



# Water Monitoring Protocol for Provincial Park Beaches

Public Health New Brunswick

## Department of Health

The requirements of this  
Protocol are in accordance with  
the Guidelines for Canadian  
Recreational Water Quality

*May 2021*

# Purpose

Recreational waters, such as rivers, lakes and beaches, have the potential to be impacted by faecal matter from such sources as discharged sewage, stormwater runoff from agricultural or urban areas, wild or domesticated animals and even through faecal shedding by swimmers themselves. Many epidemiological studies have identified gastrointestinal and upper respiratory illnesses in swimmers as a result of such contamination. As a result, there is always a slight risk of health effects when swimming, just as there is always some risk associated with other common daily activities.

The purpose of this Water Monitoring Protocol for Provincial Park Beaches (Protocol) is to define, in a clear and transparent manner, the minimum requirements for sampling and monitoring of the recreational waters within the designated swimming areas at Provincial Park beaches to help minimize the risk of water-borne illness.

The Protocol also defines the roles and responsibilities of the Department of Environment and Local Government (DELG), Department of Tourism, Heritage and Culture (THC) and Public Health New Brunswick (PHNB), which are outlined under each relevant section. PHNB is also responsible for ensuring that the Protocol is reviewed annually.

To help guide decisions by provincial and local authorities responsible for the management of recreational waters, the [Guidelines for Canadian Recreational Water Quality](#) (Canadian Guidelines) have established guideline values for *Escherichia coli* (*E. coli*) and enterococci. These values represent risk management decisions that have been based on a thorough assessment of the potential risks for the recreational water user. In considering both the potential health risks and the benefits of recreational water use in terms of physical activity and enjoyment, it was concluded that this is a tolerable and reasonable estimate of the risk of illness likely to be experienced by users engaged in a voluntary activity.

# Application

The Canadian Guidelines state that decisions regarding the design of a sampling monitoring program are to be made by the appropriate regulatory and management authorities.

These include decisions pertaining to:

- areas to be monitored, including the location and depth of water samples to be collected;
- times and frequencies of sample collection;
- choice of indicator parameters to be analyzed;
- procedures for public notification and posting of warning signs; and
- process for notification of health authorities and the type of response actions taken.

All of the requirements outlined within this Protocol are in accordance with the recommendations of the Canadian Guidelines, with the following notes:

Item	Details
Sampling Location Points and Time of Day	Canadian Guidelines recommend sampling points and time of day be included in a monitoring plan, but do not provide guidance. GNB decision.
Sampling Collection Depth	Canadian Guidelines recommend various depths from where samples could be taken, but do not recommend a depth under the surface. GNB decision.
Accredited Laboratory	Canadian Guidelines do not mention lab accreditation. GNB decision.
Oversight for sample collection and training & physical placement of signs	Not in scope of Canadian Guidelines. GNB decision.
Website	Canadian Guidelines recommend website for public information, but do not recommend the agency who should host. GNB decision.

The requirements outlined in this Protocol are followed by a “Rationale” section which includes supporting information obtained from the Canadian Guidelines. Where appropriate, this information is supplemented with information obtained from additional references.

This Protocol will be re-evaluated on an annual basis.

## Environmental Health & Safety Survey

- **Prior to the start of the recreational swimming season, an Environmental Health & Safety Survey (EHSS) will be completed and/or updated for Provincial Park beaches. PHNB will work with Health Protection Services (Department of Justice Public Safety) to ensure this occurs.**
- **Within one week prior to the opening of the Provincial Park beach for the swimming / bathing season, one set of five (5) samples shall be collected from the designated swimming area to confirm water quality.**

### Rationale

An EHSS should be conducted on an annual basis, just before the start of the swimming season. This survey should catalogue the recreational water area’s basic characteristics; identify any potential sources of faecal contamination; identify any other potential physical, chemical or biological water quality hazards or potential sources of such that may present a risk to recreational water users; and evaluate the effectiveness of the monitoring programs and risk management measures currently in place. (Canadian Guidelines)

