KLAMATH BASIN TRIBAL YOUTH PROGRAM

Climate change and Tribal Ecological Knowledge Summer Internship Presentation
10 am, August 21st

2014

AGENDA

- 10:00 am **Welcome/Opening**
  - *Opening Prayer*
  - *Project Background – KBTYP and Pilot Project*
- 10:10 am **Project Theory – Lead Mentor, Dr. Frank Lake, Forest Service**
  - *Climate Change and Tribal Ecological Knowledge Adaptation*
- 10:20 am **Project Summary**
  - *Week by Week Breakdown*
- 10:45 am **Student Research Presentation**
  - Shahnie Clark
  - Darcey Evans
  - Talonna Nelson
  - Charley Reed
  - Anthony Ulmer
- Noon **Research Student Experience**
  - Student Round Robin
  - Questions and Answers
- 12:30 pm **End**

KBTYP

Trevor Super,
Quartz Valley Indian Reservation,
USFWS,
KBTYP, Program Coordinator

Engage Educate Employ

- Klamath Basin Tribes
- Local Federal Agencies
- Local Higher Education Institutions

CLIMATE CHANGE AND TRIBAL ECOLOGICAL KNOWLEDGE SUMMER INTERNSHIP

- Follow up to the pilot project in summer 2013
- Funded by North Pacific LCC Grant through QVIR
- Operated in partnership with USFWS, USFS, USGS, NASA, SOU, HSU and the KBTYP Tribal Partners (Hoopa Valley, Karuk, Klamath Tribes, Resighini Rancheria, Quartz Valley, and Yurok Tribes)

Klamath Tribes: Traditional Hunting and Gathering Resources, Seasonal Calendar and Evaluation of Impacts Related to Climate Change

Shahnie Clark

Background

- Raised in Chiloquin, Oregon
- Entering 3rd year at OSU
- Animals and Outdoors!

OREGON STATE

Reasons for Topic Chosen

- Interest in wildlife and habitat
- Gain more knowledge on traditional practices
- Better understand the environment

Research Topic

- How has climate change effected traditional plants and wildlife?
  - Changes in seasons
  - Investigated relationships between plants, animals and cultural practices
  - Use of Traditional Ecological Knowledge

Methods

- Traveled Klamath Basin
- Tribes within the Klamath Basin
- U.S. Forest Service
- U.S. Fish and Wildlife Service
- Watershed Organizations
- Literature Review
- Interviews/Discussions

Results - Fall

Plants gathered: Huckleberry, chokecherry, pigweed, indian potato, hackberry

Plant gathering is less predictable

- Mule Deer and Elk hunting

Results - Winter

Winters typically very cold with lots of snow

"My grandfather use to tell me that when there are a lot of yellow jackets we would have a bad winter (lots of snow) I haven't seen a lot of them this year or last. I think the year before we had a lot of yellow jackets and then a lot of snow, so I highly believe what my grandfather said, and I think this coming year will be the same (not much snow)" – Lillian Watah

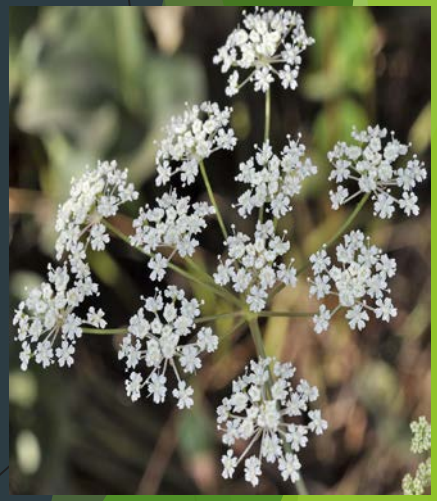
Wild Rose
Rosa woodsii

Results - Spring

- Bear hunted

Plant flowering and soil moisture changing

- Fawns are being born later



Epos
Perideridia gairdneri

Plants gathered: balsamroot, camas, desert celery, bitterroot, yellow bell, big-headed clover, epos

Results - Summer

Waterlily “wokas”
Nuphar polysepalum

- Droughts are occurring more frequently and at a higher severity

Plants gathered: balsamroot, blazing star, tule, cattail, Coyote tobacco, bitterroot, buckberry, camas elderberry, and huckleberry.

