

# Natural World

---

Covering 5,656 km<sup>2</sup>, the province of Prince Edward Island is the smallest in Canada and accounts for 0.1 percent of its total land area. The next smallest province is Nova Scotia and it is larger than the Island by 50,000 km<sup>2</sup>. In size, PEI edges out most of the Caribbean and South Pacific nations, and would rank 48th as a U.S. state, ahead of Delaware and Rhode Island.

## A YOUNGSTER

Geologically speaking, PEI is a child. About 250-300 million years ago, deposited sediment formed the famous red sandstone that makes up the province's foundation. It was only about 15,000 years ago, however, when glaciers retreated and sea levels rose and made the province an Island.

## LONGITUDE AND LATITUDE

Longitude: 63° W

Latitude: 46° N

On the global grid, Charlottetown is located at 46°17' N latitude and 63°8' W longitude. This places it on similar latitude lines with cities

such as Seattle, Washington, Belgrade, Serbia and Ulaan Baatar, Mongolia, and on near-par longitude with Hamilton, Bermuda.

## PHYSICAL SETTING

- Size: 5,656 km<sup>2</sup>
- Length: 224 km
- Average width: 6-64 km
- Furthest distance from the ocean: 16 km
- Length of shoreline: 1,600 km

## THE GULF OF ST. LAWRENCE

The Gulf of St. Lawrence is a huge ‘mixing bowl’ in which freshwater from the St. Lawrence River combines with the warmer water of the Atlantic. Added to the mix is the cold Labrador Current that streams in through the Strait of Belle Isle.

Influenced by these bodies of water, the Gulf is sometimes described as a large estuary. Its salinity levels range from 29-33 parts per thousand compared with the 33-37 parts per thousand found in the Atlantic. The Gulf’s combination of warm and cold waters allow northern fish species to coexist with more temperate water species.

Due to the high abundance of food sources, the food web of the Gulf of St. Lawrence is impressive and ranges from tiny phytoplankton to the largest animal on earth, the Blue Whale.

*Source: Geology of Prince Edward Island.*

## SEEING THE TREES FOR THE FOREST

Despite the fact that much of its coastline sports red or white sand beaches and that its fertile lowland topography is perfectly designed for

## Did you know...

that the sandstone bedrock beneath the Island is about 260 million years old?

agricultural use, PEI still has the lush productive forests so typical of the Canadian landscape. Approximately 257,000 hectares, or 45 percent of the Island is classified as forest, down from 48 percent in 1990. Abundant though it may be, the Island's treed acreage is declining as farms and cityscapes expand.

*Source: Government of PEI — Agriculture, Fishery and Aquaculture.*

## WOODLAND

Percentage of PEI forest lands that is:

Softwood: 48

Hardwood: 52

## MOTHER NATURE'S PRUNING

PEI rarely experiences the devastating fires that frequently ravage woodlands in other parts of the country. Because much of the province is settled, farmed or covered in beach sand, there are not enough forests to attract such large blazes. Most fires are reported as soon as the sparks begin to fly, giving fire fighters plenty of time to respond.

In most years, fires damage fewer than 100 hectares. The exceptions to this rule, however, were the years 1977 and 1986, when 1,200 hectares and 500 hectares were burned, respectively. Between 1991 and 2000, an average of 32 fires burned, taking 79 hectares of forest with them. The low figures have not always been the case. Back in 1960, the Portage fire wiped out nearly 7,000 hectares in Prince County.

## FARM COUNTRY

Approximately 46 percent of PEI's 5,656 km<sup>2</sup>, about 646,000 acres in total, are cleared for farm use. The latest figures identify nearly 1,900 farms in the province.

*Source: Government of PEI — Agriculture, Fisheries and Aquaculture.*

## BRIGHT RED MUD

Prince Edward Island is famous for many things: tubers, a big bridge and a redheaded girl named Anne. But one of the first sights that visitors marvel at is the “bright red mud” that Stompin’ Tom turned into a folksong anthem.