The authority with the best knowledge of the day-to-day operation of the beach is the likely candidate to lead this process. The EHSS process can also benefit greatly from intersectoral collaboration. Persons or groups valuable to consult on the process can include: the appropriate provincial or territorial management or regulatory authority; beach managers; public and environmental health departments; community members; and/or individuals representing local business and industry. (Canadian Guidelines)

Potential water quality hazards or risk scenarios that can affect the recreational water area need to be identified through an Environmental Health and Safety Survey. The results of this survey are then used to identify the appropriate procedures or actions that should be put in place as barriers. These may include physical actions, such as beach cleanup and grooming, or processes or tools to improve the effectiveness of the recreational water management program, such as monitoring, guidelines and standards, and education and communication strategies. (Canadian Guidelines)

# Beach Water Sampling Program

## Sampling Parameters and Sampling Frequency

An EHSS was conducted at all Provincial Park beaches in 2018 and will be updated annually. Using the information collected from these EHSS and other program evaluations, risk assessments are conducted by PHNB to determine which beaches are included in this Protocol and the frequency of testing of each beach.

- **Water samples shall be collected and analyzed at each Provincial Park beach for the indicator parameter (enterococci or *E. coli*) and at the frequencies as follows:**

<u><sup>1</sup> Name of Provincial Park</u>	<u>Sampling Frequency</u>	<u>Indicator Parameter</u>
Parlee Beach	Daily	enterococci and <i>E. coli</i>
Murray Beach	Three days per week	enterococci and <i>E. coli</i>
Mactaquac	Twice per week	<i>E. coli</i>
Mount Carleton	Once per week	<i>E. coli</i>
New River Beach	Once per week	Enterococci
<sup>2</sup> Oak Bay	Once per week	enterococci & <i>E. coli</i>
Miscou	Once every two weeks	Enterococci
Val Comeau	Once every two weeks	Enterococci

*E. Coli* will be analyzed at Parlee Beach and Murray Beach to compare results. The need to monitor *E.Coli* on a continual basis will be re-evaluated.

- **If for any reason a sample cannot be collected on the scheduled day, it shall be collected as soon as possible and preferably the following day.**
- **Water samples shall be collected, as practically as is possible, at the same time each day. It is recommended that they be collected in the morning.**

### Rationale

*E. coli* is the most appropriate indicator of faecal contamination in fresh recreational waters, and enterococci is the most appropriate indicator of faecal contamination in marine recreational waters. Guideline values for *E. coli* and enterococci have been developed based on the analysis of epidemiological evidence relating concentrations of these organisms to the incidence of swimming-associated gastrointestinal illness observed among swimmers. The values represent risk management decisions based on the assessment of possible health risks for the recreational water user and the recognition of the significant benefits that recreational water activities provide in terms of health and enjoyment. (Canadian Guidelines)

If it can be shown that *E. coli* can adequately demonstrate the presence of faecal contamination in marine waters, then the *E. coli* maximum limit for fresh waters may be adopted. If there is any doubt, samples should be examined for both sets of indicators for extended periods to determine whether a positive relationship exists. (Canadian Guidelines)

<sup>1</sup> Environmental Health and Safety Surveys were also completed at Herring Cove Provincial Park, Anchorage Provincial Park and Fundy Trail Parkway. Based on risk assessments completed by PHNB, water quality sampling at these Provincial Park was not deemed to be required.

<sup>2</sup> Oak Bay Provincial Park will be sampled for both *E. coli* and enterococcus as there are freshwater inputs north of the beach and the route 170 causeway limits the tidal exchange coming from the lower part of the bay.

