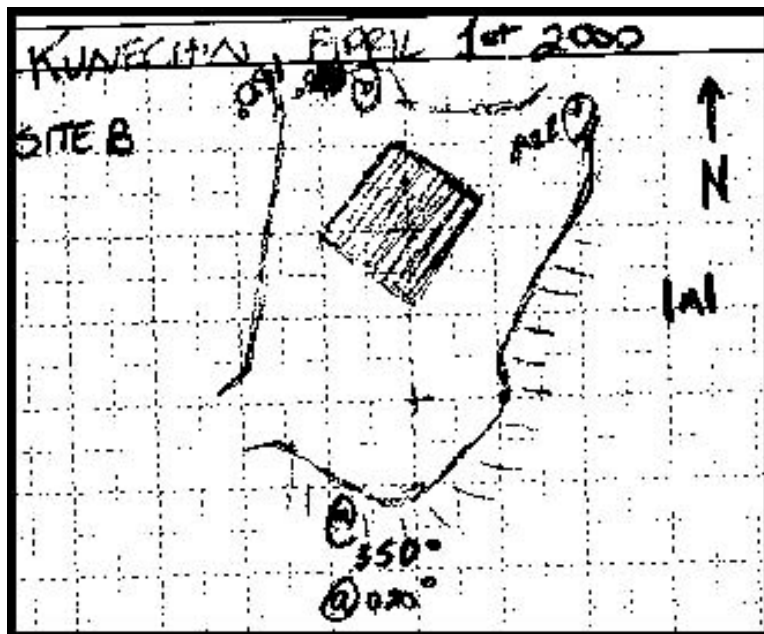


Figure 58: Sketch map of Campsite B, Kunechin Point Recreation Site

4.3.1.3 Campsite C: Photo Documentation, Sketch Maps



Figure 59: Campsite C, Kunechin Point Recreation Site

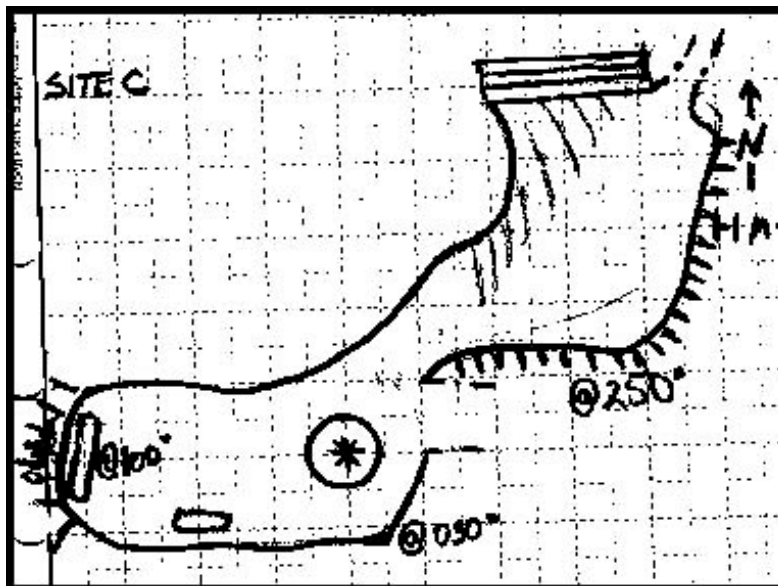


Figure 60: Sketch map of Campsite A, Kunechin Point Recreation Site

4.3.1.4 Campsite D: Photo Documentation, Sketch Maps



Figure 61: Campsite D, Kunechin Point Recreation Site

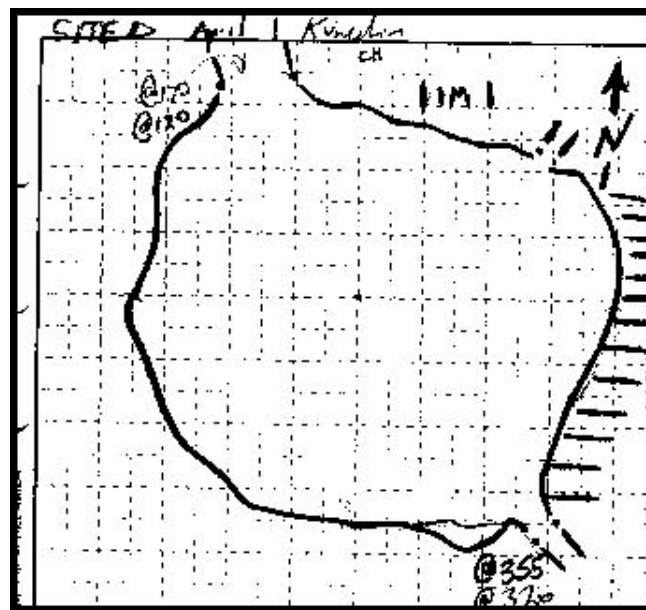


Figure 62: Sketch map of Campsite D, Kunechin Point Recreation Site

4.3.1.5 Campsite E: Photo Documentation, Sketch Maps



Figure 63: Campsite E, Kunechin Point Recreation Site

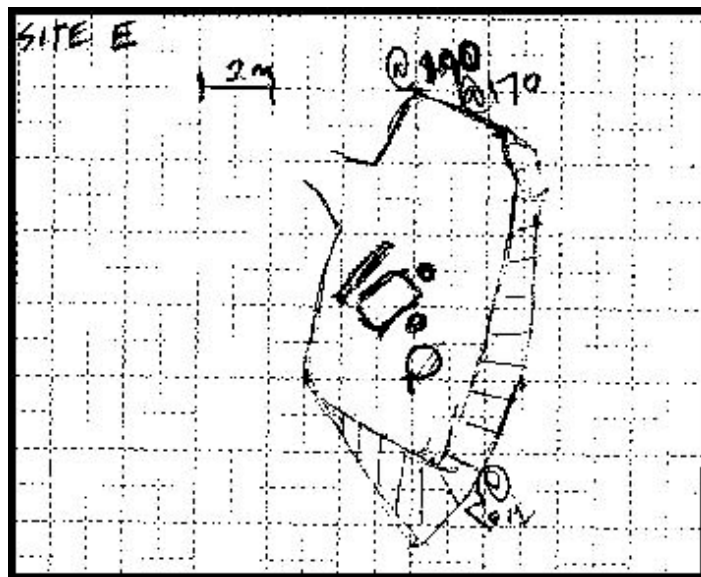


Figure 64: Sketch map of Campsite A, Kunechin Point Recreation Site

4.3.1.6 Kunechin Point Discussion

Campsites A, B, and C were located on Kunechin Point itself, which had significantly different physical characteristics compared to the rest of the Recreation Site. These campsites had high levels of impact from bare soil, erosion and vegetation wear. The shallow soil and delicate moss cover have led to extensive exposed bare rock patches and prevented any regrowth on the sites. The site alteration consisted mainly of tables and benches built out of driftwood. BC parks had installed two tent pads in campsites A and B. These campsites had higher ratings because of garbage trapped under the tent pads, and garbage left by a fire ring. The two sites (A and B) that were located on the point had social trails running between the two sites, and to the beach accesses. The sites were located close to each other, so the trails were of minor concern.

The other campsites at Kunechin Point recreation site were located within the bay at the northeast corner of the recreation site. Only campsite E had significant impact. The access to the beach had eroded from lack of vegetation do to campsite users. The vegetation wear and soil erosion in campsite E had resulted in a large percentage of the area having tree roots exposed. Although the roots have been exposed, the definite boundaries of the site have prevented it spreading.

4.3.2 Thornhill Recreation Site

The Thornhill Site A had the BRIM methods done; (**Table VIII**) shows the results of the methods.

Table VIII. Thornhill Creek BRIM Methods Results

Site	VDW	VC	BSA	FLSS	TD	TRE	NF	SA	CS	STD	RD
A	3	5	1	N/A	1	1	1	0	0	0	2
B	2	4	0	N/A	1	0	1	2	1	2	N/A

Rating (1 minor impact occurring \Leftrightarrow 5 extreme impact occurring)

