

A historical map of Oregon Territory, showing geographical features like rivers and mountains. The map is color-coded with green, pink, and yellow. A blue wave graphic is at the top. The text "Oregon Tribal Climate Change Project—BLM State Office" is overlaid in large blue font. At the bottom left, it says "OREGON TERRITORY." and at the bottom right, "By Rita Asgeirsson September 2010".

Oregon Tribal Climate Change Project— BLM State Office

By Rita Asgeirsson
September 2010

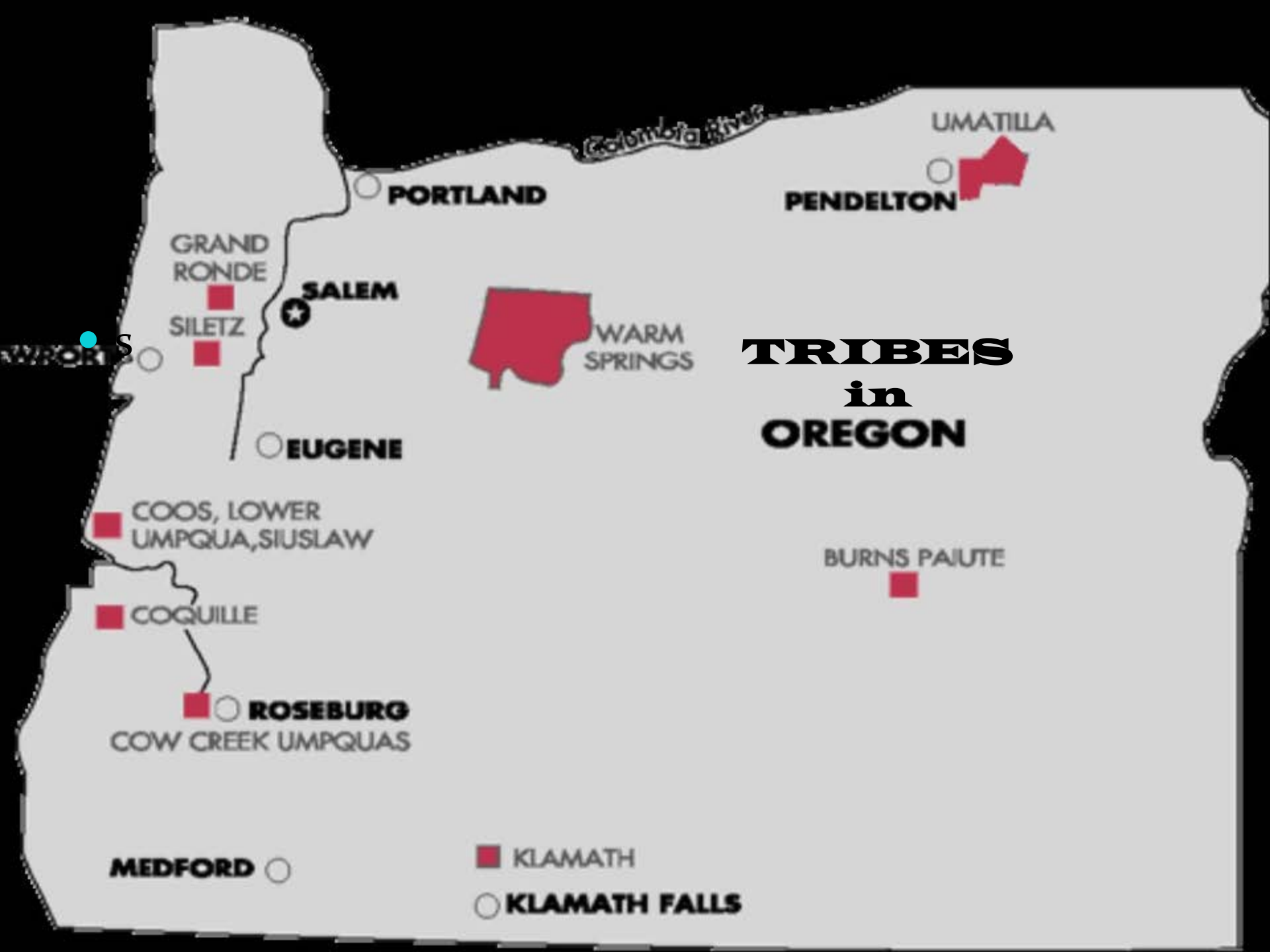
Areas Analyzed

- Yukon Delta-Bering Sea
 - Observable Climate Changes in Tribal Area
- Oregon Tribes
 - Observable Climate Changes in Tribal Areas
 - Renewable Energy
 - Interest
 - Concern
 - Existing Projects
- Develop Tribal Climate Change/Energy Overview
 - Including a Contact List

Yukon Delta & Bering Sea

- Changes in weather affecting predictable seasons
- New animal + plant species over 75 years
- Weather affecting salmon and herring entry dates
- 4 Sea-level villages threatened by potential sea rise
- Seasonal changes affecting food source availability
- Fossil-fuel dependence = Highest Cost of Living in US
- No movement toward Renewable Energy at this point
- Natural Gas Potential
- Wind Energy Potential
- Challenges include
 - Tribal and city acknowledgement of climate change threats
 - Climate Change Assessment + Planning
 - Funding
 - Collaboration





UMATILLA

PORTLAND

PENDELTON

GRAND
RONDE

SALEM

WARM
SPRINGS

TRIBES in OREGON

SILETZ

EUGENE

COOS, LOWER
UMPQUA, SIUSLAW

BURNS PAUTE

COQUILLE

ROSEBURG

COW CREEK UMPQUAS

MEDFORD

■ KLAMATH

○ KLAMATH FALLS

Clatsop Nehalem Confederated Tribes



Burns Paiute Tribe



Coquille Indian Tribe



Confederated Tribes of the Coos, Lower Umpqua & Siuslaw



Confederated Tribes

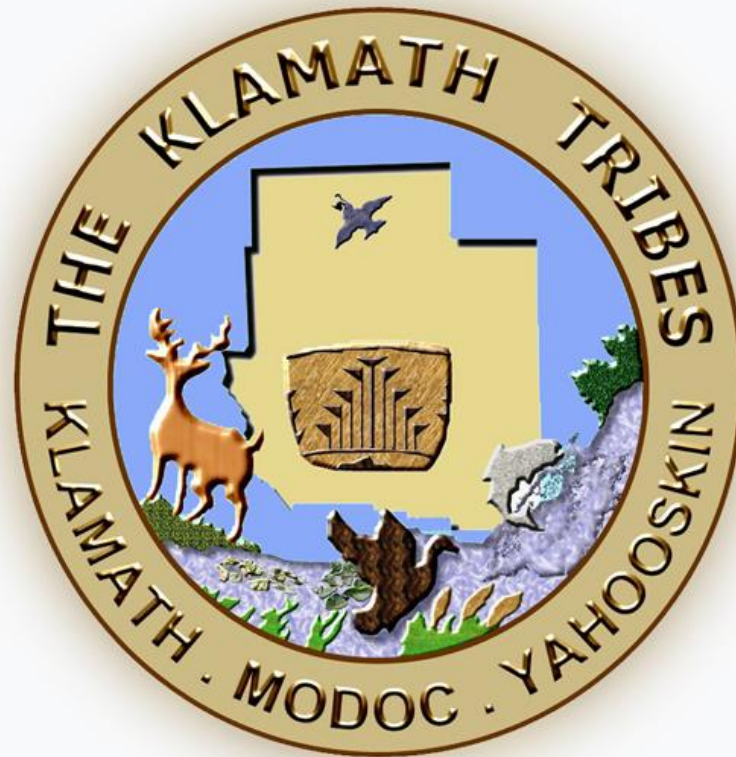
of the Coos - Lower Umpqua - Siuslaw Indians