Waters regularly used for swimming and other primary contact recreational activities should be monitored at a minimum frequency of once per week during the swimming season. Increased monitoring is recommended for those beaches that are highly frequented or are known to experience high user densities. **Similarly, under certain scenarios, a reduction in the recommended sampling frequency may be justified.** (Canadian Guidelines)

A single water sample provides a quantitative estimate of the indicator bacteria present at a particular site and time. As the total number of samples increases, the more representative the data will be of the overall water quality. (Canadian Guidelines)

More frequent monitoring (daily as opposed to weekly sampling; weekly as opposed to monthly sampling) will have several advantages. As a result of the significant day-to-day variation in faecal indicator counts that can be observed, even daily monitoring will not necessarily improve the ability of the current day's microbiological results to predict the next day's water quality. However, the additional information provided by increasing the number of samples will allow the responsible authorities to more easily observe water quality trends and to make more informed decisions regarding the area's overall suitability for recreation. Moreover, it will enable authorities to more quickly detect persistent water quality problems that may occur. (Canadian Guidelines)

When sampling, consideration should also be given to the collection of samples for the purpose of characterizing event-driven episodes of pollution that may affect recreational waters—for example, immediately following periods of heavy rainfall or at times of greatest swimmer activity. (Canadian Guidelines)

Once an understanding of water quality behaviour at a site has been achieved through relatively intensive monitoring, a reduction in sampling frequency may be justifiable and can help ease the burden of monitoring. (Canadian Guidelines)

Collection of samples in the morning appears to offer the best balance between practicality and generation of data that protects human health. If culture methods are used for enumerating indicator bacteria, morning samples could generate results that would allow posting of health advisories the next day or two. (Sampling and Consideration of Variability [Temporal and Spatial] For Monitoring of Recreational Waters, U.S. Environmental Protection Agency, December 2010)

Sampling should be conducted at the same time each day if water quality is to be compared between days and that sampling in the morning provides the most conservative measure of the health risk posed by recreational water. An additional benefit of morning sampling is delivery and analysis of the samples at laboratories early in the day. That allows the availability of results of 24-hour tests before the beginning of recreational activities on the following day. (Sampling and Consideration of Variability [Temporal and Spatial] For Monitoring of Recreational Waters, U.S. EPA, December 2010)

In general, because of the predictable variation in microbiological water quality during the course of a day, morning water quality assessments are good predictors of afternoon water quality determinations. (Sampling and Consideration of Variability [Temporal and Spatial] For Monitoring of Recreational Waters, U.S. EPA, December 2010)

# Guideline Values

➤ **The guideline values are as follows:**

Equal to or less than 35 enterococci/100 ml	Geometric mean of most recent 5 samples
Equal to or less than 70 enterococci/100 ml	Single-sample maximum
Equal to or less than 200 <i>E. coli</i> /100 ml	Geometric mean of most recent 5 samples
Equal to or less than 400 <i>E. coli</i> /100 ml	Single-sample maximum

## Rationale

The Canadian Guidelines advocate the use of both a maximum limit for the geometric mean and a single-sample maximum limit. The use of dual limits allows for a better evaluation of the water quality both in the short term and over the duration of the swimming season. The single-sample limit will alert officials to any immediate water quality issues, whereas the geometric mean limit will highlight possible chronic contamination problems. This dual approach represents good monitoring practice as part of an overall commitment to a strategy of risk management for recreational waters. (Canadian Guidelines)

The guideline values have been developed based on epidemiological evidence relating enterococci concentrations in marine recreational waters to the incidence of swimming-associated gastrointestinal illness observed among swimmers. (Canadian Guidelines)

Health Canada has estimated that using the guideline values for the recommended indicators of faecal contamination for fresh and marine waters will correspond to a seasonal gastrointestinal illness rate of approximately 1–2% (10–20 illnesses per 1000 swimmers). (Canadian Guidelines)

These values represent risk management decisions that have been based on a thorough assessment of the potential risks for the recreational water user. In considering both the potential health risks and the benefits of recreational water use in terms of physical activity and enjoyment, it was concluded that this is a tolerable and reasonable estimate of the risk of illness likely to be experienced by users engaged in a voluntary activity. (Canadian Guidelines)

Further action should be initiated if either of these guideline values is exceeded. Minimum action should consist of immediate resampling of the site(s). In addition, a swimming advisory may be issued. (Canadian Guidelines)

## **Geometric Mean**

Calculation of the geometric mean concentration should be based on a minimum of five samples, collected at appropriate times and sites to provide representative information on the water quality likely to be encountered by users. (Canadian Guidelines)