The red of the soil – striking at any time of the day and stunning when accentuated by an Island sunset — is actually one of Mother Nature’s many works in progress. The Island’s bedrock is sedimentary, consisting mainly of soft, red sandstone. The soil contains phenomenally high concentrations of iron oxide, which, as it is exposed to air, oxidizes or ‘rusts,’ creating the gorgeous red and brown hues. The minerals and nutrients in this fertile red dirt are responsible for the Island’s agricultural successes.

## WATER, WATER, EVERYWHERE

With 1,600 km of coastline and more than 4,000 km of freshwater streams, the tiny Island seems absolutely drenched with water. It is ironic, however, because PEI has almost no naturally occurring freshwater lakes or ponds. While many of its streams carry the name ‘river,’ none actually have enough freshwater to deserve the title, and most morph into estuaries sooner rather than later.

Nearly 70 percent of the water in PEI’s many streams comes from groundwater, the rest from rain and run-off. Despite all the water,

## They Said It

*“[PEI] is one entire forest of wood; all the exceptions to the truth of this literally are not much more, even including the present clearance, than the dark spots upon the moon’s face.”*

– **Walter Johnstone (1795-1824)** – **Scottish-born author of *A Series of Letters, Descriptive of Prince Edward Island (1822)* and *Travels in Prince Edward Island . . . in the years 1820-21 (1823)***

## Take 5 PEI'S FIVE MOST COMMON TREE SPECIES

1. **Red Maple**
2. **White Spruce**
3. **Balsam Fir**
4. **Poplar**
5. **White Birch**

flooding is rarely a problem on the Island. The small size and gentle currents of streams, combined with the Island's permeable soil, means that most of the water is absorbed. There is a downside, though, and that's the constant erosion of the soil.

*Source: Government of PEI — Agriculture, Fisheries and Aquaculture.*

## Take 5 CHARLIE VANKAMPEN'S TOP FIVE PEI PLANTS

Charlie VanKampen is a partner in the VanKampen Greenhouses, an Island-owned and operated garden centre in Charlottetown that has been helping Islanders appreciate the greener side of life since 1959. Charlie weighs in on his picks for the province's top five plants, adding that at first they may constitute a "strange combination."

1. **The potato plant** – This is an easy one. We grow so many and, of course, it is the first thing people think of when they think of PEI.
2. **The Lady's Slipper** – The provincial flower.
3. **The Oak tree** – The provincial tree.
4. **Grass** – We lump all grasses together, though there are actually a large number of species and they all grow very well in our moist cool maritime climate. Grass is integral to all landscapes and helps colour the Island with manicured lawns, golf courses and pastures.
5. **Irish Moss** – The list would not be complete without a plant from the sea.

## A RIVER RUNS THROUGH IT: THE HILLSBOROUGH RIVER

Although Prince Edward Island may be awash in water, very little of it is riverine. One example of this strange feature of the Island landscape is the Hillsborough River. Not quite a river (it is more of an estuary) the importance of this major waterway shouldn't be overlooked. The river is 45 km long, drains a 350 km<sup>2</sup> area (six percent of the province's landmass) and nearly splits the Island in two.

The Hillsborough River has contributed greatly to the Island's development, aiding and sustaining both its First People and Europeans alike, serving up an array of seafood, and providing an important travel route. It also provides a rich ecosystem, home to a vast range of wildlife including the great blue heron, bald eagles, muskrat, fox and more than 50 rare plant species.

In 1994, the province and the Hillsborough River Association nominated the river to the Canadian Heritage Rivers Systems in recognition of its importance to the Island, past and present.

*Source: Canadian Heritage Rivers System.*

## SOIL EROSION

In its current conservation strategy, PEI environmental and government leaders acknowledge that soil erosion is the single most important resource problem the province faces today. While freshwater streams trickle and meander slowly for much of the year, surface runoff from melting snow and ice can create quite a rush, taking with it a lot of soil. And that's in addition to the soil that's carried away throughout the year anyway thanks to wind and rain.

## Did you know...

that even a beached and dead Arctic Red Jellyfish can sting? So watch your step!

## Take 5 **DANA GALLANT'S' TOP FIVE** MUST SEE BEAUTIFUL PEI REGIONS

Pedal and Sea Adventures is a small company run by one of Atlantic Canada's most experienced adventurers. Headed by adventure enthusiast Dana Gallant, Pedal and Sea Adventures has been organizing bike tours in Prince Edward Island for close to a decade. Gallant started Pedal and Sea so he could share one of the world's best places with travelers in need of a little R&R . . . riding and relaxation, that is!

1. Charlotte's Shore is the first region we encounter as we drive over the impressive Confederation Bridge. This year marks the 10<sup>th</sup> anniversary of this marvelous structure and this shore is a great introduction to the Island.
2. North Cape Coastal Drive is where we start our cycling portion of our tour in PEI. Nestled among the windmills, the North Cape Lighthouse is an impressive sight as we start our journey that passes secluded beaches and green fields and ends at PEI's trademark red cliffs towering over azure waters.
3. Anne's Land becomes our next beautiful area to cycle. This ride is always remembered for it's colourful fishing communities nestled amongst the fields of green.
4. Point's East Coastal Drive, the largest region of Prince Edward Island, is dotted with lighthouses and secluded beaches. We end the tour at the East Point Lighthouse after a day of feeling we were the only people on the road.
5. The province of Prince Edward Island itself and the people. You can't leave the province without your senses having been touched by its' natural beauty. There is a peaceful feeling that you have set your watches back 100 years and everything appears to be exactly as it should be. And the people there make sure nobody is left out from this happening to them.

## SUN BLOCK

Dislodged soil is deposited along the streambeds, with heavier particles landing fairly quickly as sediment, and the lighter stuff making its way downstream to fall as silt and clay. All streams shoulder sediment and silt but when it overloads the stream, as is the case for many of the waterways on PEI, it's a recipe for environmental and economic disaster.

Sediment and silt block the sunlight required by aquatic plants and animals and they cloud water making it difficult for birds to hunt aquatic prey. The silt can also threaten fish-spawning habitats. It harbours bacteria and chemicals polluting the waters, detrimentally influencing the commercial fishery and shellfish industry.

Agriculture, too, is threatened as up to 14 tons of topsoil per acre can end up at the bottom of streams and estuaries each year. Ironically, it's agriculture itself that is the biggest culprit in the sad sand and silt saga. Farmers trying to squeeze as much growing space as possible out of their plots clear the land to the water's edge, removing the very vegetation that keeps the land and streams separate.

## EROSION BY THE NUMBERS

- Because of climate change and global warming, sea levels around PEI are expected to rise between 30 and 110 cm by the year 2100.
- Average annual coastal erosion (for the last thousands of years): 0.5 m
- The estimated value of cottage property (within study area) lost to erosion between 1980 and 1990: \$242,000 (or \$22,000 / year)

## Did you know...

that despite common confusion, Great Blue Herons and Cranes are actually two very different species? Cranes are common to the northwest and only rarely venture into the Maritimes. You can spot the difference between the two by looking at their necks — when in flight, herons hold their necks in an 'S' shape while cranes fully extend their necks.

## Take 5 TOP ISLAND CAMPGROUNDS

1. Brudenell River Provincial Park
2. Marco Polo Land
3. Mill River Provincial Park
4. Stanhope Campground
5. Twin Shores Camping Area

*Source: Government of PEI*

- At current erosion rates, the percentage of cottage properties (within study area) that will be lost in the next 20 years: 10 percent
- Within the next century: 50 percent
- Average increase in sea level in Charlottetown over the last century: 32 cm; at Rustico: 29 cm
- Number of storm surges above 60 cm that occur each year in Charlottetown: 8
- Year by which a recent study by the Canadian Global Circulation Model indicates that the Gulf of St Lawrence could be ice free in the winter: 2045

*Source: Government of Canada.*

### BEACHES

With a good portion of its 1,600 km shoreline jutting out into some of the warmest waters on the eastern seaboard, it's no wonder that many of PEI's most marketable assets are its beaches. The most popular beaches are on the coast of the Northumberland Strait, where shallow depths create some of the warmest waters north of Virginia and sandstone shores create white, sandy beaches.

### Did you know...

that the trees in which herons nest die as a result of their air-borne tenants? The birds' excrement kills trees.

## JELLYFISH

Most Island beach-goers have, at some point, come face to face with a jellyfish. The Gulf of St. Lawrence is home to two main types — the Arctic Red Jellyfish and the White Moon Jellyfish. The Arctic Red — also known as the Lion’s Mane Jellyfish — is the larger and more common of the jellyfish duo. It is distinguishable not only by its rich purple colour, but also by its long red tentacles.

The Arctic Red uses these tentacles to stun its prey — zooplankton — but it won’t discriminate and unwitting swimmers might also feel the wrath of the Arctic Red.

One who has a brush with these tentacles is rewarded with a mild stinging or burning sensation. Although it can be startling, the sting is harmless and easily remedied by rubbing sand on the affected area. The White Moon Jellyfish is less intrusive. A white translucent colour, this species has no tentacles and therefore cannot sting.

## SEA GLASS

No day at an Island beach would be complete without a dip in the ocean or the building of a sand castle. Many Island beach visitors would add sea glass hunting to any list of ‘must do’ beach activities.

Sea glass is created from bottles or dishes that find themselves part of the ocean ecosystem. Over time, the motion of the waves and the friction of sand break up the glass, wearing smooth any sharp edges, leaving dainty coloured collectibles. Some sea glass has a frosty appearance, the result of a process by which the water removes lime and soda from the glass.

In this age of recycling and the use of plastics, it has become harder and harder to find an assortment of sea glass shades. Brown, whites

## Did you know...

that the Canada Goose migrates to the south in the winter but occasionally 100 to 200 will winter right on the Island?

## Take 5 PEI'S TOP FIVE NATURAL TOURIST ATTRACTIONS

1. **The beaches**
2. **The red cliffs**
3. **The quilt-like landscape**
4. **Scenic heritage roads** – the narrow red clay lanes that traverse the Island.
5. **The Hillsborough River**

*Source: PEI Tourism*

and greens are fairly popular, but the once ubiquitous blue (for example, from Noxema bottles once made of glass) is much less common, and rarer still are shades of orange, red and yellow.

*Source: North American Sea Glass Association*

### GREATNESS OF THE GREAT BLUE HERON

You do not have to be a “birder” to appreciate one of PEI’s most majestic creatures, the Great Blue Heron, or *Ardea herodias*. These large birds stand an average 1.2 m, have wingspans of 1.8 m and can be spotted from March until late fall on the Island’s coastlines and along inland waters where they dine on fish, frogs, snakes, mice and plants.

A third of Maritime Blue Herons summer on PEI. Although these birds often feed solo, the Great Blue Heron is a social bird. They are “colonial nesters,” which means they live in large colonies — called

### Did you know...

that there are no official Crown lands on PEI? All lands owned by the provincial government were scooped up from the private sector through tax sales, land purchase programs and direct purchases from landowners.

## Take 5 PEI'S TOP FIVE RAREST ANIMALS

1. Piping plover
2. Smooth green snake
3. Pickerel frog
4. Red-bellied dace
5. Water shrew

heronries — that are located away from human activity. Each year, PEI is home to an average 74 heron nests, made of twigs and built atop trees. For some reason, herons were especially fond of PEI in 1997. That year, the annual visitors built a record 507 nests.

Each season, a mother heron lays between three and five eggs, which take 28 days to hatch. Youngsters leave the nest approximately two months after hatching. To ensure future Island populations, efforts are made to maintain secure and peaceful nesting and feeding areas for the Great Blue Heron. It is illegal to hunt the bird both in Canada and the United States.

*Source: Government of Prince Edward Island; Rickerts Nature Preserve.*

### PIDDLY PEAK

PEI is known for its rolling potato fields, not its mountain peaks. In fact, PEI ranks 13<sup>th</sup> in Canada for its provincial elevation. The highest peak reaches only 152 m and is located in the town of Springton.

Islanders can nevertheless try their skills at downhill skiing. Not a huge mountain, the ski facility of Brookvale Provincial Ski Park tops out at an elevation of 113 m and a vertical rise of 26 m.

### Did you know...

that there are no bears or moose on PEI?

## Take 5 PEI'S TOP FIVE RAREST PLANTS

1. Braun's Holly Fern
2. Round-leaved Dogwood
3. Whitlow Grass
4. St. Lawrence Aster
5. Black Ash Tree

### GREAT WHITE

Deep in the waters off the coast of PEI lurks one of the earth's oldest and awe-inspiring creatures, the *Carcharodon carcharias*, better known as the Great White Shark. While the giant fish is rare in the North Atlantic and tends to remain well off shore in water reaching depths of 1,280 m, a record-making Great White was caught in Island waters. Fisherman off the coast of Alberton reeled in the largest Great White ever recorded in Canadian waters in August 1983. Estimated to be about 16 years old, this big girl was more than 5.7 m long.

*Source: ReefQuest Centre for Shark Research; Canadian Shark Research Laboratory.*

### LOBSTER 101

Lobster suppers. Lobster key chains. Rubber lobsters. Lobsters are everywhere you turn on PEI. But how well do we really know the ubiquitous lobster? Lobsters are crustaceans, part of the phylum *Arthropodia*. This means they are from the same family as such unsavory creatures as spiders and cockroaches.

When they are freshly hatched, baby pea-sized lobsters float helplessly near the ocean's surface. Not surprisingly, only about 1 in a 1,000

### Did you know...

that it is actually a myth that the Lady's Slipper — the provincial flower — is protected by law? In truth, the flowers are common and it is legal to pick them.

## Take 5 TOP FIVE

### HUNTING HARVESTS ON PEI

1. **Canada Goose**
2. **Black Duck**
3. **Ruffed Grouse**
4. **Snowshoe Hare**
5. **Common Snipe**

*Source: Government of PEI*

survive their dangerous first month of life. Within a year, however, a surviving lobster will grow to about the size of your hand. As they grow, lobsters molt, shedding their shells to make room for larger ones. In fact, before it is five years old, a lobster can molt as many as 25 times!

As adults, lobsters live in dens on the ocean floor. There, these ‘garborators’ of the Atlantic gobble up garbage, such as dead fish and other rotting material. Lobsters are not picky eaters and, if push comes to shove, they even eat each other.

Lobsters are fiercely territorial and aggressive. When they are in the mood for love, however, they can be attentive and concerned crustaceans. Just after molting, a female chooses her mate. While her eggs develop, the soft-shelled female is protected in her mate’s den until her new shell solidifies.

In nine to eleven months, the mother-to-be lays her eggs – as many as 20,000 of them – in a process that may take up to two weeks. Although lobsters face a dangerous first year of life, those who make it to maturity and who avoid lobster traps will probably live to a ripe old age; it is not uncommon for a lobster to live 20 or more years.

## Did you know...

that Brant (closely related to the Canada Goose) are one of the earliest migrants in the spring and live almost entirely on eel grass?

## Web links

---

### **The Environment Coalition of Prince Edward Island**

[www.ecopei.ca](http://www.ecopei.ca)

Find out more about the work of this community-based group working to improve the Island's environment since 1988.

### **The Macphail Woods Ecological Forestry Project**

[www.macphailwoods.org](http://www.macphailwoods.org)

Check out this website for information on the PEI conservation efforts and environmental research of the Environmental Coalition of Prince Edward Island and the Sir Andrew Macphail foundation. Book a tour or attend a workshop!

### **The PEI Potato Museum**

[www.peipotatomuseum.com](http://www.peipotatomuseum.com)

Potayto, Potahto! Curious about spuds? Check out the online exhibits of the Island's Potato Museum.

### **The Natural History Society of PEI**

[www.isn.net/~nhspei](http://www.isn.net/~nhspei)

The name says it all! Everything you want to know about the rich natural history of Canada's Island province.

### **The Island Nature Trust**

[www.islandnaturetrust.ca](http://www.islandnaturetrust.ca)

This not-for-profit group looks to protect the Island's natural areas.