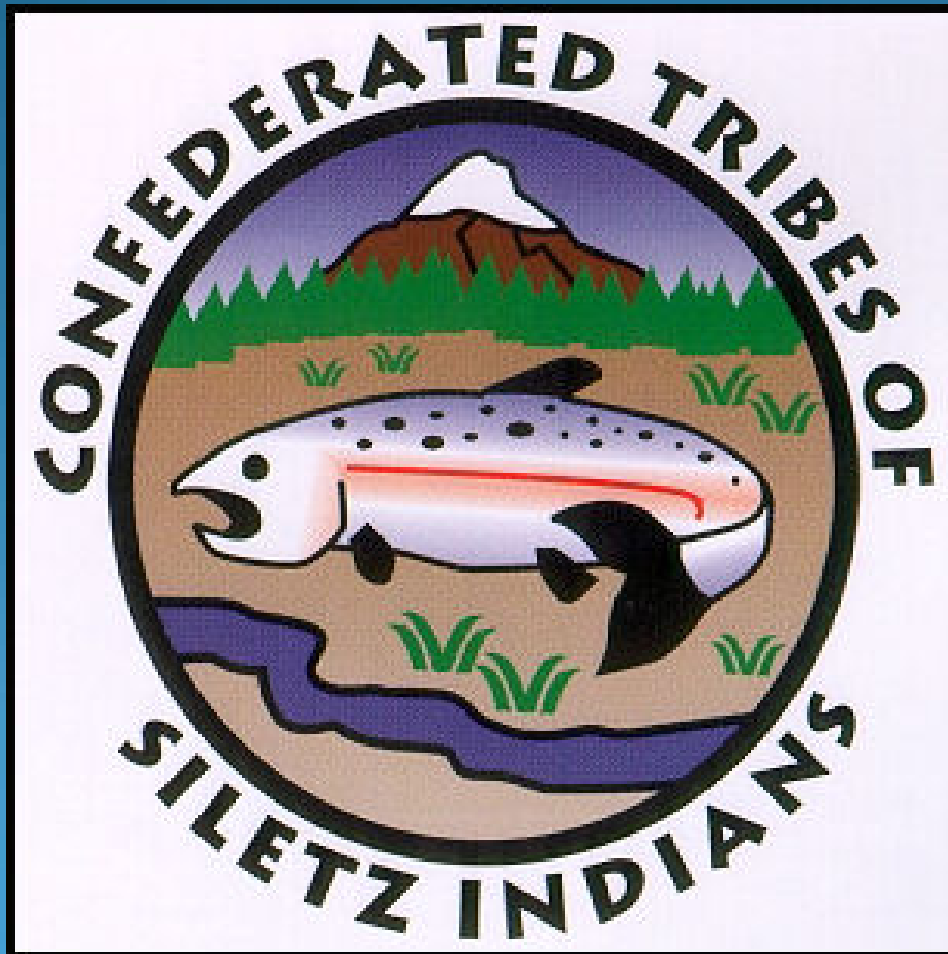
Confederated Tribes of Grand Ronde



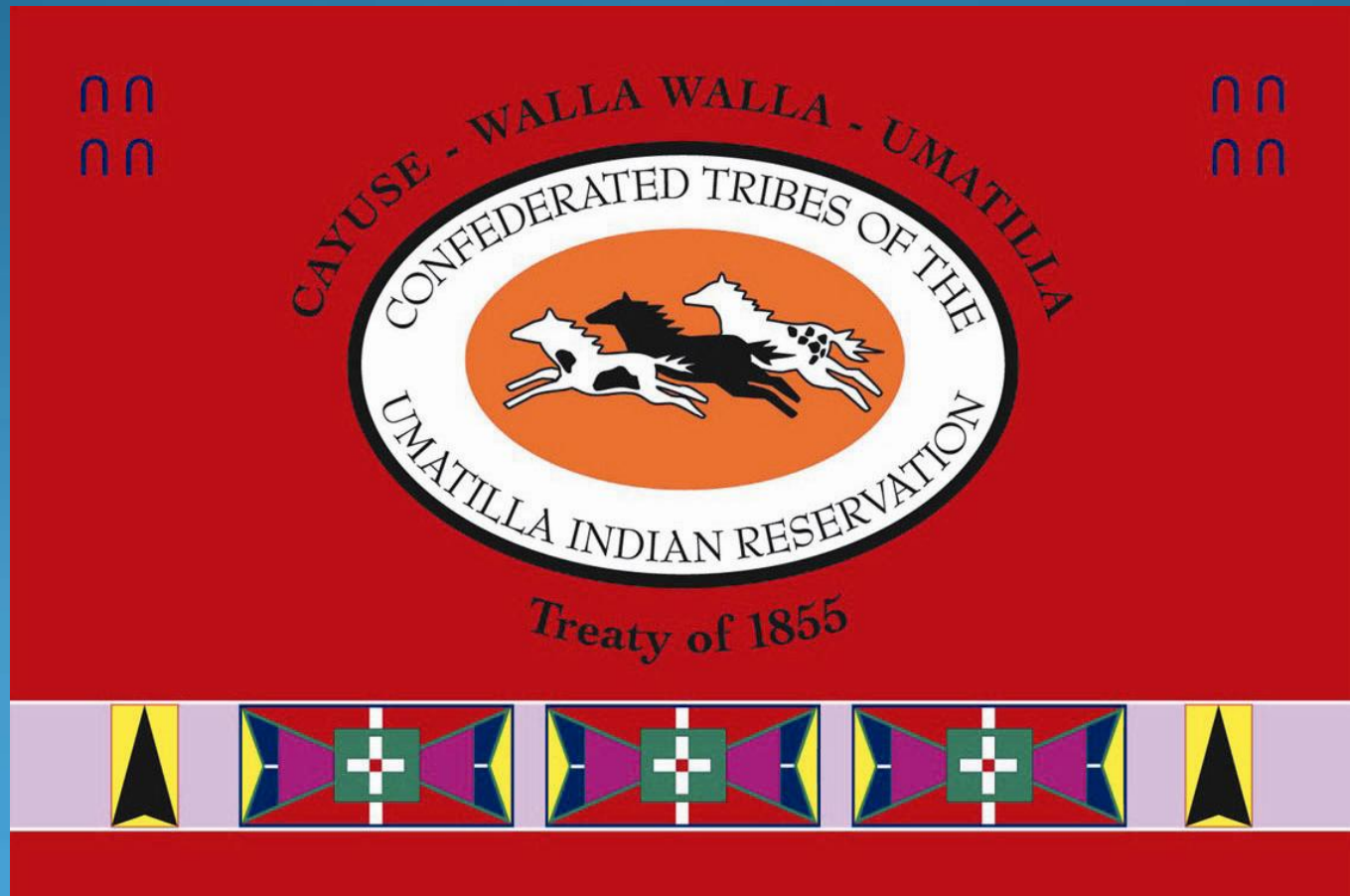
The Klamath Tribes



Confederated Tribes of Siletz Indians

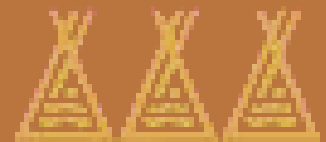


Confederated Tribes of the Umatilla Indian Reservation



Confederated Tribes of Warm Springs

Warm Springs



THE CONFEDERATED TRIBES OF WARM SPRINGS

Cow Creek Band of Umpqua Indians

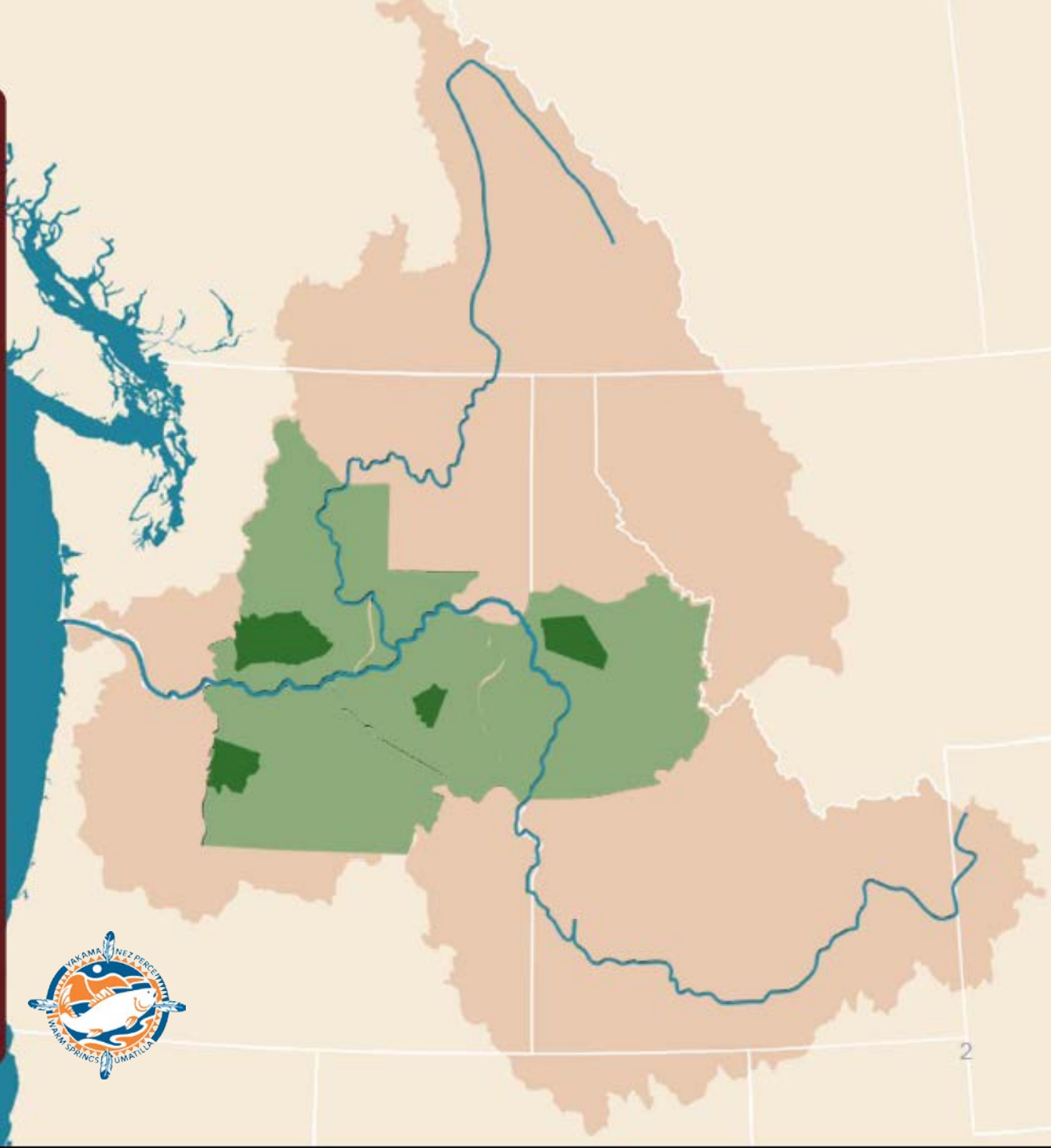


TRIBAL CEDED LANDS

- Tribes have access and use of lands outside of reservation boundaries, dependent on each of their (ratified) treaties.
- Mapped use, access and interest disclosure will vary with each tribe.
- Examples of use, access and interest include:
 - Traditional & Customary Uses
 - fishing
 - Sacred Sites
 - Usual & Accustomed Areas
 - Fishing, gathering
 - Overall Habitat Health

Four Tribes' Ceded Lands Combined

- ▶ 66,591 square miles
- ▶ More than 25% of the entire Columbia Basin
- ▶ 55% of the rivers and streams still accessible to salmon



PROJECTS MAY IMPACT TRIBES & TRIBAL FIRST FOODS

- Salmon
- Lamprey Eel
- Bull Trout
- Sucker Fish
- Deer + Elk
- Huckleberries
- Cous (roots)



Celilo Falls Fisherman # 3155a © Ray Atkeson Image Archive 2008
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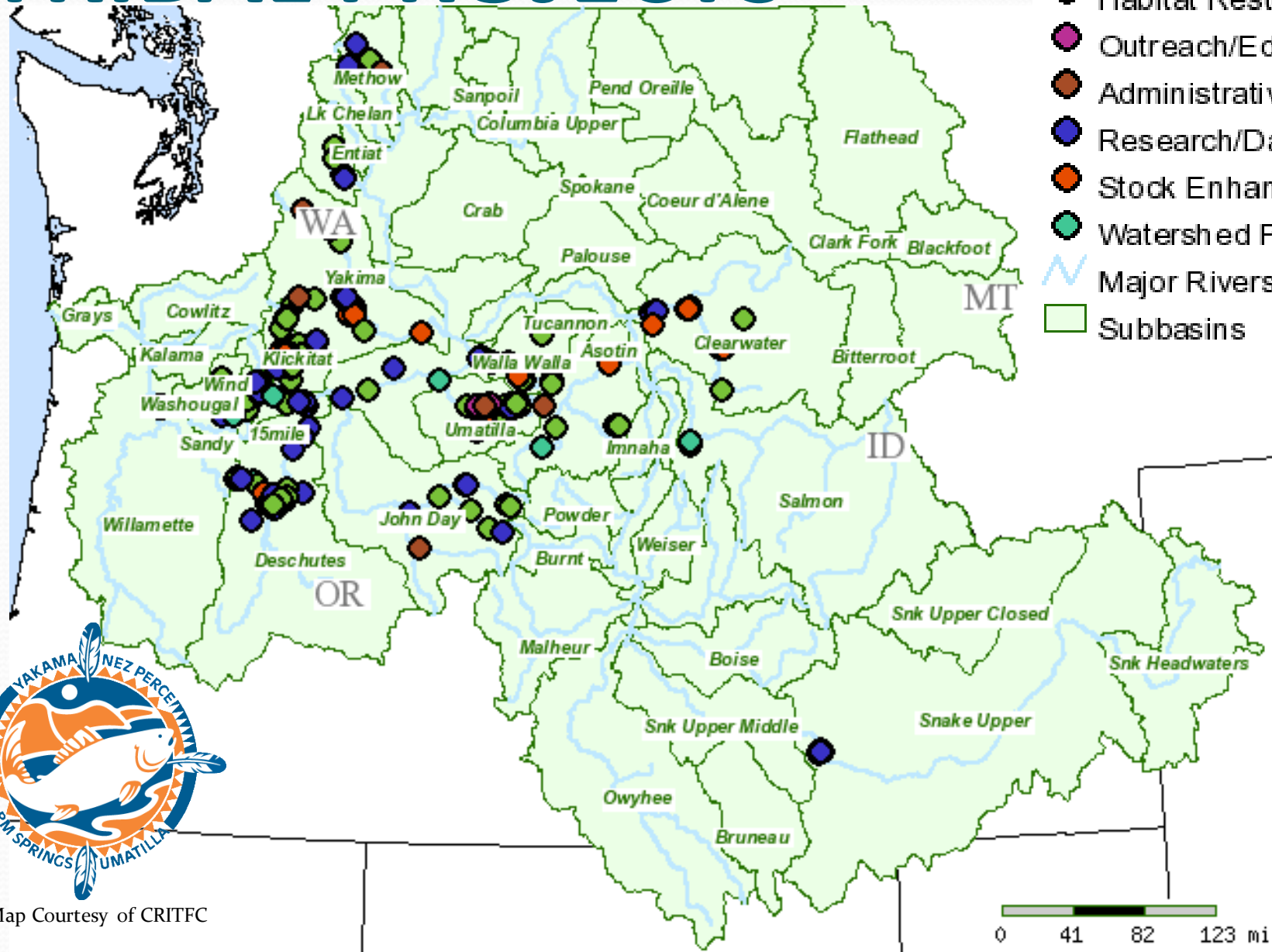
INVASIVE SPECIES AFFECTING TRIBAL FIRST FOODS

- Noxious Weed (related to required grazing on Burns Paiute tribal land)
- Sport-Planted Brook Trout (in tribal waters of the Burns Paiute & Warm Springs)
- Beetles
- Deer Lice (Oregon coast including Siletz)
- Swiss Needle Cast – (recurrent in Douglas Fir along the western coast including Siletz & Grand Ronde)

CONSIDER TRIBAL FIRST FOODS

- Is a new renewable energy project affecting tribal first foods?
 - Tribal access
 - Health of first food habitat area
 - How many other renewable energy projects are in the area that may impact first foods?
 - Do accommodations need to be made to allow health + access regarding tribal first foods ?