In areas where high swimmer densities are expected, increased monitoring is recommended. In such situations, the number of samples may be increased to permit the calculation of a weekly or even daily geometric mean (based on a minimum of five samples), if so desired. (Canadian Guidelines)

Assessment of the bacterial quality of recreational water requires more than a single result. Due to the uneven distribution of bacteria throughout a liquid medium, the count of microorganisms in a single "grab sample" does not represent the average concentration in a particular body of water. A random sample may demonstrate a concentration that is far above or below the average. In obtaining an accurate assessment of the quality of recreational water, the results of a number of samples must be combined in such a way that a random, unrepresentative sample will not unduly influence the average. Use of the geometric mean which is a log-transformation of data permits more meaningful statistical evaluations. (Canadian Guidelines)

When analysing bacteriological water quality data, the geometric mean is recommended as the best estimate of central tendency of microbial populations. The guideline values for the recommended indicators of faecal contamination are based on geometric mean values. (Canadian Guidelines)

## Sampling Location points

- **During the swimming season, five (5) water samples shall be collected on a given day, at equally spaced intervals, from within the designated swimming area at each Provincial Park beach listed in this Protocol.**

### Rationale

Water sampling points are determined by length of the bathing area as per Table 1. (Operational Approaches for Recreational Water Guideline, 2018. Ontario, Ministry of Health and Long-Term Care, Population and Public Health Division)

**Table 1: Water sampling points**

<b>Length of beach</b>	<b>Number of sampling points</b>
1000 meters or less	5 points
Over 1000 meters	1 point per 200 meters
Over 5000 meters	1 point per 500 meters

Most bodies of water used for recreational purposes are not completely homogeneous with respect to their microbiological properties. Sites should be chosen to be representative of the water quality encountered throughout the entire swimming area. (Canadian Guidelines)

## Sample Collection Depths

- **All required samples shall be collected where the depth of water is approximately 0.5 m, from a location approximately 15 cm below the water surface.**

### Rationale

Decisions regarding the most appropriate location and depth of water samples collected for microbiological analysis should be made by the appropriate local or regional authority. (Canadian Guidelines)

Observed relationships between indicator density at knee to waist depth and human health effects, lower short-term variability (temporal) in indicator density at greater water depths, and the importance of consistent sampling at a single water depth, suggest that sampling in waist-deep water might be a practical approach that balances the need

for a practical sampling location in terms of ability to collect a sample with sampling at a depth where water quality appears to relate to human health. Water quality (as the geometric mean of knee and waist depth samples) was strongly associated with odds of GI illness in children (Wade et al. 2006), indicating that although children tend to spend more time in waters shallower than waist depth, indicator densities based on samples collected deeper than waters where children concentrate their time are still predictive of health effects for children. (Sampling and Consideration of Variability [Temporal and Spatial] For Monitoring of Recreational Waters, U.S. EPA, December 2010)

Collecting one's sample near the water surface offers some advantages. The depth for the collection device (i.e., distance below the water surface) appears to be less critical than the depth zone (e.g. knee depth) where sampling is conducted. Some studies have demonstrated higher indicator density near bottom sediments than in overlying waters and their findings support sampling in the top 15 cm (~ 6 inches) of the water column. Additional positive features of sampling near the water surface include ease of sample collection and avoidance of water in the vicinity of sediments where resuspension of indicator bacteria is possible. (Sampling and Consideration of Variability [Temporal and Spatial] For Monitoring of Recreational Waters, U.S. EPA, December 2010)

#### Additional commentary of the Canadian Guidelines

Adult chest depth (approximately 1.2-1.5m) has historically been the most common sampling depth. Traditionally this has been considered to represent the depth of greatest swimmer activity and the location nearest to the point of head immersion, which would be indicative of the risk associated with accidentally swallowing water. Published epidemiological studies have typically found that only samples collected at this depth show evidence of a mathematical relationship between indicator organism density and swimmer illness. (Canadian Guidelines)

