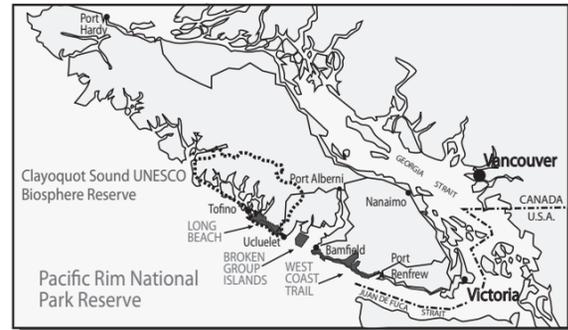


This seashore is a treasure to protect forever

That thought helped create Pacific Rim National Park Reserve of Canada – a park that protects and presents a portion of Canada’s coastal temperate rainforest and a component of the near-shore waters of Vancouver Island’s west coast.

As a national park administered by Parks Canada, Pacific Rim is also a core protected area of land and sea within the Clayoquot Sound UNESCO Biosphere Reserve.



The seashore is more than just a beach

The seashore is also known as the intertidal zone – a dynamic place where the tides rise and fall each day. Sometimes the shoreline is covered with water and mysterious, sometimes it is exposed to air and ready for discovering.

There's more to see at low tide

Tides are the result of the gravitational pull of the sun and moon upon the vast body of water that is the ocean. Vancouver Island’s west coast experiences two high and two low tides a day.

It is important to plan seashore activities according to tide heights. Tidepool viewing and beach hiking are best when tide levels fall below 1.5 metres (5 feet).

Check tide guides available at park information centres for tide times and safety notices.

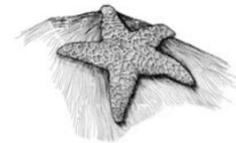
It's your treasure, and you contribute to it

National parks across Canada are protected because people choose to protect them. With hundreds of thousands of visitors every year, it is especially important to leave things in their natural state for others to discover.

You too, can protect the seashore

- Leave marine animals & plants fastened to rocks
- Replace overturned boulders for the inhabitants underneath (sunlight and drying winds can be fatal)
- Return marine animals to where you found them
- Tread carefully. Our feet crush many creatures
- Keep dogs on a leash at all times
- Enjoy natural and cultural objects (e.g. shells, driftwood) where you find them. Never remove, collect or damage them
- Clean up human litter

Remember: disturbance and removal of natural objects is illegal in national parks.



Value your safety

The Pacific Ocean has many moods. It can be calm or fierce, glistening or tumultuous. When exploring the seashore remember safety, and be aware of changing conditions.

- Check for safety information, tides, and weather (available at park information centres)
- Keep an eye on the ocean: avoid turning your back - Stay away from the water's edge when on rocks
- Beware of rolling drift logs
- Avoid headlands and beaches during storms
- Bears, cougars, wolves, seals and sealions may visit the seashore. Never feed, disturb, or approach wildlife

Explore the seashore...

Try to find evidence of each species shown in this pamphlet. Remember to leave everything as you found it. Simply put a check mark in the box beside each name. Your score = [] out of 19



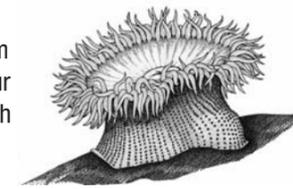
LOW Tide Zone

The low tide zone is covered by water 70% of the time. Here, plants and animals have to find ways to survive without water for short periods. To conserve moisture, many of them close up tight or dig in.

Remember: Be careful, rocks on the seashore can be very slippery and rising tides can block your route to shore.

Giant Green Anemones (*Anthopleura xanthogrammica*)

- Look like green flowers, but are animals attached to the rock
- Can grow to 30cm (12 inches) in diameter!
- Sting their prey with tiny 'harpoons'
- Have microscopic green algae that live within their tissue, giving them their bright green colour and providing them with extra nourishment



MID Tide Zone

The mid tide zone is covered by water 50% of the time. Plants and animals here have adapted to cold ocean water and also exposure to fresh water, wind and drying sun.

Remember: We have three deadly weapons...our feet, our hands and our pockets. Please explore respectfully.

