

NORTHWEST TRIBES: MEETING THE CHALLENGE OF CLIMATE CHANGE



Home on Hoh Reservation falling into the ocean.
(Photo: Hoh Tribal Archives).



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CLIMATE CHANGE: IT'S NOT JUST HYPE... IT'S NOW A REALITY

1

Native peoples have become an early-warning system for the rest of humanity—that climate change is already altering our environment, our economies, and our cultures. *Indian Country Today* states that “indigenous people are quietly reminding the rest of the world that they are the ones living with the consequences, in the here and now.” But Native people can also help lead the way in showing how to take a stand and respond to the climate crisis.



Alaska and B.C. forests have been damaged by the spruce bark beetle, increasing the risk of wildfire.

(Photo: KPB Spruce Bark Beetle Task Force).

The latest global scientific evidence shows us that climate change is speeding up at a much faster rate than scientists originally thought. We can see climate change coming, whether in Hurricane Katrina (itself worsened by warmer Gulf of Mexico temperatures), or winter megastorms here in

the Pacific Northwest. It is no longer a question whether the climate crisis is coming. It is already here, and we have to go out and meet the challenge by preparing *today*.

Global warming is caused by the emission (release) of carbon gases into our atmosphere that trap the sun's heat from rising back into space, so the Earth is becoming a hotter “greenhouse” (see diagram). The Earth has gone through natural warming cycles in its long history, but nothing like today. Our use of fossil fuels (mainly oil and coal) has released so many “greenhouse gases” that the Earth's climate is becoming unstable and extreme weather more common. Our summers in the past few years have been the hottest on record. As carbon dioxide increases in the atmosphere, global temperatures also increase (see graph on page 4).

The United Nations Intergovernmental Panel on Climate Change (IPCC) released a definitive report by the world's leading climate scientists in 2007, which laid to rest any remaining doubts about the human and industrial origins of global warming. It stated that “Global atmospheric concentrations of carbon dioxide, methane and nitrous oxide have increased markedly as a result of human activities since 1750 and now far exceed pre-industrial values determined from ice cores spanning many thousands of years. The global increases in carbon dioxide concentration are due primarily to fossil fuel use and land-use change...”.

We are now experiencing climate instability caused by greenhouse gases released *decades ago*, so the crisis will only grow worse in coming years. Scientists now have strong evidence of abrupt climate change, with sudden and dangerous shifts that can cause catastrophic loss of lives and property. Communities that begin to prepare will suffer fewer consequences than those that ignore or trivialize this “greatest challenge in human history.” While some climate change is now inevitable, we can do something to help our communities survive it.

Temperatures have risen about 1.5° Celsius in the past century. Scientists expect temperature increases at the end of this century to increase 2 to 11.5° C, according to a 2009 U.S. Global Change Research Program report. While these average changes may not seem like much, in the delicately balanced global climate system, they can cause massive

instability. Sudden temperature shifts can cause heat waves and drought in some regions, and blizzards or floods in other regions. *The effects include sea-level rises (submerging coastal areas), melting of glaciers, shifts and extinction of species, and crop and human health issues.*

Sea level rises. As the ice sheets melt near the North Pole (Arctic) and South Pole (Antarctic), massive amounts of freshwater are being added to the oceans. At the same time, warmer ocean temperatures cause seawater to expand in volume. Both changes contribute to rises in ocean levels which will make storm waves and coastal flooding far more damaging. Oceans have risen about 8 inches in the past century. Scientists now predict at least a 3- to 5-foot sea-level rise by 2100.