Another strategy for monitoring that has been proposed involves the attempt to strike a balance between the depth at which the majority of the health effects have been proven and the depth at which microbiological counts are thought to be the highest (U.S. EPA, 2005a). According to the recommendations outlined in the U.S. EPA's EMPACT report (U.S. EPA, 2005a), sampling in water of knee to waist depth may offer a reasonable, but still conservative, approach to monitoring. (Canadian Guidelines)

Sampling at shallower depths (ankle or knee depth--approximately 0.15-0.5 m) may be more representative of water quality encountered by young children playing at the water's edge. It is expected that more frequent swimming advisories would be issued if this monitoring approach were used. Sand and sediment disturbances can result in increased microbiological numbers in shallower waters. Currently there is insufficient evidence to determine whether the expected increase in the number of swimming advisories at this monitoring depth would result in a proportionate reduction in the number of swimmer illnesses. (Canadian Guidelines)

## Sample Collection Protocols and Laboratory Services

- **DELG is responsible for the oversight of sample collection for the purpose of compliance monitoring and ensuring proper training is provided.**
- **All collected water samples must be analyzed by a laboratory using an accredited method for the parameter (*E. coli* or enterococcus).**
- **All samples shall be collected, preserved and transported in sterile bottles provided by the accredited lab, and in accordance with the laboratory's standard procedures.** The laboratory Sample Submission Form shall be properly completed and included.



## Rationale

EPA recommends that professional staff from state and local agencies maintain primary responsibility for the design and oversight of beach monitoring. Citizen volunteers can also be used to perform supplemental beach monitoring program functions. Personnel responsible for sample collection and environmental measurements at the beach and those performing the bacterial indicator analyses should be trained for those activities. (National Beach Guidance and Required Performance Criteria for Grants, 2014 Edition, US EPA. July 2014)

Improper sampling techniques can lead to inaccurate test results that are unrepresentative of the waters being sampled. This can lead to incorrect management decisions. (Water Sampling in Shediac Bay 2015-2016 by Shediac Bay Watershed Association, November 2016)

# Public Communication

## Compliance Monitoring

- **Monitoring results will be emailed directly from the accredited laboratory to DELG.** DELG will ensure water quality results are entered into a database.
- **The monitoring results will be processed, assigned an advisory status and posted to the public website and sent to THC and PHNB.**

### ***“Suitable for Swimming”***

- When the most current water quality results indicate that the designated swimming area is microbiologically suitable for swimming, an Informative Beach Sign indicating the area is suitable for swimming shall be posted.

An example of a “Suitable for Swimming” Sign can be found in Appendix “A”.

### ***“No Swimming” advisories***

- When a swimming advisory is issued it means that the water has been deemed not suitable for swimming. Under this situation, users are advised to refrain from whole body contact with the water. Contact with the beach is usually permissible, and access to the facilities is generally not restricted.
- **A “No Swimming” advisory** will remain in place until follow up sampling confirms that the water quality is within guideline values. Re-sampling may occur at an increased frequency.

An example of a “No Swimming Advisory” sign can be found in Appendix “B”.

## “Beach Closure”

- Under a beach closure, the area is considered closed to all recreational activities involving beach sand and water. A beach closure will remain in effect until a MOH is satisfied that the risk to the public has been appropriately addressed. In situations where a beach closure has been deemed necessary, a MOH will collaborate with all appropriate stakeholders in order to ensure a thorough investigation is completed.
- **Where conditions are present that indicate continued operation of the beach is dangerous to the public, or poses a public health risk, a MOH may order a beach closure** as per Section 6 of the *Public Health Act*. The MOH is responsible for informing THC that a beach closure is being ordered.

An example of a “Beach Closure” sign can be found in Appendix “C”.