California Mussels (*Mytilus californianus*)

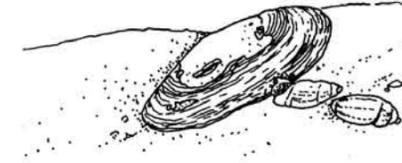
- Are large blue-shelled mussels that dominate the mid tide zone in heavy surf areas
- Grow up to 25cm long
- Are filter feeders, straining plankton from the sea
- Anchor to the rocks by secreting tiny strands of protein, called byssal threads



Ecological Integrity = when all of an ecosystem's parts are present, healthy, and functioning.

Maintaining ecological integrity is Parks Canada's first priority.

Across Canada, national parks protect and present different natural and cultural treasures as part of the richness of Canada.



HIGH Tide Zone

The high tide zone is covered by water about 30% of the time. The creatures here have to live under extreme conditions. They experience exposure to air, changing temperatures, fresh and salt water.

Remember: Tread carefully. Our feet crush many creatures.

Acorn Barnacles (*Balanus sp.*)

- Attach their heads to the rocks and use their hairy legs to fan the water for plankton
- Seal their 'trap doors' tight when the tide goes out to conserve body moisture

Listen for the clicking sound of them closing shut!



SPLASH Zone

The splash zone is an area that receives little tidal action. Here the plants and animals have learned to tolerate occasional exposure to salt water.

Remember: Any zone can flood with waves during any tide.



not to scale

Explore the seashore...

Find out what a true living treasure it is.



Exploring the Seashore



Lisaak

Pacific Rim National Park Reserve lies within the traditional territory of the Nuu-chah-nulth (noo-cha-nolth) First Nations. They have lived here for thousands of years, and continue to do so, thriving off the wealth of the land and sea.

Many Nuu-chah-nulth elders speak of the tide going out as “the table being set,” referring to the vast amount of seafood that is harvestable in the intertidal zone. Nuu-chah-nulth people not only use the resources of the land and sea for sustenance, but also protect and take care of them. In each village, a person inherits the role of being the beach keeper, which is passed down from generation to generation. It is their responsibility to ensure the health of the seashore for present and future generations.

The Nuu-chah-nulth have a word lisaak (ee-sock), meaning, “respect”. Please explore the traditional lands of the Nuu-chah-nulth respectfully.

Explore the seashore safely and respectfully: do no harm.

Ask Parks Canada staff for a map and information about places to go exploring in the region.

Her Majesty the Queen in Right of Canada
Catalogue No: R63-343/2007E
ISBN: 978-0-662-45279-9

Aussi disponible en français

www.pc.gc.ca



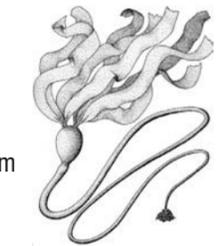
Seasonal Treasures

Seasonal storms transform west coast shorelines and wash in evidence of subtidal ocean inhabitants.

□ Bull Kelp

(Nereocystis leutkeana)

- Are huge seaweeds that can grow up to 36m long and form underwater ‘forests’
- Have root-like holdfasts to anchor them and floats that bring their fronds closer to sunlight



□ By-The-Wind-Sailors

(Velella velella)

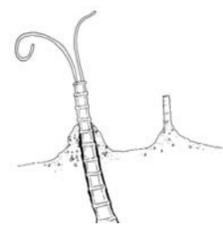
- Are blue jellyfish-like animals with triangular sails
- Occasionally wash in on beaches in large numbers



□ Bamboo Worms

(Spirochaetopterus costarum)

- Have tubes resembling clear, miniature bamboo



3 – The Muddy Shoreline

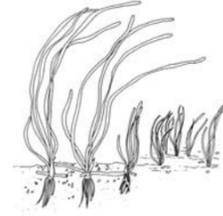
Many kinds of birds, fish and plankton feeders are found at the highly productive muddy shore. This is one of the more difficult habitats to explore, and one of the more fragile.