Discussion: Larger Issues Learned

- Traditional Ecological Knowledge is at risk from multiple factors
- Summer and Winter impacted the most for seasons
- Natural Resource management, Tribal Leadership and Climate Change adaptation approaches
- Asking questions about Climate Change involved the politics and issues around resource management

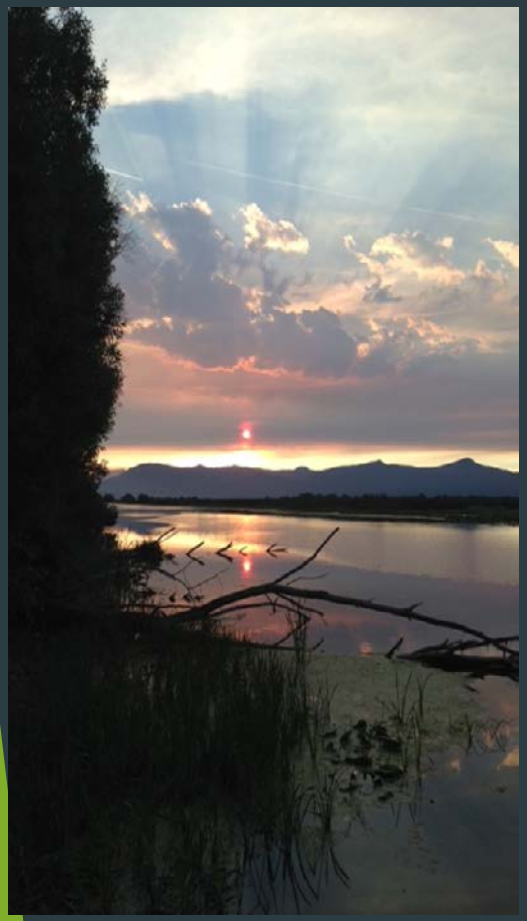
What Now?

1) Graduate from Oregon State University
2) Seek employment
3) Use the knowledge I've gained to help restore the
   and wildlife

What's Changed?

- Minor in Forestry?
- Better understanding of career aspiration
- Gained professional and personal relationship

Thank You ☺



Questions?

Comments?

