Trees, Weather, Forests and Seasons

Bordeaux Elementary - Kindergarten
Shelton School District
At the beginning of the year, each class chose a Class Tree to adopt in our schoolyard. We return to the tree with each new season to observe changes and record the data in our Tree Journals.
Example pictures of a Tree Journal showing our class tree in the summer, fall and winter.
Right now it is winter and our tree is bare.

We are excited for the spring to see the buds open into blossoms and new leaves!
Our classes went on a Field Experience to the Cranberry Lake Forest Education and Research Center in Shelton, WA.
We learned about 5 different types of trees at Cranberry Lake. We collected samples of bark, leaves and cones to bring back to school with us.
We learned that animals can change the environment. Can you guess what kind of animal damaged this tree?

A Pileated Woodpecker looking for bugs to eat!

Why do you think all of these trees died?

Beavers dammed the creek and flooded the area. The trees drowned from too much water.
Humans also change the environment.

These trees are marked to be cut down when this forest is thinned.

These trees are part of a research plot that scientists are studying.
After coming back to class we kept learning about trees in lots of ways. We used the bark, leaves and cones to make Tree Jars for observation. We used magnifying glasses to look closely at details and drew micro/macro pictures.
We wrote about our Cranberry Lake field trip in our writing journals.

We identified, sorted, counted and graphed cones from the evergreens we found.
We compared and contrasted evergreen trees to deciduous trees using a double bubble thinking map.
We learned that trees breathe in carbon dioxide and breathe out clean oxygen. Trees are important to help keep our air safe and clean.
We learned you can count the rings on tree cookies to tell how old a tree was and what the growing conditions were.

We made an art project to represent our age as a tree. I’m 6 so mine has 6 rings.
We learned that trees are an important resource.

Many things are made out of wood and paper and those come from trees.
Experts from Green Diamond Resource Company visited our class and shared how they manage forests so that not too many trees get cut down at once.

They also plant new trees to replace the ones they cut.
Mr. Mark showed us how to plant a tree and gave everyone a tree to take home and plant. We can help forests and the earth by not littering, recycling and planting new trees.
Thank you! Are there any questions?

Unless someone like you
Cares a whole awful lot,
Nothing is going to get better.
It's not.

~Dr. Seuss, The Lorax
RENEWABLE ENERGY

HOW CAN WASHINGTON SCHOOLS BENEFIT FROM USING SOLAR PANELS?

PRESENTED BY GWEN NEWPORT, SAMMY FIRKINS & ANNIE SON
WHAT IS RENEWABLE ENERGY?

Renewable energy is energy that is generated from natural resources that are continuously replenished. This includes sunlight, geothermal heat, wind, tides, water, and various forms of biomass. This energy cannot be exhausted and is constantly renewed.
WHAT IS SOLAR ENERGY?

Solar energy is light and heat from the sun harnessed by using photovoltaic cells to produce electrical energy.
There are 2,370 public schools in Washington.

If we were to place just an average of 20 solar panels on each public school in Washington, we could create 13,800,000 watts of electricity per year.
HOW DID ONE SCHOOL MAKE THIS A REALITY?

- In 2015, Arleta School in Portland, Oregon installed a 151.2 kw solar-array on their school by partnering with the Portland General Electric Renewable Development Fund, their customers, and the Energy Trust of Oregon.

- Along with Arleta School, the Portland General Electric Renewable Development Fund also installed solar-arrays on 5 other Portland schools.
SOLAR POWER AT JASON LEE

- Jason Lee is an example of an ideal location to place solar panels.

- We have the roof space for 300 solar panels which could produce 90,000 kW.

- This installation would prevent 108,000 pounds of CO₂ emissions.
WHY SHOULD SCHOOLS USE SOLAR ENERGY?

IF WE USED SOLAR ENERGY...

- Saves Money
- Reduces CO2 Emissions
- Benefits The Health Of The Community
- Generates Power Where & When It's Used Most
- Creates Learning Opportunities
HOW CAN WE MAKE THIS A REALITY?

MAKING THIS A REALITY REQUIRES...

- State Incentives
- Sponsors & Grant Money
- Private Investors
- Superintendents and School Boards
THANK YOU
RESOURCES

- https://reason.org/commentary/does-bus-transit-reduce-greenhouse/
- https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle
- https://www.bpa.gov/Pages/home.aspx
- https://www.mytpu.org/tacomapower/about-tacoma-power/dams-power-sources/community-solar/
- https://cebrightfutures.org/partners/portland-public-schools
- https://electricityplans.com/kwh-kilowatt-hour-can-power/
- https://www.governor.wa.gov/tags/climate
- http://brightstarsolar.net/common-sizes-of-solar-panels/
Reardan FFA Agricultural Issues Forum
Is Washington Doing Enough to Save Puget Sound’s Southern Resident Killer Whales?

STEM Alliance-Puget Sound Partnership-Whale Trail
Washington State Capitol Building-Olympia, WA
Donna Sandstrom-Whale Trail-Seattle, WA
Wednesday, February 27th, 2019

Reardan FFA Chapter
215 E. Spokane Ave.
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Nutrition is Key to Survival

Malnourished – “Peanut Head”

Healthy Orca

History, Backstory, Introduction
Is Washington Doing Enough to Save Puget Sound’s Southern Resident Killer Whales?
Prey

Boat Noise

Pollution

Climate Change

Proponent Introduction
Methods
Timeliness
Finances
Priorities
Opponent Introduction
2003-Species at Risk Act Listed-Canada
2004-Washington State Listed
2005-Endangered Species Act Listed- US
Salmon declining in abundance and size

Chinook populations up and down the West Coast have slowly been decreasing since the 1980s. Not only are there fewer fish in regional waters, but individuals are shrinking in average size and weight, with the older, fatter salmon making up less and less of the population.

CHINOOK ABUNDANCE FROM ALASKA THROUGH CALIFORNIA

Proponent

39.4% fewer salmon than 1976

Salmon Recovery is Key!

*Weight and length measured for 4-year-old ocean chinook from multiple salmon runs from Alaska to California.

Productive and protected habitat
Competition plays a role
Marine Mammal Protection Act
Proponents keep it straightforward here
7 of the 12 Chinook Runs Come From Upper Columbia
Much of the work has already been done!
Is there enough time?
There's a problem?
Throw more money at it.
Opponents All Agree - Something Must Be Done!
Vessel Noise and Traffic
Confined or Condemned?

Southern Resident

Transient
Management actions have focused on reducing chinook harvests to aid in Chinook recovery.
Echolocation
“...literally shrinking their world.” Rob Williams- Oceans Initiative
Not Been Determined?

Opponents
The sad truth is the truth is sad.
- Reduce Shipping Efficiency
- $10 fee

Opponent
1 Kilometer Slow Approach - Maximum Speed 7 Knots

200 Yards/Meters from Killer Whales

100 Yards/Meters

NO APPROACH ZONE

Avoid stopping in the expected path of any whale

Pacific Whale Watch Association
Voluntary Whale Viewing Guidelines
Best Practices - Updated 2018
Spirit of Conservation
Process Needs Some Cleaning Up?
Proponents

Malnutrition

Toxic Contaminants
SOUND POLICY
Who did it?
Allies Become Adversaries!
• Irregularities in salmon runs
• Changes in Orca feeding behaviors
THINGS THAT MATTER

THINGS YOU CAN CONTROL

WHAT YOU SHOULD FOCUS ON

Opponents
Proponent Summary

- Complicated and Controversial
- Policy Changes
- Prey Availability
- Reduce Boat Traffic and Noise
- Reduce Toxins
- Address Global Climate Change
Opponent Summary

- Priorities, procedures, and policies
- Cast too big of a net
- Unintended consequences
- Politically charged
- Not good Science
Is Washington State Doing Enough to Save Puget Sound’s Southern Resident Killer Whales?
• Chinook Population Trending Decline
• Productive and Protected Habitat
• Manmade Structures
“I have to really decide if this task force is for me”

Ken Balcomb
Senior Scientist, Center for Whale Research
Politically charged
2017 SRKW Census – July 1
With Post-July Updates

- This is the population chart prepared by CWR each year for NOAA, DFO, and the general public.
- L pod has been driving the overall decline until recently.
- J pod has recently experienced many losses.
- The net changes in the total population are not as meaningful as the details (next slide).
Is Washington Doing Enough to Save Puget Sound’s Southern Resident Killer Whales?
BEAVER TEAM
Reese Braman, Nick Gleed, Alice Miller, Rowan Utzinger
Intro:

- The Mid-Columbia Fisheries Enhancement Group spent $1.1 million in 2011 restoring the Reecer Floodplain

- Focus: floodplain function, enhance habitat, provide educational and recreational opportunities

- Beavers act as ecosystem engineers

- Dams also used to slow flow of water to create wetland for 85% of North American fauna that rely on wetlands.
Methods:

- Weighted scale of five ecosystem indicators (adapted from Fish and Wildlife index): Water depth and speed, stream grade, vegetation quality, cover
- Evaluated 50ft sections of both mature creek section and the more mature section
- Randomly selected sections
Our Survey Rating Scale

- Surveyed points every 50 ft along the creek.

**Example Survey:**

**Point One (17ft)**

*Water speed:* 3.4 sec/3 ft (0.88 ft/sec)

*Cover:* Based on image

*Depth:* 1-2 ft

*Vegetation:* 2 mid-sized trees, saplings (cottonwood), grass.

*Grade:* -
Findings:

• The Reecer Creek Floodplain is unable to support beaver populations

• Beaver activity observed on the floodplain most likely foragers based in larger colony

• Main habitat failings included limited availability of larger trees and inadequate cover

• With further maturation, the Floodplain will likely be able to support beaver populations.
Conclusion:

- In our survey, we discovered that yes, there is a colony of beavers and a dam at the end of Reecer Creek, but they are not based on the floodplain.

- The Reecer Creek Floodplain is not quite ready to support its own separate colony of beavers.

- Reecer Creek is making great strides toward being a continuously supportive ecosystem, but it constantly rated on average one point lower in habitat quality than our compared tribeland ecosystem.

- Through our surveys, Reecer does have enough vegetation to support beaver life, but it needs more time to grow and develop to sustainably support beavers.