TRIBAL PROJECTS



Map Courtesy of CRITFC

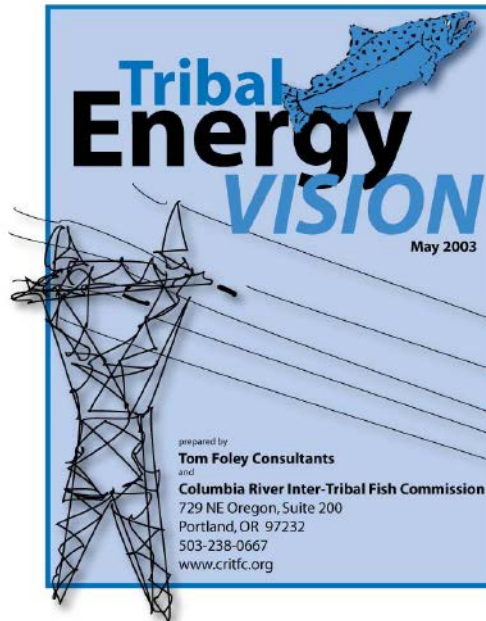
TRIBES ARE INVOLVED IN A NUMBER OF CLIMATE CHANGE, RENEWABLE ENERGY & GROUP FORUMS

- U OF OR – EUGENE
PACIFIC NORTHWEST TRIBAL CLIMATE CHANGE NETWORK
- EPA REGION 10
CLIMATE CHANGE AGENDA
- TRIBAL CLIMATE CHANGE CLEARINGHOUSE – Institute of Tribal Environmental Professionals
- NATIONAL RENEWABLE ENERGY LABORATORY – TRIBAL ENERGY PROGRAM
- AFFILIATED TRIBES OF NORTHWEST INDIANS
- COLUMBIA INTER-TRIBAL FISH COMMISSION
- NORTHWEST INDIAN FISH COMMISSION
- INDIGENOUS PEOPLE'S CLIMATE CHANGE ASSESSMENT

COLUMBIA RIVER INTER-TRIBAL FISH

Tribal Energy Vision

- CRITFC developed a Tribal Energy Vision in 2003 with goals to:
 - Reduce the pressure of energy demand on Columbia River fish and wildlife.
 - Reduce the cost of electricity for utilities and ratepayers.
 - Provide better protection against unanticipated events, such as the 2001 crisis.



Tribal Energy Vision 2010 Update

- Science-based holistic approach to predict effects of climate change in the Columbia River Basin and use the results in hydropower management strategies
- Demonstrate how climate change, energy (hydropower) and salmon are closely linked
- Implementation of efficiency and renewable resource programs
- Columbia River Treaty
- Energy and climate legislation



Current climate change work by CRITFC

- Collaborating on study with USGS in the Yakima Basin
- USGS study will assess overall impacts on chinook and steelhead, and consequent social and economic impacts for tribal members and county citizens
- Model stream temperatures of steelhead stream tributaries under future climate scenarios

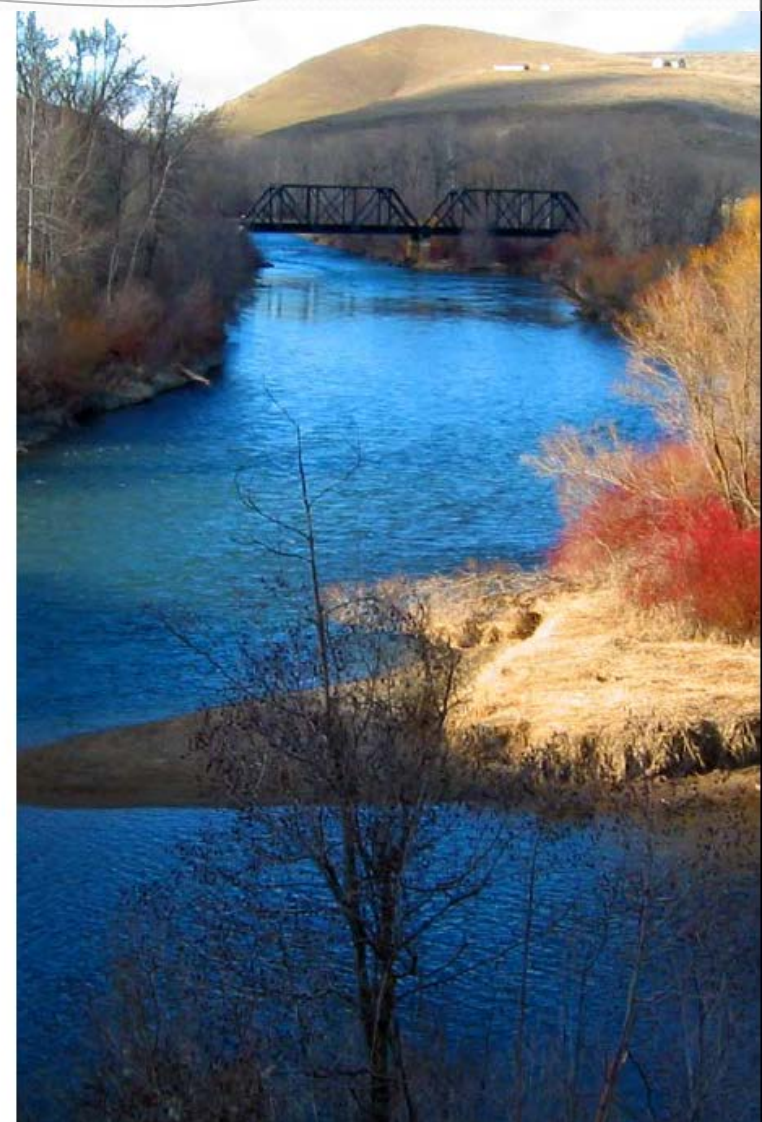


Future work

- Assess future changes to stream flow and temperature throughout the lands of our member tribes through cooperative efforts.
- Update Tribal Energy Vision.
- Develop tribal adaptation plans with a focus on First Foods and elders' knowledge.
- Contribute to passage of climate change legislation.
- Collaborate with 15 tribes and First Nations on US/Canada Columbia River Treaty.



Slide Courtesy of CRITFC

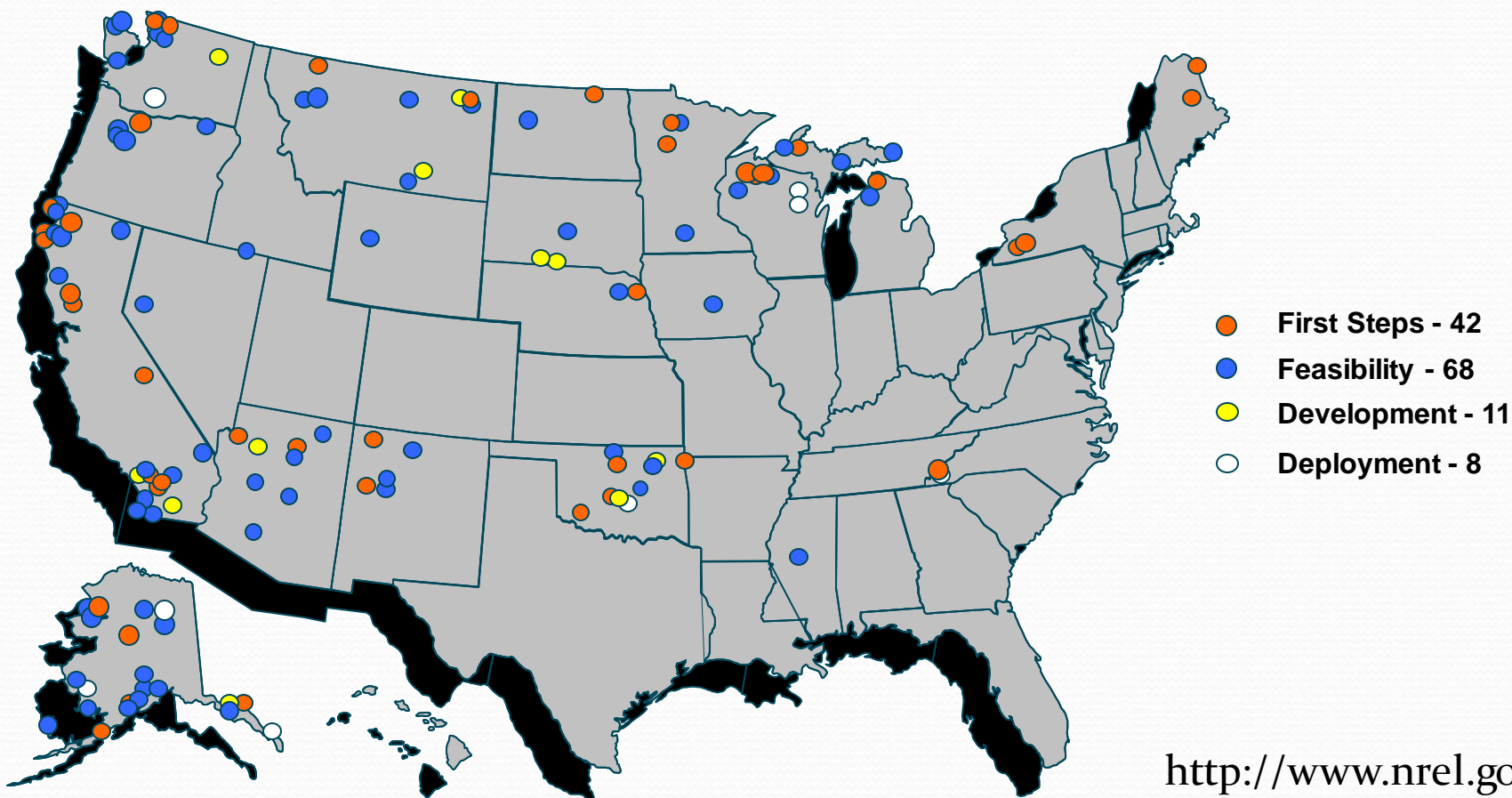




NREL

National Renewable Energy Laboratory
Innovation for Our Energy Future

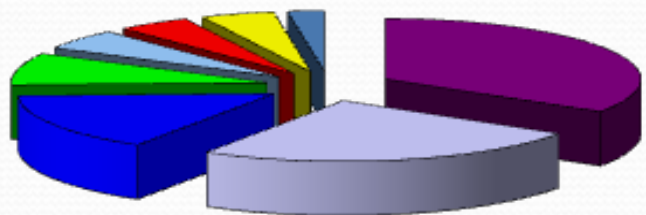
DOE has Funded 129 Tribal Energy Projects Totaling \$30.4 million (2002-2010)