CULTURAL ADAPTATION THROUGH CLIMATE CHANGE AND TRADITIONAL ECOLOGICAL KNOWLEDGE

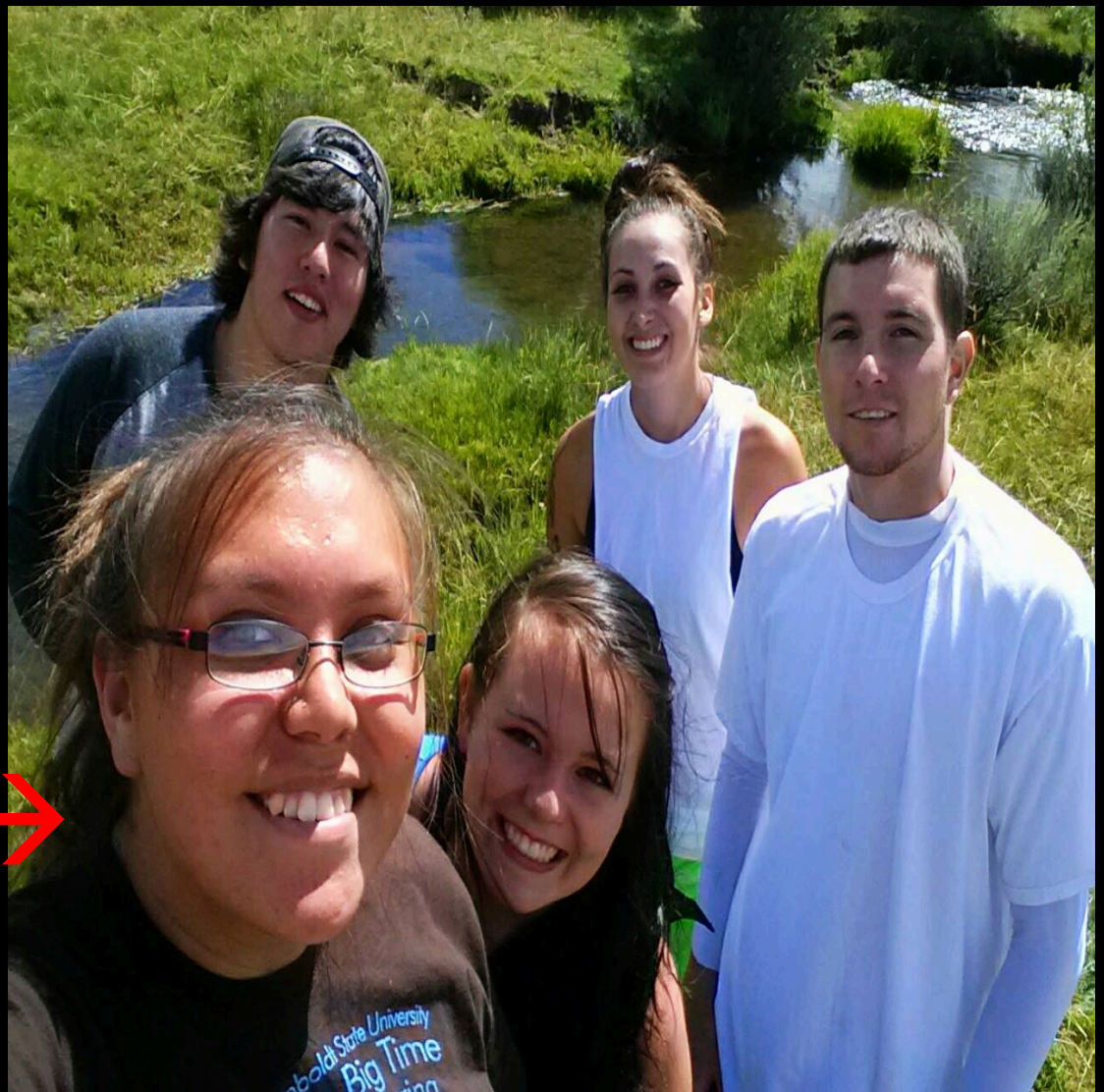
By Talonna Nelson

UC Santa Cruz

Summer 2014

Summer of 2014 Interns for the Klamath Basin Tribal Youth Program!

ME →



This photo was taken at the Sycan Marsh while doing transects on the Sycan River

KARUK ENROLLED TRIBAL MEMBER

GRADUATED FROM HOOPA VALLEY HIGH SCHOOL ‘13

FELLOW BANANA SLUG AT UC SANTA CRUZ ‘17

DOUBLE MAJORING IN PSYCHOLOGY & LEGAL STUDIES

MINOR IN AMERICAN INDIAN STUDIES & ENVIRONMENTAL CONSCIOUSNESS

Where we traveled to this summer in the Klamath Basin

- Week 1-HSU: Overview with the Forest Service & Yurok, Hoopa, and Karuk tribes
- Week 2-SOU: Went to the top of Mt. Ashland and learned of the culturally important mountain ridges
- Week 3-NASA Ames Research Center: Learned about water on the moon and
- Weeks 4+5-Orleans: Forestry plots & community dinner at Sandy Bar