- (VDW) \Rightarrow Vegetation Density/Wear
- (VC) \Rightarrow Vegetation Composition
- (BSA) \Rightarrow Bare Soil Area
- (FLSS) \Rightarrow Forest Litter/Surface Soil
- (TD) \Rightarrow Tree Damage
- (TRE) \Rightarrow Tree Root Exposure
- (NF) \Rightarrow Natural Fuels
- (SA) \Rightarrow Site Alteration
- (CS) \Rightarrow Cleanliness & Sanitation
- (STD) \Rightarrow Social Trail Development
- (RD) \Rightarrow Riparian Damage

4.3.2.1 Campsite A: Photo Documentation, Sketch Maps



Figure 65: Campsite A, Thornhill Creek Recreation Site

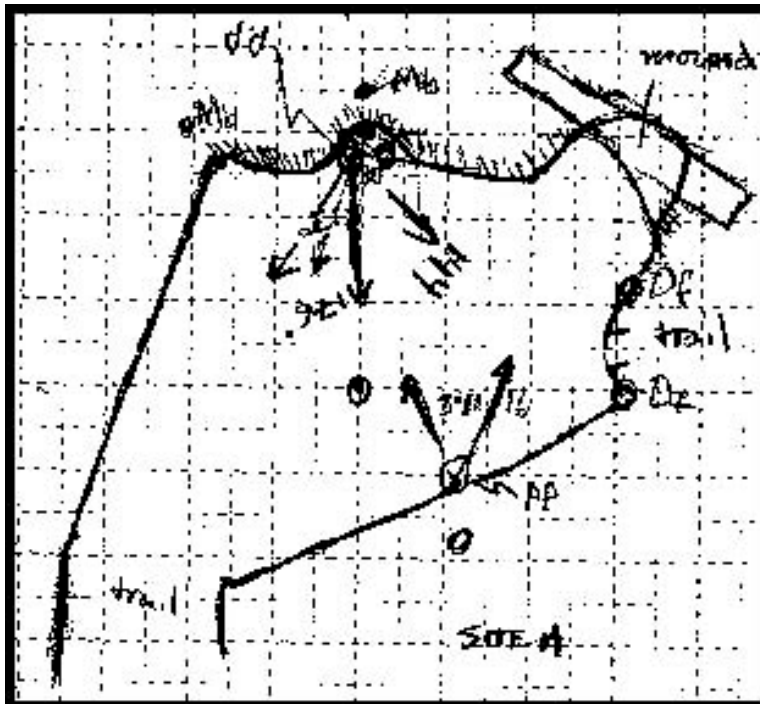


Figure 66: Sketch map of Campsite A, Thornhill Creek Recreation Site

4.3.2.2 Campsite B: Photo Documentation, Sketch Maps



Figure 67: Campsite B, Thornhill Creek Recreation Site

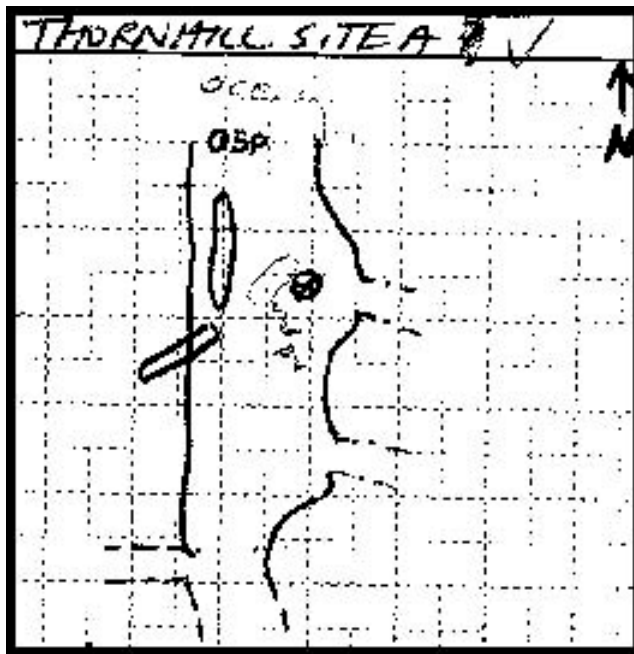


Figure 68: Sketch map of Campsite B, Thornhill Creek Recreation Site

4.3.2.3 Thornhill Creek Discussion

The vegetation was not significantly worn at Thornhill; the vegetation composition within the sites was extremely dissimilar to that of the surrounding areas. The large road / trail system that the campsites were located on have been revegetated mostly by a thick grass cover, with some mosses. The natural fuels at Thornhill were plentiful and did not seem to have been removed. The large amount of salmon berry throughout the site prevented access to the some of the natural fuels. The short distance to the ocean from the site provided large amounts of driftwood. Riparian damage was considered at campsite B because of the campsite boundary being eroded away by the ocean. The beach accesses trails were showing signs of erosion.

