



Come explore with us!

For more information visit the K<sup>w</sup>isitis Visitor Centre or attend our free interpretive programs from June through September.

250-726-3500

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**IN AN EMERGENCY**

1-250-726-3604 or 1-877-852-3100  
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**The best place to see:**

**Near Shore Ocean**  
*From all beaches*

**Sand Dunes**  
*Wickaninnish Beach / Schooner Cove*

**Shorepine Bog**  
*Shorepine Bog Trail*

**Intertidal**  
*K<sup>w</sup>isitis Visitor Centre / Green Point / Schooner Cove / Grice Bay*

**Spruce Fringe**  
*Nuu-chah-nulth Trail / Wickaninnish Beach / Combers Beach*

**Cedar Hemlock**  
*Willowbrae Trail / Rainforest Trails / Schooner Cove Trail*

**Pacific Rim National Park Reserve**

- Long Beach
- Broken Group Islands
- West Coast Trail

**TRAILS**

- Willowbrae
  - Halfmoon Bay
  - South Beach
  - Nuu-chah-nulth
  - Shorepine Bog
  - Rainforest
  - Combers Beach
  - Schooner Cove
- Parking available at all trailheads

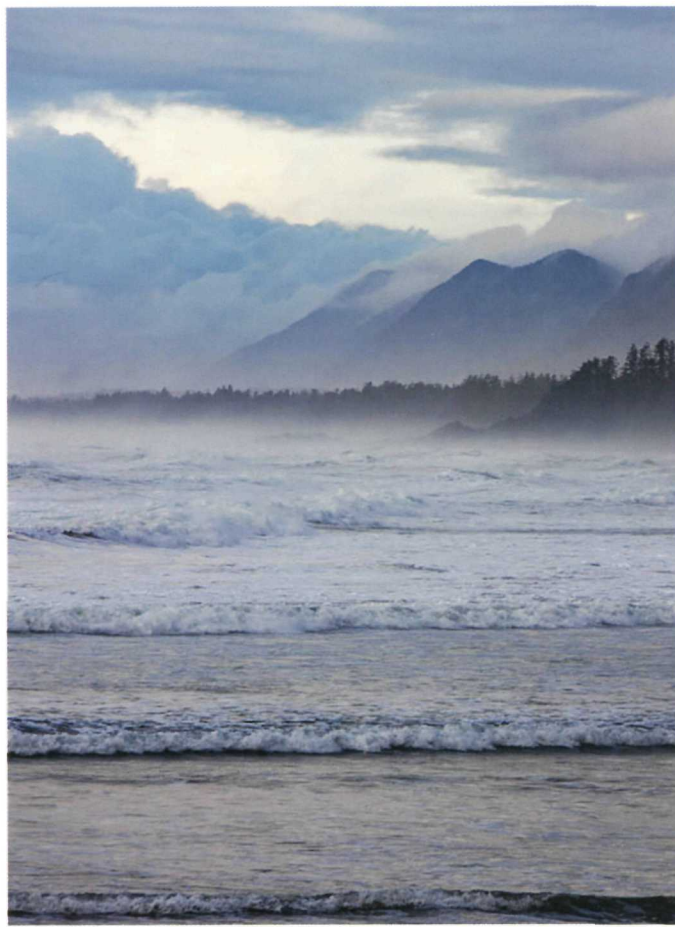
Pacific Rim National Park Reserve

# Ecosystems of Pacific Rim National Park Reserve



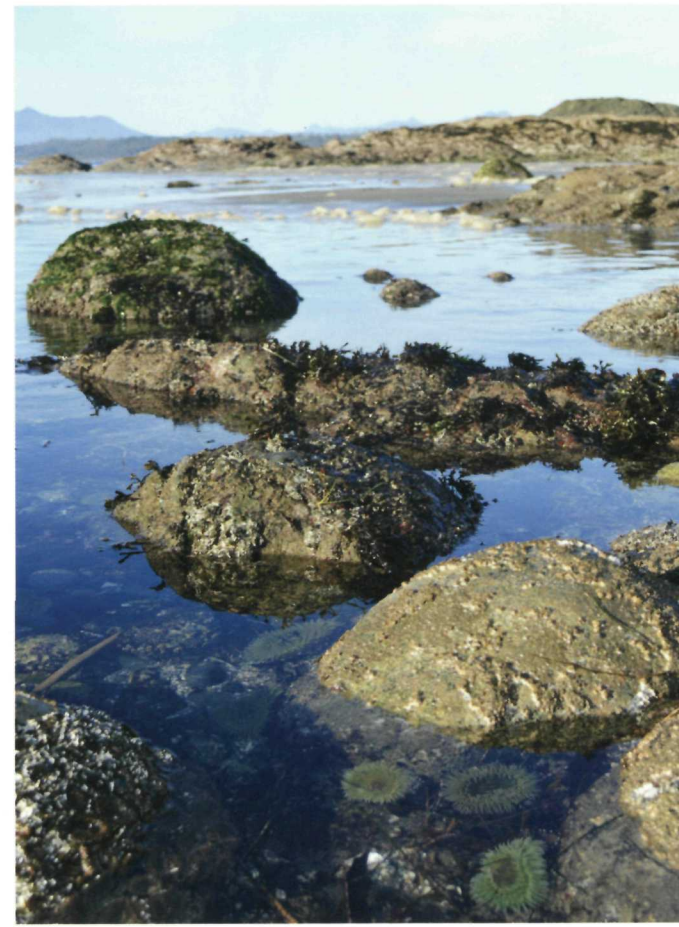
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## Near Shore Ocean