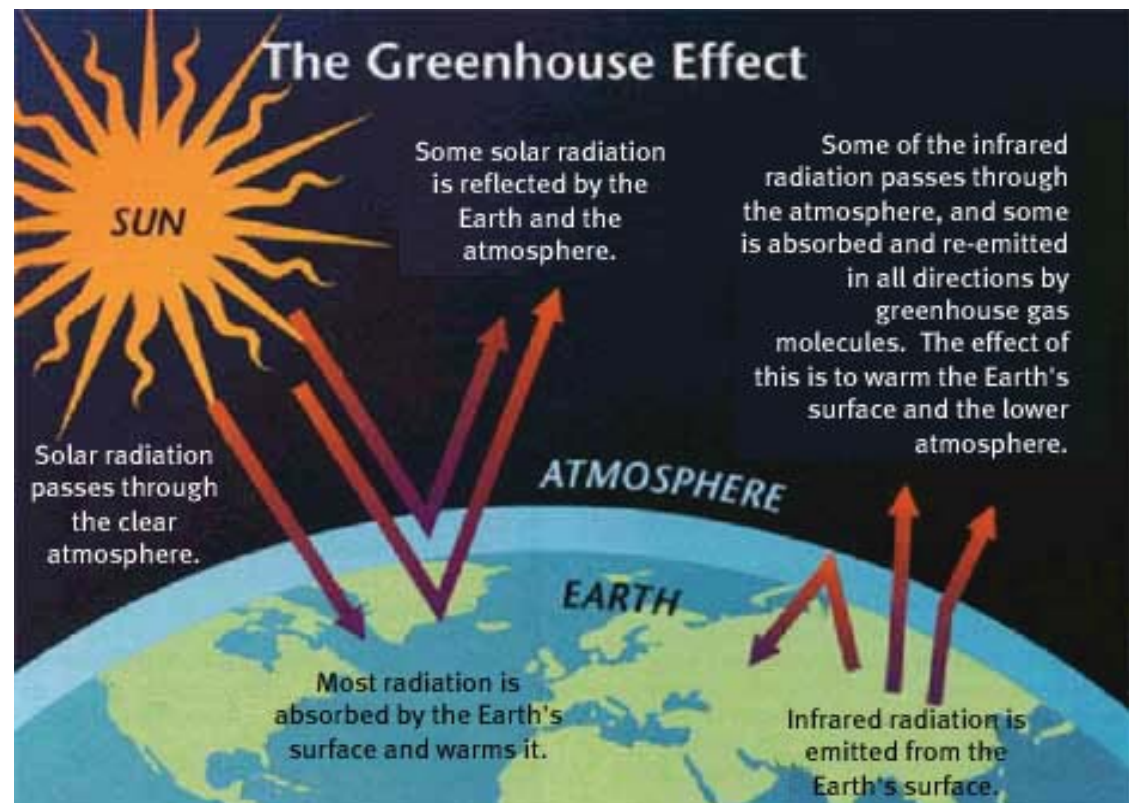
South Pacific indigenous peoples are already finding their low islands inundated by rising seas, erosion from intense storms, and saltwater in freshwater supplies.

A sudden melting of the Greenland ice sheet in the Arctic could cause the evacuation of coastal cities, and possibly shift warm North Atlantic ocean currents away from Europe, causing a “little ice age” on the continent.

Melting glaciers. Even at current warming levels, half of the glaciers in the Pacific Northwest are already gone, and the rest would disappear in this century. Glaciers in Alaska are melting twice as fast as previously predicted. This means less water in streams and rivers, drastically affecting fish and other aquatic life.

The drying up of streams can affect vegetation, water temperatures, and freshwater supplies, further damaging the resources and communities that depend on them.

The melting of permafrost (frozen ground) in the Far North can release huge amounts of methane, adding more of this harmful greenhouse gas to the atmosphere.



Shifts in species, pests and disease. As warmer temperatures creep northward (or up mountain slopes) every year, they drive some species out, and create habitat for new species to come into our area. These species include trees, plants, fish, wildlife, insects, and microbes. Some species can move with the temperature shifts, but others cannot move fast enough, and may face extinction. Climate shifts allow invasive species to displace traditional species, insects and pests to run rampant in new areas, and disease to flourish in warmer temperatures.

Many species have reproductive cycles tied to the seasons, or are more vulnerable to pests or predators at particular times in a season. Climate instability can create havoc with these balanced natural systems.

“Emerging diseases” can become threats to the health of people, livestock, wildlife, and crops, and cause epidemics in water and soil where they have not existed before.

CLIMATE CHANGE:
**IT'S NOT JUST IN THE FUTURE...
IT'S HAPPENING NOW**

2

In North America, climate changes have already drastically affected indigenous peoples' hunting and fishing, economic infrastructure, water and housing availability, forest and agricultural resources, and even their health. Using traditional ecological knowledge, Native harvesters are describing *today* the same drastic shifts in the environment that Western scientists had predicted would occur in the future. For the past decade, Native peoples have been meeting to document these changes. This scale of change will present severe challenges to all tribal cultures, resources and well-being.



The Anderson Glacier in Washington, in 1978 (left) and 2006 (right). Photos: Larry Workman

Far North. Native nations of the Arctic and Subarctic are already feeling catastrophic effects of warmer temperatures, in the melting of the sea ice, glaciers, and permafrost (frozen ground), and increase in fires, insects, flooding and drought patterns.

The polar bear is becoming an endangered species. Ice floes are the polar bears' home, where they mate, give birth, and raise their cubs. Now many polar bears are leaving their young to search for food, and the cubs are drowning because the ice floes are too thin. If the polar bears become extinct, a key part of the Inuit (Eskimo) culture will be lost. Northern peoples also hunt seals (who can only give birth on the ice) and caribou (which are getting harder to find). Hunters crossing ice are more often falling into open water and drowning.

