

City Classroom CAP - Series

PBL support for using your City Climate Action Plan as a Living Textbook for local relevance, student agency, and community impact.

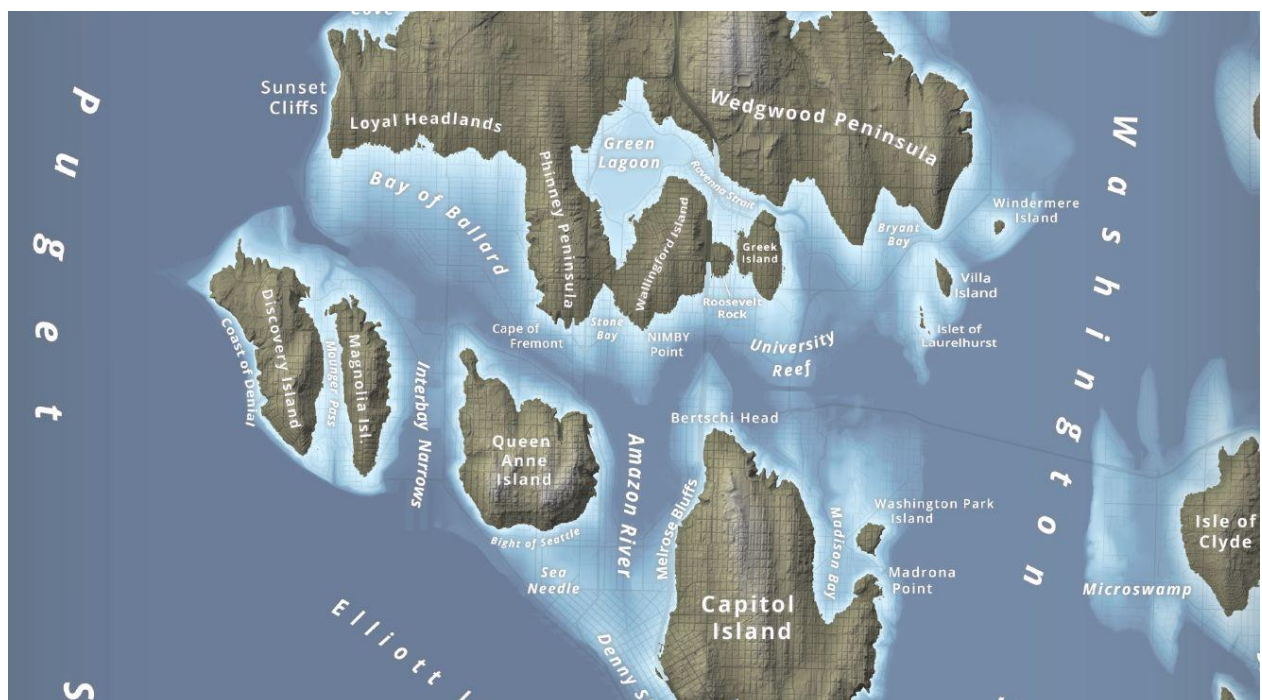


Credit: Kevin Lisota

Islands of Seattle - Analyzing Sea Level Rise

Students interact with a science-based yet fictitious map of what Seattle would look like if global temperatures keep increasing, the ice caps melt, and sea levels around the world rise to the max.

Islands of Seattle Map: A playful but data-driven, [imaginary map](#) by Jeffery Linn from [Conspiracy of Cartographers](#) on what Seattle would look like if the ice caps completely melted and sea level rose 218 feet. Learn more [about Jeffery Linn](#). See the [“Evolution of a Map”](#) with commentary by Jeffery.



ENTRY EVENT: A few Inquiries when viewing the Islands of Seattle Map

1. Where do you live on this fictional map based on sea level rise in Seattle?
2. What does this map mean? How might it happen? Is it happening? At what rate?
3. What causes sea level rise? Can we slow it down through our own individual actions? Who's working on this and how can we get involved?
4. What do you think the map-maker intended?
5. The map is a “projected scenario” based on real data. Where does this data come from?