Remember: *This is a sensitive area, so please leave the mucking around for the mud dwellers!*

□ Eelgrass

(Zostera marina)

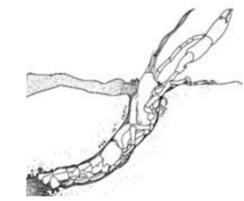
- Is a flowering plant with long, flat, green leaves which has adapted to the marine environment
- Forms ecologically important marine ‘meadows’



□ Ghost Shrimp

(Neotrypaea californiensis)

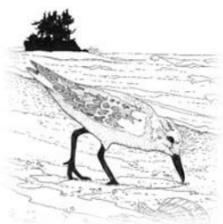
- Hide their soft, pale bodies in U-shaped burrows in the mud
- Have one claw that is much larger than the other
- Allow other kinds of creatures to move into their burrows, even while they are still home



□ Western Sandpipers

(Calidris mauri)

- Are small shorebirds with black legs and a tapered bill that droops slightly
- Are a common seasonal migrant along the beaches and mudflats of the national park



2 – The Sandy Shoreline

To avoid strong wave action, keen predators, hot sun, and drying winds, many sandy shore animals bury themselves deep under the sand.

Remember: *There is a reason animals are hidden under the sand, so please leave the diggers deep.*

□ California Beach Hoppers

(Megalorchestia californiana)

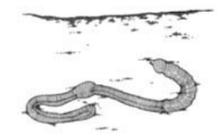
- Are shrimp-like animals with long antennae that burrow into moist sand near the high tide line



□ Blood Worms

(Euzonus sp.)

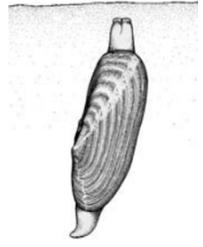
- Are small red worms that live in a maze of tiny pinholes below the high tideline
- Feed on sand bacteria and, in turn, feed thousands of shorebirds such as sandpipers



□ Razor Clams

(Siliqua patula)

- Have thin, tan coloured shells about 15cm long shaped like an old-fashioned straight razor
- Are detected by the presence of a small ‘volcano’ on the sand surface



□ Dungeness Crabs

(Cancer magister)

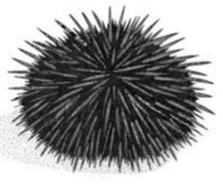
- Are large tan coloured crabs that prefer to live offshore, but venture inshore to molt
- Molts are often mistaken for dead animals when their cast-off shells wash ashore



□ Purple Sea Urchins

(Strongylocentrotus purpuratus)

- Are the purple ‘pin cushions’ found under rock ledges and in tidepools
- Have needle-like spines to deter would-be predators



□ Tidepool Sculpins

(Oligocottus sp.)

- Are tiny fish that can change colour to match their tidepool décor
- Are territorial and may use their sense of smell to try to find their home tide pool



□ Hermit Crabs

(Pagurus sp.)

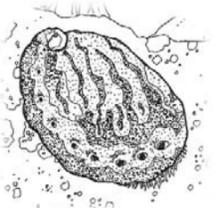
- Have a soft abdomen, so they use the shells of other creatures for armour
- Require ever-larger accommodation as they grow, and often fight over empty shells



□ Northern Abalone

(Haliotis kamtschatkana)

- Are slow growing, ear-shaped marine snails
- Were previously abundant, but are now a species at risk due to over harvesting
- Are the focus of conservation initiatives to restore their population to healthy numbers



Three Different types of shore to explore

Just like a city has different communities within it, the seashore has different habitats. The sandy, rocky and muddy shores have unique plants and animals that have adapted to a particular type of condition.

1 – The Rocky Shoreline

Animals and seaweeds inhabiting the rocky shoreline have to hang on tight in order to survive the constant barrage of fierce waves.

Remember: *Sticking to the rocks ensures a creature's survival, so please leave the clingers clinging!*

□ Rockweed

(Fucus sp.)

- Is an olive green seaweed found hanging down in curtains in the high tide zone
- Has inflated bladders on its branch tips so that it can float upright in the water



□ Ochre Sea Stars

(Pisaster ochraceus)

- Are sometimes called starfish, but they aren't fish at all; they are spiny-skinned animals
- Are purple or orange voracious predators that feast on mussels and barnacles
- Eat by pushing their stomachs out through their mouths, digesting their prey inside the victim's own shell

