

# Monitoring for King Tides



*This year's highest tides give us a preview of sea level rise. How can you help track the effects of these King Tides?*



## What are King Tides?

King Tides, also known as perigean spring tides, are extreme high tide events that occur when the sun and moon's gravitational forces reinforce one another and the moon is closest to the earth. The highest tides of the year tend to occur in winter, and can be even more dramatic if pushed higher by a storm's sustained winds ("storm surge"). The term "King Tides" originated in Australia, and has been adopted in many parts of the world to refer to the highest winter tides.

## What is the King Tide Project?

The project started in Queensland, Australia in 2009 and has since become an international effort to document the highest reach of each year's highest tides. The project began in Oregon five years ago, and CoastWatch has been a sponsor every year. CoastWatch and the Coastal Management Program of the

Department of Land Conservation and Development, with Surfrider Foundation and the MidCoast Watershed Council joining in, are playing the lead organizing roles this year. The King Tide project is a volunteer-based citizen science project. Anyone with a camera can participate by photographing an area of the coast at the time it is impacted by these highest tides. Photographs taken anywhere are valuable, but the most helpful images are taken where the reach of the tide can be gauged against familiar landmarks, either natural or those of the built environment. Ideally, photographs can be taken at a certain spot and then replicated at exactly the same vantage point at a later, ordinary high tide level.

## Why is this project important?

The King Tide project is a way to document dramatic changes taking place on our coast. It can reveal the

potential impact of high tides and storm surges on infrastructure and natural habitats under current conditions. But perhaps more important, it gives us a preview of the coast at the higher sea levels predicted due to global warming and climate change. In a sense, these photographs depict what may someday be the "new normal." This can help us make decisions based on future coastal hazards. Since tide levels are impacted by storms, obtaining a series of images over a period of years will give us better knowledge of changing patterns. Sea level rise is estimated to range from half a meter (approximately 20 inches) to a catastrophic 2 meters (more than 6 feet) by 2100. The King Tide project can aid in raising public awareness of the possible impacts created by climate change.



**This season's King Tides take place November 14-16, 2016, December 12-15, 2016 and January 10-12, 2017**

## The King Tide Project in Oregon

This year, CoastWatch is partnering with the Coastal Management Program and other organizations, including watershed councils, to sponsor the seventh annual King Tide Project in Oregon. Each year the program has documented the highest tides at dozens of sites, with Lincoln and Tillamook counties being the best covered. However, in an effort to anticipate the effects of King Tides, on rocky shore habitats and beaches in protected areas, our special goal for this year, and years to come, is to document the King Tides for the vicinities of Cape Arago and our 5 marine reserves:

- Redfish Rocks
- Cape Perpetua
- Otter Rock
- Cascade Head
- Cape Falcon

## Areas of Interest

We are especially interested in the areas ten miles on either side of the center points of the marine reserves. We are also especially interested in photos that reveal the impacts of high tides on natural habitats, such as wetlands, tide pools and dunes, and to public recreation areas. For more information on the reserves and their locations please visit:

<http://www.oregonmarinereserves.org>

## How to Volunteer

To volunteer for the King Tide Project please contact Fawn Custer, CoastWatch Volunteer Coordinator: [fawn@oregonshores.org](mailto:fawn@oregonshores.org) 541.270.0027 For more information you can visit:

<http://www.oregonkingtides.net>

## Celebrate the Conclusion of the King Tide Project!

Join us for a party! We'll hold celebrations after the final tide series in January. For details, watch the website:

<http://oregonshores.org/coastwatch.php5>

**SEE YOU THERE!**

## How to Participate

### What shots to take?

Capture photos of local coastal areas that are subject to flooding or erosion. Take images where the impact of the tide can be gauged against familiar landmarks like buildings, jetties, bridges, roads, sea walls, shorelines, beach infrastructure or estuary shorelines. If you can, take contrasting shots of peak high and peak low tide, as well as a "typical" high and low tides. This helps show the tidal variability. Time-lapse photography can also be quite striking.

### When to go?

The best time to take photos is at the peak of the tide when the water level is at its highest. The time of peak tide varies. To find the best day and time in your area check out our tide table at:

<http://www.oregonkingtides.net>

### What information to include?

King Tide photos need to include the:

1. Date, including year
2. Time
3. Specific location
4. Photo orientation

### Share

There are lots of ways to share your images with the King Tides community:

- Upload your photos via the website: [www.oregonkingtides.net](http://www.oregonkingtides.net) and click on the tab, 'How to Participate' for instructions.
- Post your pictures with #orkingtides on our Oregon King Tides Facebook wall
- Add them to Twitter with #orkingtides and let us know @ORKingTide
- Email your photos and photo information to [orkingtide@gmail.com](mailto:orkingtide@gmail.com)