

# WHAT'S THE BIGGER PICTURE?

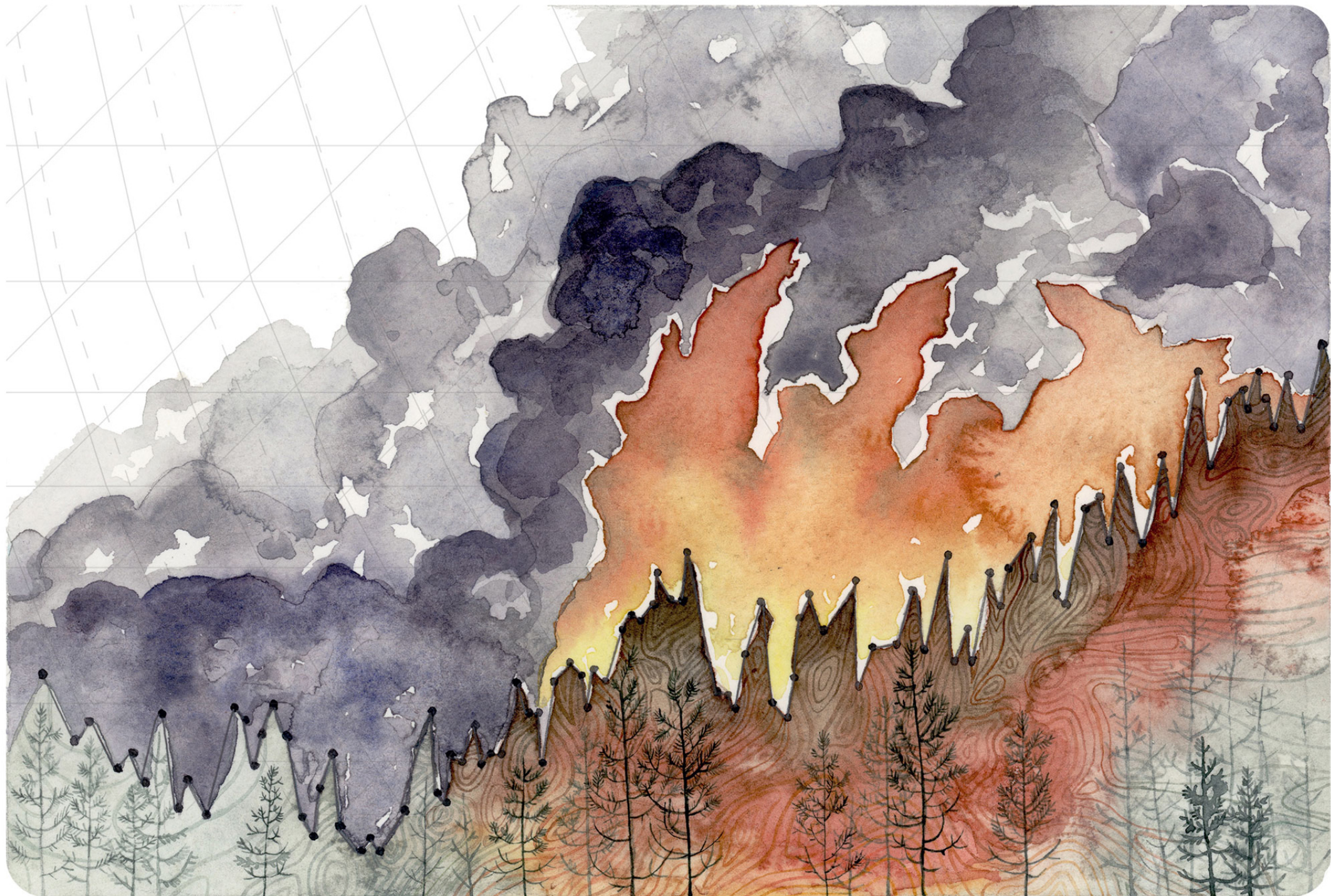
**E A R T H**

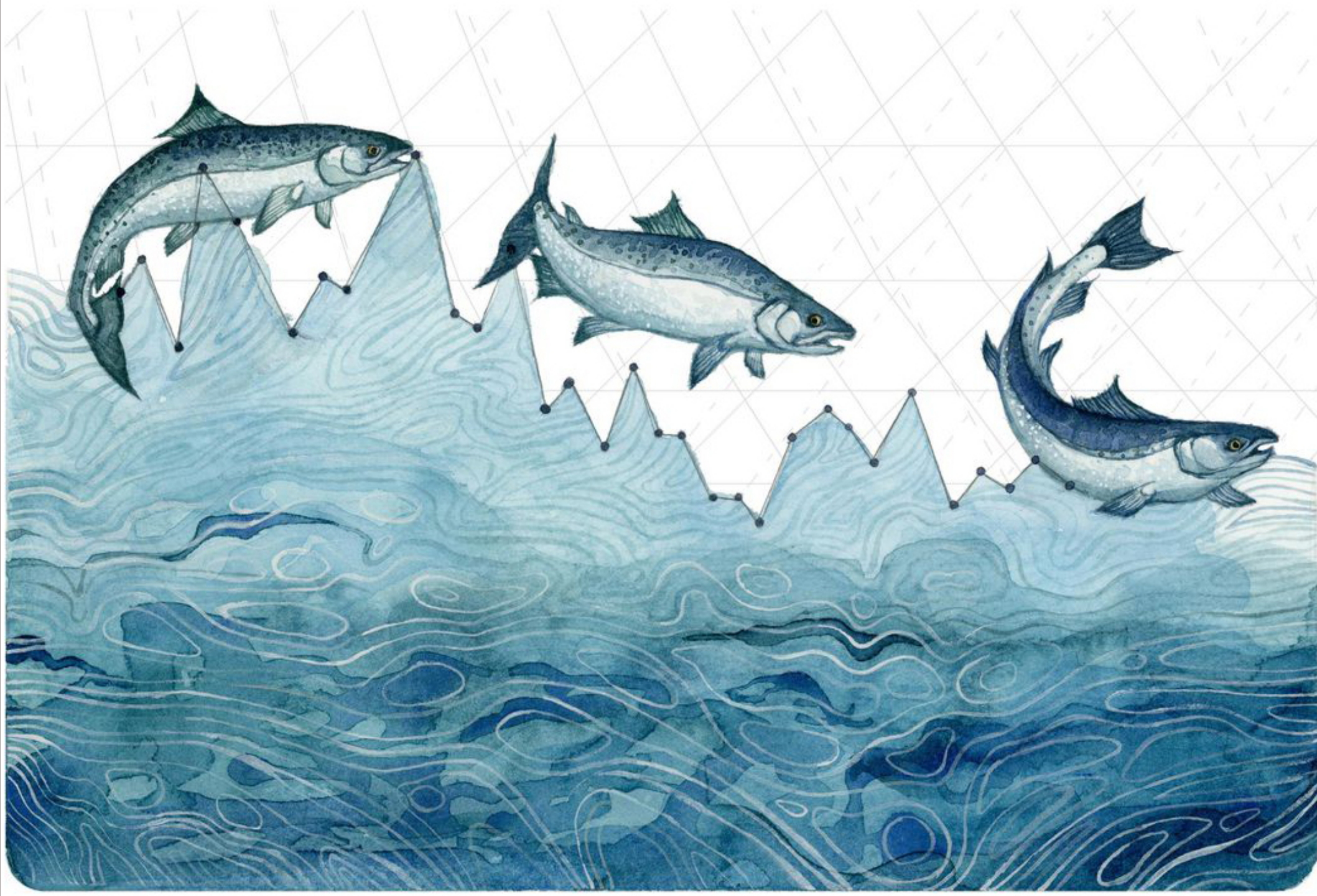
Combining **Art** and Science

## Do Now:

Observe the following pieces of art. Record what you see.