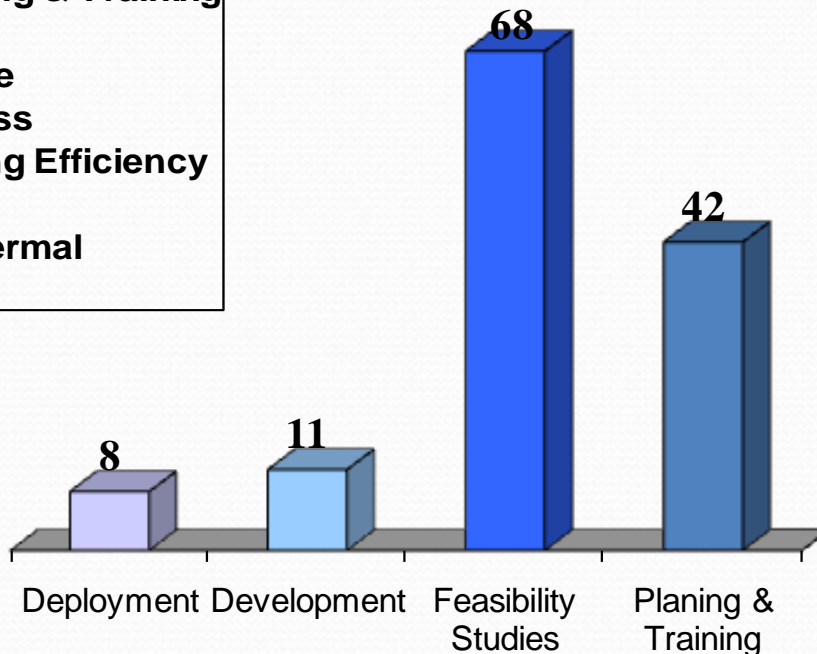
<http://www.nrel.gov/>



Tribal Energy Project Pipeline



Diverse Renewable Resources and Various Stages of Development

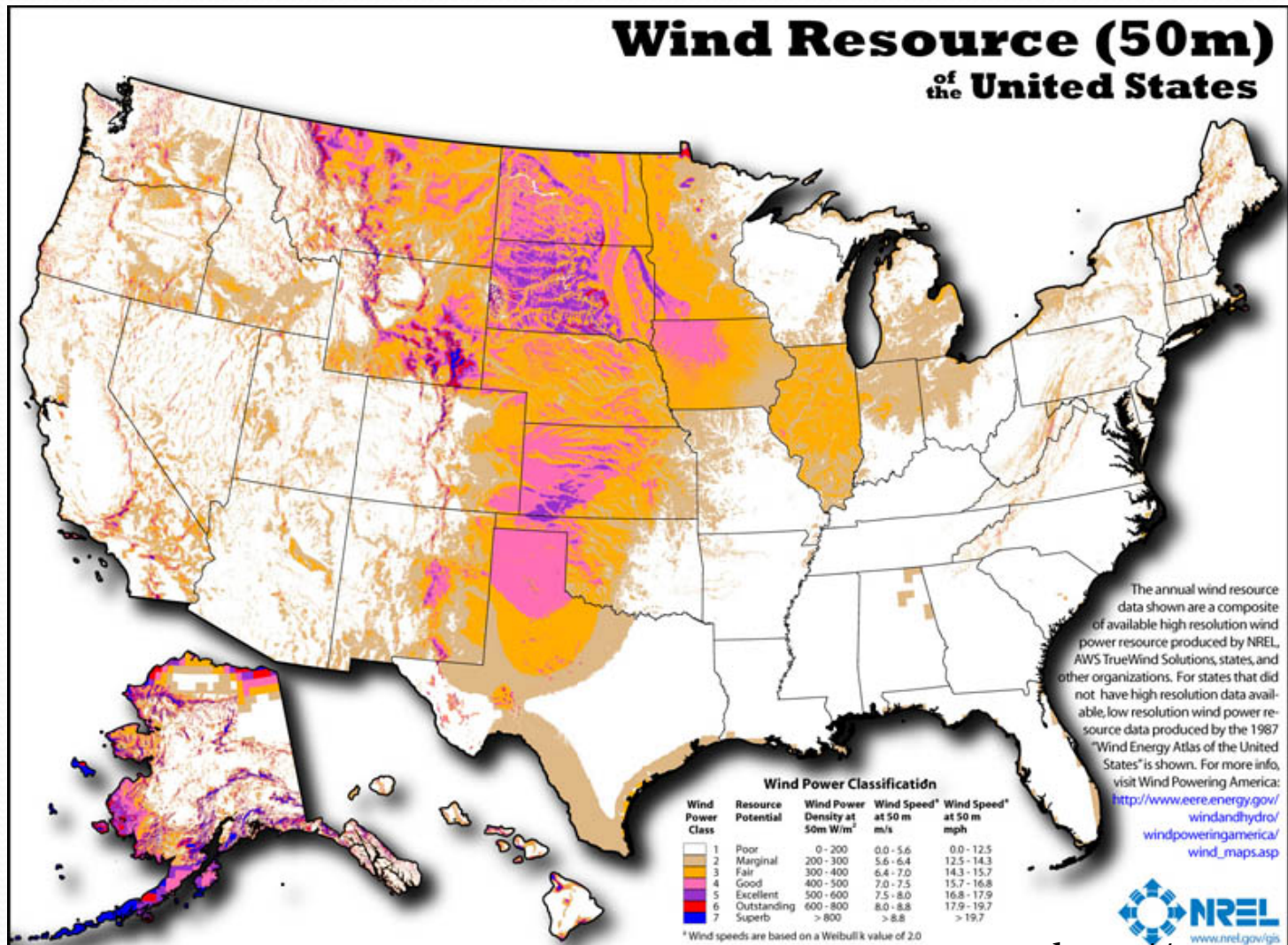


Assisting Tribes Fulfill Their Energy Vision

TRIBES ARE PURSUING THEIR RENEWABLE ENERGY INTERESTS

- Wind Energy
- Solar Energy
- Biomass Development
- Natural Gas Development
- Geothermal Energy Development
- Wave Energy

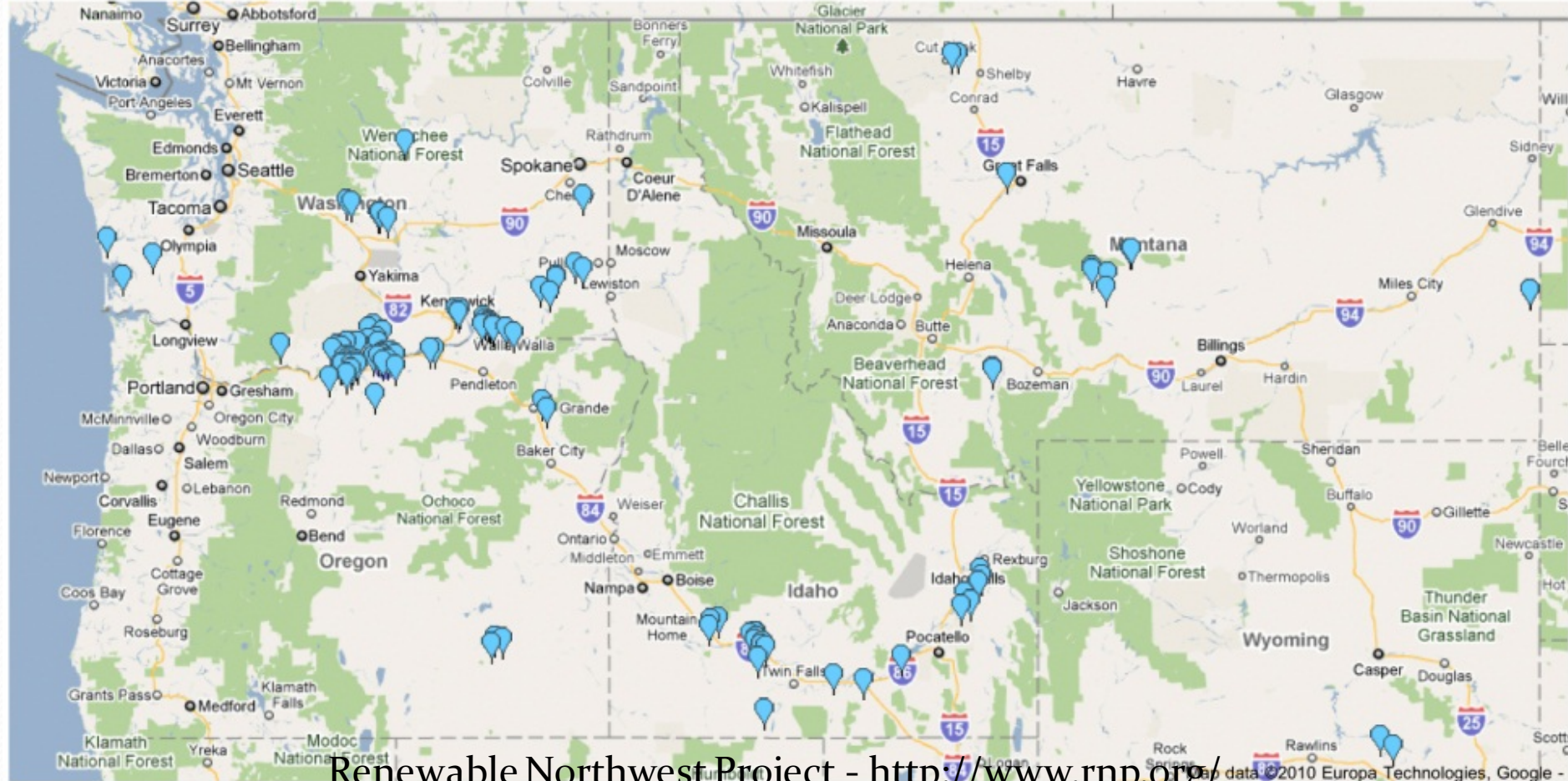
US WIND ENERGY POTENTIAL



NORTHWEST WIND ENERGY EXISTING PROJECTS

Map Legend

Wind; Solar; Wave; Geothermal



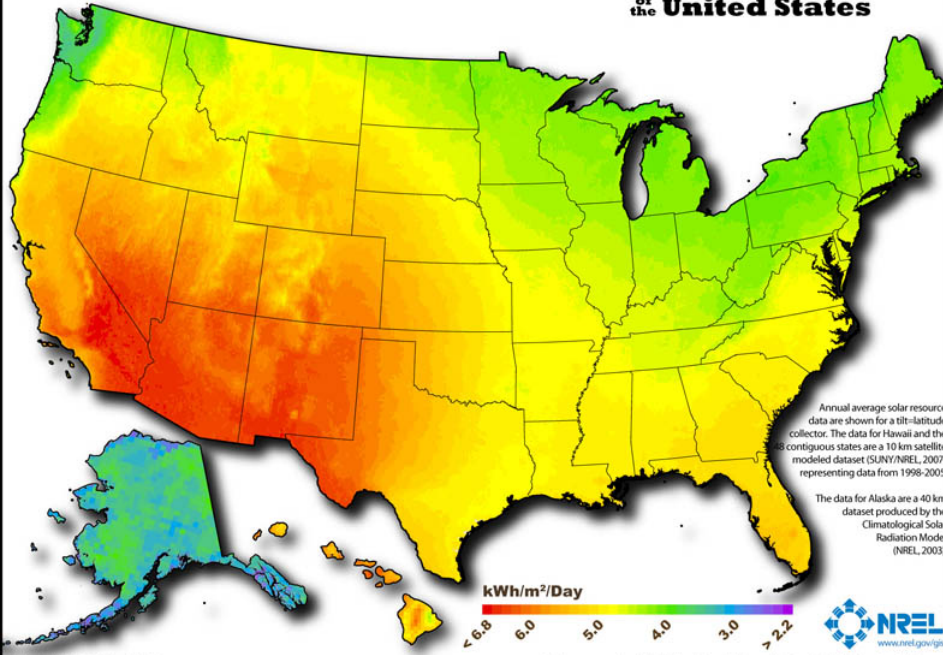
TRIBAL WIND ENERGY EXISTING PROJECTS

- **UMATILLA**
 - Rattlesnake Project
Partner
Arlington, OR
- **WARM SPRINGS**
 - Warm Springs, OR
Successful test site



