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Crowdsourcing King Tide Flooding

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What Is King Tide Flooding?

King Tides are the highest high tides in the year, usually peaking in the Spring and Fall. In South Florida, King Tides contribute to flooding along the coast and in other low-lying areas when the storm water system becomes overwhelmed with sea water. The water comes up through the sewer system, flooding streets and other areas. The tidal flood water can bring brackish water through storm drains inland.

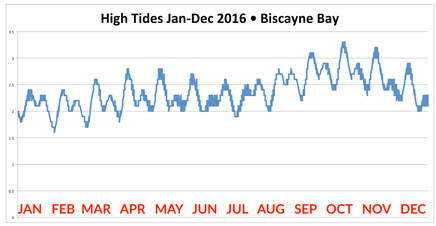
Why Crowdsource Flooding?

Many communities experience "sunny day flooding" during the King Tides, but are not aware that the water on their street contains salt water, or that the flooding is connected to sea level rise. As a result, flooding is under-reported and not well documented. The goal of this project is to educate and engage communities to understand, document and measure salt water from King Tide flooding. These data can be used to validate occurrence and depth of flooding projected by models.

How to Crowdsource Flooding

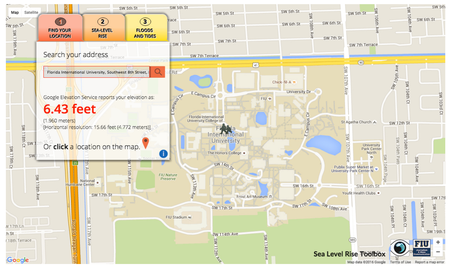
Identify King Tide Days

To determine the days of highest tides, we use tide estimation tables from sites like **tidesandcurrents.noaa.gov**, which provides estimates for the date and time when the tides reach their peak. The tables also show the location of the tidal gauges.



Identify Locations

To determine where we want to focus our data collection, we use FIU's Sea Level Rise Toolbox application to find the lower elevation areas near the tidal gauges and inland from them. We then deploy our students, faculty, and civic partners to these locations at the time when flooding is likely to occur. We increase the time of day for areas further inland from the coast.



Recruit Citizens to Document Flooding

We invite people who are interested in sea level rise to participate in our crowdsourcing activities, starting with students, faculty and civic groups interested in sea level rise.

How to Document a Flood

Take Photos and Videos

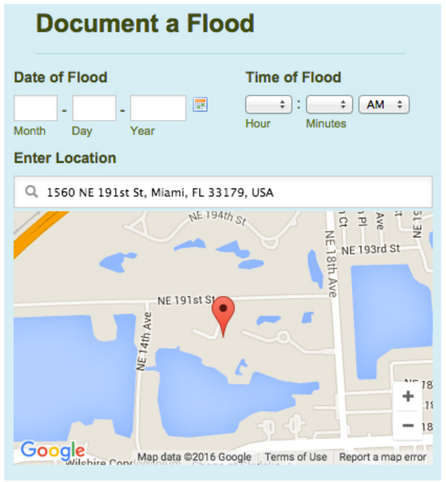
The easiest way for citizens to document flooding is to use a smartphone with a still or video camera to record flooding associated with high tide events (i.e. tidal flooding around the "King Tide" days).

Measure Depth of Flooding & Salinity

With a simple ruler or yardstick and careful observation of the time of day, anyone can measure the depth of flooding, and record how the depth changes over time. Using simple salinity measurement tools, anyone can determine the amount of salt in floodwater.

Record Measurements in the App

Anyone with a smartphone can upload their photos, record the depth of flooding and the salinity content of floodwater in the Sea Level Rise Toolbox application.



Crowdsourced Contributions

October 28, 2015 – Lincoln Road, Miami Beach

October 28, 2015 – Old Cutler Road, Coral Gables

September 29, 2015 - Las Olas, Fort Lauderdale

These photos were uploaded to the Sea Level Rise Toolbox application by students and faculty of FIU and South Florida citizens through the Document a Flood form:
http://kingtides.us/flood.html

Key Partners

Nicole Hernandez Hammer, Southeast Advocacy Coordinator for Climate and Energy at the Union of Concerned Scientists, has been an instrumental partner in organizing our crowdsourcing efforts, particularly identifying dates, times and locations of King Tides and organizing community and media partners.

The Climate Leadership Engagement Opportunities (CLEO) Institute, led by Executive Director Caroline Lewis, works to create an informed and engaged public willing to make changes and support climate resilience efforts locally, nationally and globally. CLEO is organizing Climate Roundtable Discussions to engage communities in conversations to create local climate action plans.

For Further Information

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