The largest ocean in the world can be fierce or gentle, but it can never be ignored. It has left its mark on this place. The Nuu-chah-nulth-aht have said that this is where land, sea, sky and people meet and change each other. Spend some time here where the ocean swirls against the land and join the mix.



## Intertidal

The intertidal is the narrow world found between ocean and land, not fully claimed by either. Changing tides mean it is sometimes covered by water, and sometimes exposed. It's an incredible place to visit, but an incredibly challenging place to live.



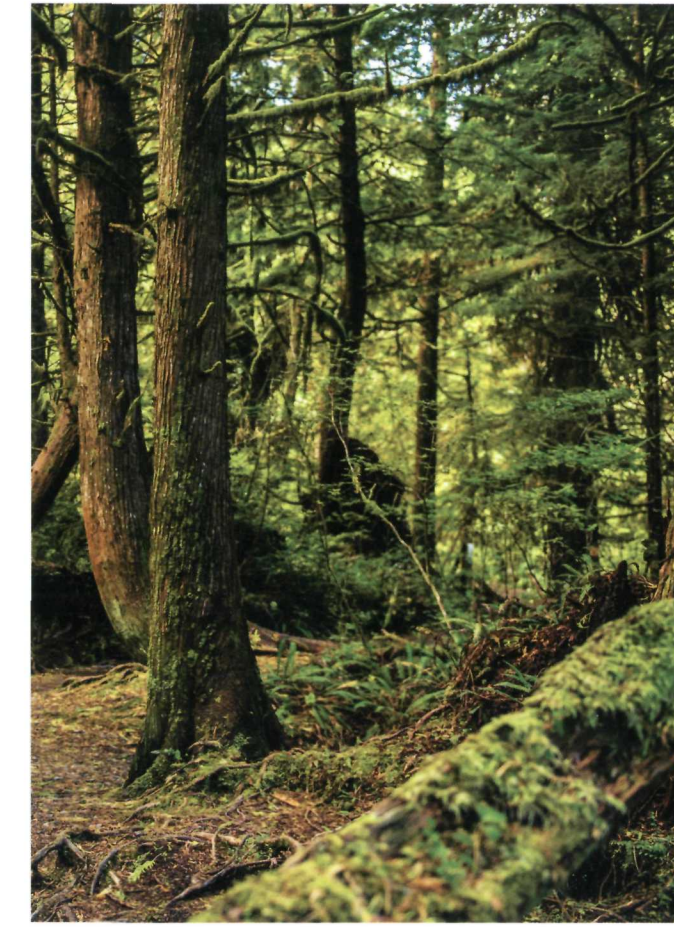
## Sand Dunes

Behind Wickaninnish Beach is the most extensive area of sand dunes on Vancouver Island. The land is low enough for the wind to pick up sand and blow it onshore forming a fluid border between beach and forest. Trace the border of the dunes and see where sand travels into the woods and forest life creeps out onto the sand.



## Spruce Fringe

Salal and Sitka spruce are two species that can survive sand and salt winds. Together they form the wind-pruned forest wall known as krummholz. Without the protection of this krummholz, the inner-forest plants would have difficulty surviving.