The Alaskan village of Shishmaref (inhabited for 4,000 years) is facing evacuation. Due to a reduction of sea ice and permafrost, the village is no longer protected from erosion by violent storms. Homes in many other northern villages are sinking into the melting permafrost.

Many new species are migrating northward in the Arctic, such as the robin (for which the Inuit language has no word). These invasive bird species can carry diseases such as the West Nile Virus. Other species such as orcas are eating new species that they had never before been seen eating.

Southwest. Drought has affected the water table levels and limited water sources that depend on the little rain the region get to replenish them, killing plants and livestock.

Droughts have caused beetles to suck all the sap of trees (such as the piñon) for water, and caused the death of medicinal plants.

The 1993 Hanta Virus outbreak was a mystery to scientists until Navajo elders noticed that increased rainfall had caused an explosion in the population of mice (which fed on piñon nuts). The rainfall had been caused by intensified "El Niño" fluctuation in ocean temperatures. Hanta has also spread to rodents and humans in other regions.

Great Plains. Increased extreme weather such as flooding, blizzards and drought are threatening tribal economies where livestock and grain are the primary sources of income.

Summer heat and severe weather has increased health risks of children and elders.

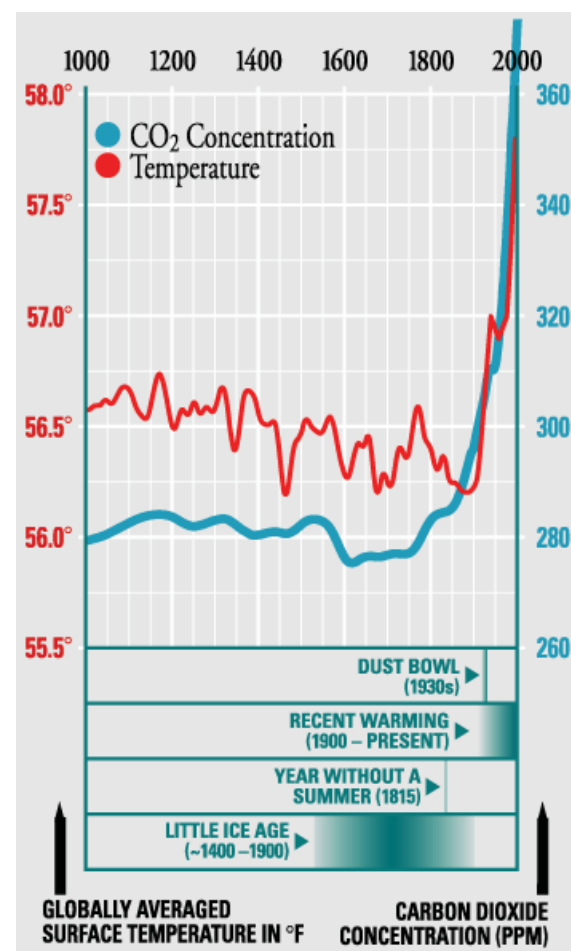
Water resources on the surface and in underground aquifers are becoming depleted before they can be recharged by rain.

Eastern Woodlands. Climate Change proves an ecological global risk that disputes traditional food gathering and forestry. Severe weather events include ice storms and flowing from rapid snowmelt.

Culturally significant trees such as sugar maples and birch are shifting northward out of the Northeast and Great Lakes regions.

Greater numbers have been seen of stinging black flies, disease-spreading mosquitoes, and predatory fish. Fewer numbers have been seen of hummingbirds and frogs.