Week 1-Klamath

Week 2- Mt. Ashland

Week 3- NASA

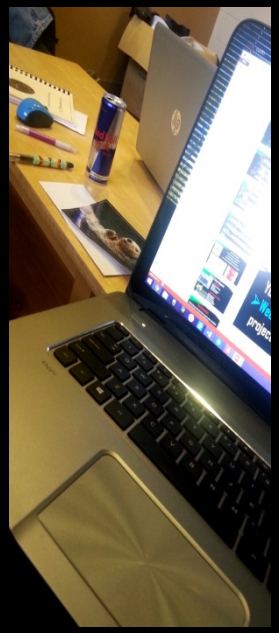
Week 4+5-Wooley Creek

- Week 6-Silver Lake: Sycan Marsh & river transects
- Week 7-Quartz Valley: evacuated from Log Fire
- Week 8-Ah-Pah: Traditional Yurok village
- Weeks 9+10-SOU: Finishing up projects

Week 6- Sycan Marsh

Week 7-Shackleford Creek (Quartz Valley)

Week 8-Old Growth Fores



Week 9+10-Computer Work

My Questions

- What is leading to culture loss?
- How is climate change impacting culture loss?
- What can we do to help prevent culture loss?
- How has time commitment contributed to lack of culture practice?
- Do community members realize how important culture is?
- Are we taking advantage of our elders and not learning from them?

Time Consumption

- Sports take away after school time to practice culture and tradition
- Lack of interest in practicing culture with free time
- Modernization
- Commitment to other priorities (work, chores, social activities)
- Travel
- Patience to sit down with an elder and listen to a story

Education is Time Consuming

High School

- Homework
- Sports games & practice
- After school tutoring

Higher Education: College

- College Applications
- Community Service
- Going away for college
- Being away for ceremonies
- Full-time Commitment

Methods:

- Traveled the Klamath Basin and learned about the different climate change effects
- Literature review & internet research
- Interviews with community members in Klamath basin
- Self reflection of TEK just looking back to my younger days and how I remember things differently
- In order to learn, one must have the patience to sit and listen to seminars

In this picture, we are learning how big the Klamath Basin is, what and where the major tributaries are, and aboriginal territory of the tribes.

Culturally Important traditions still being practiced

Basket Weaving

Ceremonial Dances

Language

Pros vs. cons during internship

- I am directly effected through culture loss by this program and the time commitment it took
- I planned on going to the dances this summer but never got the chance
- I did get to learn more about how to preserve TEK by traveling and talking with other people
- There's so much to learn in such little time
- There are selfless good people dedicating their lives to restore our forests
- People look down on you for what has been learned. Jealousy
- I got to travel the basin and learn of the other tribes issues that are effecting them through climate change i.e fishing, hunting, gathering
- I realized that each tribe can be sheltered in their own way, sheltered to their territory.

What I'm taking away from this summer back to my family and communities

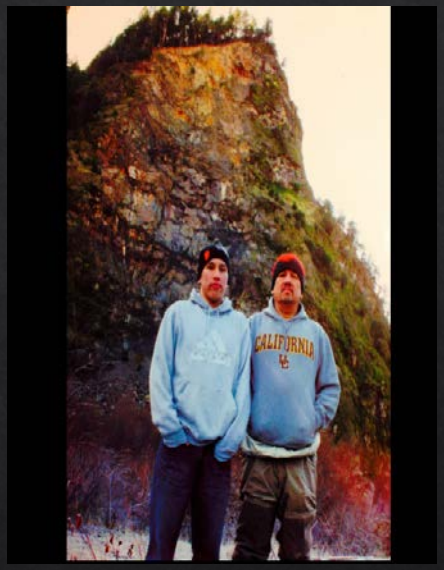
- I learned that cultural adaptation is how Native People have survived and it's a way of life
- I learned that education is important in all forms
- I gained new friends from around the basin
- A new aspect of cultural preservation
- Traditional Ecological Knowledge of the Klamath Basin
- Inspiration to learn more about climate change effects
- I'm taking away from this program that there isn't one problem and that there will never be one answer
- We are all connected and we all need to help one another with what skills we have to prepare for a healthier future

Yootva!

