

## **Cape Enrage Interpretive Centre Inc.**

Employee Handbook/Interpretation Training Manual

2017

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### Welcome!

Cape Enrage Interpretive Centre Inc. is a registered not-for-profit organization operating an adventure and tourism destination along the Fundy Coastal Drive, under a volunteer board of Directors at Cape Enrage, NB.

Our goal is to operate and maintain a first-class sustainable operation to enhance visitor experience in the Fundy region through the lowest possible rates and donations

#### **Mission Statement**

To provide guests with an enriching and entertaining experience of the Bay of Fundy that will create lasting memories.

\*Message from Board of Directors?

Part I: Employee Handbook

General Information

#### **Location and Contact Information**

General Information	<u>Local:</u> (506) 887-CAPE (2273) <u>Toll Free:</u> 1-888-423-5454
	Email: info@capeenrage.ca
Mailing Address	Cape Enrage Interpretive Center 650 Cape Enrage Road Waterside NB E4H 4Z4
GPS Coordinates	45° 35′ 39.98 N / 064° 46′ 47.67" W
Season Dates	Friday, May 19 <sup>t-h</sup> - Monday, October 9 <sup>th</sup> 2017

#### **Season Dates and Rates**

Cape Enrage Interpretive Centre Inc. operates on a seasonal basis. Generally, we are open 7 days a week starting on the Victoria Day weekend until Thanksgiving Monday.

#### **Hours of Operation 2020**

Friday, May 15 <sup>th</sup> – Friday, June 19 <sup>th</sup>	Open 9:30AM to 5PM

Saturday, June 20<sup>th</sup> – Sunday, September 7<sup>th</sup> Open 9AM to 6PM

Monday, September 8<sup>th</sup>– Monday, October 12<sup>th</sup> Open 9:30AM to 5PM

## Admission and Adventure Rates 2020

#### Rates for Individuals and Families

Children Under 5	FREE

Children and Youth Ages 5 – 17	\$5.00
Students (with ID)	\$5.50
Seniors (65 and up)	\$5.50
Adults	\$6.00
Family	\$20.00
Season Pass (one individual)	\$21.00
Season Pass (valid for a Family, or a car)	\$70.00

#### **Group Rates**

Bus or Tour Group	\$4.75 per person
Roads to Sea Guided Tours	\$4.75 per person

#### **Adventure Rates 2017**

Zip line (3 zip included)	\$50.00 per person
	*plus tax and site admission
One Zip deal (Only available on site)	\$25.00 per person
	*plus tax and site admission
Rappel	\$95.00 per person
	*plus tax and site admission
Rappel and Zip line Package	\$130.00 per person
	*plus tax and site admission

## Uniforms and Safety Equipment

Cape Enrage will supply certain uniform pieces to employees who are required to wear such attire. Each department may have different uniform and/or clothing policies. Please refer to your department supervisor for the uniform or clothing policies pertaining to your department.

Uniforms must be kept clean and worn with pride. Any damaged or stained items should be returned for replacement.

Employees who have been supplied uniform pieces are expected to wear them at all times while on duty, unless stated otherwise by their supervisor or property manager.

### Personal Appearance

Dress, grooming, and personal cleanliness standards contribute to the morale of all Employees and affect the business image that Cape Enrage presents to guests.

- During business hours, Cape Enrage expects you to present a clean and neat appearance and to dress according to the requirements of your position.
- Sweater hoods should **not** be worn over the head other unless it is for protection against extreme weather conditions
- Hats and other clothing that are worn by employees while on duty should **not** have any
  obvious logos or images on them. Any article that does have a logo/image must be
  approved by the Managing Director.
- Functional, sturdy footwear with non-slip soles, closed toes and backs are highly encouraged and required in some departments
- Employees should avoid eating and chewing gum in front of guests
- When talking to a guest, employees should make an effort to remove sunglasses
- Facial hair should be kept neatly trimmed
- Employees who work outdoors are expected to arrive to work with appropriate attire for weather conditions.
- Cape Enrage is a SCENT FREE environment and employees should refrain from wearing perfume or other heavily scented products.

- If an employee arrives for work inappropriately dressed they may be sent home and directed to return to work in proper attire. In these cases, employees would not be compensated for the time away from work.
- Employees should never smoke in the presence of guests. Smoking is only permitted in designated areas and at designated break times.

#### Cape Enrage has the following policies in place:

- Tattoos are permitted only by the discretion of the property manager
- Piercings in excess of two earrings per ear are not permitted
- Body piercing is permitted only by discretion of the property manager
- Other jewelry is permissible unless it violates a health and safety issue

## Payroll Information

Employees will receive their pay once every two weeks. Under normal conditions, an employee's pay will be placed in their bank account via direct deposit on the Friday following the pay period end date.

#### **Employee responsibilities:**

1. Provide direct deposit information as soon as possible after hiring

- 2. Have timesheets filled out accurately and on time. If an employee is unsure about how to fill out a timesheet, they should ask their direct supervisor or Management for assistance.
- 3. Ensure that pay corresponds with hours worked and report any discrepancy to their direct supervisor or Managing Director immediately so that it may be corrected

### Other pertinent Information

#### **Employee Evaluations**

Each employee will have their job performance evaluated at least once per season, generally near their termination date. Interim evaluations may occur if they are deemed necessary by their supervisor.

Performance reviews should be viewed as a way to train, reward, or direct an Employee's career growth. There are, of course, situations where reviews can be used to justify job action against an employee.

Performance reviews can be formal interviews, or informal passing comments.

It is a right of all Employees to have at least one annual written performance review.

#### Discipline

Any issue concerning non-compliance with Health and Safety Policies which could endanger Employees or guests will be cause for immediate action, up to an including dismissal.

Other than Heath and Safety issues, when disciplinary action is required, it will consist of three stages:

- 1. Verbal warning
- 2. Written Warning
- 3. Suspension of duties or dismissal

The length of suspension will depend on the severity of the wrong doing. Dismissal will occur if the same problem or wrongdoing occurs more than once. Management may decide to skip one or more levels of disciplinary actions and dismiss an employee according to their own discretion depending on the severity of the wrongdoing.

#### **Personnel Files**

Cape Enrage will maintain a separate file in each Employee. Information and records in their file will be strictly confidential. Files will only be accessible to management and the Employee's direct supervisor, and the employee upon request.

#### Administration

Since Cape Enrage is a seasonal operation, each year all staff hired both new and returning, shall be required to reapply with a resume, a police check, and complate the following forms:

New Casual Employee Set Up form Personal Tax Credit Form Direct Deposit Form Emergency Contact Form

All forms shall be provided to Employees upon hiring.

#### Lay-offs

Staffing levels will be increased or decreased in proportion to the volume of visitors entering the site. When there is a reduction in the volume of visitors entering the site and when the site is closed for the season, staffing levels will be reduced.

	Employee Handbook/Interpretation	Training Manual 2020
Professional Conduct and Public Se	ervice Standards	
Professional Conduct		
All employees are expected to act with good r	norals and courtesy:	
Good Morals		
Acting with good morals for employees means fellow employees, tickets, and monies.	s being truthful and honest with all C	ape Enrage guests,
<u>Courtesy</u>		

Courtesy for employees means treating all guests with warmth, understanding, politeness, and concern for welfare.

#### **Public Service Standards**

- 1. Cape Enrage will maintain a high level of cleanliness at all times.
  - Employees will pick up debris and litter as they walk by, if debris is of bio hazardous nature wear gloves or call for maintenance.
  - Report unsightly areas to your immediate supervisor.
- 2. Cape Enrage Employees will be courteous and friendly to patrons and colleagues.
  - Smile and greet patrons and fellow staff as they come in.
  - Actively listen to what people have to say. Look for ways to have a win-win situation in problem areas.
- 3. Cape Enrage Employees will handle patron's concerns quickly and efficiently.
  - Whenever possible the telephone should be answered within the third ring.
  - When faced with a request for which you do not have the answer, don't pass the buck, find out the answer and advise the person.
- 4. Cape Enrage Employees will conscientiously work together and support each other in a positive manner.
  - Involve all staff in the formulation of rules and policies.
  - Deal with interpersonal problems discretely, one-on-one.
- 5. Cape Enrage will provide a high level of safety and security at all times.
  - You must be alert and attentive at all times.
  - All safety equipment is to be maintained in top condition and accessible at all times.
- 6. Cape Enrage Employees will take every opportunity to make patrons aware of facility-specific activities, programs and services.
  - You should have a good knowledge and information of the property.
- 7. Cape Enrage Employees will conduct themselves in a professional manner at all times.
  - Be attentive and interested in your patrons, facilities and grounds.
  - Be familiar with policies, procedures and the reasons behind them.