## Cedar Hemlock

This type of forest, dominated by western redcedar and western hemlock, grows in well-drained soil, sheltered from wind carrying salt and sand. Most people expect to see this kind of rainforest when they come to the West Coast. It has huge trees, ferns, and moss hanging from branches, and a jumbled understory of plants reaching for precious light.



## Shorepine Bog

Bogs are characterized by poor drainage, acidic soils and a thick build-up of Sphagnum moss. Acid released from Sphagnum moss prevents bacteria from growing. Without bacteria to release nutrients from dead plants, the bog soil provides little food for its inhabitants. Shorepine trees are just one of many stunted plants in the bog. The trees' small size may hide many years of survival.

# Ecosystems

## of Pacific Rim National Park Reserve

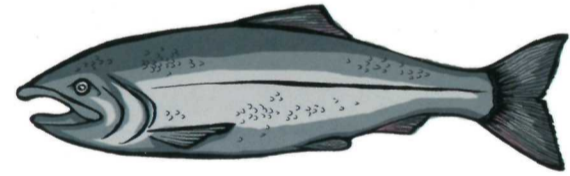


Alwyn Rutherford

### Near Shore Ocean

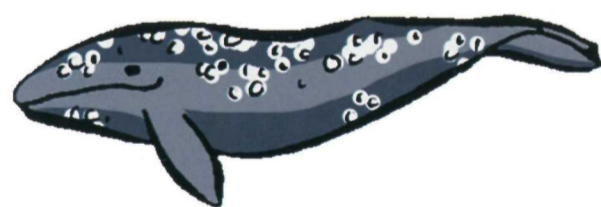
#### Salmon (*Oncorhynchus sp.*) *saamin*

Salmon are born in the forest, mature in the ocean, and return to spawn and die in the rainforest. A healthy forest is needed for a healthy salmon population, but because of the nutrients the salmon bring back from the ocean, a healthy forest needs a healthy salmon population too.



#### Grey Whale (*Eschrichtus robustus*) *?ihtuup*

Grey whales migrate past us heading north in the spring and then back down south again in the fall. Some, however, decide they like it here and can spend several months enjoying the area.



#### Sea Otter (*Enhydra lutris*) *k'waaak'wat*

Not small cute things. Well yes, they are cute, but adults are about the size of a German Shepherd. They were hunted to extinction, but their population is recovering.



### Intertidal

#### Vancouver Island Wolf (*Canis lupus crassodon*) *q'w'ayačiik*

Though it may be rare to see wolves on the beach, wolf tracks are not rare. We love the freedom of the beach, the view, and the chance to find interesting things washed in by the tides. So do they, and they were here first.



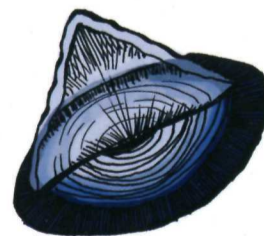
#### Western Sandpiper (*Calidris mauri*) *čiinu*

The best time to see a Western Sandpiper and many other shorebirds is in early May when they stop here on their northward migration. If you do see them, they are probably trying to eat as much as they can in a very short time so they can fly off again for the Arctic.



#### Velella velella (*Velella velella*) *xunxun'wi*

Each individual Velella velella is actually a colony of hydroids. They sail the ocean at the whim of the wind and currents. Sometimes that means they wash up on the beach by the thousands.



#### Sea Palm (*Postelsia palmaeformis*) *k'winjimc*

They look like miniature palm trees but they don't grow where it is warm or calm. They grow on the rocks that get smashed by the cold ocean waves.



### Sand Dunes

#### Pink Sand-verbena (*Abronia umbellata*) *xiih'ciip*

If a flower disappears from Canada does anyone care? Parks Canada does. Pink Sand-verbena did disappear, except for two surviving plants. The invasive beach grasses were partly to blame, but despite the challenges, Parks Canada has brought the population back from the brink.



#### American Dune Grass (*Leymus mollis*) *hitingis?i saqmapt*

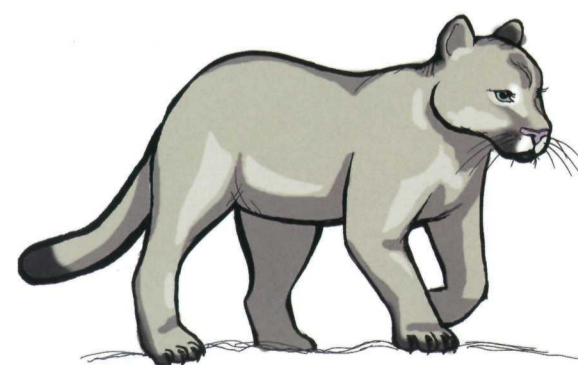
This native grass slows down sand movement, but doesn't stop it. The problem is invasive dune grasses also grow here and they keep the sand in place. If sand movement is blocked, dunes disappear. We've already lost some dunes, but are working to fix the problem.

