

## Intertidal Zones

Tide pools are divided into four different intertidal zones: splash, high, mid, low.

The splash zone is almost always exposed to air and is moistened by the highest waves, ocean spray and rain. The high zone is rarely under water and only at high tide. The mid zone is covered part of the time between tides. The low zone is almost always covered in water and is only accessible during low tide. Life must adapt to these conditions and does so in amazing ways!

### Splash Zone

Life in this zone must withstand extreme temperature and salinity changes on a daily basis.

### High Intertidal Zone

Life here must cope with intense wave action and extreme changes in water availability. When the tide is low, many organisms retain water inside their bodies while others find a place to hide in crevices or under rocks.

### Mid Intertidal Zone

Organisms in this zone deal with many of the same issues as those in the high zone, except there is more water readily available. This is where most tide pools you see are found.

### Low Intertidal Zone

Only uncovered at the lowest of tides, organisms found here rarely deal with extreme changes, and they cannot survive long if exposed to the air.

Special thanks to Patrick's Point State Park for the inspiration for this brochure and generous sharing of art work.

## Family Fun Activities



★ In the high zone, there are at least three species of limpets living on the rocks. How many different types can you find?

★ Hermit Crabs live in different types of shells. How many can you find?

★ Can you find any fish in the tide pools?

★ Seaweed comes in many colors: pink, brown, green and red. Which of these colorful algae do you see? How do they feel?

★ Read *A House for a Hermit Crab* by Eric Carle or find a fun spot on the rocky shore and read the poem below to your children.

## Beckoning

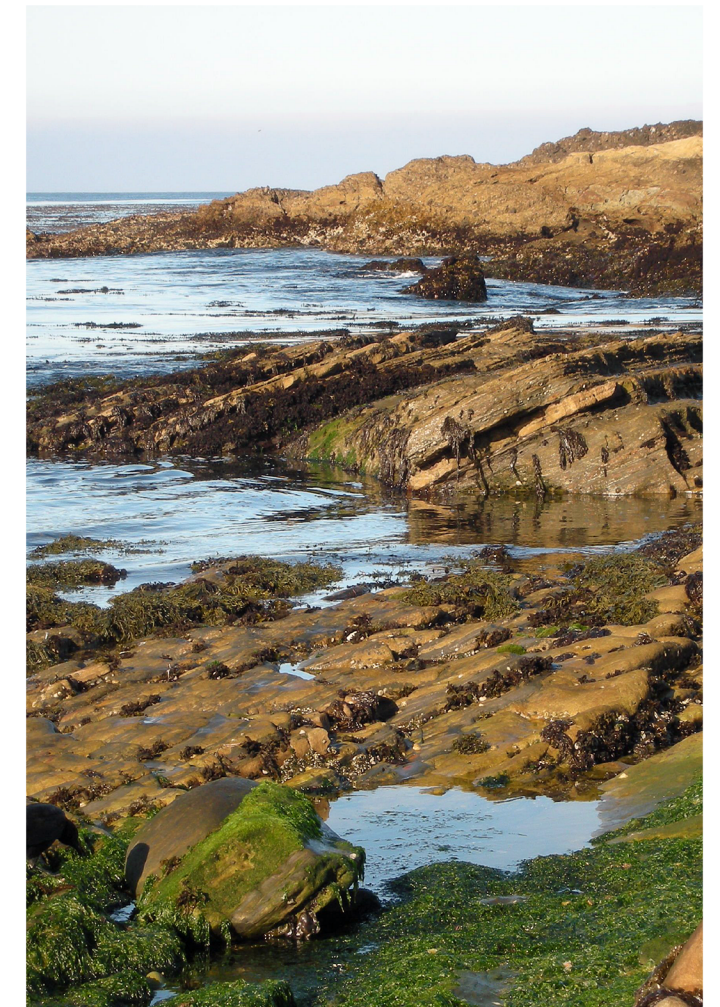
Days by the shore, so happy and free  
The cool ocean breeze says, "Come visit me."  
Small sea shore creatures litter the shore  
Happy little children want to see more.

So much to see, don't be a grouch  
Careful where you step or you'll say, "Ouch!"  
Pick it up gently for a look see  
Put it back where you found it and happy it'll be.

Days by the shore, so happy and free  
The cool ocean breeze says, "Come visit me."

- Sue Miller, Point Lobos Docent

## Point Lobos State Natural Reserve Weston Beach Tide Pools



## Life in the Intertidal Zones

Donations from people like you  
provide the funds to maintain trails  
and support docents.