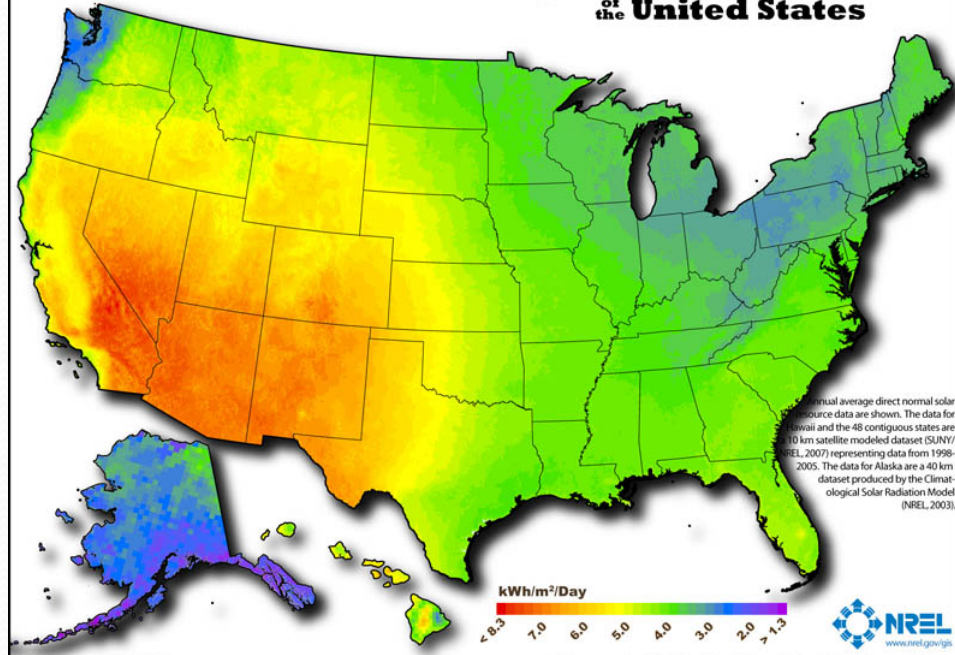
US SOLAR ENERGY POTENTIAL

Photovoltaic Solar Resource of the United States



PANEL-TYPE

Concentrating Solar Resource of the United States



MIRROR/LENS TO PANEL OR LIQUID

<http://www.nrel.gov/>

NORTHWEST SOLAR ENERGY EXISTING PROJECTS

Map Legend

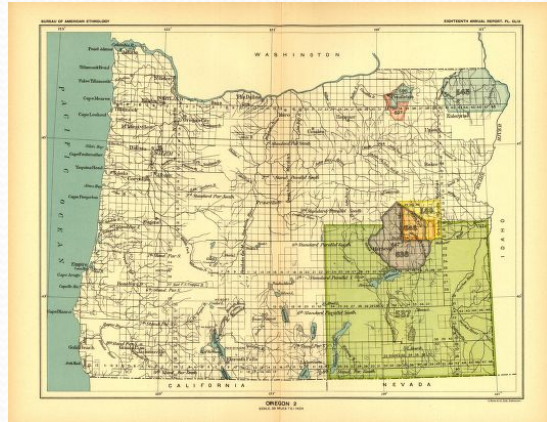
📍 : Wind; 📍 : Solar; 📍 : Wave; 📍 : Geothermal



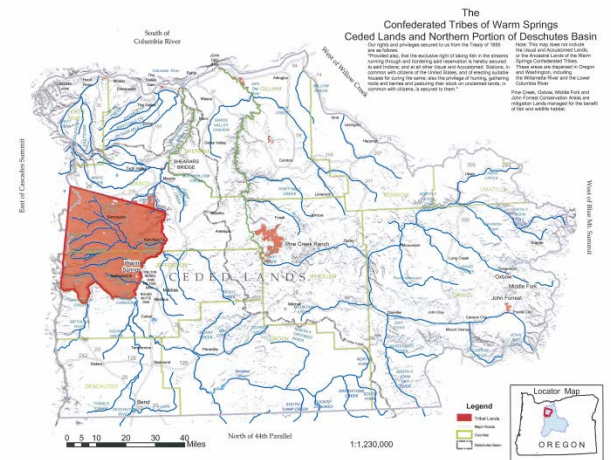
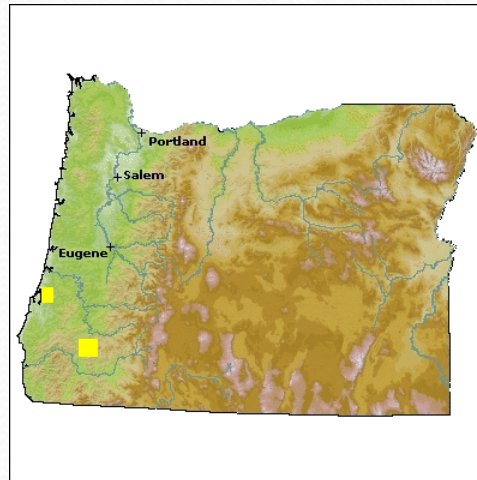
TRIBAL SOLAR ENERGY INTEREST

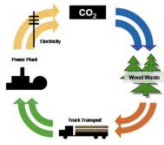
BURNS PAIUTE

WARM SPRINGS



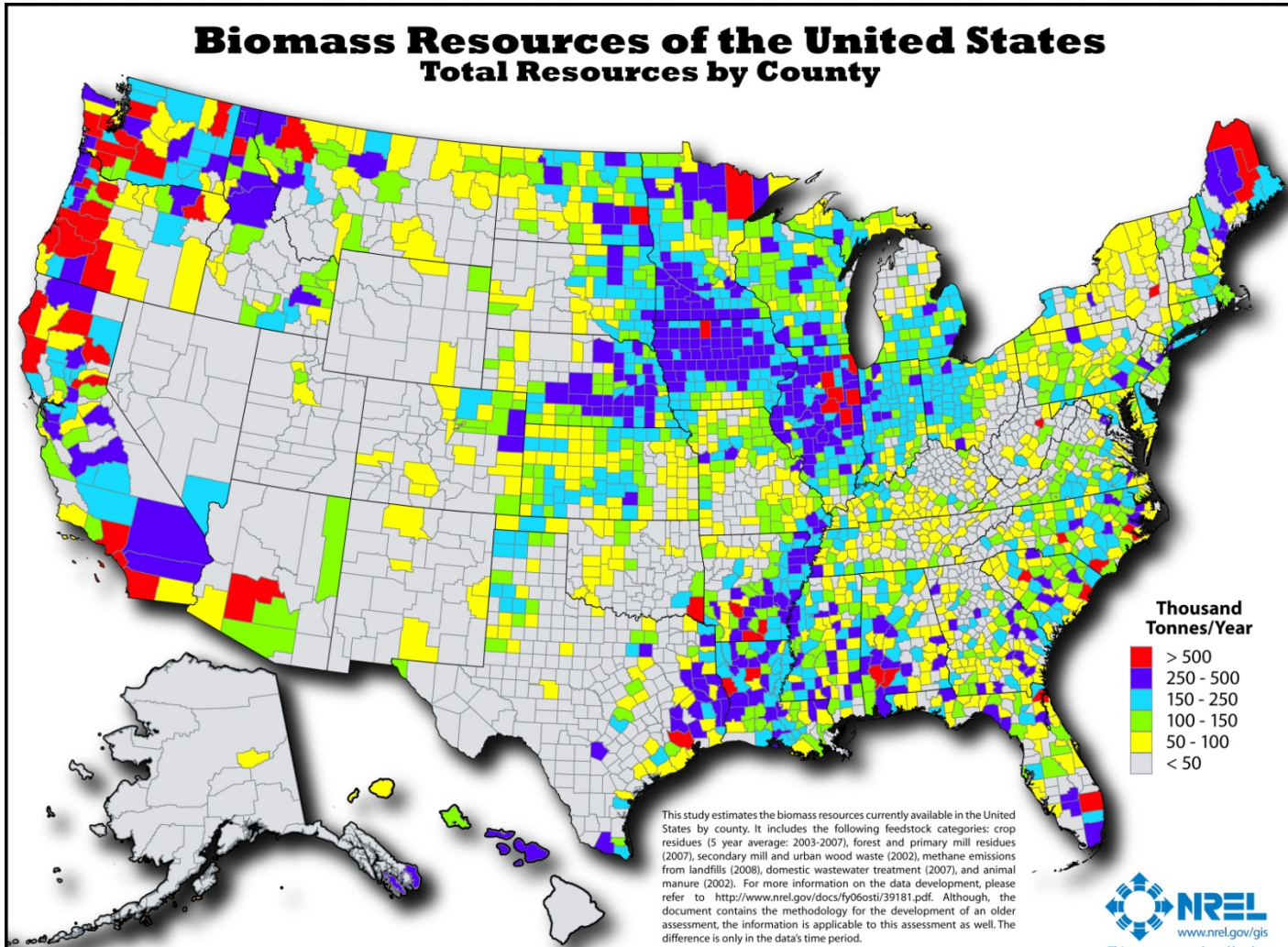
COQUILLE





US BIOMASS POTENTIAL

**Biomass Resources of the United States
Total Resources by County**



**Thousand
Tonnes/Year**

- > 500
- 250 - 500
- 150 - 250
- 100 - 150
- 50 - 100
- < 50

This study estimates the biomass resources currently available in the United States by county. It includes the following feedstock categories: crop residues (5 year average: 2003-2007), forest and primary mill residues (2007), secondary mill and urban wood waste (2002), methane emissions from landfills (2008), domestic wastewater treatment (2007), and animal manure (2002). For more information on the data development, please refer to <http://www.nrel.gov/docs/fy06osti/39181.pdf>. Although, the document contains the methodology for the development of an older assessment, the information is applicable to this assessment as well. The difference is only in the data's time period.