#### Cougar (*Puma concolor*) *kayuumin*

Are there cougars in the national park reserve? Yes.

Will you see one? Probably not.

What will you do if you see one? If you don't know, have a conversation with one of our staff.



### Spruce Fringe

#### Sitka Spruce (*Picea sitchensis*) *tuuhamapt*

The salt winds from the ocean twist, prune and even kill trees. Sitka spruce is not immune to that wind, but it's the best at surviving it and so it dominates the coastline.

#### Salal (*Gaultheria shallon*) *yama*

If you close your eyes in the rainforest and point, it is likely that you are pointing at salal. In many cases, it forms huge thick tangles that are almost impossible to walk through.



#### Kinnikinnick (*Arctostaphylos uva-ursi*) *xaaqapt*

Kinnikinnick flourishes where sand meets forest. It's one of the first plants to creep out, cover the sand, and continue the forest's relentless effort to change the dunes into forest.



#### Leather Fern (*Polypodium scoleri*) *kaackuuxsmapt*

Not all ferns are delicate things. The leather fern looks and feels a bit more like an old leather glove. That's an advantage that helps it grow despite the salt wind.



### Cedar Hemlock

#### Western Redcedar (*Thuja plicata*) *huumiis*

This tree has been described as the "tree of life" for Nuu-chah-nulth-aht. Shelter, clothing, tools and transportation were all obtained from this tree.

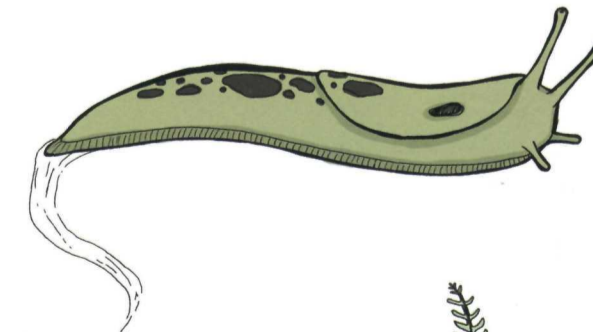


#### Western Hemlock (*Tsuga heterophylla*) *qwi'aaqmapt*

This forest has so much rain, so much shade, and so many previous generations of trees decaying on the ground, it's just about a perfect place to grow hemlock! These trees love the humidity, the rich organic matter, and are very shade tolerant.

#### Banana slug (*Ariolimax columbianus*) *šinri*

Just like bananas, these slugs vary in colour from green, to yellow, to black. Unlike bananas, however, these slugs are slimy all the time, not just when they grow old.



#### Deer Fern (*Blechnum spicant*) *kaackuuxsmapt*

This fern has two types of fronds. Horizontal evergreen fronds that last from year to year, and vertical reproductive fronds that wither each fall.



### Shorepine Bog

#### Shore pine (*Pinus contorta* var. *contorta*) *?išmapt*

Most shore pines don't grow tall and straight. The acidic conditions of the bog make it difficult for any plant to grow. By that measure, the stunted and twisted shapes of the shore pine are a mark of hard-won success where most trees couldn't grow at all.



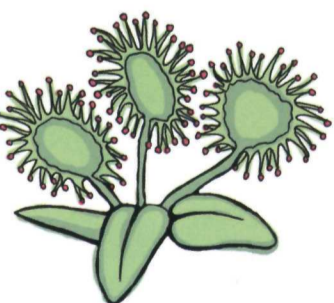
#### Black bear (*Ursus americanus*) *čims*



Check the boardwalk for muddy footprints. Since the bog is a fragile area, people and dogs need to stay on the boardwalk. But, since travel on the boardwalk is easier, bears often use it too. If you are unsure of what you should do if you meet a bear, please ask our staff.

#### Sundew (*Drosera rotundifolia*)

If you are in the bog in June, July or August, look down and look closely for a small plant the size of a fingernail. The sticky droplets on its leaves are how it lures in flies, mosquitoes and ants. Once it traps them, it eats them.



Illustrations by Alwyn Rutherford

Indigenous language is  
**Yuutu?i?ath**