TAKE A CLOSER LOOK

Select from the high resolution maps below to zoom in on a section of Seattle. Also available as [SLIDES](#). Look for details like your home, your school, parks, favorite beaches, sports arenas, and other familiar landmarks. Notice how mapmaker Jeffery Linn has added a single contour line on the current satellite view map to point out the huge land loss if all of the ice caps melted.

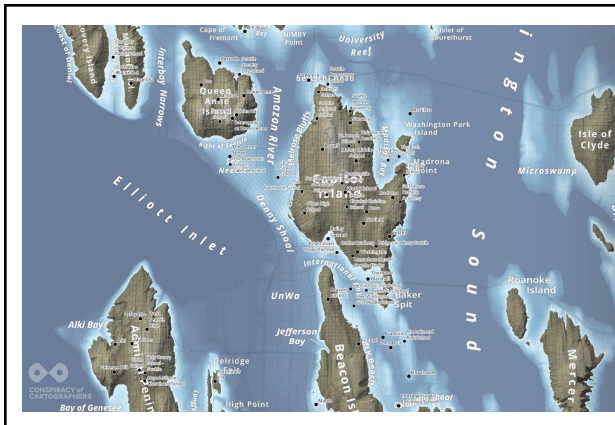
NORTH - [Islands of Seattle](#)



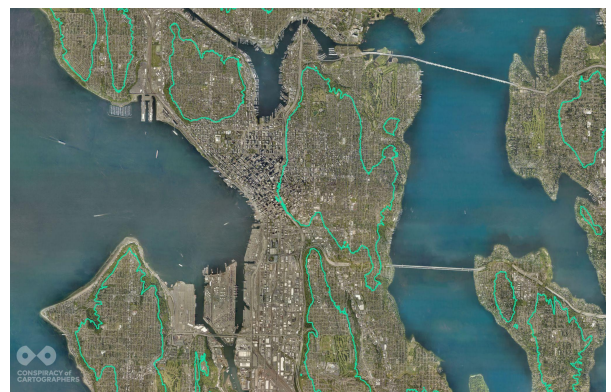
NORTH - [With high water contour](#)



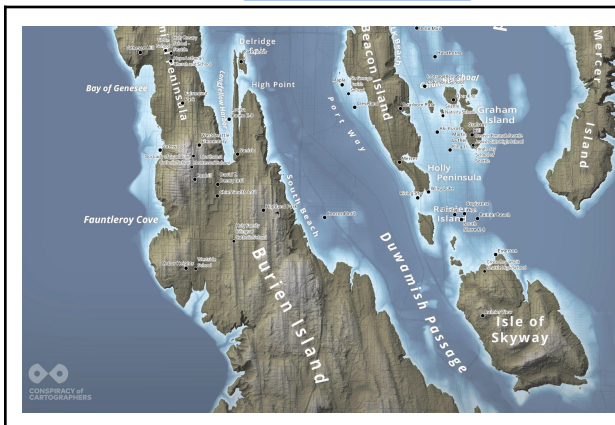
CENTRAL - [Islands of Seattle](#)



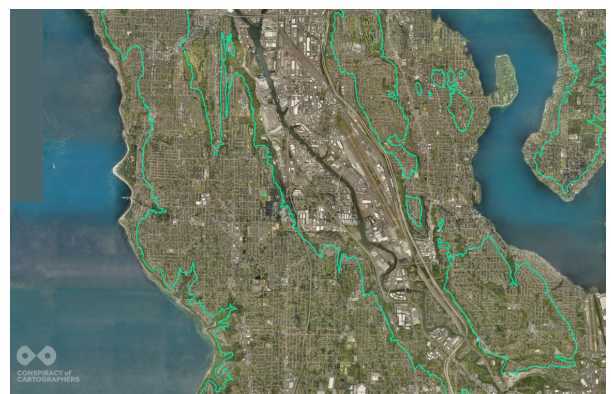
CENTRAL - [With high water contour](#)



SOUTH - [Islands of Seattle](#)



SOUTH - [With high water contour](#)



MAP READING COMPARISON

Use the map layers at [MyWater.World](#) to find the same scale used for Islands of Seattle.