4.4 Narrows Inlet Recreation Sites

4.4.1 Tzoonie Narrows Recreation Site

The results of the assessments at Tzoonie Narrows sites A, B, C, and D are shown in (Table IX).

Table IX. Tzoonie Narrows BRIM Methods Data

Site	VDW	VC	BSA	FLSS	TD	TRE	NF	SA	CS	STD	RD
A	3	5	2	N/A	3	0	0	5	4	0	5
B	1	5	0	N/A	3	0	0	0	0	1	N/A
C	2	4	1	N/A	1	1	2	4	2	0	5

Rating (1 minor impact occurring ⇔ 5 extreme impact occurring)

- (VDW) ⇒ Vegetation Density/Wear
- (VC) ⇒ Vegetation Composition
- (BSA) ⇒ Bare Soil Area
- (FLSS) ⇒ Forest Litter/Surface Soil
- (TD) ⇒ Tree Damage
- (TRE) ⇒ Tree Root Exposure
- (NF) ⇒ Natural Fuels
- (SA) ⇒ Site Alteration
- (CS) ⇒ Cleanliness & Sanitation
- (STD) ⇒ Social Trail Development
- (RD) ⇒ Riparian Damage

4.4.1.1 Campsite A: Photo Documentation, Sketch Maps



Figure 69: Campsite A, Tzoonie Narrows Recreation Site

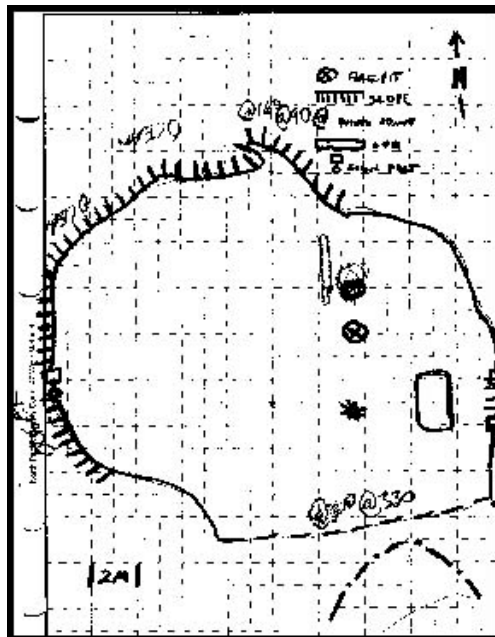


Figure 70: Sketch map of Campsite A, Tzoonie Narrows Recreation Site

4.4.1.2 Campsite B: Photo Documentation, Sketch Maps



Figure 71: Campsite B, Tzoonie Narrows Recreation Site

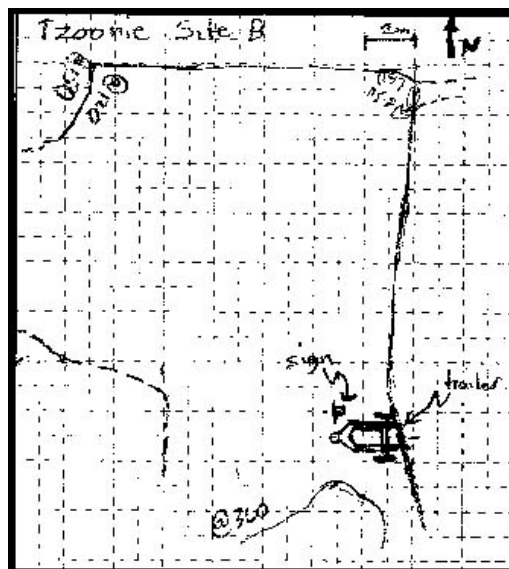


Figure 72: Sketch map of Campsite B, Tzoonie Narrows Recreation Site

4.4.1.3 Campsite C: Photo Documentation, Sketch Maps



Figure 73: Campsite C, Tzoonie Narrows Recreation Site

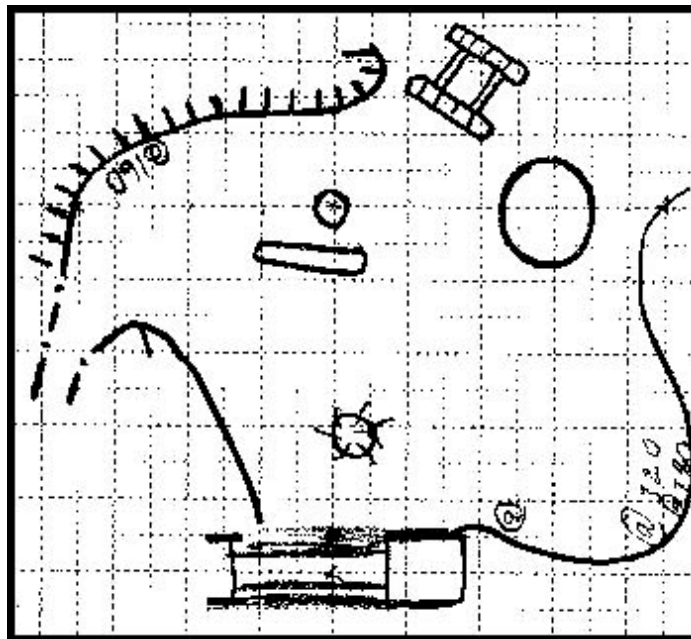


Figure 74: Sketch map of Campsite C, Tzoonie Narrows Recreation Site

4.4.1.4 Tzoonie Narrows Discussion

Tzoonie Narrows showed minor impacts on the vegetation and surrounding soil. The species diversity within the sites was extremely dissimilar to that of the surrounding areas. The large road / trail system on which the campsites are based had been revegetated mostly by a thick grass cover, with some mosses. Site alteration was high in campsites A and C. BC Parks had installed a fire ring at each one of those campsites, but regardless user made fire rings still remained. Site A had the development of a well structured table and some benches, along with a BC Parks installed sign posting board. Site B had the presence of an old boat trailer, which appeared to have been parked and abandoned. Tzoonie Narrows site A had large amounts of garbage debris left on and around the table, along with in the fire pits and surrounding area. Site A, and C of Tzoonie Narrows had high ratings of riparian damage because the sites had over half of their boundaries effected by the oceans waves eroding away the soil.

5.0 Recommendations