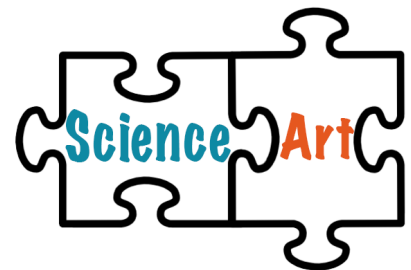






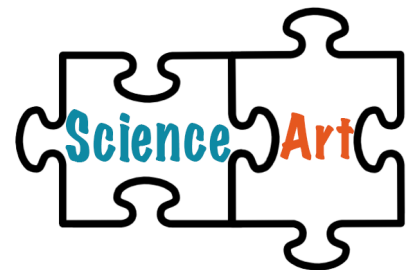
# Let's discuss...

- What did you notice?
- What trends or patterns did you observe?
- What is this image trying to convey?



# Artist & Scientist: Jill Pelto

- These images were created by Jill Pelto. She is a graduate from the University of Maine and uses her degrees in Studio Art and Earth Science to create images to illustrate environmental issues.
- Her field work has taken her to the glaciers in Washington, the dry valleys of Antarctica, and the carved cirques of the Falkland Islands.
- Let's take a look at the artist's descriptions about her art.





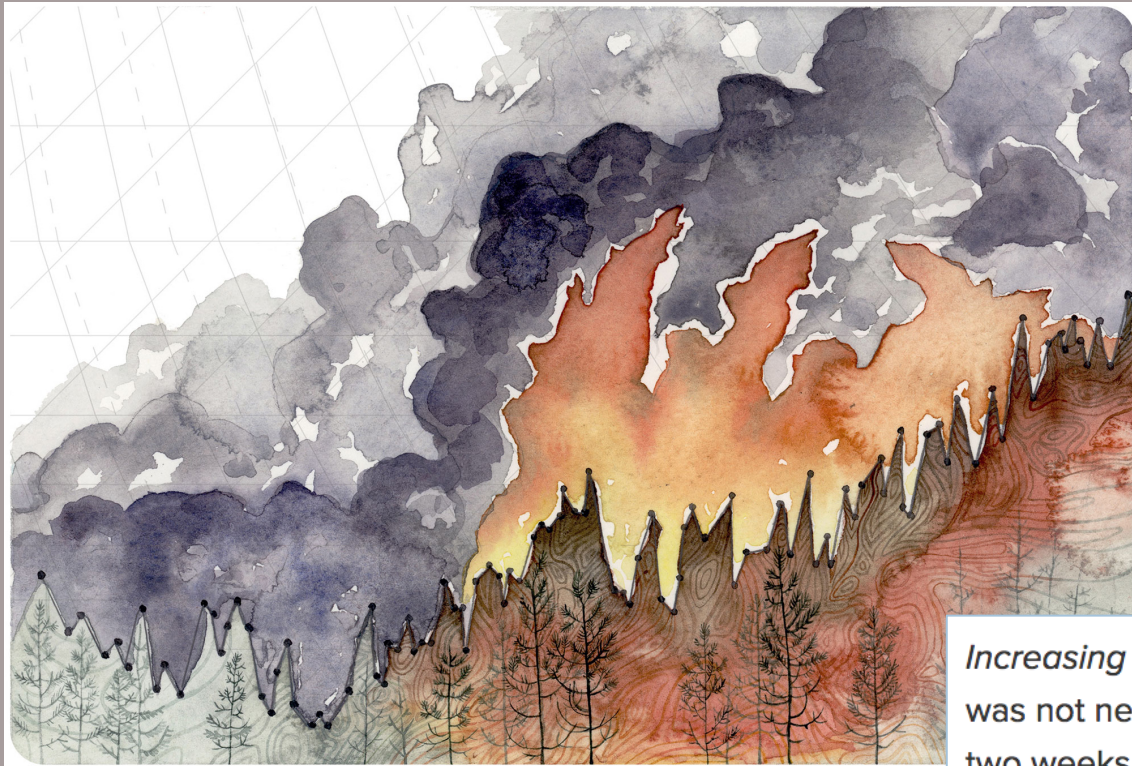
*Habitat Degradation: Ocean Acidification* contains ocean pH data from 1998 to 2012. The decreasing pH is due to atmospheric carbon dissolving into the ocean, and creating carbonic acid, which means a more acidic ocean. This has harmful effects on all marine life. Studies on clownfish show that more acidic water alters how their brains' process information. This affects their ability to avoid predators by detecting noises and find their way home. Ocean water has a lower pH than a fish's cells, so they take in carbonic acid in order to be in harmony with their environment. Even a small drop in pH requires fish to expend much more energy in order to equilibrate, and this energy is taken from other necessary functions. The clownfish in my watercolor are grouped in confusion, separated from the anemone in which they live. The oceans may be vast, but if pH drops globally, there is literally nowhere marine life can go, they are confined to the water.

References: <http://wxshift.com/climate-change/climate-indicators/ocean-acidification>

<http://ocean.si.edu/ocean-acidification>

Source: <http://www.jillpelto.com/ocean-acidification>





*Increasing Forest Fire Activity* uses global temperature rise information. Fortunately, I was not near any of the massive forest fires that raged before, during, and after my two weeks in Washington summer 2015, but I was greeted with many smoke-filled days. On some days, when the winds blew from the fire toward us, the smell and taste of the smoke overpowered my senses, even though the fire was about 100 miles away. As temperatures increase, and drought and drier than average conditions persist, forest fires become a huge threat to the forest, plants, animals—and of course to people and structures.

Reference: <http://www.climatecentral.org/gallery/graphics/rise-in-global-temperatures-since-1880>

Source: <http://www.jillpelto.com/increasing-forest-fire-activity>



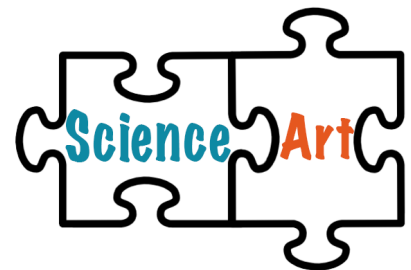
*Salmon Population Decline* uses population data about the Coho species. Seeing the rivers and reservoirs looking so barren was frightening; the snowpack in the mountains and on the glaciers supplies a lot of the water for this region, and the additional lack of precipitation has greatly depleted the state's hydrosphere. Consequently, the water level in the rivers the salmon spawn in is very low, and not cold enough for them. The salmon are depicted swimming along the length of the graph, following its current. While salmon can swim upstream, it is becoming more of an uphill battle with lower stream flow and higher temperatures. This image depicts the struggle their population is facing as their spawning habitat declines.

Reference: <http://blogs.agu.org/fromaglaciersperspective/2015/06/08/salmon-challenges-from-glaciers-to-the-salish-sea/>

Source: <http://www.jillpelto.com/salmon-population-decline>

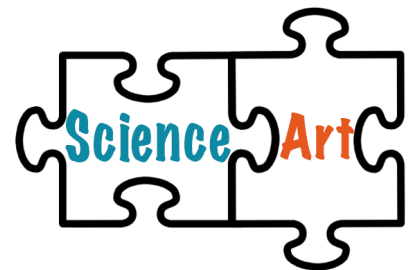
# Your Assignment (Part 1):

- **Analyze and interpret the graph** you have been given. (You may want to use the *Graph Analysis Worksheet* to lead your thinking.)
- Once you have identified the trend of your graph, **research the topic** in more detail.



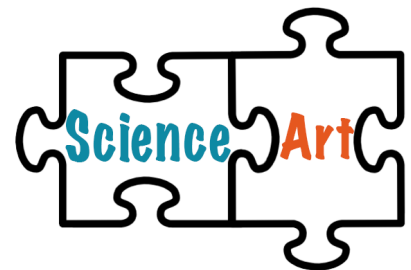
# Your Assignment (Part 2):

- Decide upon an **illustration that would best communicate** the issue contained in your graph.
- **Illustrate** your graph.
- **Develop an 'Artist Statement'** (modeled after Jill Pelto's) to accompany your art. Include your references.
- Prepare your art and statement for a *Gallery Walk*.



# Gallery Walk

- As you move through the gallery, make observations, note patterns, and define problems.



# What's the bigger picture?

- Using the information you have just gathered, make a statement about how the pieces of data fit together.
  - ▣ What broader issue is the data illustrating?
  - ▣ What trends support your statement?
    - Support your claim with logical reasoning, relevant and accurate data, and evidence that demonstrates your understanding of the topic.

