Sea Level Rise: from classroom to citizen science
How does this fit in my curriculum?

- **Common Core**
  - **Listening and Speaking**
    - Comprehension and Collaboration – effective engagement in discussions
    - Presentation of Knowledge and Ideas – presentations with organized ideas, integrating multimedia and using evidence, adapted for the audience

- **California Science Framework**
  - 6th – 12th grades – earth science, ecology and investigation and experimentation

- **Next Generation Science Standards**
  - Earth’s systems; Earth and Human Activity; Engineering

- Climate Literacy – Our understanding is improved through observations; human activities are impacting climate; climate change will have consequences for Earth systems and human lives

- Ocean Literacy – The ocean shapes features of the Earth; the ocean and humans are inextricably interconnected

- **Education in the Environment Initiative** – People influence natural systems; there are no permanent or impermeable boundaries that prevent the flow of matter between systems; decision affecting resources and natural systems are complex and involve many factors
Goals

1. Students will demonstrate increased knowledge about the impacts of climate change on sea level rise and an understanding of the science understanding and predicting sea level rise.

2. Students will engage in citizen/community science as volunteers by collecting and contributing photographic evidence of tidal heights during tidal extremes.

3. Students will effectively communicate their observations to the global King Tides Project community, and to members of their own community.

4. Students will be able to explain the impacts of climate change caused sea level rise on environmental, biological and social systems and give examples of strategies used in adaptation efforts.
You will distribute photos for you to observe and discuss. These are all photos taken and contributed for the King Tides Initiative. Please plan to share back to the group about your observations.

As a group discuss the risks from increased tidal level shown in the photo. Can you determine the location and tell what the differences in the tidal heights are?

How would you categorize the risk of increased sea level based impacts? Does it show the impact on...

<table>
<thead>
<tr>
<th>Category</th>
<th>Y or N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coastal habitats</td>
<td>Y or N</td>
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<tr>
<td>Coastal agriculture</td>
<td>Y or N</td>
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<td>Coastal resources</td>
<td>Y or N</td>
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<td>Coastal development</td>
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<td>Groundwater aquifers</td>
<td>Y or N</td>
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<tr>
<td>Public recreation</td>
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</tbody>
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Benefits of capturing king tides with photography

- Document current flood risk in coastal areas
- Visualize the impacts of future sea level rise in their community
- Ground-truth and validate climate change models by comparing model predictions with the high-tide reality
- Serve as a living record of change over time for future generations
Resources from today available online at:

- King Tides Initiative
- USC Sea Grant