COASTAL PLANT guide




LEARN TO
IDENTIFY AND PRESERVE
COASTAL VEGETATION

20 ANS Comité ZIP du Sud-de-l'Estuaire

ST. LAWRENCE Action Plan 2011-2026

Canada Québec

This project was made possible through an investment under the Community Interactions Program, which is part of the St. Lawrence Action Plan 2011-2026, and is implemented by the governments of Canada and Québec.

Sépaq
Parc national du Bic

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COMITÉ ZIP DU SUD-DE-L'ESTUAIRE

ACKNOWLEDGEMENTS

We would like to thank the Community Interactions Program of the St. Lawrence Action Plan and the Bic national park for their help in the protection and valorization of the Bic's coastal biodiversity.

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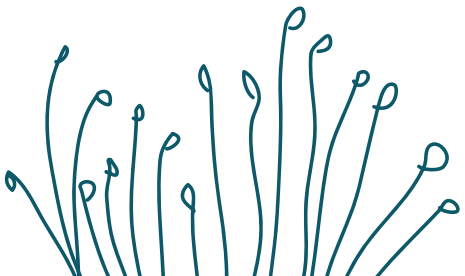


AGAINST ALL ODDS...

Discreet and yet omnipresent on our shores, the plants that inhabit our beaches don't have it easy. They have to face the natural disturbances, whether it is the powerful coastal winds, the blazing sun or even the salt water waves that throw them around. Shoreline plants use ingenuity, because in these often hostile environments, water drains quickly and nutrients are scarce. And let's not forget human activity, which can sometimes add to the problem.

FACED WITH THESE CHALLENGES, COASTAL VEGETATION HAD TO DEVELOP SURPRISING ADAPTATIONS TO SURVIVE. HERE ARE A FEW :

- **EPICUTICULAR WAX :**
  Thin waxy layer that covers the surface of leaves to reduce evaporation and transpiration.

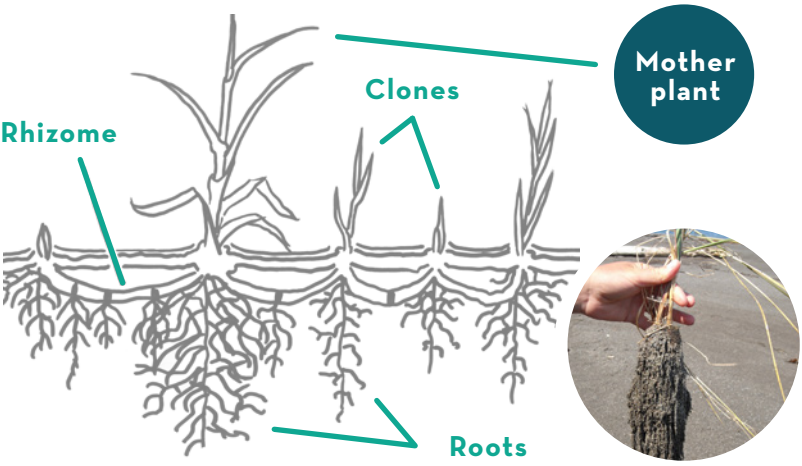
- **SUCCULENCE :**
  Ability to stock fresh water in the leaves and stems, giving plants a fleshy look.

- **SALT TOLERANCE :**
  Ability to control the amount of salt in a tissue. Plants that can tolerate salt water are called **halophytes**.

COASTAL PLANTS

are essential to coastline preservation

In full sun, on poor and elusive soil, many plants choose the subsoil to develop. Several of them opt for a particular root system, the rhizomes. Small underground stems that allow plants to develop a vast root network in order to make the most of the little water and nutrients that the sand offers. Acting as a net, these rhizome networks help retain sediments on the shore.



WATCH YOUR STEP!

When walking on the beach, the soil compacts under our feets. Similar to a pinched straw, the rhizome is then compressed and is no longer able to circulate the water and nutrients necessary for plant growth.

BEST PRACTICES

for walking along the coast :

TIP # 1

Plants are fragile; avoid trampling them while you walk.

TIP # 2

Do not take closed trails , as the vegetation in these areas is regenerating.

