Ecosystem Management of Sockeye Salmon in the Copper River Watershed: Cooperation between Community and Government

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Tradition tells us ....

We are all a part of this land...

...Our future depends on this land...

...It will always provide for us.
Science tells us... Our resources are finite... 

...we are connected to our environment...

...we can be a part of the solution.
So Where Do We Get Started?
• Ocean Currents
• Alaska Coastal Current
• Alaska Gyre
• North Pacific Current
Important Components

**Biotic factors**
- Predators/Prey
- Plankton
- Decomposers

**Abiotic factors**
- Temperature
- Ocean currents
The Living Components...
Salmon Food Web
Sockeye Salmon

• *Oncorhynchus nerka*
The other guys.....

- Plankton
- Zooplankton
- Mammals/Scavengers
- Homo Sapiens
The Bottom Of the Chain.

Tertiary Consumers

Secondary Consumers

Primary Consumers

Producers
The Top of the Chain.

- Commercial Fishermen
- Subsistence Gill Netters
- Chitina Dip Netters
- Federal Subsistence
- Glennallen Sub-district
- Sport Fishermen
Commercial Fishing

- Seining
- Gill netters work inside the barrier islands

New Regulations
Subsistence

- Dipnetting
- Fishwheels
Others Want Their Share.

- Not only do humans use Sockeye but so do:
  - Trees use Carbon, Phosphorus, Nitrogen from rotting carcasses
  - Bears depend heavily on salmon for food
  - Creates habitats for microorganisms
Non Living

EL NIÑO

Non Living
Alaskan Ocean Currents

- Alaska Coastal Current
- North Pacific Current
- Alaska Gyre
Pacific Decadal Oscillation

- El Nino
- La Nina

Boom And Bust cycle

Alaska  ↔  Pacific Northwest
Temperature

• Salmon thrive in cold water

• Spawning

• Food source
Global Warming
Greenhouse Effect

- Ozone Layer
- Greenhouse Gases
  - water vapor
  - carbon dioxide
  - methane
  - nitrous oxide
  - fossil fuels
Positive and Negative Effects

- Helps warm the Earth
- Water Levels are rising
- Climate Change
Our Backyard

- Permafrost is being lost
- Temperature increase of 5 degrees
- Loss of Glacial Ice
- Sea Ice could be gone...
What We Can Do to Make a Difference.
Cooperation

• Our World

• Our State

• Our Community

• Our School
Global Thinking

• Advocate for More Research
  - Global Warming
  - Fuel Usage
  - Cleaner Energy

• Be a part of the solution!!!
Closer to Home...

- Board of Fisheries
  - Submit a Public Proposal
  - Describe how you can remedy the problem
  - Present a plan on how much each group should be allotted
Creek Side....

◊ People *Rely* on Subsistence

180 miles

2800+ miles
A Matter of Fairness

- Commercial fisherman
- Dip Netters
- Federal Subsistence
- Sport fishing

How do we keep Track?
Ways of Counting

Fish Weir

A weir creates a block so that the salmon have only a narrow opening to go through. This makes it easier to count the number of salmon going up a certain stream.
DIDSON

- Uses sonar to create near quality video for applications ranging from underwater surveillance and fisheries purposes.

- Swim Bladder

- Miles Lake
School Side

- Salmon Raising Projects
- Salmon Calendar
- Long Term Studies
- Data Collection