With the data gathered from the BRIM assessments, a number of recommendations have been made for the recreation sites in Sechelt Inlets Marine Park. Due to whether difficulties, all of the objectives for the project were not completed, therefore a couple of recommendations are part of or the are a objective of the project.

The recommendations made are as follows:

- Assess what type of wilderness experience the Sechelt Inlets Marine Park is trying to offer, and establish a set of criteria on acceptable levels of impact in order to meet those objectives.
- Manage sites where high ratings occurred, and look for ways to reduce the high levels of impact that have occurred.
- Wherever possible restore current impacts to natural levels, such as removing garbage, unwanted site development, nails in trees, etc, so that any future assessments can be accurately recorded. (A present high rating will remain high if not dealt with).
- Install any facilities that are lacking, such as benches around BC Parks installed fire rings, to avoid visitors altering or modifying sites.
- Follow up BRIM assessments in future years, to determine whether impact is increasing or decreasing.
- Acquire lands between existing sites where distances are high, to allow for a more evenly spaced out paddling circuit.
- Implement a rotation system to allow for regrowth on sites, where impact has reached extreme ratings.

6.0 Conclusions

The nine existing recreation sites in Sechelt Inlets Marine Park are set up to accommodate overnight use with a medium degree of wilderness experience. The sites have higher degrees of impact in some criteria, which were most likely, the result of past use over large periods of time. These impacts will take time to recover and therefore management of these impacts is important. Some sites showed signs of heavy use and with these sites; they may be better off left impacted, to preserve areas where impact is more manageable.

BC Parks facility development has resulted in pit toilets at all the recreation sites with the exception of Middle Beach, these toilets are properly spaced within the recreation sites, but located too close to water bodies so they pose sanitation concerns. Other developments such as fire pits are established at some sites, but are not consistent throughout the park. Depending on the amount of use that each site receives, these site developments should be considered, to reduce development from users that are not up to park standards.