### Rationale

Compliance monitoring is conducted to identify existing water quality hazards and to maintain a record of changes that may occur. Proper monitoring and reporting are essential for assessing and communicating information on the level of safety of recreational waters. (Canadian Guidelines)

Information on the quality of the water should be communicated to the user through the use of posted signs. Signs should be used to warn users when the water is unsafe for recreational use. Similarly, during periods in which the area is considered suitable for use, corresponding signs should be posted that clearly communicate this information to the public. One important concept to communicate to beach users through education is that even in waters considered of good quality for swimming, there is always some probability that swimmers may experience some adverse health effects. (Canadian Guidelines)

In the event of an incident that represents a risk to public health or safety (such as microbiological, physical or chemical), health officials can play a key role by providing advice and determining what actions need to be taken. (Canadian Guidelines)

There are two main situations under which a warning sign may be posted – following the issuing of a no swimming advisory and following the issuance of a beach closure. Issuing a swimming advisory or beach closure should be made by the MOH. (Canadian Guidelines)

A swimming advisory can be issued if the responsible authority identifies that the water is not suitable for recreational use. Under this situation, users are advised to refrain from whole body contact with the water. Contact with the beach is usually permissible, and access to the facilities is generally not restricted. Examples of scenarios that may trigger jurisdictions to decide to issue a swimming advisory include:

- exceedance of the guideline values for the recommended indicators of faecal contamination;
  - exceedance of the guideline values for toxic cyanobacteria and their toxins, or in the event of the development of a cyanobacterial bloom;
  - evidence of the risk of swimmer’s itch; and a
  - after periods of significant rainfall, which could trigger an advisory as a pre-emptive action.
- (Canadian Guidelines)

Beach advisories (or postings in California) are recommendations to avoid swimming at the beach, or beach area, because of an increased risk of contracting a water-related illness. The action does not, however, officially close a beach to the public. (National Beach Guidance and Required Performance Criteria for Grants, 2014 Edition, US EPA. July 2014)

Pre-emptive beach postings or swimming advisories restricting recreational water activities for short periods immediately after rainfall events present another potential \*barrier. These act by limiting swimmer exposure to faecal contamination that may have been washed from the sand environment to the swimming area. (Canadian Guidelines)

\*barrier in this context is a protective barrier.

A “Beach Closure” can be issued if the responsible authority identifies a serious risk to the health and safety of recreational water users, and that it is further necessary to restrict individuals from coming in contact with the area. Under a closure, the area is considered closed to all recreational activity. (Canadian Guidelines)

## Public Awareness and Education

- **THC is responsible for receiving water quality results and changing as appropriate the “Suitable for Swimming” or “No Swimming” advisory signs at the locations indicated in Appendix “D”.**
- **If it is determined that a “Beach Closure” is necessary, the MOH will inform THC directly. THC is responsible for removing the “Suitable for Swimming” or “No Swimming” signs and replacing them with a Beach Closure sign, at the locations indicated in Appendix “D”.**
- **The PHNB “Public Health Advisory and Alert” webpage will be updated** to show that a “No Swimming” advisory is in effect or if PHNB has ordered a “Beach Closure”. THC’s website will be linked to the PHNB website.
- **All monitoring results will be reported on the PHNB website.** The THC website will be linked to the PHNB website.
- **Other forms of public risk communications and educational products beyond advisory signage may be utilized if and when appropriate.**

### Rationale

In order to participate in safe, enjoyable recreational water activities, the public requires access to information on the quality of the area and its facilities, as well as notification of any existing water quality hazards. Beach operators, service providers and responsible authorities have a responsibility to inform and educate the public and provide adequate warnings about any hazards relevant to their recreational water areas. (Canadian Guidelines)

Beach postings inform the public about potential risks to health and safety, based on an assessment of those risks. The owner/operator of the beach is primarily responsible for posting and removing the advisory/signs as conditions warrant (Operational Approaches for Recreational Water Guideline, 2018. Ontario, Ministry of Health and Long-Term Care, Population and Public Health Division)

Signs should be posted in locations that are highly visible to the public. The information provided should be easily understood and not open to misinterpretation. Warnings should be timely and should be promptly removed once the issuing authority has determined that the risk no longer exists. (Canadian Guidelines)

The public can also do their part by: educating themselves on actions they can take to protect themselves and the beach; becoming aware of where the water quality monitoring results are posted; and, consulting this information before going to the beach. (Canadian Guidelines)