1. Open up the “Map Layer” side menu.
2. Go to the basemap “Satellite View” and zoom in or out to establish the exact same scale as the Islands of Seattle Map.
3. What do you notice when you click on a few other map layers like those listed below? Selected maps could also be provided as print sets laminated on cardstock so that students can physically handle them, mixing and matching via small group interaction.
 - i. Satellite
 - ii. Topography
 - iii. Hillshade
 - iv. Contour Lines
 - v. 1936 Aerial Imagery
 - vi. Demographic Data (weave in equity data for different neighborhoods)

Zoom in on your school neighborhood. Are you underwater or on one of the [Islands of Seattle](#)? If you live outside of this map’s range how do you think Sea Level rise will impact you? How might you use a “**Contour Lines**” map layer to determine sea level rise where you live?

Check out the “**Swipe**” feature where you can pull up the Map Layer Menu on both sides of your screen, select two different maps, and then swipe back and forth to see the contrasting landscape stories.

Use [this interactive map](#) from the City of Seattle to look at how much of Seattle will be covered by “Predicted Sea Level Rise”. You can use the layers to look at a 2 foot rise then up to a 5 foot rise. When do you think we will reach 5 feet of sea level rise? Can we avoid it?

BACKGROUND KNOWLEDGE

Reading Text: (short half page) [SUMMARY TEXT - Sea Level Rise in Puget Sound](#) from the full report: [State of Knowledge - Climate Change in Puget Sound](#), details on pages 71-84.

The King County Sea Level Rise Risk Area [FACT SHEET](#). Excellent overview with links to NASA and NOAA basic science explanations of thermal expansion, ice melt, plate tectonics, and global sea level data.

SOUTH PARK CASE STUDY

South Park Community: What is the experience of sea level rise for Seattle families who live in South Park where students go to school at Chief Sealth High School?

1. See [SLIDES on Key Concepts](#) (graphs, map, diagram) from [19 Page Report](#): City of Seattle Office of Planning and Community Development.
2. See this [Fly Over Video Map](#) visualizing sea level rise on the Duwamish River if it rises by 2 feet which is a possibility within this century. The 2-foot amount falls into the “Likely Range” by 2100 based on [this critical 2018 Study](#).
3. How is the [Duwamish River Community Coalition](#), a nonprofit organization based in South Park, taking the lead on building community resilience? See the DRCC webpages on: [Climate Justice](#) and also: [Flooding - Community Response](#).
4. See Full Report: [South Park Sea Level Rise Adaptation Vision Summary](#):
5. GET THE LESSON - [How Sustainable Is My Neighborhood - South Park Case Study](#)

DATA VISUALIZATION AND ANALYSIS

UW Climate Impacts Group: [Interactive Data Visualization Tool](#). Data projections with interactive variables are provided for 171 locations along Washington’s coastline.

1. Visualization #1: [Projected sea level change by year](#)

WORLD COMPARISON STORIES

What do predictions of sea level mean for people in other places? [Get the SLIDES](#) featuring the maps and videos below.

1. **New York City:** [Map](#) | [Video](#) | [Reading includes graph and maps](#)
2. **Pacific Island Nations:** [Map](#) | [Video](#) | [Reading](#)
3. **Bangladesh:** [Map](#) | [Video](#) | [Reading](#)

BONUS

Vulnerability of King County Wastewater Facilities to Flooding from Sea-Level Rise: [CASE STUDY](#).

Funder & Partner Acknowledgement