The Sechelt Inlets Marine Park provides kayakers with a kayaking circuit for all levels. The sites located within Sechelt inlet allow for a comfortable days paddle, without being restricted by time or fitness level. The further distanced sites such as Kunechin Point, Thornhill Creek, and Tzoonie Narrows give the more experienced paddlers, somewhere to go if they are looking for more of a challenge. The distances to these sites are quite large, and to better utilize these sites, possible park additions should be looked at between them to reduce the paddling distance.

From the results of the BRIM analysis, it was apparent that the further distant recreation sites such as Tzoonie Narrows and Thornhill experienced much lower levels of impact. Kunechin was found to be impacted at the sites on the point, which need special management considerations in the future. The other recreation sites in the Sechelt Inlet Marine Park all showed significant levels of impact and therefore should be serious considerations for future management decisions. The development of Skaiakos and Middle Beach recreation sites would allow park user impacts to be spread throughout the park. The sites closer to Sechelt such as Tuwanek, Nine-Mile Point, Halfway Beach, and Piper Point were all considerably impacted and should be the first priority for management.

7.0 References

7.1 Instruction Pamphlets

Shultz, R.O. 1994. Backcountry Recreation Impact Monitoring methods. Resource Office

Thompson, 1977. A Plan for Marine Recreation in the Sechelt Inlets. Parks Branch

BC Parks, 1981. Master Plan for Sechelt Inlets Marine Recreation Area. District Office

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7.2 Personal Communications

Bawtinheimer, Senior Park Planner, Garibaldi/Sunshine Coast District, BC Parks. 1999.

Jenkins, Area Supervisor, Garibaldi/Sunshine Coast District, BC Parks. 1999.

Tisdale, Recreation Officer, Garibaldi/Sunshine Coast District, BC Parks. 1999.

7.3 Web Addresses

BC Parks, 1999. Catalogue Of Opportunities. [Web page]
<http://www.mstar-ca.com>

BC Parks, 1999. Welcome. [Web page]
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<http://www.thesunshinecoast.com/secheltchamber>

District of Sechelt, 1999. Kayaking. [Web page]
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Appendices

Appendix 1: Terms of Reference

TERMS OF REFERENCE

SECHELT INLETS MARINE PARK

Project Name	Sechelt Inlets Marine Park - Recreational Use and Impact Study
Originating Office	Garibaldi/Sunshine Coast District
Purpose	<p>To provide an overview of the condition of the present recreation sites, and an overview of the possible boating circuit as it exists now.</p> <p>Objectives included are:</p> <ul style="list-style-type: none">• To document the impact and use that has occurred on the eight existing rec. sites plus one undeveloped site, using the Backcountry Recreation Impact Monitoring (BRIM) methods.• To provide an overview of the kayaking circuit as a whole, stating the strengths and weaknesses.• To analyze the crown lands within the inlets for future potential sites.• To determine the number of users in the parks.

Scope of the Study

Sechelt Inlets Provincial Park was established in 1980 as a Recreation Area to provide boaters with overnight, and day-use facilities in the Sechelt, Salmon, and Narrows Inlets. The Park totals 142 ha. is comprised of 6 areas ranging from less than 1ha., to 79 ha, and was recently designated Class A status. Two of the former sites, Tuwanek Beach and Nine Mile Point are now incorporated within the new Mount Richardson Park, but will be included in this study because of their marine access. One undeveloped site located in the Mount Richardson Park is being used by kayakers, and will be assessed for potential facility development.

The study will begin using the BRIM methods to assess the existing sites for their levels of impact. Once the impact assessments are complete, research will be conducted as to the numbers of visitors visiting the park. This will be done by, consulting with the local park use permit (PUP) holders, kayak rental companies located in Sechelt, as well as using any information regarding boat launching from Porpoise Bay Provincial Park. An overview of the whole park circuit will be conducted to examine current opportunities for extended trips. Suitable Crown land areas along the inlets will be examined for potential future acquisition, to complement the current sites in the circuit.