# References

1. Guidelines for Canadian Recreational Water Quality, third edition. Health Canada, April 2012. Available from:  
<https://www.canada.ca/en/health-canada/services/publications/healthy-living/guidelines-canadian-recreational-water-quality-third-edition.html>
2. Operational Approaches for Recreational Water Guideline, 2018. Ontario, Ministry of Health and Long-Term Care, Population Health and Public Health Division. Available from: [Operational Approaches for Recreational Water Guideline, 2018 \(gov.on.ca\)](#)
3. Water Sampling in Shediac Bay 2015-2016 by the Shediac Bay Watershed Association, November 2016. Available from:  
[http://www.shediacbayassociation.org/wp-content/uploads/2016/11/Salt-Water-report-2016\\_Final.pdf](http://www.shediacbayassociation.org/wp-content/uploads/2016/11/Salt-Water-report-2016_Final.pdf)
4. Sampling and Consideration of Variability [Temporal and Spatial] for Monitoring of Recreational Waters. United States Environmental Protection Agency, December 2010. Available from:  
[Sampling and Consideration of Variability \(Temporal and Spatial\) for Monitoring of Recreational Waters \(epa.gov\)](#)
5. National Beach Guidance and Required Performance Criteria for Grants, 2014 Edition. United States Environmental Protection Agency, July 2014. Available from:  
<https://www.epa.gov/sites/production/files/2014-07/documents/beach-guidance-final-2014.pdf>

# Appendix “A”

## Suitable for Swimming Sign Example



# Appendix “B”

## No Swimming Advisory Sign Example



Appendix “C”  
Beach Closure Sign Example

**WARNING**  
**BEACH CLOSED**

TO PROTECT THE PUBLIC’S HEALTH, **ACCESS TO THE BEACH AREA  
AND WATER ARE NOT PERMITTED.**

BY ORDER OF THE MEDICAL OFFICER OF HEALTH

For more information, please visit [www.gnb.ca/beaches](http://www.gnb.ca/beaches)



**ATTENTION**  
**PLAGE FERMÉE**

AFIN DE PROTÉGER LA SANTÉ DU PUBLIC, **L’ACCÈS À LA PLAGE ET  
À L’EAU EST INTERDIT.**

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Pour plus de renseignements, consultez le [www.gnb.ca/plages](http://www.gnb.ca/plages)



# Appendix "D"

## Locations of Informative Beach Signs

### Parlee Beach Provincial Park

Informative beach signs will be placed at the eight (8) designated beach entrance points, and at the Park entrance points, as illustrated below. There is also a sign located on Parlee Beach Road.



(Communication with the Department of Tourism, Heritage and Culture – February 2018)