TIP # 3

Stay on the marked trail ; you will still enjoy the sights.

DISCOVER COASTAL PLANTS

IDENTIFICATION CARDS

HASTATE ORACHE (common name)

Atriplex hastata (Latin name)
Creeping saltbrush, fat-hen (vernacular names)

Hastate orache is a small annual plant that grows in abundance in the organic debris left behind by the tide. It looks a lot like the famous pigweed which belongs to the same family (Chenopodiaceae). It is easy to recognize due to the triangular shape of its leaves which have small pointed lobes at their base, a leaf shape called hastate. The leaves are edible and quite appreciated, with a faint spinach taste. **However, harvesting hastate orache in the national park is prohibited.**

DID YOU KNOW?

Let's eat!

Orache has been eaten by humans since prehistoric times. Found all over the planet, it has been an important source of food in the past.

KEY FEATURES

- Height : up to 45 cm
- Triangular leaves with small pointed lobes on both sides of the base
- Reddish stem
- Grows at the high-water mark

AMERICAN DUNEGRASS (common name)

Leymus mollis subsp. mollis (Latin name)
Sea lyme grass , strand wheat or strand grass (vernacular names)

American dunegrass is an **emblematic species** of the St. Lawrence maritime estuary that is commonly found on sand and gravel beaches. A member of the grass family, this perennial herbaceous plant bears large spikes that sway in the wind. Native to North America, American dunegrass is essential to retain beach sediments. Armed with their rhizomes and foliage, dunegrass colonies act as barriers against the waves and help **prevent coastal erosion**.

DID YOU KNOW?

From grain to flour

When ground up, American dunegrass seeds produce a flour similar to that of wheat. From the 11th to the 19th century, dunegrass was the main source of flour in Iceland. In Alaska, its foliage was also stored to feed cattle.

KEY FEATURES

- Height : 1 to 1.5 m
- Blue-green leaves covered by waxy layer (epicuticular wax)
- Large flower spike (20 cm x 1.5 cm)
- Large colonies along the beach

BEACH PEA (common name)

***Lathyrus japonicus* (Latin name)**
Sea pea (vernacular name)

A species of sea pea with a beautiful bloom, the beach pea grows on beaches alongside the American dunegrass. Just like the dunegrass, the Beach pea uses **rhizomes to colonize soft subtrates** along the coast. As a member of the legume family, the beach pea has a considerable advantage when it comes to growing on the poor sandy soils of maritime beaches: symbiotic bacteria located in the plant's roots capture atmospheric nitrogen and make it available to the plant.

DID YOU KNOW?

Polar infusion

The Inuit used to grind the dried peas into a powder and use it as an infusion, similar to coffee.

KEY FEATURES

- Height : 30 to 60 cm
- Leaf composed of 6 to 12 flat leaflets* that ends in a tendril
- Pink to violet flowers from July to September
- Green pods

** Small leaves that make up a compound leaf.*

SEASIDE SANDPLANT (common name)

Honckenya peploides (Latin name)
Sea sandwort (vernacular name)

Have you ever noticed the lovely mats of sea sandwort growing on the beach? This small perennial herbaceous plant barely reaches 30 cm in height but it can form large mats that can cover up to 10 m². Its opposite leaves are arranged in the shape of a cross, a leaf arrangement called **decussate**.

DID YOU KNOW?

In the eyes of the first explorers

The sea sandwort was noticed by the first explorers who landed on our shores. The explorer Marc Lescarbot mentioned it in his work "Histoire de la Nouvelle France" (1609) in which he called it "pourpier de mer".

KEY FEATURES

- Height : 25 to 35 cm
- Fleshy texture
- Fleshy, decussate leaves
- Small mats on the beach
- White flowers

CANADA BEACH-HEAD IRIS

(common name)

Iris hookeri (Latin name)
Hooker's iris (vernacular name)

This beautiful iris finds its home in small rocky crevices along the coast. It is easy to recognize with its striking blue violet flowers and small narrow petals. The large droopy sepals are tinged with white and yellow and are streaked with violet veins. The Canada beach-head iris **differs from the harlequin blue flag**, the floral emblem of Quebec, which is larger and has bigger petals.

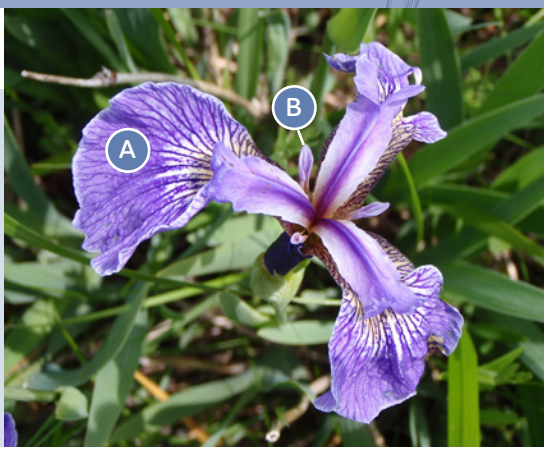
DID YOU KNOW?

Petals or sepals?

The sepals **(A)** *of the Canada beach-head iris are considered petaloids. Sepals form a chalice (receptacle) holding the corolla (the flower and its petals). The sepals of this iris, however, have the appearance of petals* **(B)**.

KEY FEATURES

- Height : 30 to 50 cm
- Large blue violet flowers with 3 big , droopy sepals and 3 tiny petals
- Foliage nested at the base, forming a fan like shape



OYSTERLEAF

(common name)

Mertensia maritima (Latin name)

Oysterplant, sea bluebells (vernacular names)

Oysterleaf is a creeping perennial plant that has waxy fleshy blue foliage. These features help the leaves retain water in the same way desert plants do. True to its name, the oysterleaf's leaves have a slight oyster taste. It bears delicate blue flowers in the axils of its upper leaves.

DID YOU KNOW?

A fan of cold environments

The oysterleaf is a nordic plant.
It has a circumpolar distribution, which means it can be found all around the North pole, from Asia to America and Europe.

KEY FEATURES

- Height : 10 cm
- Fleshy, waxy bluish leaves
- Creeping perennial
- Small blue flowers tinged with pink

SMOOTH ROSE (common name)

Rosa blanda (Latin name)

Meadow rose, prairie rose (vernacular names)

The Smooth rose is **native** to North America. While its appearance may vary a lot, this species has distinct features that help differentiate it from its cousin, the Japanese Rose. Its thorns are often absent, or smaller and less dense, especially at the base of the stems. Its foliage is smooth and matte. The Smooth rose prefers poor, dry and often sandy soils. It grows at the edge of the beach, reached by waves only at higher tides.

DID YOU KNOW?

A never-ending story

Roses have been valued in gardens for their beauty for over 5 000 years. There are more than 300 wild species and thousands of ornamental varieties worldwide.

KEY FEATURES

- Height : about 1 m
- Few or no thorns
- Smooth, matte foliage
- Low density colonies
- Light pink flowers

JAPANESE ROSE (common name)

Rosa rugosa (Latin name)
Rugosa rose (vernacular name)

Although commonly found on the coast of the St. Lawrence River, the Japanese rose originally comes from Northeast Asia and was brought to North America during the 19th century in part due to its resistance to salt spray and diseases. The Japanese rose produces beautiful pink or white flowers and grows in **large thorny patches** in which few people would dare venture. It is also called the rugosa rose due to the texture of its leaves.

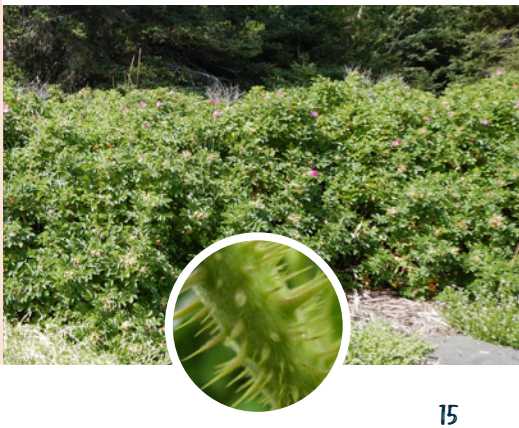
DID YOU KNOW?

Exotic or indigenous?

The Japanese rose is considered an invasive plant that is a threat to indigenous rose species. Its fruit is edible and can be transformed into juice, fruit paste or flour.

KEY FEATURES

- Height : up to 2 m
- Compound leaf with a rough and glossy texture
- Many prominent thorns
- White or pink flowers with 5 petals
- Large patches high on the beach



A DAY
at the beach

Beaches are a dynamic ecosystem that is affected by waves and saltwater tides. They are particularly poor in minerals and frequently undergo droughts, so they are somewhat like small deserts. The coarse sediments (gravel, pebbles) on the beach completely differ from our rich garden soil. Water infiltrates beach sediments quickly and the soil cannot retain large amounts of nutrients. In this fragile habitat, a meeting point between aquatic and terrestrial environments, marine birds and mammals meet their counterparts from coastal forests. Beaches are also the buffer zone between the St. Lawrence estuary and our human development. Coastal vegetation helps dissipate wave energy and reduce erosion during storms. It is essential to protect our shores if we want to protect our own living environment.

PROTECTING BEACHES IS ESSENTIAL IN ORDER TO PRESERVE BOTH TERRESTRIAL AND AQUATIC ENVIRONMENTS!

ABOUT
this project

The Bic national park faces many challenges when it comes to the conservation of its coastal habitat, particularly in the Chemin-du-Nord trail.

Many sections of coastline between the Rioux farm and the Cap-à-l'Orignal show signs of coastal erosion and flooding. The unintentional trampling of vegetation by park users is also an issue.

To favour the conservation of the coastline, all improvised trails were closed off. Over 30 000 coastal plants were planted to regenerate the coastline in order to reduce erosion.

IN COLLABORATION WITH THE BIC NATIONAL PARK, THIS WORK CARRIED OUT BY THE COMITÉ ZIP DU SUD-DE-L'ESTUAIRE HAS CONTRIBUTED TO MAINTAIN COASTAL BIODIVERSITY.

BIC NATIONAL PARK

A MARITIME TREASURE

The Bic national park covers 33 km², a third of which is aquatic habitat. It's the only SEPAQ park located in the southern St. Lawrence estuary coastal zone.

Its coastline includes various types of landscapes such as cliffs, coves and islets. Its geology is composed of sedimentary rocks from the Appalachian orogen(~ 490 million years). This landscape has been shaped over time by the climate and the waters of the St. Lawrence River.

DISCOVER THE PARK'S DIFFERENT COASTS

ROCKY CLIFF

BAIE DU HA! HA!

SAND CLIFF

ANSE AUX BOULEAUX-EST

TIDAL MARSH

ÎLE AUX AMOURS

BEACH TERRACE

HAVRE-DU-BIC SECTOR

IN THIS BEAUTIFUL HABITAT RICH IN PLANTS AND WILDLIFE OVER 200 000 ANNUAL VISITORS HAVE THE CHANCE TO OBSERVE...

About 20 fish species

12 reptile and amphibian species

248 bird species

730 plant species

340 moss and lichen species

About 30 mammal species

including the harbor seal

Would you like to learn more
OR CONTRIBUTE?

Many free guides are available on the website of the Comité ZIP du Sud-de-l'Estuaire. You will find information on the recommended plants for revegetation of coastal habitats or on the best practices for coastal management and restoration.

VISIT OUR WEBSITE www.zipsud.org

Only available in French.

CONSULT THE COMPLETE MANUAL OF COASTLINE RESTORATION AND MANANGEMENT

You will find a wide range of information on coastal plants and more complex techniques such as beach nourishment and soil bioengineering.

This booklet was created by the **COMITÉ ZIP DU SUD-DE-L'ESTUAIRE**, a nonprofit organization that works with various regional stakeholders for the conservation, restoration and promotion of the coastal ecosystems of the St. Lawrence River.

Our territory extends from Berthier-sur-Mer to Les Méchins, consisting of nearly 400 km of coastline. For the past 20 years, our mandate has been to study coastal environments, restore degraded environments and lead awareness activities on various maritime issues.

www.zipsud.org

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