Current Impacts and Issues

A number of significant issues exist for these protected areas that must be addressed:

- Levels of impact that have occurred on the sites need to be documented. These assessments will be considered while preparing recommendations for BC Parks. The recommendations will take into account whether impact levels are beyond the limits of acceptable change, or whether carrying capacity should be increased if exceeded.
- With the completed assessments, levels of use will be determined. These will show if sites are being overused/underused by the public and/or guiding companies.
- Spacing of the sites will be assessed to consider if the distances allow kayakers a comfortable days paddle, and help determine locations of potential sites.

Future Role and Recreation Opportunities

During this study, proposed ideas or plans will be considered for potential affects to the future of the recreation area. These include:

- Assessing how the trail proposed on the west side of the inlet will affect the existing sites. The proponents have plotted the trail to link with both Skaiakos and Halfway Beach. The number of hikers that would camp in these locations must be addressed in determining site carrying capacity, as does the question of whether the sites would be considered less remote with terrestrial access.
- Considering the alternative recreation in the area such as the diving site at Kunechin Point. The levels of use from parties of divers who stay at the site will be addressed, as will the sites ability to accommodate for these divers. Also, do power boaters use the sites for day use and overnight stopovers?
- Studying available Crown Land around the Inlets that could be potential additions to the park. These sites will be considered depending on appropriate location within the circuit, visual resource quality of surrounding land, and physical factors making for campsites up to BC Parks standards.
- Determining if there should the four kayaking companies with PUP's using the park sites. This will take into account site carrying capacity, group size, and visitation frequency.
- Evaluating the affects of marketing may be taken into consideration if it appears to be a major factor.

Contacts and People Involved

To get a complete picture of the issues involved with this area, we will be consulting many of the following stakeholders. Key participants for our research may include, but not be limited to:

- Ministry of Forests – Recreation Inventory Maps and Text
- Sechelt Chamber of Commerce
- Outdoor Recreation Council
- Kayak Guiding Companies, and PUP's
- Kayak Rental Companies
- Sunshine Coast Conservation Association

BC Parks will sponsor the project, in conjunction with the BCIT Fish, Wildlife and Recreation faculty.

Project Team

The project team consists of Darren Ferguson, and Martin Stol, both second year Fish, Wildlife, and Recreation Management students at BCIT. This project easily fulfills the requirements of our Projects Course. We are both avid paddlers. We look forward to assisting BC Parks by providing input on whether the Sechelt Inlets Marine Parks are effectively catering to the demands of boaters.

The project coordinator from BC Parks will be Brian Bawtinheimer, Senior Park Planner. As well, Al Jenkins (Area Supervisor), John Tisdale (Recreation Officer), and Brandin Schultz (Resource Officer) are park staff that will be valuable contributors to the project:

Project Timeline

<u>Assignment/Task</u>	<u>Completion Date</u>
1. Terms of Reference Submission	October 30 th 1999
2. Field Work	April 15 th 2000
3. Report Outline	December 15 th 1999
4. Draft Report	February 2 nd 2000
5. Oral Presentation	April 16 th 2000
6. Final Report Submission	May 10 th 2000

Approved

Brian Bawtinheimer
Senior Park Planner
Garibaldi/ Sunshine Coast District
BC Parks

Date

Darren Ferguson
Second year student
Fish, Wildlife and Recreation
British Columbia Institute of Technology

Date

Martin Stol
Second year student
Fish, Wildlife and Recreation
British Columbia Institute of Technology

Date

Appendix 2: BRIM Methods Form

CAMPING (p.2 of 4)

CAMPING IMPACT ANALYSIS For each kind of impact (#1 to 11), circle box that most closely describes the impact, then fill in number score into "New Score" box. Do not use weighting process (first and last box) in initial field assessment.

Term, Wgt.	Indicator	N/A or 0	Score: 1	Score: 2	Score: 3	Score: 4	Score: 5	Previous Assessment's Score ()	New Score	New Score x Wgt.
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1. VEGETATION DENSITY/WEAR: A relative measure of the extent of cover within the most impacted portions of the site compared to similar unimpacted areas nearby (If bare areas are present, score 5 and go to #3).