# Murray Beach Provincial Park

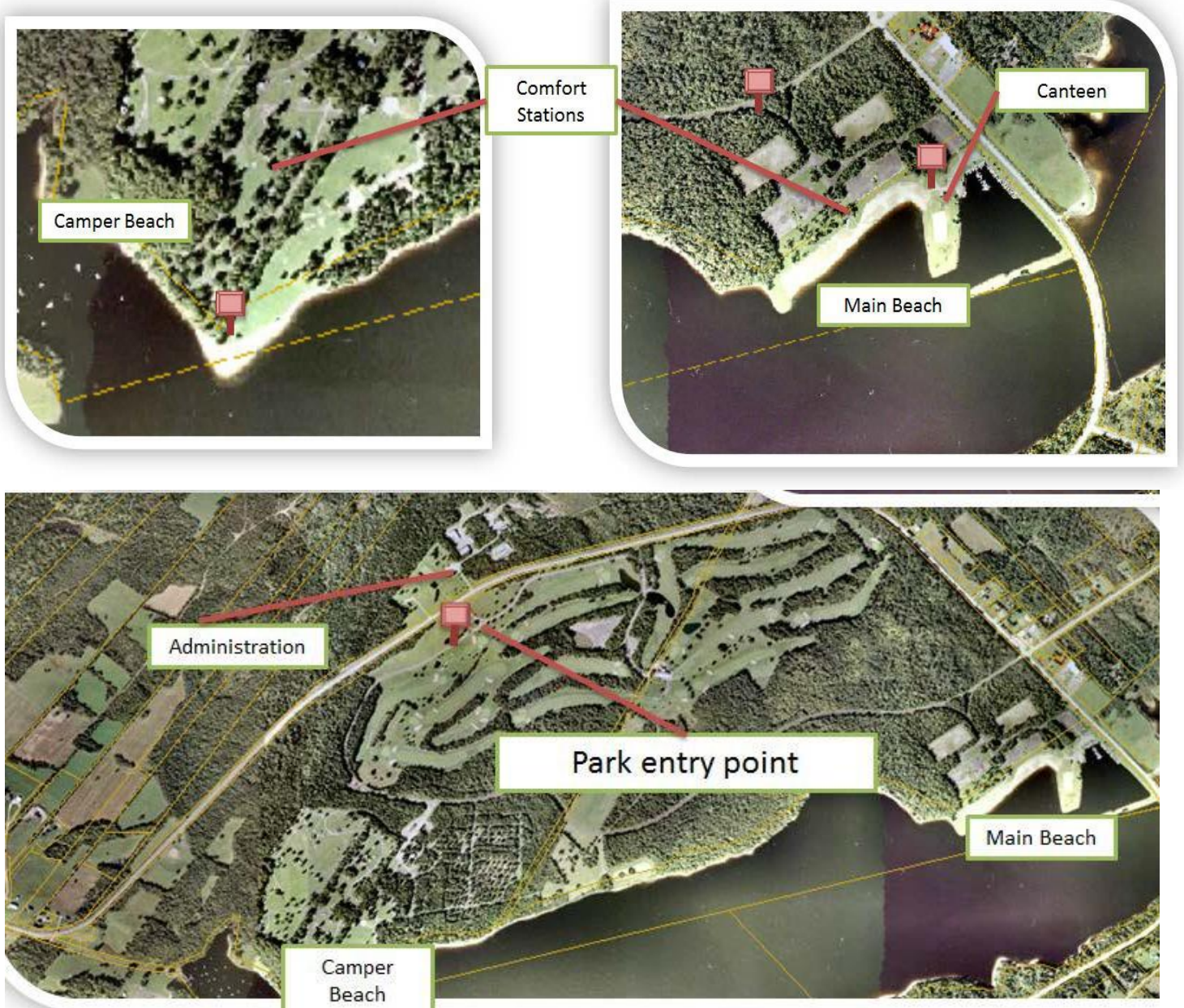
Informative beach signs will be placed at the four (4) designated beach entrance points and at the Park Entrance, as illustrated below.



(Communication with the Department of Tourism, Heritage and Culture – February 2018)

## Mactaquac Provincial Park

Informative beach signs will be placed at the designated beach entrance points at Camper Beach and Main Beach as illustrated below and at the Park Entrance.



(Communication with the Department of Tourism, Heritage and Culture – February 2018)

# Mount Carleton Provincial Park

Informative beach signs will be placed at the two (2) designated beach entrance points, and at the entrance to the campground, as illustrated below.



(Communication with the Department of Tourism, Heritage and Culture – February 2018)

# New River Beach Provincial Park

Informative beach signs will be placed at the two (2) designated beach entrance points, and at the two (2) Park entrances, as illustrated below.



(Communication with the Department of Tourism, Heritage and Culture – February 2018)

# Oak Bay Provincial Park

Informative beach signs will be placed at the two (2) designated beach entrance points as illustrated below.



(Communication with the Department of Tourism, Heritage and Culture – February 2018)

# Miscou Provincial Park

Informative beach signs will be placed at the two (2) designated beach entrance points and at the Park Entrance, as illustrated below.



(Communication with the Department of Tourism, Heritage and Culture – February 2018)

## Val Comeau Provincial Park

Informative beach signs will be placed at the six (6) designated beach entrance points, and at the Park Entrance, as illustrated below.

Park entry point



(Communication with the Department of Tourism, Heritage and Culture – February 2018)