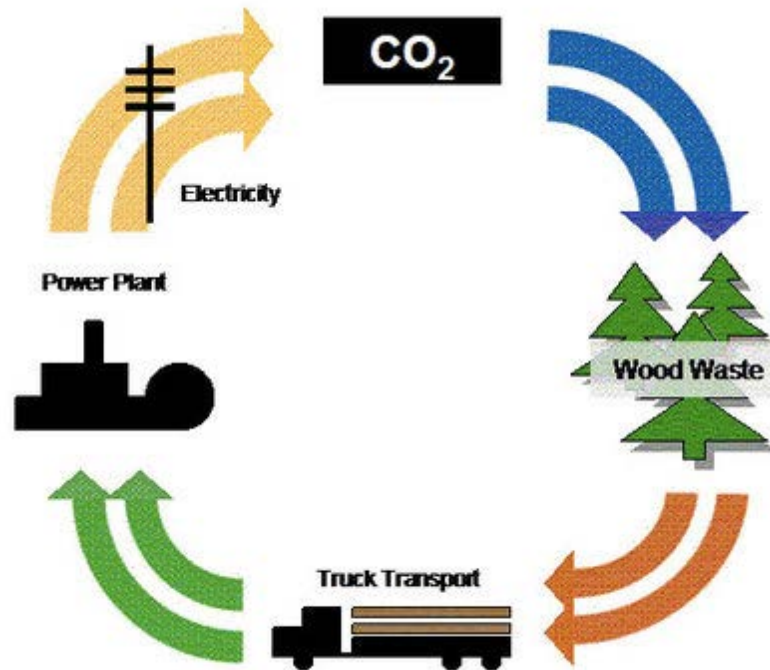


This map was produced by the National Energy Laboratory for the Department of Energy.
<http://www.nrel.gov/>

TRIBAL BIOMASS EXISTING PROJECTS

WARM SPRINGS

COQUILLE

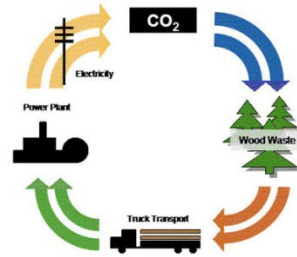


TRIBAL BIOMASS FEASIBILITY/INTEREST

KLAMATH



Carol Craig
Klamath tribal representative Will Hatcher (right) and a representative stood above
Mazama Forest.



GRAND RONDE

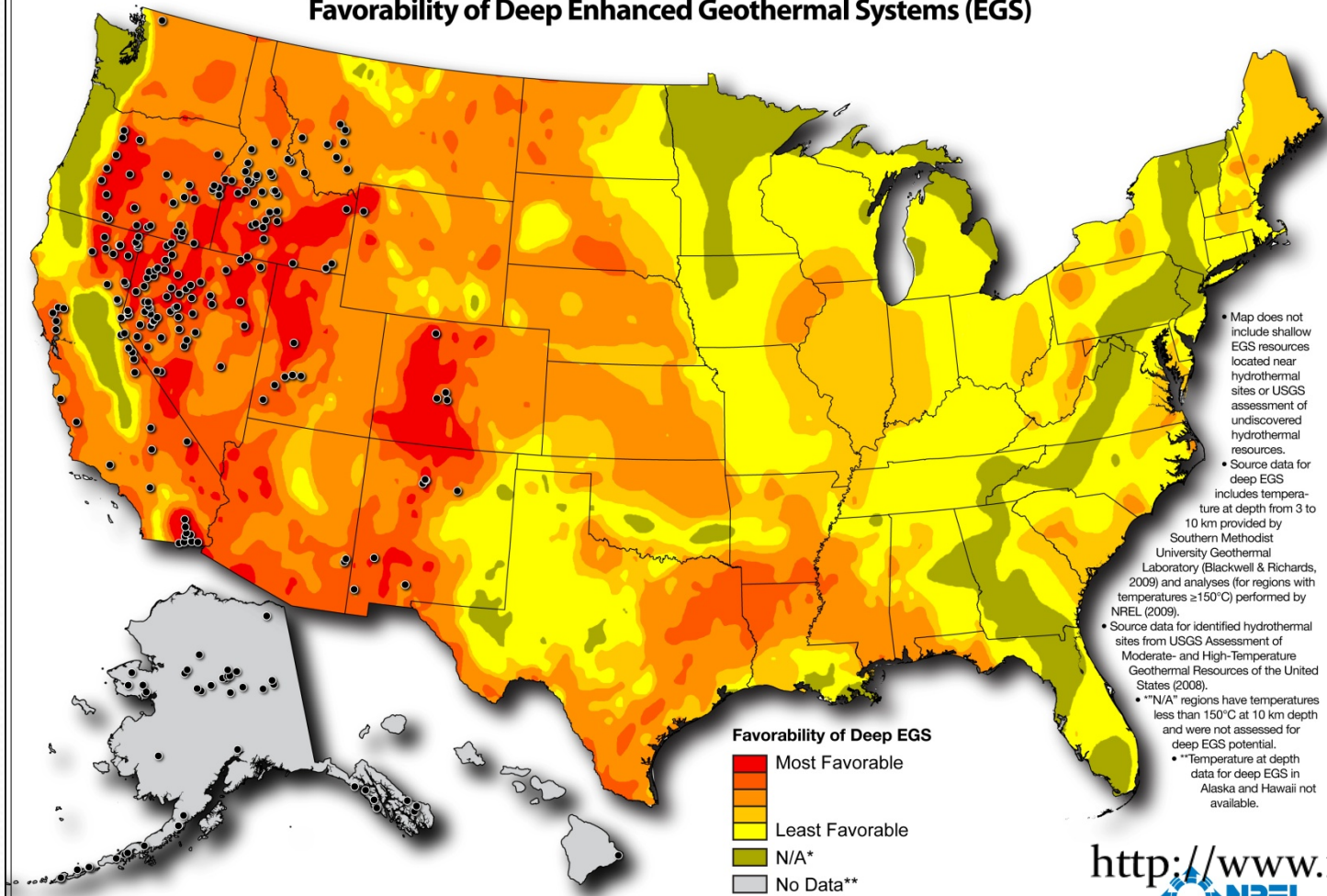


COW CREEK



US GEOTHERMAL POTENTIAL

Geothermal Resource of the United States Locations of Identified Hydrothermal Sites and Favorability of Deep Enhanced Geothermal Systems (EGS)



This map was produced by the National Renewable Energy Laboratory for the US Department of Energy.
October 13, 2009 Author: Billy J. Roberts

<http://www.nrel.gov/>

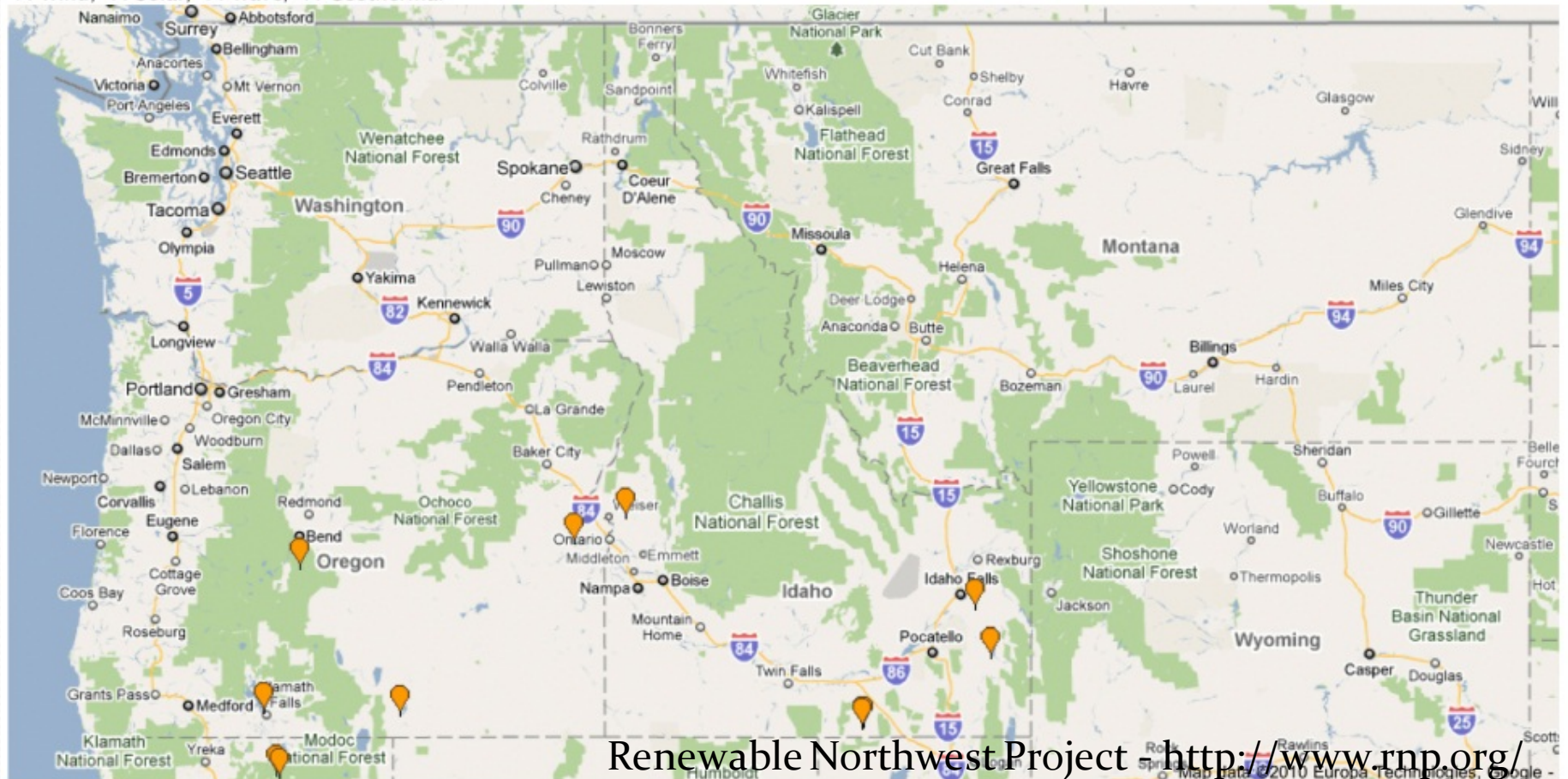


www.nrel.gov/gis

NORTHWEST GEOTHERMAL EXISTING PROJECTS

Map Legend

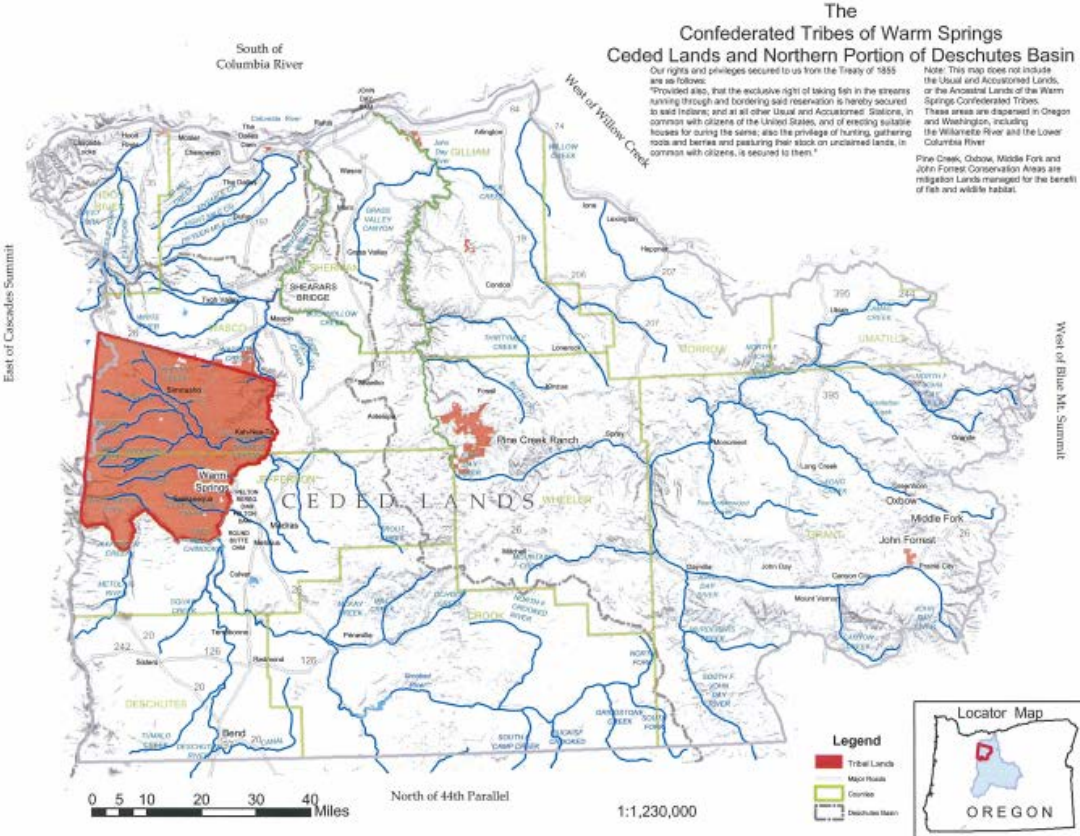
Wind; Solar; Wave; Geothermal



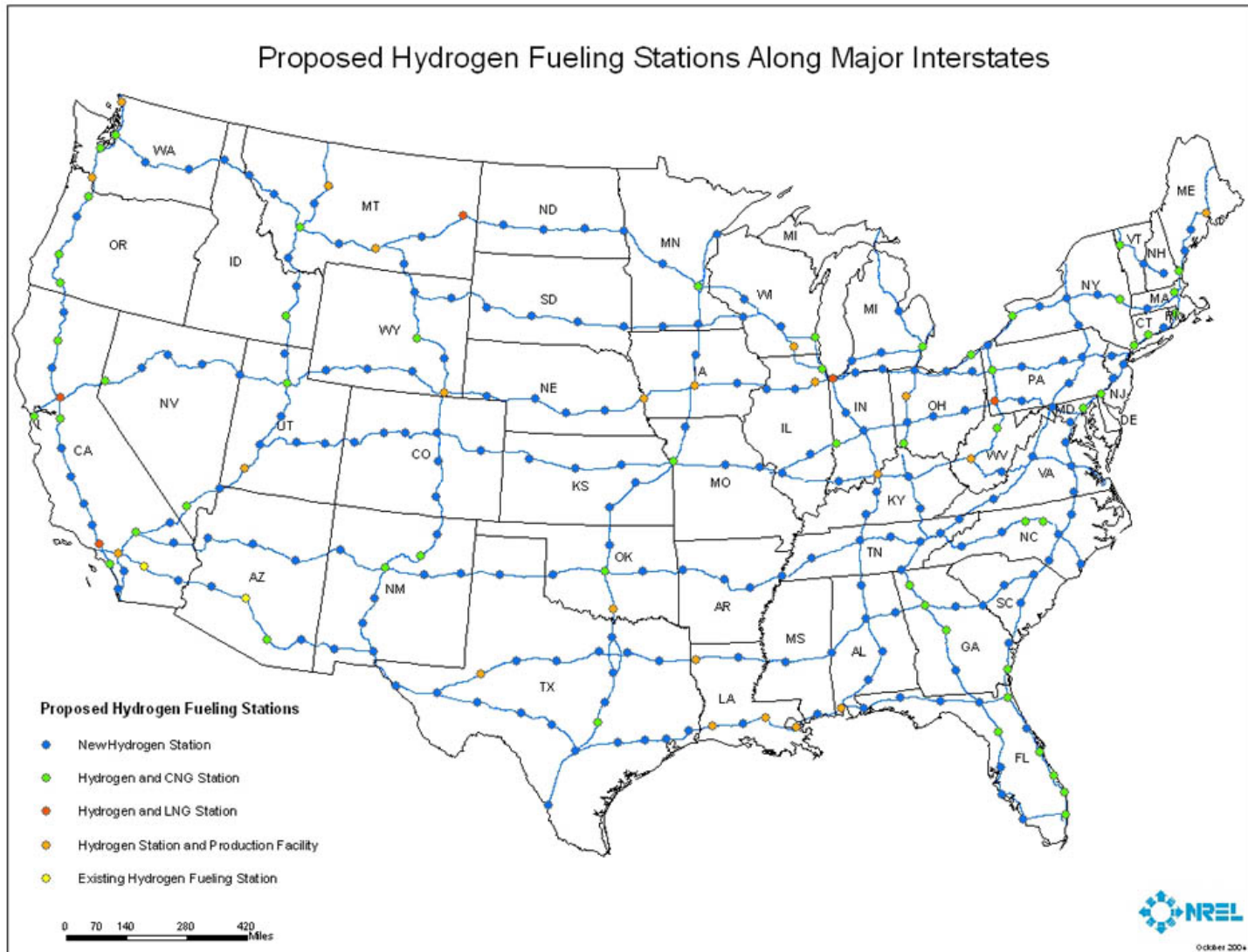
TRIBAL GEOHERMAL ENERGY INTEREST

WARM SPRINGS

- Test potential



US NATURAL GAS POTENTIAL



TRIBAL NATURAL GAS ENERGY INTEREST

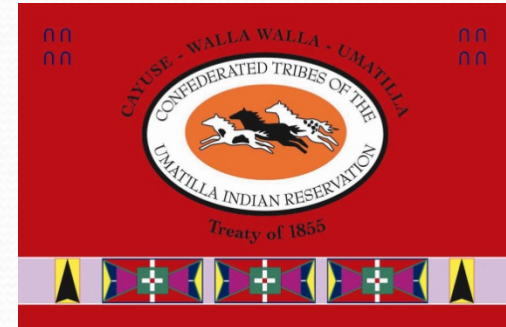
COQUILLE



WARM SPRINGS



UMATILLA

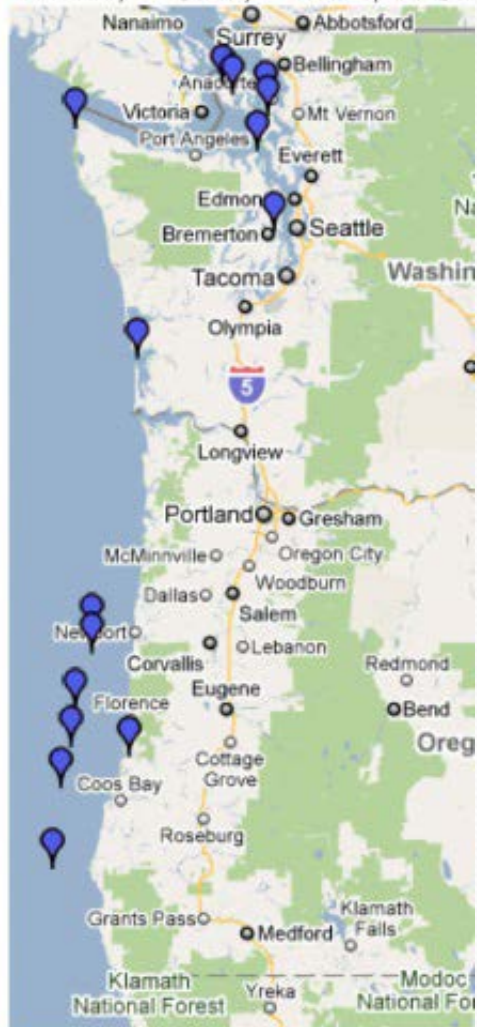


- Yaka Energy

NORTHWEST WAVE ENERGY EXISTING PROJECTS

Map Legend

Wind; Solar; Wave; Geo



COQUILLE INTEREST



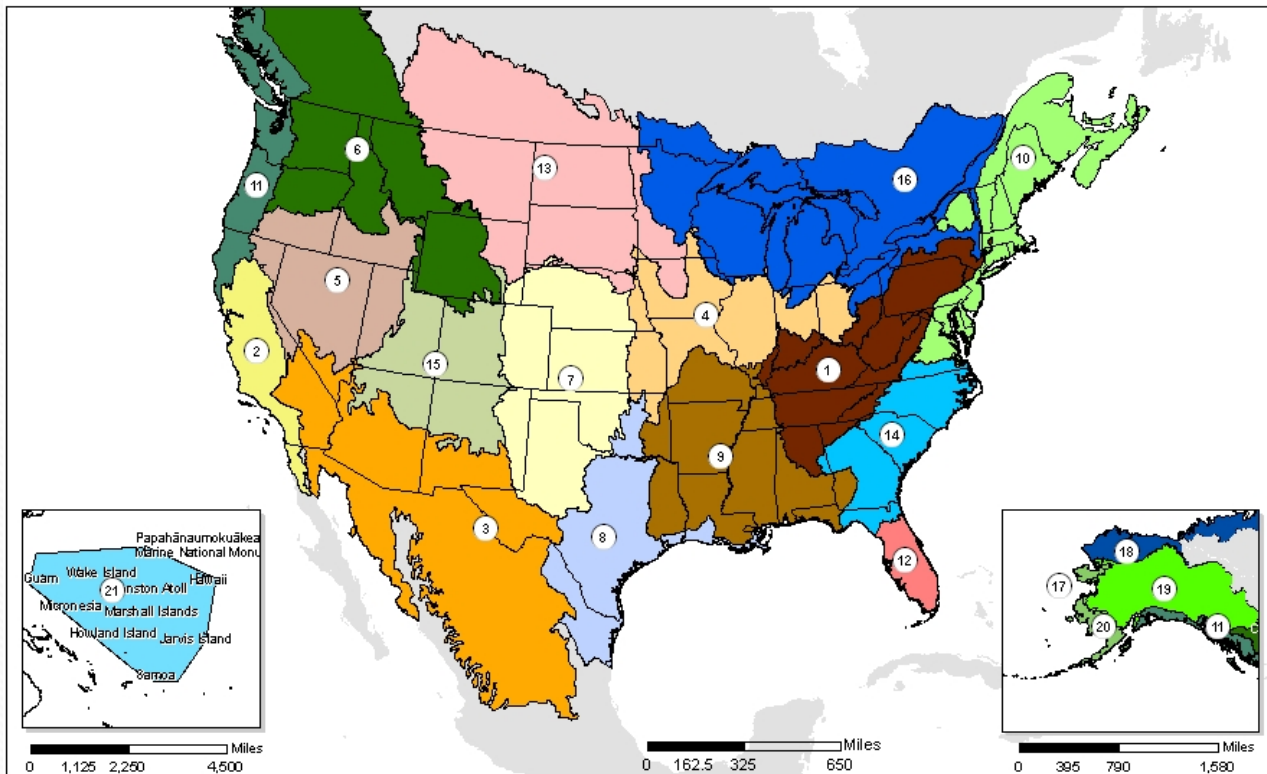
DOI ADDRESSING CLIMATE CHANGE & RENEWABLE ENERGY

- LANDSCAPE & CLIMATE SCIENCE COOPERATIVES are used to address climate change adaptation and renewable energy

Agencies Involved

- BLM
- B OF OCEAN ENERGY MANAGEMENT
- B OF RECLAMATION
- NATIONAL PARK SERVICE
- OFFICE OF SURFACE MINING
- US FISH & WILDLIFE
- US GEOLOGICAL SURVEY