## ★ Your Safety

Tide pools are great fun to explore. Keep these tips in mind while you are in The Zone!

- **Never turn your back to the ocean.**

Waves can be unpredictable and deadly.

- Your feet will get wet and the rocks are slippery. Wear appropriate shoes or boots.
- Even on a cloudy day, wearing a hat and sunscreen are good ideas.

## ★ Plant and Animal Safety

Intertidal zones are very fragile environments. Tide pool life can be easily harmed or killed by human disturbance.

• **No collecting of plants and animals is allowed** at any California State Park!

- Life is everywhere. Try to walk on sand or bare rock when possible.

- Prying animals off surfaces hurts them. Please observe them in place.

- If you look under rocks or seaweed for animals, return them to their original position.

For a more complete list of common intertidal species of our area go to <http://seanet.stanford.edu.Rocky Shore>.

Try these tide pool apps available for your smart phone:

<https://itunes.apple.com/us/app/california-tidepools/id497631839?mt=8>

<https://play.google.com/store/apps/details?id=org.californiatidepools&hl=en>

## How did Weston Beach get its name?

Ansel Adams proposed that this small beach in the Point Lobos State Reserve be named in memory of Edward Weston, who photographed the forms of Point Lobos for 20 years. The beach “is sort of synonymous with him,” Adams said. The United States Board on Geographic Names made it official in October, 1979.

Brochure: Mary Conway, Melissa Gobell, Marie Murphy

Photos: Mary Conway, Dave Evans, Sue Miller, Marie Murphy, Celie Placzek

Special thanks to Ann Wasser for scientific review

## ★ Tide Pool Ecology

Some of the richest and most diverse intertidal habitats in the world can be found in the tide pools at Weston Beach at Point Lobos. There are also three ADA trails where the rocky shores can be viewed.

With two low and two high tides daily, intertidal life must adapt to some of the most drastic changes in living conditions every day.

Three main factors determine in what zone an intertidal organism lives: wave strength, the type of surface to grow on, the amount of time an organism spends exposed to air and water.

Temperatures can vary from cold to hot. Sunny days can result in heated pools and low oxygen levels. Evaporation leads to high water salinity or salt content causing organisms to lose body fluid.

A rainy day can cause salinity levels to drop, making organisms soak up too much fresh water, swelling their tissues, and often leading to death.

To learn more about tide pool ecology and the tide pools at Weston Beach visit [www.pointlobos.org](http://www.pointlobos.org).

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Monterey District  
2211 Garden Road  
Monterey, CA 93940

For information call: (800) 777-0369.  
(916) 653-6995, outside the U.S.  
711, TTY relay service

[www.parks.ca.gov](http://www.parks.ca.gov)

## What will you see in the tide pool?

Walk through the **SPLASH ZONE** which is almost always exposed to air and enter the tide pool.

Look for these common plants and animals where they usually live.

### HIGH INTERTIDAL - exposed to air for long periods twice a day



Black Turban Snail



Hermit Crab



Rough Limpet



Black Abalone



Rock Weed (brown algae)

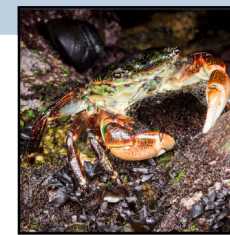


Bright Green Tuft (green algae)

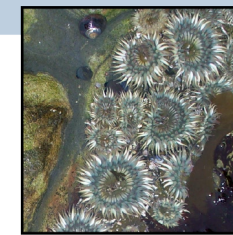


Turkish Towel (red algae)

### MID INTERTIDAL - exposed to air for short periods twice a day



Purple Shore Crab



Aggregated Anemone



Ochre Sea Star



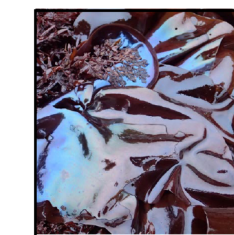
Feather Boa Kelp (brown algae)



Dead Man's Fingers (green algae)



Purple Sponge



Irridescent Algae

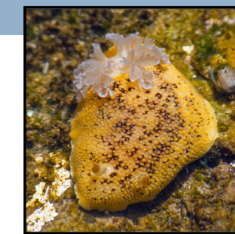
### LOW INTERTIDAL - only exposed to air during the lowest tides of the year



Bat Star



Surf Grass (flowering plant)



Spotted Nudibranch



Five-Ribbed Kelp (brown algae)



Purple Sea Urchin



Sponges



Coralline Algae Encrusting (red algae)