- 8. Cape Enrage will strive to provide top quality experiences at all times.
  - Evaluations with patrons, both formal and informal, can provide an indication of how they perceive the quality of Cape Enrage.
  - Take every reasonable opportunity to let patrons know that we appreciate them, and they are important to us.
- 9. Cape Enrage Employees will go a step beyond expected levels of public service.

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### Safety and Emergency Procedures

\*The separate **Emergency and Evacuation Procedures Manual** will be made available to all Employees at the time of employment. Department supervisors must ensure that all employees are familiar with this document.

#### **Health and Safety Policy Statement**

Cape Enrage Interpretive Centre Inc.'s policy is to provide and maintain as safe and healthy a work environment as is reasonably practicable, at all places where the company's staff or representatives may work, for our staff members, our clients or third parties using those facilities under our control or influence.

<sup>\*\*</sup> Fire drills/emergency simulations will be conducted whenever reasonably possible to ensure familiarity with emergency procedures.

The site's goals of client satisfaction, ongoing business development, and profit are not in conflict with goof safety practices. On the contrary, a good safety record is of benefit to our business while a safe and healthy environment protects and encourages people, our most important asset.

All relevant statutory requirements will be complied with, at all times. These relevant statutory requirements will be considered as a minimum standard and, where reasonably practicable, will be exceeded when it is necessary to meet the spirit of this policy.

It is management's duty to ensure staff members are informed and receive adequate Health and Safety training, and that tasks are only allocated to staff members capable of fulfilling these tasks in a manner that is safe to themselves and others. All staff members are required to understand their responsibilities and duties and to carry out such duties with the same diligence and priority as any other tasks. Safety comes first at all times.

It is our policy to assess potential risks formally. Good organization, planning, and communication will minimize those risks and apply protective measures to ensure, so far as is reasonably practicable, the health and safety of all. The removal of risk is the primary goal of this policy, with risk reduction and protective measures being implemented where this is neither practical nor possible.

Each and every individual is duty bound to act in a safe manner, no staff or subcontractor must conduct himself or herself in a manner that will endanger themselves, their colleagues, and staff members of other organizations or the general public by their own acts of omissions.

<u>Note:</u> Health and Safety practices and procedures are the principal concern for all Cape Enrage Employees. Failure to comply with any Heath and Safety practice or procedure will be cause for disciplinary action, up to and including immediate dismissal.

#### Radio and Communication Protocol

#### **MOBILE RADIOS**

Radios are an important tool for running day to day operations at Cape Enrage and are especially crucial during emergency situations. <u>Staff who have been assigned a radio should be wearing them</u> at all times for the safety of our guests. Radio Users are responsible for keeping radios charged.

\*Always assume that guests can hear you whenever you speak on the radio. Keep it brief and professional and avoid using radios for personal conversation.

\*If you can hear someone calling you on the radio, never leave them hanging. Always confirm that you have heard their message.

#### **HELPFUL VOCABULARY**

\*You are not required to use these terms and phrases; the important thing is just to get your message across. You might find some of them helpful\*

Radio Check	Can you hear me? Should be responded with: "This is Suzy, you are loud and clear, over."
All Stations, all stations	Attention everyone on site
Come in	Please acknowledge that you are listening
Over	End of my message. By saying this, the other party knows that your message was not cut off
Go ahead	I am listening
Stand by	I will let you know when I can listen
Say again	Could you please repeat your message
Copy/Understood	I understand your message
Clear	I am finished talking.
Do you copy?	Do you understand?

#### To Make a Call to another individual (Example of good radio etiquette)

Suzy this is Carol, come in.

Carol, this is Suzy, go ahead.

Suzy, the cat is out of the bag, over

Carol, understood, will let you know when I find the cat. Suzy clear

Thank you, Carol clear.

#### **INCOMING TELEPHONE CALLS**

Every telephone should be answered on or before the third ring.

Each person answering the telephone shall say "Good Morning/Afternoon, Cape Enrage" and identify him or herself.

Voicemail messages need to be checked and cleared several times each day. All calls need to be returned within the same business day, or at the latest, within 24 hours.

#### Harassment and Discrimination

Number: AD-2913

Section: OTHER PERSONNEL MATTERS AND TRANSACTIONS

Subject: WORKPLACE HARASSMENT Last update: 12/03/96; Printed: 10/98

#### 1. APPLICATION

This policy applies to all personnel including casuals employed in Parts I, II and III of the New Brunswick Public Service. Where applicable, this policy also applies to volunteers, staff members, contractors, fee for service individuals, those governed under medical staff bylaws, and clients.

2. AUTHORITY: Board of Management Minute 93.0625, 96.0777.

#### 3. POLICY STATEMENT

- **3.1** As an employer, the government of New Brunswick is committed to providing a work environment in which all individuals are treated with respect and dignity. It is the employer's responsibility to prevent and eliminate harassment in the workplace.
- **3.2** Harassment in the workplace is a form of discrimination. It is unwelcome and unwanted. It affects the individual's ability to learn and work. It can also be an expression of abuse of power, authority, or control and is coercive in nature.
- **3.3** Managers are responsible to take appropriate preventive or corrective action and to put a stop to any harassment they are aware of, whether or not a complaint is filed. Failure to take appropriate action may result in disciplinary measures being imposed on the manager as well as the offending person.
- **3.4** Harassment in the workplace will not be tolerated and managers must take appropriate action to protect their employees and others in the workplace. Harassment in the workplace constitutes a disciplinary infraction and shall be dealt with appropriately.
- **3.5** The abuse of one's authority or position, to intimidate, coerce, or harass is forbidden. All managers and supervisors are responsible for their employees' work environment.
- 3.6 This policy is not intended to limit or constrain the employer's right to manage. Performance reviews, work evaluation and disciplinary measures taken by the employer for any valid reason do not constitute harassment in the workplace.
- **3.7** This policy delineates some unacceptable behavior but does not modify any other rights or obligations.

#### 4. DEFINITIONS

For the purposes of this policy, harassment in the workplace includes **personal and sexual** harassment, poisoned work environment and abuse of authority.

#### 4.1 Personal Harassment

**Personal harassment** means any objectionable or offensive behaviour that is known or ought reasonably to be known to be unwelcome. It includes objectionable conduct, comment or display made on either a one-time or continuous basis that demeans, belittles, or causes personal humiliation or embarrassment

Without limiting the above, personal harassment includes harassment within the meaning of the *New Brunswick Human Rights Act*, i.e., harassment on the basis of the following prohibited grounds of discrimination: race, colour, religion, national origin, ancestry, place of origin, age, physical disability, mental disability, marital status, sexual orientation or sex.

#### 4.2 Sexual Harassment

**Sexual harassment** means any conduct, comment, gesture or contact of a sexual nature, whether on a one-time basis or a series of incidents,

- a. that might reasonably be expected to cause offence or humiliation; or
- b. that might reasonably be perceived as placing a condition of a sexual nature on employment, an opportunity for training or promotion, receipt of services or a contract.

**Examples** of behaviour that can constitute sexual harassment include, but are not limited to:

- unwanted touching, patting or leering;
- sexual assault:
- inquiries or comments about a person's sex life;
- telephone calls with sexual overtones;
- gender-based insults or jokes causing embarrassment or humiliation;
- repeated unwanted social or sexual invitations; and
- inappropriate or unwelcome focus/comments on a person's physical attributes or appearance.

#### 4.3 Poisoned Work Environment

A **poisoned work environment** is characterized by an activity or behaviour, not necessarily directed at anyone in particular, that creates a hostile or offensive workplace. Examples of a poisoned work environment include but are not limited to: graffiti, sexual, racial or religious insults or jokes, abusive treatment of an employee and the display of pornographic or other offensive material.

#### 4.4 Abuse of Authority

Harassment also includes **abuse of authority** where an individual **improperly** uses the power and authority inherent in a position to endanger a person's job, undermine the performance of that job, threaten the person's economic livelihood, or in any way interfere with or influence a person's career. It is the exercise of authority in a manner which serves no legitimate work purpose and ought reasonably to be known to be inappropriate. Examples of abuse of authority include, but are not limited to, such acts or misuse of power as intimidation, threats, blackmail or coercion.

#### 4.5 Workplace

The **workplace** includes but is not limited to the physical work site, washrooms, cafeterias, training sessions, business travel, conferences, work related social gatherings, the employee or client's home or worksite, etc.

- **4.6** The Complainant is the person who alleges that she/he has been harassed by the respondent.
- **4.7** The Respondent is the person who is alleged to have harassed the complainant.
- **4.8** CEO means a Chief Executive Officer or designate and includes Deputy Ministers, Superintendents of Schools, Part I; Chief Executive Officers of Regional Health Authorities, Part III; and for the purpose of 5.2.4 or 5.2.5 Deputy Minister for the Office of Human Resources.
- **4.9** Manager includes line supervisors, directors, principals of schools, nurse managers, directors of finance and administration, facility managers, human resource directors, human resource personnel and all appropriate persons in the chain of command within the organization. A manager may be designated to be responsible for formal complaints or in any other role as determined by the CEO.

**4.10** Parties to the complaint mean the complainant and respondent.

#### 5. PROCEDURE:

Upon becoming aware of any incident which may fall under the definition of harassment nothing precludes a CEO from foregoing the procedure under this policy and taking appropriate action which may include invoking the normal disciplinary procedure.

#### Informal Procedure

Complainants and managers must use the informal complaint procedure to attempt to resolve workplace harassment unless it is inappropriate to do so.

#### 5.1 Informal Complaint - Mediation

- **5.1.1** An effective way to end the problem of harassment in the workplace is to communicate concerns directly by telling the person that the behaviour is unwelcome and must stop or by requesting the manager to do so.
- **5.1.2** A complainant should request the assistance of a manager in the informal resolution of a workplace harassment complaint. If the communication is done orally the complainant should have the manager present. If done in writing, it is advisable to forward a copy to the manager, and to keep a copy of the letter.

The manager may help with other methods of informal resolution such as discussion and mediation, to assist the parties in voluntarily reaching an acceptable solution.

- **5.1.3** When the facts are not in dispute and it is determined by the CEO that the respondent or any other person has committed an act or acts constituting harassment the CEO shall take appropriate action up to and including dismissal.
- **5.1.4** Nothing in the informal procedure prevents a manager from recommending the matter be investigated or if the informal complaint procedure is not successful from recommending further action.

#### **5.2 Formal Procedure**

- **5.2.1** Where appropriate, the complainant may choose to file a formal complaint.
- **5.2.2** The employer is committed to responding to all complaints, however, it is in the CEO's discretion whether or not to investigate a complaint if it is not filed within a year of the alleged circumstance leading to the complaint unless:
- a) there is a strong factual and legal case,
- b) there is evidence of substantial loss or damage to the complainant and a clearly identifiable remedy,
- c) there are justifiable reasons beyond the complainant's control for not filing the complaint within the one year limit, and

- d) the respondent will not be unduly prejudiced by the extension.
- **5.2.3** A formal complaint must be written and signed. It should give an accurate account of the incident or incidents of harassment including times, places and parties involved. When completed, the complaint is submitted to the manager, or Chief Executive Officer (CEO).
- **5.2.4** If the complainant deems it inappropriate to file a complaint with one of the persons mentioned above, a complaint may be filed with the Deputy Minister for the Office of Human Resources.
- **5.2.5** The CEO shall investigate or shall appoint an investigator or request the Deputy Minister for the Office of Human Resources to appoint one to ensure the complaint is investigated in a confidential and expeditious manner.
- **5.2.6** If at any time a grievance has been filed and the subject matter is the same as, similar in nature or related to the complaint the CEO may suspend or terminate the investigation.
- **5.2.7** When there is a direct reporting relationship between the complainant and the respondent, it may be in the best interest of all parties for them to be physically and hierarchically removed from one another for the period of the investigation. If there is no reporting relationship, the employer shall determine if the parties should be physically removed from one another for the period of the investigation.
- **5.2.8** The CEO or the investigator may upon reviewing the written complaint and interviewing the complainant determine whether or not the complainant has a prima facie complaint under this policy which merits further investigation. The CEO or investigator shall inform the complainant whether or not the investigation will be pursued and may take action to resolve the issue.
- **5.2.9** The respondent shall be informed of the complaint, presented with a written statement of allegations and afforded an opportunity to respond.
- **5.2.10** Unless directed otherwise the investigator shall gather and analyze the information, summarize the findings and may propose corrective action or make recommendations.
- **5.2.11** The investigator shall report the findings and recommendations to the CEO who shall determine whether the respondent has committed an act or acts constituting harassment.
- **5.2.12** Where it is determined that the respondent has committed an act or acts of harassment, the CEO shall take appropriate action up to and including dismissal.
- **5.2.13** The CEO may take any other action deemed advisable.
- **5.2.14** A complaint under this policy that involves falsehood or malicious intent or is otherwise made in bad faith, as determined by the investigation, shall be subject to appropriate disciplinary action.

**5.2.15** The parties to the complaint must be informed in writing of the outcome.

#### **6. OTHER OPTIONS**

#### Complaints to the New Brunswick Human Rights Commission

New Brunswick Human Rights Act complaints should normally be filed within one year from the time the harassment occurred. Complaints are investigated by the New Brunswick Human Rights Commission. For more information, call the New Brunswick Human Rights Commission.

#### **Complaints under the Criminal Code**

Sexual and other forms of assault are covered under the Criminal Code. In these instances, the police can be asked to lay criminal charges. Sexual and other forms of assault are serious criminal offenses that should be reported to the police.

#### Orientation Checklist

#### Orientation should be completed within the first week of employment.

We strive to provide all new employees with all necessary information, rules, and regulations so that they may be an effective team member:

- Organized structure (other positions and reporting relationships)
- □ Introduce to co-workers and supervisor
- Show facilities
- Review safety regulations
- Working conditions
- □ Dress code

- Vacation entitlement and periods
- □ Sick leave
- Workers' Compensation Claims procedure
- Sample forms
- Procedure for reporting injuries
- Emergency Procedures Manual

#### Employee Handbook/Interpretation Training Manual 2020

Scheduled days off
 Hours to work
 Lunch and coffee breaks
 Work schedules
 Customer interactions
 Inappropriate behaviour
 Pay period/Timesheets
 Deductions
 Direct Deposit Information

If you have any questions about the information provided in this manual please let your supervisor or Management staff know!

Part II: Interpretation Training Manual

The Bay of Fundy <u>is</u> one of the <u>Marine Wonders</u> of the World with tides rising as much as 16.3m (53 vertical feet) over a 12-hour period twice each day.

Cape Enrage offers one of the most spectacular views of the natural phenomenon from its towering cliffs.

A light station and fog alarm since 1838; the current light tower is over 100 years old.

### The History of Cape Enrage Light Station

"Cape Enrage lighthouse is one of the oldest on New Brunswick's Fundy coastline. The original light was built about 1840 at a cost of £600 and was probably a fixed, white light which may have been changed later to a green hazard light. David Tingley sold the land for £50 and allowed a road to be constructed to the Cape at no charge. The Commissioners determined the site to be suitable; it had water, stone for building, some arable land and the point of land reserved for the lighthouse was in direct sight of all points from Rockport southward to St Martins."

Recently, records have been found indicating that a second lighthouse was built at Cape Enrage in 1870. This light had a revolving white light until replaced with a fixed green light about 1999. Cape Enrage is actually an island now called Barn Marsh Island and is only connected to the mainland by a beach-head along which the road has been constructed. It is separated from the mainland by Barn Marsh Creek.

Cape Enrage is so named for the turbulent waters that pass over the reef which continues southward from the island for nearly a kilometer at low tide and the rough seas can be seen for much farther on windy days as the current and wind are in opposition. It is one of the most hazardous areas for mariners in the upper Bay of Fundy. In the 1800's, there was much shipping passing by Cape Enrage en route to The Bend (Moncton), the Petitcodiac River, Cumberland Basin, Grindstone, Rockport and other settlements on the Shepody Bay. Both ship building and stone quarrying were important industries in the upper part of the Bay of Fundy during that time. Barges carrying gravel to Moncton from Waterside Beach continued well into the 1900's. Many shipwrecks occurred at Cape Enrage.

The Grindstone Island lighthouse was constructed in 1885 and so named due to the rock quarried on the island that was used to make grinding stones that were used in grist mills. The lighthouse was decommissioned in 2000; its last keeper, Wainwright Weston (Pappy Weston) lived on Route 915 at New Horton for many years thereafter.

#### **Beaches**

Barn Marsh Beach is located 6 Km in on the Cape Enrage Road, once you leave the #915 and is only 0.5 Km from the Cape Enrage lighthouse. The extensive sand beach is covered during the last two hours of the incoming (flood) tide and the first two hours of the outgoing (ebb) tide. The exposed sandy ocean floor extends for about two hundred metres at low tide and its width extends from Inner Head to Outer Head, the latter being the cliffs of Barn Marsh Island upon which sits the Cape Enrage Lighthouse. Barn Marsh Beach is the only land connecting the mainland with Barn March Island (Cape Enrage) at high tide. The beach is owned by New Brunswick Nature Trust, as are portions of the adjoining marsh. Swimming is common; however it is always at your own risk. No known undercurrents are present but extreme Bay currents extend from Inner Head to Outer Head at almost all times of tide. As on all beaches rocks and fossils may not be removed. Litter should be

carried home for disposal, although refuse barrels are provided by Shepody Fish and Game Association. Fires on the beach must be with the permission of the Department of Natural Resources.

On the northeast (away from the Bay) side of the beach, Barn Marsh Creek extends nearly 6 Km parallel to Barn Marsh Island out to the Bay at Bray Beach. Each incoming tide fills the marsh and on extreme tides, fills the marshland from tree line to tree line.

Barn Marsh Island Beach extends the entire 6 Km length of Barn Marsh Island on the Bay side. It is primarily accessible from the Cape Enrage lighthouse property where a set of stairs descends the 30 metres to the beach. Use of the stairs is at your own risk. There is a constant danger of rock falls from the 40-metre cliffs that extend for about four of the six kilometres of beach. Therefore, do not linger near the foot of the cliffs. This beach is not navigable from two hours before high tide to two hours after high tide. Be certain to know when the safe times for hiking are by checking with the Cape Enrage staff before you attempt the hike. Departure from the beach is only possible by traveling along the beach since the cliffs prevent direct access to safety in the event of a "tidal miscalculation". This is truly the wilderness beach in the area and is the ultimate walk on the ocean floor. Fossils are strewn everywhere as they erode from the cliff faces with each tide.

#### Fossil information

There are two main types of fossils:

- 1. Body fossils include any part of the actual animal or plant. Things like bones, teeth, shells, and leaves are considered body fossils.
- 2. Trace fossils give us proof of animal life from the past. Trace fossils include things like foot prints and burrows. Trace fossils provide palaeontologists with evidence of the activities of ancient animals something body fossils simply can't do. Trace fossils are formed in place and can therefore tell us about the ancient environment in which the animal lived. One single animal can make thousands and thousands of traces in its lifetime, but it

will only leave behind one body when it dies. Because of this, trace fossils are much more common than body fossils.

Trace fossils are moments of time that have been captured forever in the rock record.

#### How does something become a fossil?

Live. Die. Get buried... Well... it's not quite that simple. Most plants and animals will not become fossils. They decay very quickly or get eaten by other critters. If a plant, an animal, or a trace is going to become a fossil, it has to be buried rapidly by sediment (like mud). This happens in places like rivers, lakes, and oceans. Over time, many layers of sediment build up and eventually turn to rock. After more time passes, the layers of rock are brought to the surface of the Earth by forces like earthquakes. The overlying layers of rock are eroded exposing the fossils.

The fossils at Cape Enrage are contained in the layers of sedimentary rock approximately 320 million years old. They have all been transported from elsewhere, with an abundance of plant trunk fossils washed downstream and trapped along the river channels in 'log jamups' along the sides of large river channels. A diverse flora exists at the Cape Enrage site, with lowland plants, including beautifully preserved giant horsetail-like trees called *Calamites*, and classic lycopsid bark and roots. An abundance of frond stems with ropey bark textures and large branch knots are also well preserved at the site. Small invertebrate track ways are also present. These track ways have classically been assigned to millipedes; however horseshoe crabs may also produce similar traces. The cliff section displays predominantly river dominated sediments. Multiple sandstone and mudstone infilled river channels can be seen in cross section, and where exposed, spectacular rippled surfaces can be found.

### Reef & Shipwrecks

Cape Enrage has a large reef pointing south and extending into the bay. This is a prime reason the water gets violent, especially during mid-tide when it is partially exposed and the water is in motion.

"The fact that Cape Enrage jutted out into the Bay of Fundy nearly half way to Nova Scotia made it prone to shipwreck many sailors. The water is very deep on the seaward (northeast) side of Cape Enrage and sailors tended to travel close to Cape Enrage in the winter to avoid ice which was common along the south shore against Nova Scotia. In addition, the busiest trade route was past Cape Enrage rather than past Apple River."

Southward of Cape Split, is Scotch Bay, a wide, open roadstead, with extensive mud-flats at its upper extreme. Considerable quantities of Shad were taken on these flats, chiefly in weirs; but a large seine was also used. Complaints were made, as being injurious to the fisheries, by taking numbers of small fish of every description. Here the Shad fishery ceased on the Southern Shore of the Bay of Fundy and the geological character of the Coast changes. The bold and rugged cliffs of the South Shore consist chiefly of trap rocks."

#### Shipwrecks listed by searching Chignecto Bay:

- Ariadne (1887)
- Mary George (1877) 18 tons, Schooner stranded in Chignecto Bay. Voyage from Five Islands, NS to St-John, NB. Snow storm caused a total loss March 16, 1877.
- Ethel Sumner crashed at midnight on November 12th 1912. It was one of the last large ships built at Turner Shipyard in Harvey, NB. It was named after the eldest daughter of the first mayor of Moncton. The ship hit a ledge and broke apart near Waterside, NB. Visible were both lights of Cape Enrage and Apple River. Four drowned and three survived. Captain Patterson was apparently a smart man, and the mystery remains as to why or how it got so close to the ledges.
- May Flower (1893)
- o Nellie (1927) 59 tons, Schooner stranded in Cape Chignecto on April 8, 1927
- Vanessa (1934) 13 tons, ship struck submerged object and was wrecked on Feb
   8th, 1934 at Cape Chignecto

There are many other shipwrecks in the Bay of Fundy...you may want to check out Robert Parson's book; Shipwrecks of New Brunswick"

## Frequently Asked Questions: Cape Enrage

1. What is the structure that is now at the top of the hill near the entrance to Cape Enrage that is currently skirted with decking?

Beneath the decking are the remains of the fog alarm building (known in seaman's parlance as the Whistle House) and is believed to be the second location of the fog alarm. Inside, was the compressor and engines that provided power for the system.

#### 2. When was Cape house built?

Cape House was built in 1952 just prior to the demolition of the original keepers dwelling which was in what is currently the lower parking lot near the stairs to the lighthouse.

#### 3. Has the lighthouse always been in the same location?

It is believed that the lighthouse that exists today has been in its current location since it was built. However, another lighthouse predated the current one and its location is unknown to us. Our thoughts are that it would have been on the point slightly lower than the current one where the concrete is still visible, hanging over the cliff. The fog alarm, on the other hand, has been located in three positions. The first was at the same location as the suggested first location of the original lighthouse; the second was at what we refer to as the "fog deck" near the main gate; the final position was the current location near the lighthouse. The current configuration is two vertical components and was predated by a four-horn configuration at the same location.

## 4. What is the geographical name of the point of land where the lighthouse stands?

Outer head. The point on the other side of Barn Marsh Cove is Inner Head.

#### 5. What four components are housed inside the lighthouse?

The lantern at the top, the fog detector on the middle level, the Lister diesel back-up generator and a radio communication system on the main level.

#### 6. Who operates the lighthouse?

The lighthouse and fog alarm are automated but the Canadian Coast Guard does provide the required maintenance of the fog alarm since it is highly technical and parts are not available other than from retired pieces of equipment in Saint John or Dartmouth.

#### 7. What is the purpose of the antenna on the lighthouse?

There have been two antennae on the deck of the lantern: one tubular style is to transmit data from the operation of the lighthouse to CCG in Saint John. (now obsolete) and the other whip style antenna is for the VHF system.

#### 8. How many decibels is the current fog alarm at 1 metre?

The precise value is noted on the blue panel located on the middle level of the lighthouse, but it is in the vicinity of 140 dB.

#### 9. What is the time sequence of the fog alarm?

A 2 second blast followed by a 3 second silence, a 2 second blast followed by a 3 second silence and a 2 second blast followed by 48 second silence.

#### 10. What sequence of events turns the fog alarm on?

The fog detector emits continuously a light beam aimed off the southern point (Outer Head) and measures the time for its reflection to be received. Normally, during no fog or other conditions of atmosphere that do not reflect light, a reflection is not received and the fog alarm remains inactive. If the conditions within range of the system reflect light back into the receiver and the condition persists for about 10 minutes, the fog alarm is activated. When the conditions clear and reflection cease for a period of time, the fog alarm shuts off.

#### 11. When were the stairs to the lighthouse built?

They were built over a period of time beginning in 1997 and ending in 1998.

## 12. Where did the funds for the construction of the stairs to the lighthouse come from?

Funds were provided by Environmental Trust Fund (ETF).

## 13. What was the structure used for that is at the far end of the point in front of the lighthouse?

It was the location of the first fog alarm and probably the first lighthouse.

#### 14. Where did the name Chignecto come from?

It is the name of the Bay of Fundy adjacent to Cape Enrage – Chignecto Bay.

## 15. What was the structure of the brick remains that may be seen in the valley beyond the guard rail?

We do not really know the right answer, but the most common answer is a storage shed for coal to run the engines that powered the fog alarm and for fuel for the keepers dwelling that was located just NE of it near the bottom of the lighthouse stairs. Some have also suggested it housed the cistern.

#### 16. When was Chignecto House built?

It was started in the summer of 1996 and completed during the winter and spring of 1997. Second floor reconfiguration in the winter of 2006.

#### 17. When was the Cape House built?

Cape House was built in 1952 just prior to the demolition of the original keepers dwelling which was in what is currently the lower parking lot near the lighthouse stairs.

#### 18. Is Cape Enrage a major light or a minor light?

According to the classification rules of CCG, it is a minor light.

#### 19. What is the main fishing that occurs near Cape Enrage?

The main fishing is lobster and fishermen set their traps close enough to the cliffs at Cape Enrage that one can easily carry on conversation with them from shore.

20. What influence does the Petitcodiac causeway have on the fishing industry at Cape Enrage? When the causeway was built in 1967, the amount of silt deposited from the Petitcodiac River into the upper part of Chignecto and Shepody Bays was significantly reduced. Subsequently, the bottom conditions became amenable to lobster habitation. The enlarged fishing ground area was a great boost to the fishing industry in Alma.

#### 21. How does a fisherman recognize his own traps?

The color and color configuration on the buoys is the main way fisherman identify their own traps. Every fisherman has his or her own "mark" that is unique to them.

#### 22. Why is cell phone reception poor at Cape Enrage?

The towers located on the New Brunswick mainland near Albert and in Fundy National Park are too distant for good reception and the major hills in the intervening distance also block reception. Cell phones used here usually access Nova Scotia towers which could cause long distance charges.

### 23. What other lighthouses can be seen at night from Cape Enrage?

Cape Capstan, Apple River.

#### 24. What lighthouses may also have been seen from Cape Enrage 30 years ago?

Cape Capstan (Apple River), Grindstone Island and Martin Head plus the Anderson Hollow light.

#### 25. What formation separates Cape Enrage from the mainland?

A tidal creek called Barn Marsh Creek separated Barn Marsh Island (Cape Enrage) from the mainland. The mainland area is largely Little Ridge which extends from near Cape Enrage and Inner Head to New Horton and Two River Inlet

#### 26. Who owns the property where the spring is?

It was sold by a person known as Larry King to Michael O'Connor from Connecticut. Mr. O'Connor died in 2009 and it now belongs to Michael Smith.

#### 27. What is the name of the beach at the end of "our" island?

The beach at the eastern end of Cape Enrage (Barn Marsh Island) is Bray Beach.

#### 28. When was the last of the dirt road to Cape Enrage paved?

In the late 1990's.

## 29. What is the name of the place that is about 1 km beyond our island travelling up the bay? Tom's Island and Two

Rivers Inlet are about 1km further up the bay from the end of Barn Marsh Island.

#### 30. Where did Ha Ha Cemetery get its name?

The lake that we know as New Horton Lake was formerly known by its Native American name, Ha Ha Lake after the sound of the loon. In that lake there is a very small island, only a few square feet in area, known as the Loon Island. The brook that carries run-off from Ha Ha to the bay was called Ha Ha Brook and the bay that it flowed into was called Ha Ha Bay. Therefore, the cemetery near the brook, the lake and the bay is called Ha Ha Cemetery.

#### 31. When were the steel stairs to the beach constructed?

There was a stairway of Eastern Hemlock constructed the first summer of the Cape Project in 1993 by the students. Those were in use for 15 years. In 2008, the steel stairs were put in place.

## 32. What statistic most dramatically tells the magnitude of water that flows in and out of the Bay of Fundy?

More water flows in and out of the Bay of Fundy in a 24 hour period than all the water flowing out of all the rivers in the world combined... 100 billion tonnes

#### 33. Why does fog occur so often on the Bay of Fundy?

The ultimate reason for the creation of fog is a significant difference in the temperature of the two levels of air mass. Since the air over the mainland is usually warm and moist, as it encounters the cold water over the Bay of Fundy, the moisture in the warm air condenses at the lower temperature and fog forms. Fog occurs more often during the seasons when the air over the land is warmer – summertime.

#### 34. Does dulse grow at Cape Enrage?

Yes, it does, but it is only accessible at extremely low tides. There is not enough dulse growing here to be harvested commercially.

#### 35. To what degree do fishermen depend on the fog alarm at Cape Enrage?

Technically, the fishermen today have onboard electronics that allow them to know precisely where they are in relation to other watercraft, buoys and land masses as well as shoals and reefs. In the event of an electronic failure, the lighthouse is the only navigational beacon available to help them position themselves to a safe location.

#### 36. What is the significance of the green buoy off the point at Cape Enrage?

It is the position of safe passage for boats passing by Cape Enrage. On the way up the Bay, boats will keep the green buoy on their starboard (right side, green light side) and on the way down the bay, it will be kept on their port (left) red light side.

#### 37. Are there fish to be caught from the shore at Cape Enrage?

Yes, there are small sharks known as sand sharks that can be caught at certain times of the tidal cycle.

#### 38. How many whales have been sighted by Cape Enrage staff?

One. It swam by the Cape close to shore in the summer of 2000 after having been seen at Hopewell Rocks earlier in the day.

#### 39. How often do porpoise come near Cape Enrage?

Generally every day during the spring, summer and fall seasons. They position themselves at the edge of the incoming and outgoing currents as the water passes over the submerged reef beyond the lighthouse

## 40. What are the large flocks of black and white ducks that are seen flying near the water?

They are either Common Eiders or Scoters. The Eider males are mainly white with black wings and Eider females are Brown. The Scoters have white markings but are noticeably blacker all over.

## 41. What is the name of the large grayish blue bird seen frequently near Cape Enrage?

These birds are Great Blue Heron. They also nest on Grindstone Island.

# **42. Name four shore birds that breed on Grindstone Island**. Great Black Backed Gulls, Herring Gulls, Common Cormorants and Great Blue Herons. The Peregrine Falcons also nest there.

#### 43. When is the current the strongest at Cape Enrage?

The current is always strongest at "half tide", that time of the tidal cycle each day, three hours after low tide and again three hours after high tide. The strongest of those currents occur twice each month during or near the new moon and again near full moon.

- **44. When is it safe to walk from Cape Enrage to Waterside?**It is safe to make this hike during the six hour period ...3 hours after high tide until three hours after low tide.
- **45. When is it not safe to be on the ocean side beach of Barn Marsh Island?** To travel the beach for any distance is not possible for the four hour window surrounding high tide.

#### 46. Which are the foggiest months?

The foggiest season is June through September with July and August having the highest possibility of fog.

#### 47. Why is the spring migration of sea birds different from the fall migration?

In the spring the seabirds returning northwards, follow the coastline which tends to funnel them into the Bay of Fundy and the flight-path leads directly over/past Cape Enrage. In the fall, migration again follows the coastline but the strategy takes the major part of the birds out into the Atlantic south of Nova Scotia.

## 48. What is the significant difference between New Horton Lake and Lockhart Lake?

The biggest difference is that New Horton Lake is fresh water while Lockhart Lake is primarily salt water that is fed by the high tide from the Bay of Fundy flowing in and out of Long Marsh Creek. Long Marsh Creek is the creek that flows under the bridge at the beginning of the Cape Enrage Road. A great kayak or canoe trip is possible by following the tide into and out of Lockhart Lake.

#### 49. How was the above structure accessed?

The concrete base that still remains was somewhat larger before erosion claimed it and the base was accessed through trap doors. These same access doors are present in the fog deck near the main gate.

#### 50. How many types/species of gulls are seen at Cape Enrage?

There are always Herring gulls and Great black backed gulls in the bay, however sometimes there are "strangers". This usually signals the presence of herring or other small fish.

#### 51. What animal strips the bark off the fir trees in this area?

Porcupines eat the bark of many tree species and spend a large portion of their life in trees where they are safe from predators...however they do not have many predators.

## 52. What is the name of the point or the split head that is visible from the lighthouse?

It is called Inner Head.

#### Distance from Alma, Riverside-Albert and places close by:

Alma (via Rte. 915): 20.4km (13 miles)

Alma (via Rte. 114 & Shortcut Rd): 23.7 km (15 miles)

Riverside-Albert: 24km (15 miles)

From intersection Rte. 915 & Cape Enrage Rd: 6.5km (4 miles)

#### Distance from Moncton, Sussex, Fredericton and Saint John:

Moncton: 80km (50 miles) Sussex: 75km (45 miles)

Fredericton: 190km (120 miles) Saint John: 150km (95 miles)

## Frequently Asked Questions: Bay of Fundy

(With thanks to Terri McCullough from Bay of Fundy tourism)

#### 1. Are the Bay of Fundy tides a 50-foot "wall of water"?

The Bay's tides do officially measure 50 feet in height but the tidal bore (just one of several ways to see the tides) is not a 50 foot 'wall of water' twice a day. More information about the various tidal effects that you can experience in addition to the bore below.

2. Why do people call the tidal effects by different names? Isn't a tide simply a tide? There are actually four tidal effects that can be experienced around the Bay of Fundy...They are:

**Vertical Tidal Effect** - This is the effect that gives the Bay of Fundy the highest tides in the world (approx. 50 feet) designation. This effect can be seen at most of our wharves around the bay.

At low tide local fishing boats are sitting high and dry on the ground against the wharf while the tide is a mile or so away. At high tide, these same boats are floating alongside the top of the wharf.

Remember: the time between high and low tide is 6 hr 13 minutes. To best appreciate the vertical tidal effect, visit the same wharf at low tide then again at high tide.

**Tidal Bore** - Even if you've never previously been to the Bay of Fundy, you may have heard about the phenomenon known as the tidal bore: out flowing rivers flowing back upstream as the tide comes in. Folks who have never been to Fundy before tend to take our 50-foot tide measurement and combine it with the bore concept - then end up thinking that we have a 50 foot (think: tsunami!!) bore twice a day, which we do not. The actual rapids of a tidal bore are between 10 and 12 feet, which is still pretty cool.

Many rivers in the upper part of the Bay have tidal bores but, unless you're a local, you may have trouble finding them. Visitors usually like to visit those with some interpretation. Most of these are on the Nova Scotia side of the bay.

Note that the bore time does not match either the high or low tide times listed on the tide chart for that community. The bore time varies depending on where you're perched to view it from the riverbank.

One of the best ways to experience this tidal change is to go white water rafting in it... it's interesting to watch from the shore but it is hugely fun to raft in.

**Horizontal Tidal Effect** - This phenomenon occurs in many locations in the upper part of the Bay of Fundy but you need to allow 6 hours to appreciate it. Basically, it involves going to the same beach at both high and low tide to see the huge distance that the tide travels from high to low. If you are accustomed to the 1-6 foot tides in the rest of the world, this

may not sound very impressive. However, with the volume of water we have moving in & out of the Bay (100 billion tons each tide) the horizontal effect can be a truly an amazing sight!

At low tide a vast expanse of the ocean floor is exposed. In the upper part of the Bay the tide can be a few miles away from where it was at high tide. And, of course, there is nothing like sea kayaking at high tide over where you were previously walking at low (see links).

**Tidal Rapids, Whirlpools & Rips** - The fourth way to see the tides is to visit a location where the tidal rapids, whirlpools or rips can be seen.

The Bay of Fundy coast is definitely not smooth and linear; there are many craggy cliffs and sharp headlands jutting out into the Bay which "interfere" with the flow of water in and out of the Bay, or at the very least cause the water to flow in interesting patterns. The "Old Sow off the coast of Deer Island: the largest whirlpool in the western hemisphere, the second largest in the world - second only to the Maelstrom Whirlpool of Norway. This natural wonder can be seen from the shores of Eastport, Maine. The best time to see the "Old Sow" is 3 hours before high tide.

#### 4. Where can I go to 'see' the tides?

#### **Vertical Tidal Effect**

In New Brunswick: Saint Martins, Alma, Cape Enrage, Hopewell Cape, the Chocolate River near Hillsborough, Petticodiac River in Moncton.

In Nova Scotia: Advocate Harbour, Parrsboro, Hantsport, Hall's Harbour, Margaretsville, Harbourville, Digby.

#### **Horizontal Tidal Effect**

In New Brunswick: St Andrews, New River Beach, St Martins, Alma, Cape Enrage,

Hopewell Rocks, Dorchester Cape

In Nova Scotia: Joggins, Parrsboro, Five Islands, Grand Pre, Blomidon.

#### **Tidal Bore**

o Petticodiac River - Moncton

- The Maccan River about 10 minutes from Amherst
- the tidal bore in Truro just out by the Palliser restaurant
- the South Maitland Tidal Bore Lookoff where there is an interpretation centre

Note that the bore time does not match either the high or low tide times listed on the tide chart for that community. The bore time varies depending on where you're perched to view it from the riverbank.

#### Tidal Rapids, Whirlpools Rips

In New Brunswick: Reversing Falls in Saint John, Cape Enrage, by boat in the Passamaquoddy Bay (such as off the coast of St Andrews or between Black's Harbour and Deer Island). The "Old Sow off the coast of Deer Island: the largest whirlpool in the western hemisphere, the second largest in the world - second only to the Maelstrom Whirlpool of Norway. This natural wonder can be seen from the shores of Eastport, Maine. The best time to see the "Old Sow" is 3 hours before high tide.

In Nova Scotia: Cape d'Or near Advocate, Cape Split - it's a 4 hr hike out there (near Wolfville), in the water channels of Digby Neck between Digby Neck and Long Island, and between Long Island and Brier Island.

#### 4. How do the tides work?

Tides are

the periodic rise and fall of the sea caused by the gravitational pull of the moon and the sun on the Earth. Fundy's tides are the highest in the world because of an unusual combination of factors: resonance and the funnel shape of the bay.

- The water in the Bay of Fundy has a natural resonance or rocking motion called seiche. You could compare this to the movement of water in a bathtub. Although the water in a bathtub sloshes from one end to the other and back again in a few seconds, it takes about 13 hours for the water in the bay to rock from the mouth of the bay to the head of the bay and back again. As the ocean tide rises and floods into the bay every 12 hours and 25 minutes, it reinforces the rocking motion.
- To imagine this, picture an adult giving a gentle push to a child on a swing. Just a very small push is required to keep the swing moving. Likewise the seiche in the bay

is sustained by the natural resonance of the ocean tides. The bay's shape and bottom topography are secondary factors contributing to Fundy's high tides. The bay becomes narrower and shallower [from 130 m (426 ft) to 40 metres (131 ft)] toward the upper bay.

#### Where is the Bay of Fundy located?

The Bay of Fundy is located on the Atlantic coast of North America, on the northeast end of the Gulf of Maine. Its right between the Canadian provinces of New Brunswick and Nova Scotia, with a small portion touching the U.S. state of Maine. The Bay of Fundy is 290 kilometers (180 miles) in length. The mouth of the Bay of Fundy is 100 km (62 miles) wide and between 120 and 215 (400- 700 feet) deep.

How fast is the current during the changing of the tides, and is this sufficient to produce tidal energy if turbines were in place?

The speed of the current varies greatly depending on where in the Bay of Fundy you are. However, a few years ago the Nova Scotia government set up a demonstration site in the Minas Passage area of the Bay of Fundy. This location is close to Black Rock, about 10 kilometers west of Parrsboro. This particular site is ideal for tidal energy because it features:

- water depths up to 45 metres at low tide
- a sediment-free bedrock sea floor
- straight flowing currents
- water speeds up to 10 metres per second on ebb and flow

The Bay of Fundy is commonly regarded as the most potent site for in-stream tidal generation in North America. Early estimates suggest that the Minas Passage may be able to generate 300 megawatts of green, emission <u>free electricity</u> – enough energy to power close to 100,000 homes – while the Bay of Fundy as a whole could provide up to 8,000 MW of installed capacity.

Unlike with a barrage or dam system, in-stream tidal devices are placed in the flowing tidal stream to harness its kinetic energy. The technology is brand new and the first device tested in the Bay of Fundy – a 400-tonne heavy 1 MW undersea turbine developed by the Irish company Open Hydro – had to be pulled out of the water a year early because the Fundy tides broke of all the turbine's blades. It will take some time to test and refine these devices to create a commercially viable technology that can withstand the violent Fundy tides.

That being said, there are currently three working tidal power plants in the world – one in France, one in Russia, and one in Nova Scotia. But these are all barrage plants that use dams to hold the water before releasing it through a generator – similar to conventional hydroelectric plants.

Nova Scotia's Tidal Generating Station has been operating since 1984. It uses the Bay of Fundy tides to produce 20 megawatts of energy – enough to power about 6,000 homes.

#### Do the Bay of Fundy turbines work in both directions?

Yes, the Open Hydro turbine they deployed in the Bay of Fundy, and almost all other tidal turbine designs, work in both directions.

### History of New Brunswick

When Samuel de Champlain and other European explorers began to explore the area that became New Brunswick in the early 1600s, they were met by the Maliseet and Mi'kmaq peoples who inhabited the area and lived along its rivers and coasts. The early French pioneers established settlements at the head of the Bay of Fundy and up the St. John River Valley as far as present-day Fredericton and called the entire Maritime region Acadia.

The area was the subject of numerous conflicts between the French and British empires during the later 1600s and early 1700s. The region was ceded to Great Britain in 1710. Following the final defeat of the French in 1755, more than 5,000 Acadians were forced into exile from their lands by the British. Some of them escaped to what was then a remote and relatively uninhabited coastline along the Gulf of St. Lawrence and Baie des Chaleurs, where these Acadian settlements grew and thrived. Today, this region is known as the Acadian Peninsula.

In 1783, refugees loyal to the British Crown began to land at the mouth of the St. John River in what was then part of the Province of Nova Scotia. They were fleeing from persecution in the aftermath of the American Revolution and came from as far south as Georgia and as far north as Massachusetts. These refugees were not all of British origin, but included German, Dutch

and Black Loyalists. The Black Loyalists included a number of freed slaves, but there were a small number of loyalists who brought their slaves with them to New Brunswick.

Discontentment with the government in Halifax led to the establishment of the areas north of the Bay of Fundy as the province of New Brunswick in 1784. By 1785, so many refugees had landed and settled at the mouth of the St. John River that the King granted a charter to the new City of Saint John, the first incorporated city in Canada. The capital was established at Fredericton, 114 km up the St. John River.

#### **New Brunswick Facts**

- Partridge Island was used as a quarantine / immigration station and is also the site of the world's first steam-operated fog horn.
- An arboretum of all tree species native to New Brunswick is found in Odell Park in Fredericton, the provincial capital.
- Near Saint-Jacques, one of the few remaining RAF Lancaster Bombers is on display.
- On the furthest tip of Miscou Island, a lighthouse in operation since 1856 continues to serve as a major navigational beacon.
- One of the longest natural sandbars in the world is at Eel River Bar. On one side of the bar there is salt water, and on the other side, fresh water.
- At Rogersville, a monument pays tribute to Acadian settlers and has been the home of a Trappist Monastery since 1904.
- The Enclosure Provincial Park is the site of an exciting archaeological excavation where Aboriginal, Scottish, Acadian and Loyalist settlements have been uncovered.
- At Boiestown, the Central New Brunswick Woodmen's Museum chronicles the fascinating history of people who worked in the woods.
- One of the most popular and most photographed attractions in Eastern Canada is the flowerpot rocks at Hopewell Cape. This is one of the best locations to view the rise and fall of the Fundy tides
- Shediac, lobster capital of the world and site of an annual lobster festival, also has the world's largest lobster.
- Canadian Forces Base Gagetown, located in Oromocto, is the largest military training area in the British Commonwealth. A military museum is open to the public
- The Old Sow, off Deer Island, is one of the largest whirlpools. It can best be seen three hours before high tide.
- The highest and longest trestle bridge in Eastern Canada can be seen near New Denmark.
- Hartland is the site of the longest wooden covered bridge in the world. The structure, built in 1899, stretches for 391 metres across the St. John River.
- The St. John River system is the second largest on North America's Atlantic coastline.
- Fiddleheads, edible, tightly coiled ferns that resemble the spiral end of a violin or fiddle, are a New Brunswick delicacy.
- New Brunswick has more than 48 lighthouses and is famous for its existing inland lighthouse system that dots its inland rivers.
- New Brunswick has 62 remaining covered bridges. Kings County is considered the Covered Bridge Capital of Atlantic Canada. The bridges that are standing today are living examples of the pride of craftsmanship, heritage, engineering and design of our forefathers. The "Longest Covered Bridge in the World" is located in Hartland, New Brunswick - 390 m (1,282 ft.) long.
- Charles Thomas "Stompin' Tom" Connors, one of Canada's most prolific and well-known folk singers, was born in Saint John on February 9, 1936 (died 2013).

- The world's oldest intact shark fossil, over 409-million years old, was discovered near Atholville, in the heart of the Appalachian Range.
- New Brunswick's Sir Charles G.D. Roberts was the first Canadian poet to be knighted.
- The first French settlement in North America was attempted in 1604 on Saint Croix Island.
- The University of New Brunswick is tied with the University of Georgia as being the oldest University in North America.
- The oldest "still in use" university building in Canada is the Old Arts Building, located on the Fredericton Campus of the University of New Brunswick.
- Fredericton's Willie O'Ree was the first black player in the NHL.

#### **New Brunswick Inventions**

- Scuba tank, James Elliot and Alexander McAvity, Saint John, 1839.
- Compound steam engine, Benjamin F. Tibbets, Fredericton, 1845.
- Snow blower, Robert Carr Harris, Dalhousie, 1870.
- Sardine cans, Henry T. Austin, Black's Harbour, 1932.
- Clothes washer with roller wringer, John E. Turnbull, Saint John, 1843.
- Combined hot and cold water faucets, Thomas Campbell, Saint John, 1880.
- Crossword game, Edward R. MacDonald, Shediac, 1926.
- Dump-box for trucks, Robert T. Mawhinney, Saint John, 1920.
- Ganong Brothers Ltd., St. Stephen, are the first in Canada to produce lollipops (1895), to use cellophane packaging (1920), to make peppermint rolls (1926), and to sell Valentine candy in heart-shaped boxes (1932).

#### Overview

New Brunswick, the largest of Canada's three Maritime Provinces, is located under Quebec's Gaspe Peninsula and beside the State of Maine. Its northern border also includes the Restigouche River and the Baie des Chaleurs.

The eastern boundary is entirely coastal - the Gulf of St Lawrence and Northumberland Strait - and dotted with warm, sandy beaches, featuring the warmest salt water north of Virginia.

Chignecto Bay and the 24-kilometre wide Isthmus of Chignecto, which connects New Brunswick to Nova Scotia, form part of New Brunswick's southern border.

The rest of it is the Bay of Fundy. Its tides - the highest and wildest in the world - have carved a spectacular coastline. New Brunswick is also connected to Prince Edward Island by the world-famous Confederation Bridge.

New Brunswick's communities vary from its eight major cities, Bathurst, Campbellton, Dieppe, Edmundston, the provincial capital of Fredericton, Miramichi, Moncton and Saint John ("Saint" is always spelled out), to its many attractive towns and villages located throughout the province that offer a wide range of attractions to visitors and residents alike.

Its rivers, such as the mighty St. John, the magnificent Restigouche or the majestic Miramichi, all possess unique characteristics unlike anywhere else you can find. From rolling farmlands to picturesque forests, river valleys to rocky pinnacles, the beauty and variety New Brunswick offers is unique in the world.

We have 15 First Nation reservations in NB...10 Mi'kmaq and 5 Maliseet. Historically the Mi'kmaq sided with the French and the Maliseet with the English.

The Petticodiac River is a loose derivative of the Mi'kmaq name which means "bends like a bow" and the reason it is so chocolaty in color is two fold: 1. There is a high iron content in the soil/silt and when it exposes to the air it oxidizes and literally rusts, giving it its reddish tinge. 2. The silt is loose in its composition and because of the strong tidal influx, it is constantly churned up.

Official flower: Purple violet

Official bird: Black Capped Chickadee

Official tree: Balsam Fir

750,000 people in the only official bilingual province in Canada

15% of NB is developed, 85% is still forest

#### **Provincial Flag**

Our provincial flag, based on the coat of arms, was adopted by proclamation on Feb. 24, 1965. The symbols depicted on the flag are taken from the Coat of Arms assigned by Royal Warrant of Queen Victoria on May 26, 1868. They are a gold lion on a red field across the top and an ancient galley with its oars in action across the base.

The province takes its name from the Duchy of Brunswick in Germany, which in 1784, the year the province was established, was in the possession of King George III. The arms of Brunswick consist of two gold lions on a red field, and the arms of the King contained the three gold lions of England. The gold lion in the flag therefore reflects New Brunswick's relationship both to the Duchy of Brunswick and England.

The galley is the conventional heraldic representation of a ship and reflects the two principal economic activities, shipping and shipbuilding, carried on in New Brunswick when the coat of arms was assigned.

### Interpretive Guest Services & Expectations

#### "The question is not what you look at- but how you look at what you see." Henry David Thoreau

The goal of an Interpretive Guide is to build bridges between landscapes, people and history; reveal stories behind the scenery and create memorable and inspiring experiences. Effective Interpretation is not about what you say...but rather the way you say it!

Well executed Interpretation is a fun and motivating recreational learning experience!

The goal is not so much to fill their heads with information, so much as it is to inspire them to continue to research and perhaps gain an interest in a subject they may have not previously considered.

Above all, take care of our guests...it's that simple

#### **SAFETY our #1 Priority**

Always provide a safe and positive experience to all visitors and team members by following all safety policies and procedures at all times. Do not hesitate to remind guests as well as your teammates to

"Think Safe". Before Guests leave you to hike the Fossil Beach, remind them not to stay close to the cliff and certainly not to go under a climber or a person that is rappelling...also they may want to rethink their foot wear. You might offer info on the surface they will encounter and also, if it is raining or foggy...Tell them that the rocks will be slippery.

#### **Create a first Impression**

- You only have one chance at the first impression, so make it a good one!
- First impressions communicate before we speak...SMILE, its universal!
- Wear your uniform with pride and be sure that it is wrinkle free and as clean as possible. (Check your appearance after breaks, lunch and supper)
- Be aware of your posture and facial expressions...be approachable and engaging.

#### First impressions are usually formed in 3-5 seconds

#### Customer Acknowledgement and guidelines on addressing people

- <u>Always</u> acknowledge guests with a hello!, a smile, a nod ...a Welcome to Cape Enrage! This makes guests (always refer to our guest as guests, not customers) feel welcomed and at ease and lets them know that we care.
  - Introduce yourself...Tell them your name and what you do...Interpretive, Adventure etc.
- <u>Never</u> make assumptions ... Greet all of our guests courteously...whether they are staff family, service people, Coast Guard, local people, RCMP...Everyone is our guest!
  - Address guests appropriately by using their given name if you know it or... "Folks"
  - Never shorten someone's name unless told to do so.

#### **Professional Telephone & Telecommunications Skills**

- <u>Always</u> answer the phone and/or radios with a smile on your face. Always be professional. Answer the phone with "Good Afternoon or Morning or Evening...Cape Enrage and your name and How can I direct you call or How may I help you"...in French as well, if possible.

#### **Communication & Conversation**

- By observing your guests facial expressions and body language, you can often determine what questions they may have.
- Do not assume that you know for sure what they are looking for or at or questioning. Offer your assistance by asking ... "How can I help you? " or "May I help you"
- Be informative and friendly and sincere...If you do not have the answer...Get it! Tell them you will have it by the time they return from their walk and then... remember to do so!

(Sometimes that is all it takes to leave a good impression)

#### **Conversation & Topics to avoid**

- Politics, Religion, Sex, and Personal Matters

#### **Handling Customer Complaints**

- Take Ownership – **LISTEN** – Apologize and Thank the guest for bring this to your attention. Assure them that you will look after it....if you can. If you cannot, get someone who can. This may be a great time to introduce our General Manager.

#### **Have Fun**

- It is easy to have fun and stay professional in a place as amazing as Cape Enrage. Being informative, polite, friendly, and sincere and looking the part you play is providing professional service. Enhance your day to day with positive interactions. You can enhance the guests experience by this demonstration of teamwork. Be a team player...never talk negatively about any team member or supervisor. Always be supportive. Always come to work with a positive attitude and be proud of what you do and where you work.. Constantly show initiative and keep busy...there's lots to do. Try to show up 15 minutes early...that way you will never be late.

#### Know your product inside and out!

Choose your attitude ...how you think about the guests is how you will treat them!

Be Consistent...Guests return because, they liked what happened last time

Have a Great Summer!