1 2 3	Vegetation Density / Wear	N/A or 0	Same Density Slight Wear	Similar Density	Slightly Less Dense	Moderately Less Dense	Considerably Less Dense			
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2. VEGETATION COMPOSITION: Compare species composition and relative abundance in area to surrounding unimpacted sites. If invasive plants are evident, indicate presence and species under miscellaneous notes section.

1 2 3	Vegetation Type	N/A or 0	Almost Similar	Slightly Dissimilar	Moderately Dissimilar	Considerably Dissimilar	Extremely Dissimilar			
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3. BARE SOIL AREA: Estimate total % of impacted area which as a result of use has been completely denuded of vegetation. May be a single core area or the sum of several bare areas within the same site. Note under "miscellaneous" if soil erosion takes place.

1 2 3	Bare Soil Area	N/A or 0	< 10%	10 - 24%	25 - 49%	50 - 75%	> 75%			
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4. FOREST LITTER / SURFACE SOIL: Use only if original site before impact lacked ground vegetation due to shade or litter fall from canopy. Measure degree to which organic debris such as twigs and needles are worn off (compared to adjacent unimpacted areas) and further, to what degree the dark surface soil has been compacted, turned into mud, pulverized, or worn away.

1 2 3	Litter and Surface Soil	N/A or 0	Part of Litter Worn Off	Most of Litter Worn Off	Surface Soil Slightly Worn	Surface Soil Partly Mucked / Pulverized	Surface Soil Considerably Mucked / Pulverized			
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5. TREE DAMAGE: Document extent of damage to live trees such as broken or cut branches, nails, mutilations, or felled.

1 2 3	Tree Damage	N/A or 0	1 or 2 Minor Occurrences	> 2 Minor Occurrences	1 or 2 Major Occurrences	> 2 Major Occurrences	Extensive Damage			
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6. TREE ROOT EXPOSURE: Record the % of impacted area with exposed roots due to trampling or other human activities.

1 2 3	Root exposure	N/A or 0	< 10%	10 - 24%	25 - 49%	50 - 75%	> 75%			
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CAMPING (p. 3 of 4)

7. NATURAL FUELS: Record the extent of ecosystem degradation by removal of dead vegetation (forest floor, dead branches off trees, snags) for firewood or other human activities. Assess site and surrounding area to limit of impact.

1-2-3	Natural Fuels	N/A or 0	Dead Wood Mostly in Place	Some Dead Wood Removed	Considerable Dead Wood Removed	Most Dead Wood Removed	All Dead Wood Removed			
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8. SITE ALTERATION: Record extent of informal, unauthorized site development such as fire rings, seats, benches, windbreaks, ditching, etc.

1-2-3	Site Alteration	N/A or 0	Scattered Fire Debris	Existing Fire Rings & Seats	Existing seat, bench, etc.	Several Facilities Developed	Extensive Facilities Developed			
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9. CLEANLINESS & SANITATION: Assess level of sanitation and cleanliness of site with regards to litter, trash, human and animal waste, etc.

1-2-3	Clean & Sanitary	N/A or 0	1 or 2 Occurrences	3 to 5 Occurrences	6 - 9 Occurrences	10 - 20 Occurrences	Extensive Occurrences			
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10. SOCIAL TRAIL DEVELOPMENT: Indicates formation of informal trails (originating from the site) to nearby destinations such as other camps, water source, viewpoint, etc. Discernable trails are still mostly vegetated, well-worn trails are mostly revegetated.

1-2-3	Social Trails	N/A or 0	1 Trail Discernable	2 Trails Discernable	1 Trail Well Developed	2 Trails Well Developed	> 2 Trails Well Developed			
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11. RIPARIAN DAMAGE: Use only for sites which have frontage on standing or flowing water. Assess progressive changes from the original vegetation cover to open, damaged soil (tendency for mucking on gentle slopes, or for erosion on steep banks). Include areas where mucking extends into shallow water.

1-2-3	Riparian Damage	N/A or 0	Vegetation in Place but Trampled	Some Vegetation Worn Off, Starting to Compact or Muck	Mostly Open Soil, With Some Compaction or Mucking	Only Mucked or Compacted Soil, or Erosion Starting	Extreme Compaction or Mucking or Advanced Erosion			
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MISCELLANEOUS NOTES, RECOMMENDATIONS FOR MITIGATION OF IMPACT, ETC.:
