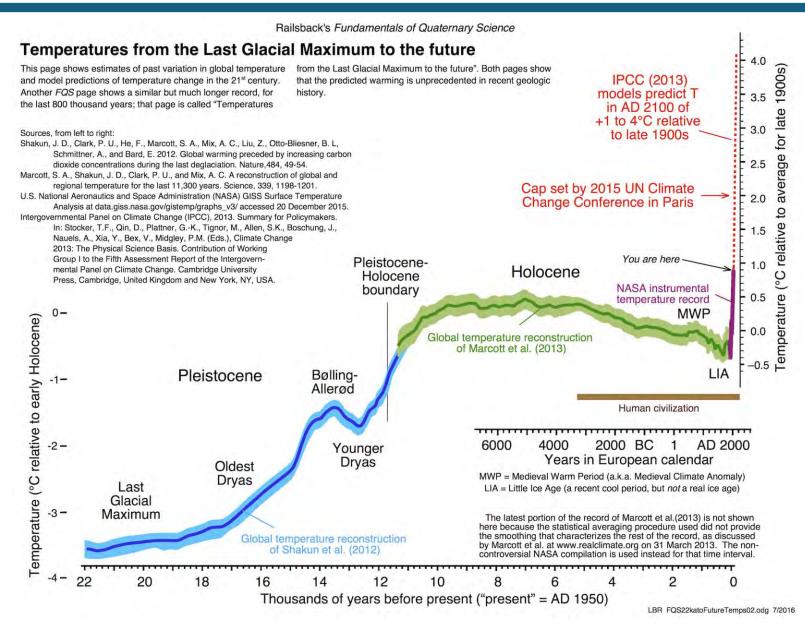


Thank you for the privilege of being here today to represent our land and our people in this healing work you've set before us.



Climate changes in the past followed their natural cycles and were **slow**.

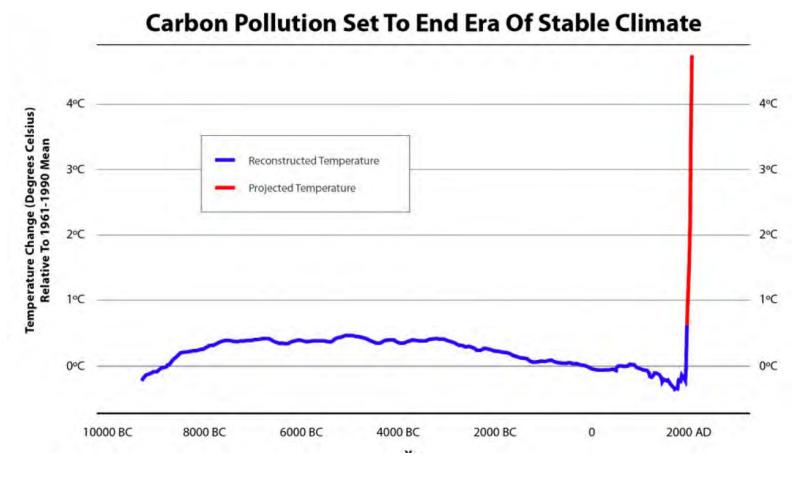
Today's changes go in the opposite direction to the cycles and are happening *rapidly*.

If climate change was still operating within its natural cycles, it should instead be going slowly cooler down the "green trend".



Natural climate change was a slow continued downtrend toward the next ice age.

Human caused climate change has created an abrupt change in the OPPOSITE direction.







Primary Objective. The Coquille Indian Tribe recognizes that the climate of their traditional and historical homelands is changing. These changes may have disproportionate impacts on Coquille Tribal people. Climate change and its consequences may threaten Tribal and Tribal member lifeways and subsistence practices and may pose risks to the Tribe's natural resources, land rights, future growth, cultural restoration / preservation / continuity, social resources, and financial resources. Therefore, the Tribal Council has directed the creation of a taskforce to make recommendations to Tribal Council for how the Tribe will adapt to and mitigate the impacts of climate change. The desired outcome of these adaptation and mitigation efforts is referred to as "Climate Resilience."



Steps to Resilience: Tribal Resilience Resource Guide



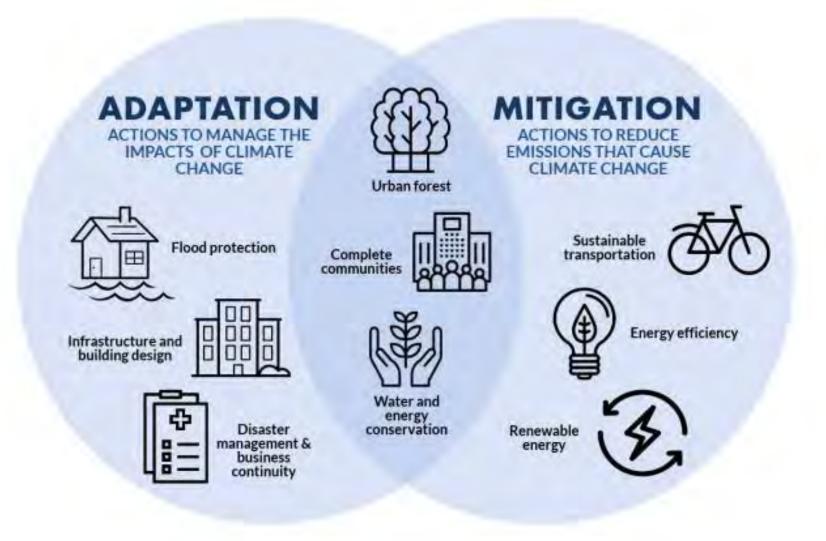
ADAPTATION VS. MITIGATION

ADAPTATION

A variety of actions that are meant to reduce or compensate for or adapt to the adverse impacts that arise from changes in the Earth's climate

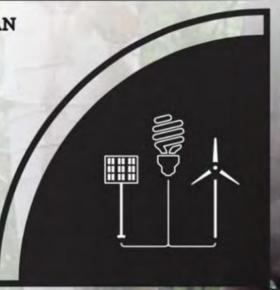
MITIGATION

Actions or changes in societal behavior taken to reduce or eliminate greenhouse gas (GHG) emissions and/or to remove GHGs from the atmosphere to prevent significant adverse climate effects



ENERGY REDUCTION PLAN

The Tribe is identifying ways to reduce energy use, save money, and decrease greenhouse gas emissions.



VULNERABILITY ASSESSMENT

The Tribe will use a community assessment process to determine the vulnerability of concerns within our tribal environment, health, and infrastructure.

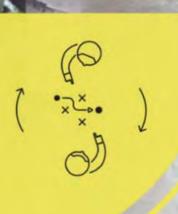


Through hazard
mitigation planning
the Tribe will reduce
both natural and
man-made risks that our
community might face now
and in the future.



ADAPTATION PLAN

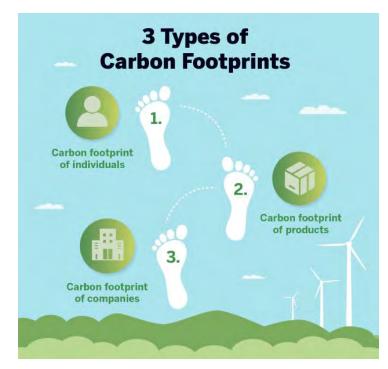
Through adaptation planning, the Tribe will identify actions the community can take to prepare for climate change.



REDUCTION OF CARBON FOOTPRINT

Today, the term "carbon footprint" is often used as shorthand for the amount of carbon (usually in tonnes) being emitted by an activity or organization.

Carbon emissions from burning fossil fuel accumulate in the atmosphere if there is not enough biocapacity dedicated to absorb these emissions. Therefore, when the carbon footprint is reported within the context of the total Ecological Footprint, the tonnes of carbon dioxide emissions are expressed as the amount of productive land area required to sequester those carbon dioxide emissions. This tells us how much biocapacity is necessary to neutralize the emissions from burning fossil fuels.





Overarching Climate Resilience Goals

Goal #1

Adopt a survival mentality.

Goal #2

Ensure ongoing support and commitment to climate resilience education and initiatives.



Overarching Climate Resilience Management Priorities

Recommendation #1

Develop strategy to ensure Climate Resilience Management Plan is implemented and used throughout the Tribal organization.

Avoiding the dreaded document gathering dust on the shelf.

Recommendation #2

Incorporate BIA resilience funding to provide expert contracted consultation to develop plans to position the Tribe to be shovel ready for project funding, specifically energy sovereignty funding.

Recommendation #3

Incorporate BIA resilience grant funding to support an FTE or contracted staff support for 3+ years to implement next steps of taskforce planning, implementation of Tribal Council approved resilience recommendations, coordination of project work with other Tribal Departments and facilitate resilience components of strategic and master plans.





Indigenous Water Sovereignty



Indigenous Food Sovereignty



Reduction of Wildfire Risk and Impact



Loss of Kelp & Eel Grass



Responsible Contribution to Ocean Health



Energy Sovereignty/Carbon Footprint Reduction

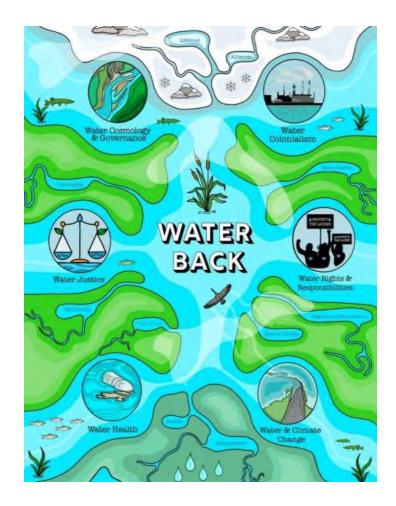


Reduce, Reuse, Recycle

INDIGENOUS WATER SOVEREIGNTY

It's important for people to understand that one of the attributes of our inherent sovereignty is our ability to have a decisive say when it comes to our land, territory, resources, and people. But there's still a level of paternalism and a level of political inequality. When it comes to protecting our resources, the United States still will take unilateral action affecting our land, territories, and sacred sites.

-Fawn Sharp, National Congress of American Indians





INDIGENOUS WATER SOVEREIGNTY

Fresh water is necessary for the survival of all living organisms on Earth. Our bodies are made up of about 60% water and we cannot survive more than a few days without it. Without water, life as we know it would not exist. Life exists wherever there is water. Protecting and ensuring a fresh water source for the Tribe and its Members is essential for our future existence.

Water is one of our most valuable resources, one that we tend to take for granted, especially here on the south coast. Not only do we need potable water for drinking and dried food re-hydration, we need water for cleanliness, sanitation and for growing food. If climate change throws a severe drought our way, we need to be prepared. Fortunately, our Emergency Manager has already been working on water storage, filtration and more. Further steps

that we recommend include:





INDIGENOUS WATER SOVEREIGNTY

Recommendation #1

Develop plans for larger water storage (tower, bladders, ponds, more large tanks, etc) to provide appropriate storage and water pressure to support Kilkich.

Consideration for summer/drought conditions. Likely requires completion of water rights applications and perfection of permits, specifically at 4th Creek and Tarheel with the goal of fully exercising our sovereignty and ownership of this water.

Recommendation #2

Develop wells and water diversion plans to support emergency water needs for longer periods of time. For example, 4th creek diversion to storage tank.

Recommendation #3

Develop plans to support and encourage rainwater collection and water storage by Kilkich homeowners, as well as other homeowners, both within and outside the service area.

About one in four Native people experience food insecurity, compared to one in nine Americans overall according to the United Stated Department of Health and Human Services.

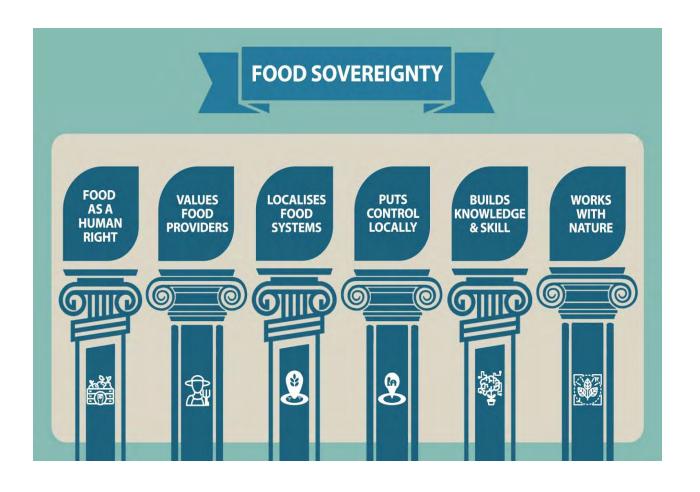
Native American reservations often have some of the highest rates of <u>food insecurity</u>, poverty, and diet-related diseases due, in part, to past and present-day inequities. Native American families are 400% more likely to report food insecurity according to Against global hunger.org.

Indigenous regenerative agriculture is an age-old practice that combines the wisdom of native cultures with sustainable farming techniques to replenish the health of our planet. This approach not only addresses food security issues but also contributes to mitigating climate change by enhancing biodiversity and sequestering carbon.

https://youtu.be/fSEtiixgRJI



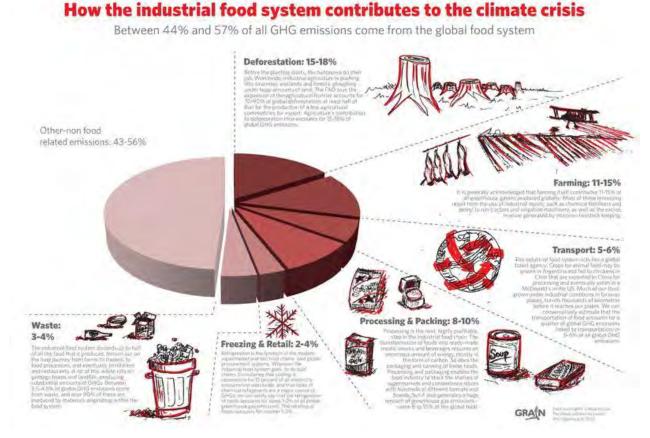








Through deforestation, farming, transportation, processing and packaging, refrigeration and retail, and waste, the industrial model of agribusiness – guided by generation of profits, exploitation of labor, commodification of the earth, and manipulation of natural systems – is a major contributor to the climate crisis. Between 44% and 57% of all greenhouse gas emissions come from the global food system. These fields of poison, heavily reliant upon toxic fertilizers and pesticides, wreak havoc on the health of humans, wildlife, and the environment.









Agroforestry

Recommendation #1

Invite Linda Black Elk to speak to our Tribe about food preservation (NATIFS).



Recommendation #2

Learn from experts in Indigenous Food Sovereignty.

Tour other Tribal Food Sovereignty Successes. Look at potential in seed exchange for first foods or traditional foods grown historically in this area.

Look at CSA farming and potential investments in Farm to Table restaurants with Native chefs.

Recommendation #3

Discuss a food preservation building on Kilkich to process, can, dehydrate and freeze dry to preserve foods.

Freeze dried foods last for up to 25 years. Provide food security.

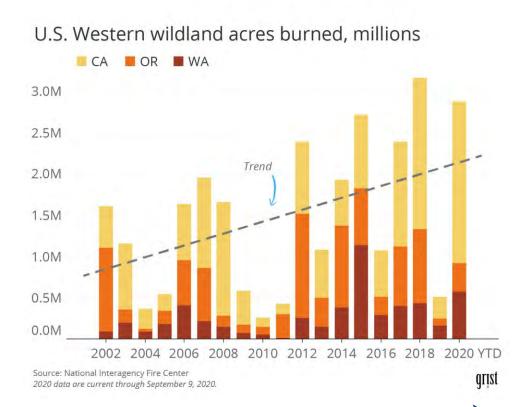
Recommendation #4

Hire Duane Lane from 1855 Plants to survey Kilkich for Free Fresh Traditional Food Gardens locations providing Kilkich residents with foraging foods all around the reservation.

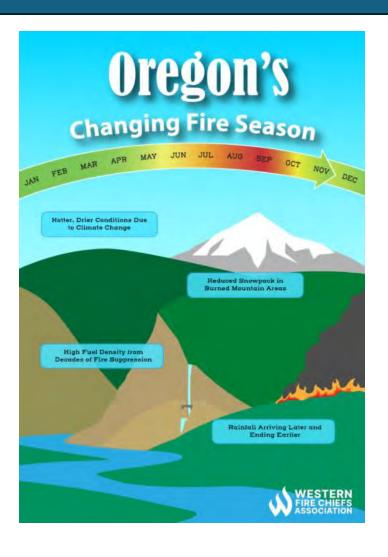
REDUCTION OF WILDFIRE RISK AND IMPACT GOAL: To reduce the risk of fire on Kilkich and to minimize the impact of fire should it occur.

Since 1984, about 4 percent of the land in Oregon has burned per decade. The changing climate is likely to more than double the area in the Northwest burned by forest fires during an average year by the end of the 21st century.

Although drier soils alone increase the risk of wildfire, many other factors contribute to fires, and forests in the Western Cascades may be less vulnerable to climate change than those in the Eastern Cascades. Higher temperatures and a lack of water can also make trees more susceptible to pests and disease, and trees damaged or killed burn more readily than living trees. For example, climate change is likely to increase the area of pine forests in the Northwest infested with mountain pine beetles in the next few decades. Pine beetles and wildfires are each likely to decrease timber harvests. Increasing wildfires also threaten homes and pollute the air.







A study by Portland State University (PSU) students ran climate change projection simulations to see what effect different scenarios would have on Oregon's fire season. Projections showed that it could increase by 8-32 days over 30 years.

With the rising frequency and size of fires in the state, Oregon forests are being cleared out extensively and tree cover is reduced. This leads to a decreased snowpack in areas that experienced a severe fire. Snowpack is essential for storing water in the Western United States, building up water stores in the winter, and releasing water during **snowmelt** in the spring and summer months.



Oregon has a wide range of climates and <u>diverse forests</u>, and fire has always been a part of the ecosystem in the state. Frequent, low-intensity fires kept forests healthy and resilient in Central, Southern, and Northeastern Oregon, burning every 4-20 years. Wildfires in Western Oregon and along the Oregon Coast were rare, happening every 200-500 years, and were much more intense.

Lightning started many of the smaller fires that cleared dry Oregon forests, and is a major cause of wildfires now, but Native peoples living in the area also used fires to promote ecosystem health in the following ways:

- Reduce fuel build-up on the ground keep wide spacing between large, fire-resistant trees (e.g., Ponderosa pines and Douglas fir trees)
- Decrease the impact of diseases and bugs on plants

Cycle nutrients back into the soil

Build out habitat for wildlife that thrives in more open forests

Fire adaptation plans must balance land use management, fire suppression, and community preparedness.

















Fire adaptation plans must balance land use management, fire suppression, and community preparedness.





Fire adaptation plans must balance land use management, fire suppression, and <u>community preparedness</u>.





Fire adaptation plans must balance land use management, fire suppression, and community preparedness.

Recommendation #1

Assist and encourage homeowners [and residents] on Kilkich to form a cooperative group, the purpose of which is to help one another in preparing for weather/climate challenges and disasters.

Recommendation #2

Develop and provide guidelines for and assistance to Kilkich homeowners to clear brush from woods and land adjacent to their lots after working out liability language with CIHA.

Recommendation #3

Provide guidelines for, and promote compliance with fire defensible areas around CIHA, HUD, Tribal and Homeowner structures (Kilkich, ISA, and OSA).

Recommendation #4

Implement coordinated efforts to mitigate and eradicate Scotch Broom, Gorse, and other invasive [flammable] species on Kilkich including empowerment of residents and utilization of Youth Corps to participate in mitigation and eradication activities.

Recommendation #5

Coordinate the availability of wildfire apparatus and equipment including warning systems, as needed, in key locations.

Recommendation #6

Establish Kilkich Contact/Communication System for needed alerts, warnings, and communications, when cell phones are down.

LOSS OF KELP AND EEL GRASS GOAL: Restoration of Eel Grass & Kelp Forests to save our First Foods (Salmon, Abalone, Crab & Clams)

According to the National Centers for Coastal Ocean Science:

"Native eelgrass (*Z. marina*) occurs in intertidal and subtidal zones of the South Slough estuary. Eelgrass beds provide many ecosystem benefits, including nursery grounds, shelter, foraging and spawning areas for fish and invertebrates along with improving water quality and storing carbon in sediments. Eelgrass habitat is sensitive to a variety of abiotic and biotic stressors and has been diminishing globally due to threats such as coastal development, warming ocean waters, sea-level rise and nutrient/sediment pollution."



Seagrass and algae in the Lower Coos Watershed. Picture taken by partnershipforcoastalwatersheds.org



LOSS OF KELP AND EEL GRASS



Dead abalone surrounded by purple sea urchins.

According to the Oregon Kelp Alliance:

"Studies have revealed the rapid climate-driven catastrophic shift in 2014 from previously robust kelp forests to unproductive large scale urchin barrens in northern California, an ecoregion bearing many similarities to that found on the southern coast of Oregon. Most recently, the Oregon Department of Fish and Wildlife, in collaboration with commercial urchin divers, completed a survey of sea urchin populations at Orford Reef, reporting a preliminary estimate of ~350 million purple sea urchins, a more than 10,000-fold increase on this single reef since 2014."

LOSS OF KELP AND EEL GRASS



One study on seagrass, by scientists from MBARI (Monterey Bay Aquarium Research Institute) and others, showed that these plants can combat ocean acidification. Seagrasses absorb carbon dioxide from the ocean water when they photosynthesize, which raises the pH to higher (less acidic) levels. The study found that the seagrass beds return the habitat's pH to pre-industrial levels, as far back as 1750. These findings suggest that protecting seagrass habitats may help reduce the impacts of ocean acidification on ocean animals.

Ocean acidification is threatening this ecosystem. Animals that rely on calcium carbonate to build their shells need to work harder to build and maintain these structures — which leaves them with less energy to feed, grow, and reproduce. It can also cause their shells to become thinner and more brittle. These disturbances can ripple through ocean food webs, affecting animals and ecosystems in ways scientists are just beginning to decipher.



LOSS OF KELP AND EEL GRASS



Recommendation #1

Assign a Liaison of the Coquille Indian Tribe to work with ORKA and OSU Port Orford Field Station. Involving our tribal members in the solution.

Recommendation #2

Snorkel or Dive with a scientist at the Port Orford Field Station.

The Port Orford Field Station is willing to train divers to help with Sea Urchin eradication.

Recommendation #3

Tour Bandon Urchin Research and Port Orford Field Station in April-August for CRTF members & Tribal Council.



Recommendation #4

Develop programs:

Urchin Control partner with ORKA and OSU Port Orford Feld Station; serving Uni and Dulse Seaweed at The Plankhouse (Uni is Sea Urchin eggs); sell Dulse Seaweed, Kelp products from Bandon/Alaska and give a portion of profits to ORKA for continued research and events to stop Urchin Barrens; Tribal Restoration/Gatherings promote saving our Kelp and Eel Grass through an information booth. Tell tribal members about the potential extinction of our abalone; and improve Kelp Forests through sustainable Kelp Farming look at investments.

Fact: Our ocean is dying due to acidification



RESPONSIBLE CONTRIBUTION TO OCEAN HEALTH GOAL: See individuals and the Coquille Tribe as a whole begin to take responsibility for our contribution to ocean health, which will ensure our survival.

- The ocean is the true "**lungs of the planet**," absorbing 25-30% of our carbon dioxide (not the Amazon Rainforest which now emits more carbon than it holds it's no longer a carbon sink)
- Plankton absorbs carbon
- Plankton levels have dropped 50% in the last 70 years
- 50% of all plants & animals within the ocean have died in the last 70 years since the chemical revolution of the 1950's
- Plastic is killing plankton

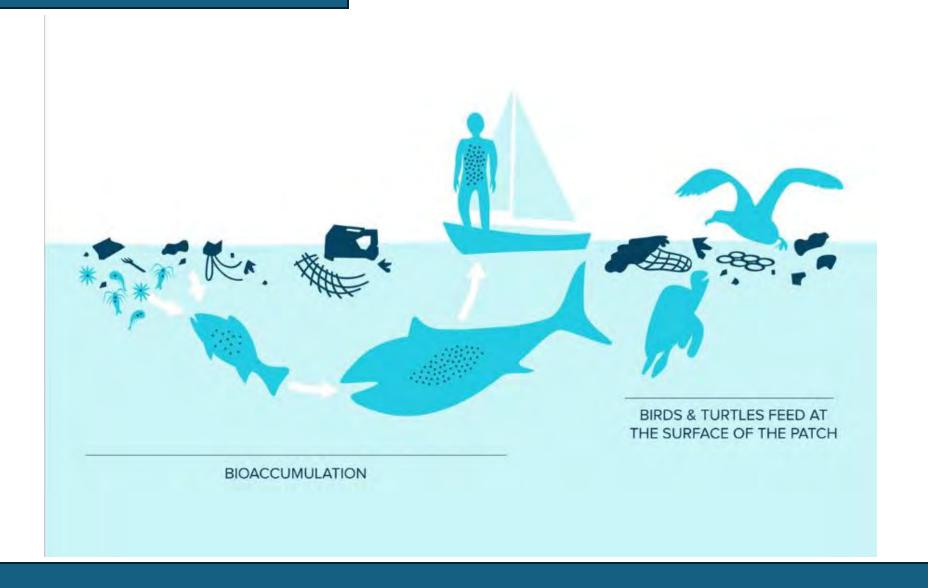














Unless we make drastic changes – becoming carbon neutral, eliminate plastic and chemical pollution – in 21 years' time, we will usher in a catastrophic collapse of the entire marine ecosystem and the ocean will die within 50 years.

(GOES foundation, University of Edinburgh)

If the ocean dies, we die with it.





Recommendation #1

Look for alternatives to plastic for everything we use but especially single use.

Begin using renewable resources such as paper and other products in supplies. Actively seeking out plastic alternatives.

Recommendation #2

Sponsor land and water clean up days.

The more we practice taking ownership, the more we gain a true understanding of the problem at hand and encourage others to do the same. We've got to get out and physically do the work.

Recommendation #3

Support the growth of kelp forests.

Partnering with OSU and other agencies already engaged in this work to support the growth of kelp forests.

ENERGY SOVEREIGNTY

- Energy supply and delivery are threatened by extreme weather, sea level rise, droughts, wildfires, and other climate-related hazards.
- Carbon emitting fuels (coal, gas and oil) will be curtailed to some degree.
- Hydro power generation will decrease when river flows decreases. Fires, floods and landslides will create unreliable electricity transmission from the Willamette Valley.
- our energy will not be reliable or resilient or cheap unless changes are enacted.
- But the good news is: energy storage, energy efficiency, and energy generation is becoming cheaper and cheaper.
- Plus, a great deal of funding available now is aimed at assisting tribes to become more resilient.
- Taking steps now will keep tribal facilities functioning, reduce energy costs, and produce a more reliable and resilient energy future.
- Importantly, as we achieve energy sovereignty, we will also reduce our carbon footprint.

ENERGY SOVEREIGNTY/CARBON REDUCTION GOAL: Initiate progress to achieve energy sovereignty and reduce carbon foot print.

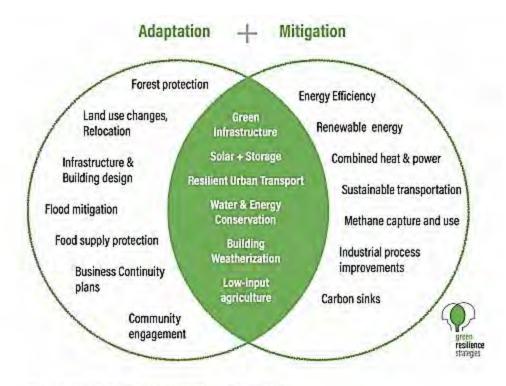


Figure 1: Climate Adaptation and Mitigation Synergies Green Resilience Strategies (2017)

Examples of green resilience measures include:

- Energy efficiency, distributed renewables, district energy systems, microgrids
- Green infrastructure
- Public transit flood protection, active transportation
- Water use efficiency and wetland treatment
- Low-carbon, resilient buildings
- Climate smart agriculture



ENERGY SOVEREIGNTY

Energy issues

- Hydropower less reliable due to droughts, low summer flows
- Grid more susceptible to flooding landslides
- Wildfires extreme weather interruptions
- Electrified economy needs more energy...
- Transition from gas and oil to renewables is underway

Energy Solutions

- Conservation (heat pumps, etc.)
- Microgrids (ie Coos Bay area)
- Battery storage
- Renewable Energy
- EV charging stations
- Tribal EV Fleet vehicles



ENERGY RESILIENCE



Recommendation #1

Complete an Energy Evaluation of Tribal facilities.

Ensure all Tribal facilities incorporate energy efficient solutions and that all Tribal homes on Tribal lands follow eco-compliant guidelines.

Recommendation #2

Complete a solar panel feasibility study for Tribal facilities and Tribal homes.

Recommendation #3

Consider options for reducing carbon and energy generation (e.g. solar), as part of all new construction planning.

Recommendation #4

Initiate a process to distribute heat pumps or other energy efficient equipment equitably to homeowners and renters in both OSA and ISA.

Recommendation #5

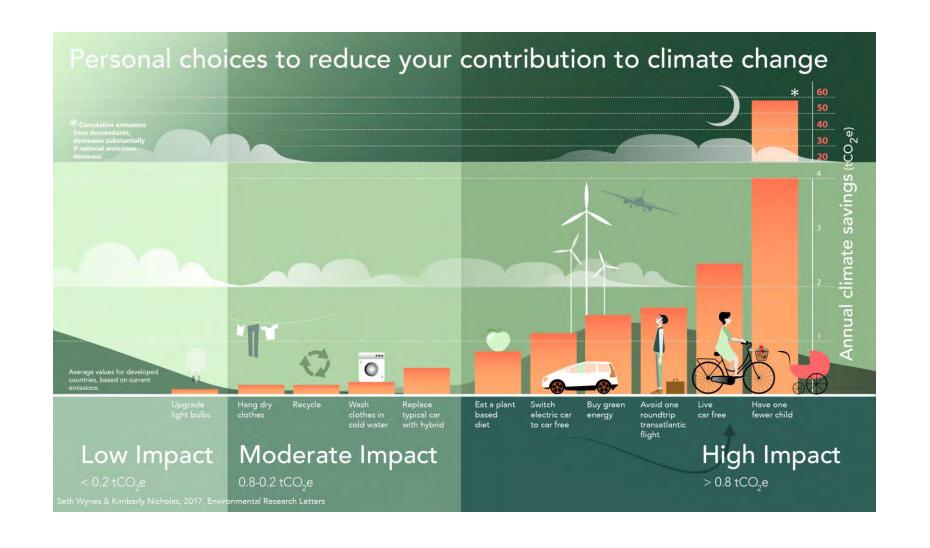
Replace part of the Tribal fleet with EVs. Target the vehicles that are used for short distance trips.

ENERGY SOVEREIGNTY

RECOMMENDATIONS



- Complete Energy Evaluation of tribal facilities
- Complete a solar panel feasibility study for tribal facilities and tribal homes.
- Ensure all tribal facilities incorporate energy efficient solutions.
- Ensure tribal homes on Tribal lands follow eco-compliant guidelines.
- All construction consider options for reducing carbon and energy generation(e.g. solar), as part of planning
- Initiate process to distribute heat pump or other energy efficiency equipment equitably to homeowners and renters in both OSA and ISA.
- Replace part of the tribal fleet with EVs. Target the vehicles that are used for short distance trips.





Our Ancestors used everything they gathered.



Photo by the blowup on Unsplash

 Today, convenience rules. As a Nation, we need to return to our traditional values and limit the waste we produce.

- It's simple!
 - Reduce
 - Reuse
 - Recycle



Methane gas is an unwanted byproduct of food waste. An estimated 58 percent of the methane emissions released to the atmosphere from solid waste landfills are from landfill food waste. Due to its quick decay rate, food waste in landfills is contributing to more methane emissions than any other landfilled item.

According to Green Restaurant Association, a restaurant can produce up to <u>25000-75000 pounds of food waste</u> a year.

Per the National Restaurant Association's report, diners care about sustainable options.

The conversion of restaurant food waste to animal feed offers an efficient and useful product.





At home we can work on composting options.





Grant Funding – Prioritized Opportunities

Name of Program	Category	Program Milestones	Amount	Description
Environmental Protection Agency (EPA)	Community Change Grants Program	Applications due 11/21/24	Track II: \$1 - \$3 million each	Track 1: climate resilience, pollution reduction, community health, economic prosperity and community strength. Track II: educational and training programs, environmental advisory boards, collaborative governenace activities.
Department of Energy	Tribal Energy Loan Guarantee Program	Rolling basis		Solar, wind farms, microgrides, electric vehicle charging stations, transmission and distribution
Department of Energy	Home Electrification and Application Rebate Program (State Energy Program)	Applications due 1/31/2025	State Energy Program - \$56,714,440	Heat pumps, heat pump water heaters, heat pump dryers, electric stoves/ranges/ovens, electric load service center upgrades, insulation, air sealing, ventilation, and electric wiring. This program covers 100% of project costs (up to \$14,000) for low-income households and 50%
Office of State and Community Energy Programs (SCEP)	Tribal Home Electrification and Appliance Rebates	Opens May 1, 2024 for Tribes		Programs provide up to \$14,000 per eligible household for home upgrades. CIHA applying.

Grant Funding – Awards

Name of Program	Program Milestones	Amount Requested	Description
BIA Tribal Climate Resilience Program	Application submitted 10/2023. Award granted.	\$147,749.00 per year, for 3 years.	Tribal Climate Resilience Coordinator personnel costs, supplies, lease for electric vehicle, office equipment and training costs.
BIA Tribal Climate Resilience Program	Application submitted 10/2023. Award granted.	\$250,000.00 over a 3 - year period of performance	Development of a Tribal Resilience Management Plan.
U.S. Department of Energy	Application submitted 10/2023. Award granted.	Year 1 allocation: \$185,903 Year 2 allocation: \$184,900	Invest in grid resilience projects related to community facilities and infrastructure.
Roundhouse Foundation	Application submitted 2/2024. Award granted.	Requested: \$91,000 Award: \$40,000	Solar Assessment, Vulnerability Assessment, Contractual Support.

NEXT STEPS

- Review of Recommendations prioritizing our recommendations and funding to do the work.
- Implementation of BIA and Roundhouse Foundation planning funding (\$290K) to position the Tribe to apply for large project resilience funding.
- Implementation of BIA Climate Resilience Coordinator funding (\$147K per year for 3 years).
- Task force continues to work on vetting recommendations, evaluating time sensitive grant opportunities and preparing information critical for the master and strategic planning process.
- Taskforce continues to educate themselves and the community.
- Taskforce supports integration of any Tribal Council approved recommendations.
- Designate a Tribal Office to integrate resilience program, budgets, contractors, and potential staff to lead approved work.