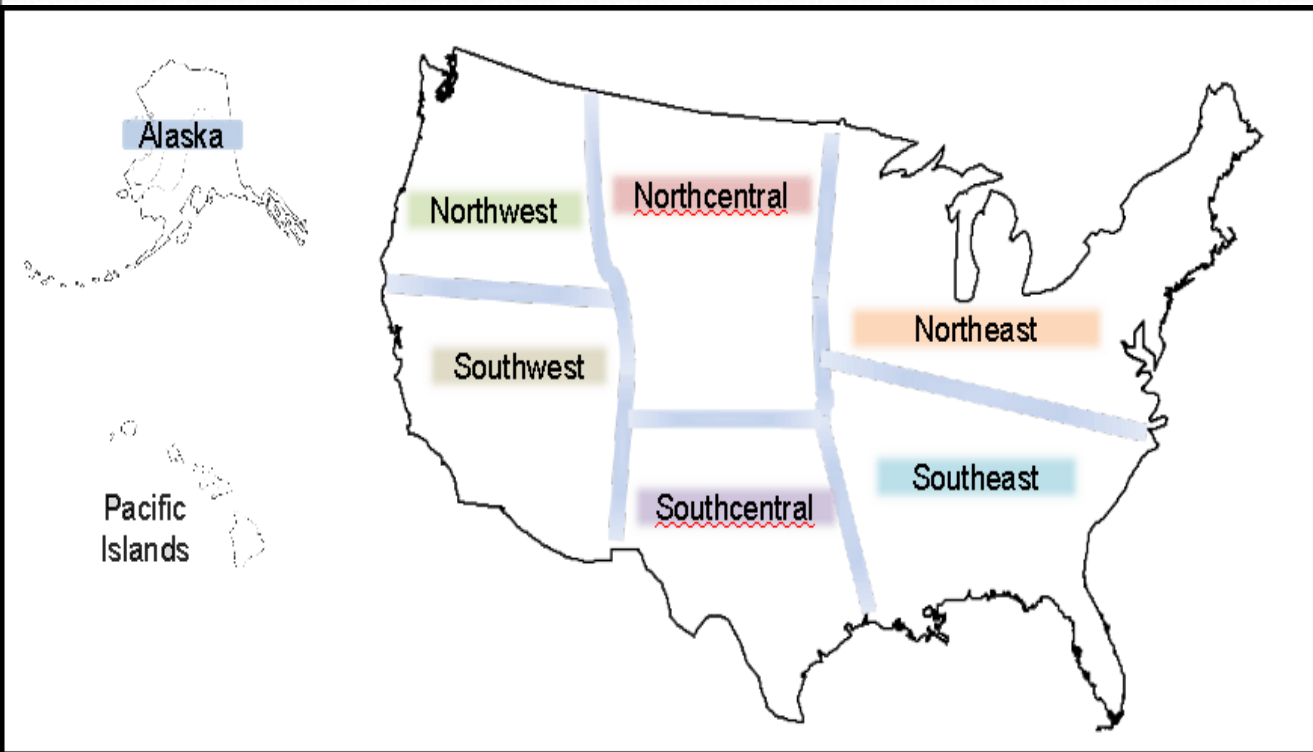
OREGON TRIBES IN 3 DOI LANDSCAPE CONSERVATION COOPERATIVES



- | | | | |
|---|-----------------------------------|-------------------------------------|----------------------------------|
| 1. Appalachian | 7. Great Plains | 13. Plains and Prairie Potholes | 19. Northwestern Interior Forest |
| 2. California | 8. Gulf Coast Prairie | 14. South Atlantic | 20. Western Alaska |
| 3. Desert | 9. Gulf Coastal Plains and Ozarks | 15. Southern Rockies | 21. Pacific Islands |
| 4. Eastern Tallgrass Prairie and Big Rivers | 10. North Atlantic | 16. Upper Midwest and Great Lakes | Unclassified |
| 5. Great Basin | 11. North Pacific | 17. Aleutian and Bering Sea Islands | |
| 6. Great Northern | 12. Peninsular Florida | 18. Arctic | |

“LCCs are management-science partnerships that inform integrated resource-management actions addressing climate change and other stressors within and across landscapes. They will link science and conservation delivery.” (www.doi.gov)

OREGON TRIBES IN 1 DOI CLIMATE SCIENCE COOPERATIVE

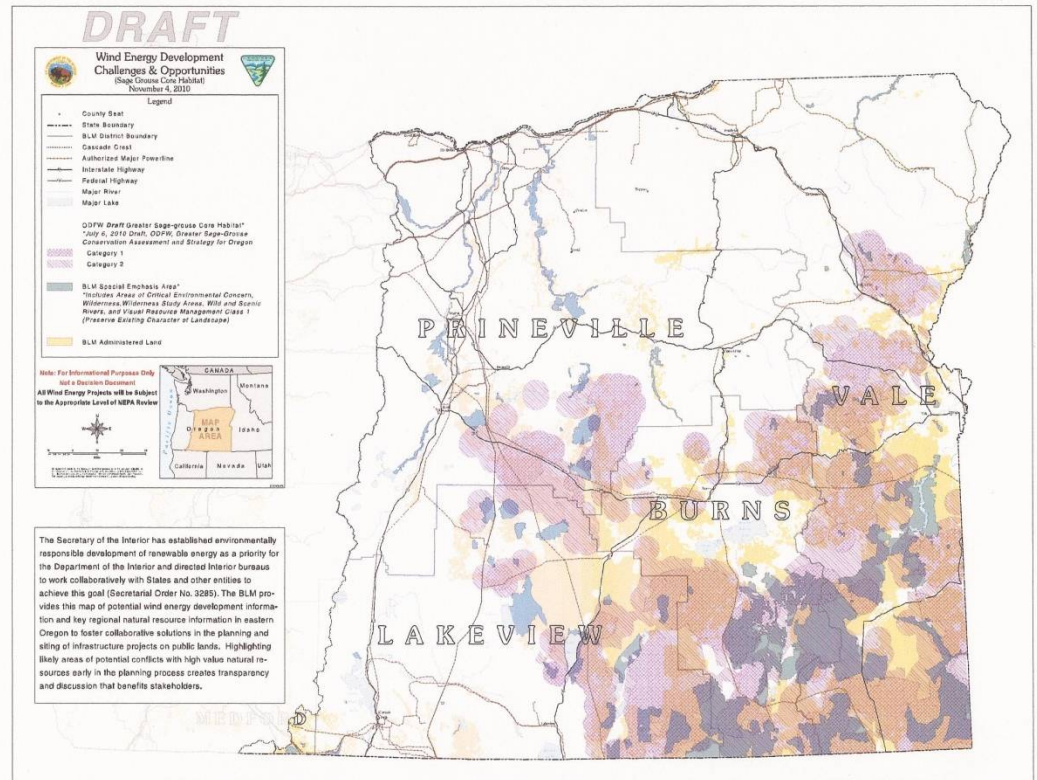


“CSCs will provide scientific information, tools and techniques that land, water, wildlife and cultural resource managers and other interested parties can apply to anticipate, monitor and adapt to climate and ecologically-driven responses at regional-to-local scales.” (www.doi.gov)

EXISTING BLM CONSERVATION & RENEWABLE ENERGY ZONES

- SAGE GROUSE
 - PYGMY RABBIT
 - Are taken into consideration for renewable energy planning
- Map Link

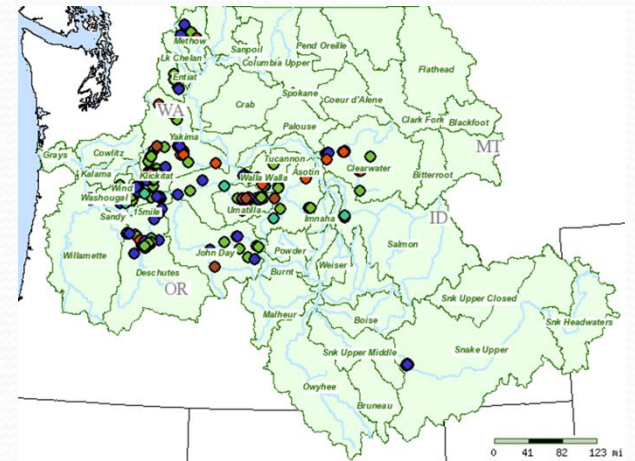
http://www.blm.gov/or/energy/opportunity/files/core_habitat.pdf



PROPOSE THE ADDING THESE TO THE BLM WIND ENERGY CHALLENGES & OPPORTUNITIES MAP

- **TRIBAL SALMON RESTORATION AREAS**

- Consult with All OR Tribes
- Consult with CRITFC



- **OTHER FIRST FOOD + CULTURAL USE AREAS**

- Per Each Tribe's Discretion

TRIBAL CONCERNS + PROPOSALS

- 3-year cattle grazing requirements on a 31,000 tract of Burns Paiute leased land fuels noxious weed growth. The tract is prime sage grouse breeding territory.
 - Discuss management-improvement with Burns Paiute
- Propose adding Burns Paiute salmon feasibility area to BLM planning maps
- Umatilla and the BLM Vale District completed phase 1 of identifying Umatilla First Foods.
 - Discuss funding phase 2
 - Propose replicating project with other interested tribes and BLM Districts

TRIBAL CONCERNS + PROPOSALS continued

- Tribes manage deer + elk on reservation boundaries.
 - Discuss including tribal deer + elk management on BLM lands with each Oregon tribe.
- Lamprey Eel harvest sites are off reservation boundaries, but within ceded lands.
 - Discuss including tribal lamprey eel management on BLM lands with each Oregon tribe.
- DOE is funding tribes in renewable energy projects.
 - Discuss BLM funding to support tribal renewable energy projects with each tribe.

TIPS FROM TRIBES

- Understand that each tribe is its own nation, addressed so per US treaties.
- Establish government-to-government communication lines with tribal council members and tribal staff.
- Consulting with a tribal staff member does not mean an agency consulted with the tribe. Request tribal council feedback.
- Tribal nations vary from one another. Their organizations vary; therefore, each communication method will vary. Consult with each tribal council and staff to create these communication lines.
- Tribes communicate with each of the federal, state, county and city governments; and all of their bureaus, departments and offices.
- Take time to meet each of the tribes in person, in each of their home areas.
- Take time to learn about each tribe's history & visit during a public celebration.

GIS MAPPING – THE COMMON TOOL

- All OR tribes have GIS Capability
- Propose sharing BLM GIS baseline data with tribes
- Propose adding Tribal Interests (i.e. salmon restoration areas) to BLM Planning Maps and LCC, CSC Maps
- A way to establish working relationships with tribes
- Climate change adaptation and renewable energy planning must move beyond jurisdictional boundaries

TRIBAL STEWARDSHIP

- Although tribes ceded lands to the US, they maintain land and environmental stewardship
- The definition of “Natural Resource” goes beyond monetary, scenic or recreational value for tribes.
- Tribes maintain thousand-year old connections to their home areas, evident in many cultural practices.
- Connection = Taking Responsibility = Stewardship
 - Tribes reserved rights to land and “natural resources” in their treaties.
 - Tribes lead the way in climate change adaptation and natural resource restoration projects.

Works Cited

- Renewable Northwest Project - <http://www.rnp.org/>
- Columbia River Inter-Tribal Fish Commission - <http://www.critfc.org/>
- Confederated Tribes of Grand Ronde – Ceded Lands Map
- Confederated Tribes of Warm Springs – Land Map
- Burns Paiute Tribe – Land Map
- National Renewable Energy Laboratory - <http://www.nrel.gov/>
- Department of the Interior - <http://www.doi.gov/whatwedo/climate/>
- Department of the Interior – Landscape Conservation Cooperative
<http://www.doi.gov/whatwedo/climate/strategy/LCC-Map.cfm>
- Department of the Interior – Climate Science Cooperative
<http://www.doi.gov/whatwedo/climate/strategy/CSC-Map.cfm>
- BLM Wind Energy Development Challenges & Opportunities Maps
<http://www.blm.gov/or/energy/opportunity/maps.php>