From the 2014 Summer KBTYP Interns!

Fire Impacts On Our Fisheries

Shasta College



By Charley Reed

Why Did I Choose This Project?

- Essential to the survival of our Karuk people.
- Benefits and negative impacts fire has on our fisheries.
- Different perspectives on using fire as a tool
- Help our fish during climate change and drought years.

What I Knew

- Fire has been a tool used by tribes for hundreds of years
- Frequent burning prevented catastrophic wildfires
- Fire increased natural resource productivity
- Fire can maintain healthier rivers, creeks and streams

Methods:

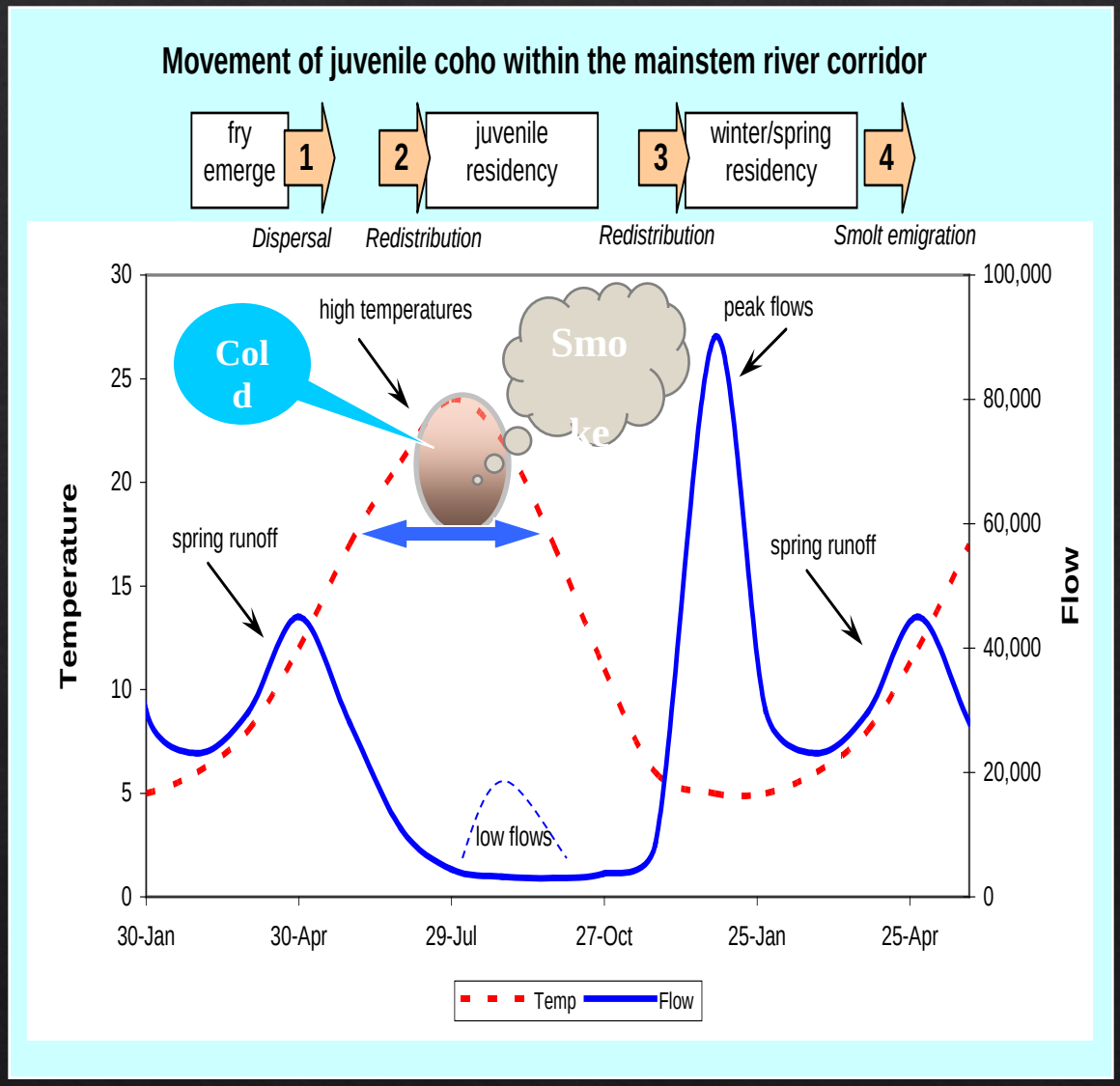
- Field trips and meeting up and down the basin learning from agency and tribal managers, scientists, and community members.
- Literature review and internet search
- Compared what was in the literature to what was being talked about in the field
- Focused interviews with specific people to address my question of interest
- Evaluated what was being presented to what I specifically was interested in

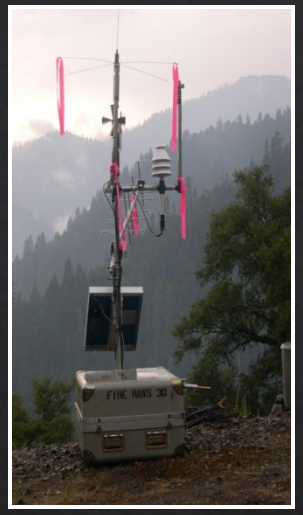
Results: What I Lea

- Smoke cover lowered water and air temperature
- Eliminated brush and provided more ground water
- High Intensity Burn Prevention
- Charcoal acts as water purifier

Wildfires 2008

Findings





Graph: Karuk Tribe,

Top Photo: MODIS, Collaborative ideas and data sharing

Smokey Bear's Legacy

- Smokey the Bear introduced the thought of "bad fire" in 1944.
- Preventing fire from our ecosystem and causing fire suppression
- Tribal youth are being taught that wildfire is bad, which conflicts with traditional beliefs.
- Fire suppression and exclusion with climate change is a double whammy

Beneficial Effects of Fires: Smoke and Water

- Smoke-Alleviates the stress of fish in cold water refuge by cooling down the air and water
- Smoke-Decreased water use by vegetation which helps increase spring flow and recharging the water table
- Cooler river water-Reduce the chances of disease with increasing fish distribution between cold water tributary refugia
- Fire severity-Burning of high country forests/trees helps accumulate snow pack

High Fire Intensity Effects

1. Removes old growth vegetation
2. Causes erosion
3. Unwanted sediment in streams
4. Removal of fish habitat and shade
5. Increasing water temperatures and fish
6. Fish are more vulnerable to predators

What I Got From This Experience

- Traditional knowledge about fire management
- Fires benefits to our ecosystem
- Different tribal perspectives on fire uses
- Wide variety of experience
- Met some important people and future mentors

Future Plans

- Educate my fellow native communities
- Educate federal agencies to our traditional burning
- Inspire and motivate people
- Save our Fisheries!

Thank You!

Questions?

FIRE IN THE KLAMATH BASIN

Klamath Basin Tribal Youth Program: June 16-August 21, 2014

Anthony Ulmer

A LITTLE BIT ABOUT ME

- Grew up on the Klamath River as a Yurok Native
- Mckinleyville High School graduate
- Currently working for the Yurok Tribe Educational Program
- Attending College of the Redwoods with plans to transfer to Humboldt State University and peruse a Major in Botany and a Minor in Water Treatment

REASONS FOR INTEREST IN THE KLAMATH BASIN TRIBAL YOUTH PROGRAM INTERNSHIP

- Personal awareness in Environmental Science and Forestry
- Furthering my educational goals as well as my job skills
- The opportunity to meet new people
- New adventures in previously unexplored locations

METHODS: TIME SPENT ON THE KLAMATH BASIN

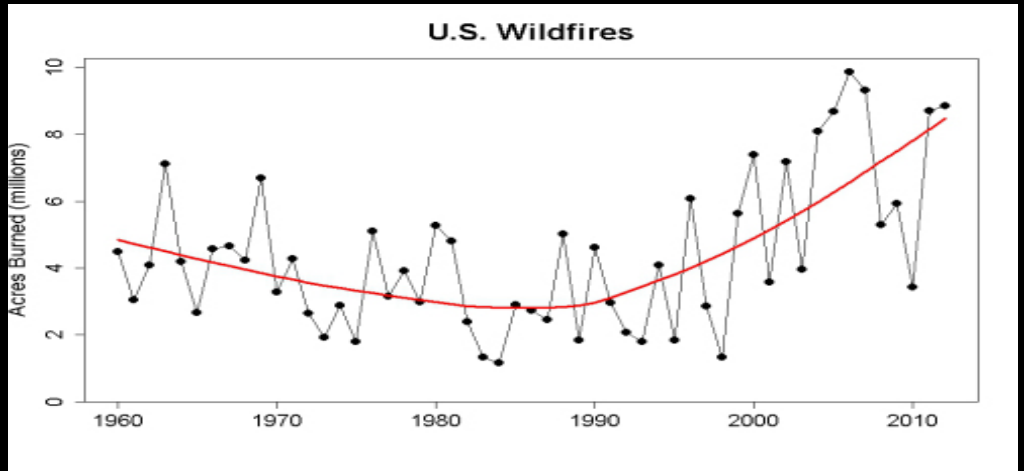
- Multiple locations up and down the Klamath Basin were explored
- Met with various influential people, organizations, tribes, and agencies
- Learning experiences working on different projects
- Field trips, meetings with tribes, agencies, and community members
- Used published literature, reports, and internet sources

SUBJECT OF INTEREST

- Several types of fires that affect ecosystems in the Klamath Basin

EFFECTS OF WILDFIRE ON THE LANDSCAPE

- How climate change and drought conditions contribute to severe wildfires in the Klamath Basin
- The severity of wildfire today and its impact on the future
- Money spent putting out massive wildfires and its effect on the economy
- Irreversible damage to the wildlife and plant life



TRADITIONAL AND PRESCRIBED BURNING

- The differences between traditional and prescribed burning
  - Traditional burns to promote food, basketry, etc. resources
  - Prescribed burns to reduce hazardous fuels and wildfire spread
- A way of life for the indigenous people of the Klamath River
  - Maintenance of traditional practices and knowledge systems
- How traditional burning can prevent undesired impacts of wildfire

TRADITIONAL AND PRESCRIBED BURNING

- The good effects traditional burning had on the landscape for plants and animals of cultural importance
- How the suppression of traditional burning around 1910 on the Klamath River created fuel for massive wildfires years later
  - Now many areas need fire and do not support traditional resources
- Severity of the fires that were burned for specific cultural reasons
  - Different places and resources to support the cultural traditions

RECOMMENDATIONS

- Traditional burning needs to be implemented back into the landscape
- Agencies, tribes, and community members need to work together in planning for wildfires given the expected changes in climate
- More funding is needed to support traditional and prescribed burning projects that are working with tribes and communities
- Increase awareness and knowledge about the differences between good and bad fire needs to be taught and understood by public

SPECIAL THANKS TO EVERYONE INVOLVED:

- Tribal Governments, Tribal community members, Fish and Wildlife, Ah-Pah Village, Quartz Valley, Sandy Bar Ranch, HSU, SOU, MKWC, Redwoods and Rivers Rafting, NASA, and special thanks to Frank Lake and Trevor Super

THANK YOU

- Any Questions?