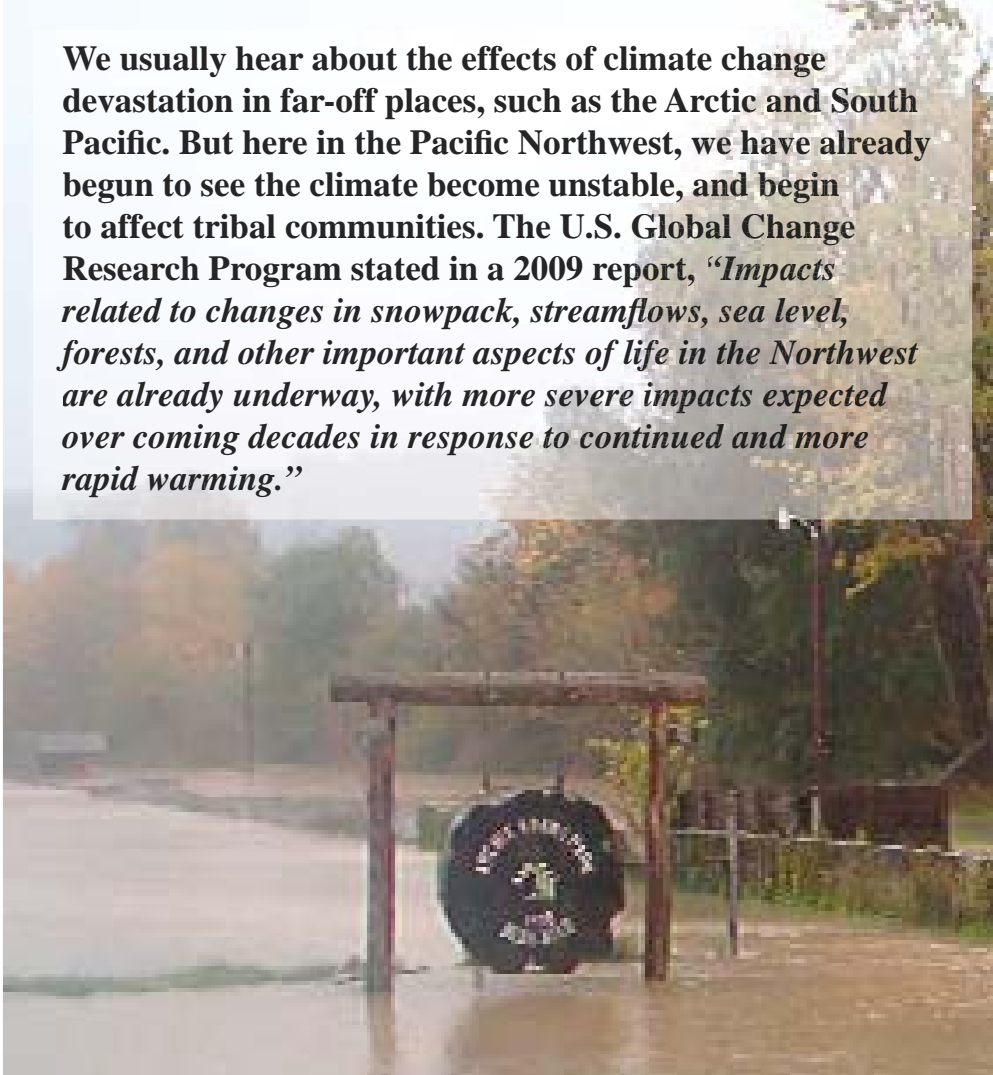
Graph of temperature and carbon dioxide rise



IT'S NOT JUST HAPPENING ELSEWHERE..... BUT IN OUR OWN REGION

3

We usually hear about the effects of climate change devastation in far-off places, such as the Arctic and South Pacific. But here in the Pacific Northwest, we have already begun to see the climate become unstable, and begin to affect tribal communities. The U.S. Global Change Research Program stated in a 2009 report, *“Impacts related to changes in snowpack, streamflows, sea level, forests, and other important aspects of life in the Northwest are already underway, with more severe impacts expected over coming decades in response to continued and more rapid warming.”*



Flooding at Skokomish (Photo provided by The Sounder)

Shifts in weather patterns and glaciers. An unstable climate affects different regions in different ways. Our region, where the ocean meets the coast and the mountains, is especially vulnerable to extreme variations in weather. The concern is not that there is more wind and rain, but that it comes with increased intensity in shorter bursts.

Scientists debate whether specific recent windstorms, mudslides, floods and blizzards can be tied to climate change. But it is not debatable that weather pattern shifts are occurring in the Pacific Northwest.

Normally, weather systems come in from the west, bringing in ocean moisture. When the moisture hits the mountains, it rises and condenses into rain or snow. But increasingly, the winds are coming instead from the north or south, and are following the ridgelines, resulting in less rain and snow in the mountains.

Melting glaciers and snowpack. Warmer temperatures are reducing both glaciers and snowpack in the mountains, and changing the timing of their seasonal melts. With shorter winters, there is less time for snow to pile up in the mountains. Smaller glaciers mean less freshwater in the streams for fish and other aquatic life. More than 90 percent of North Cascades glaciers could disappear in 40 years if annual temperatures increase by 2° C. Between 20 and 40 percent of the glaciers' volume has been lost in 25 years. At least one Olympic glacier has melted entirely.

The snow melts more quickly in the Spring, not only causing floods, but damaging salmon habitat—scouring and stirring up sediments, when the salmon are still smolts. Less of the runoff has time to seep into the groundwater.

In the summer, there is less runoff and it flows more slowly. The blueback salmon are threatened in the Quinault River because of reduced runoff from the Olympics. Other fishers report seeing salmon with lesions associated with warm-water diseases.

Changes in fishing. Northwest tribes have spent decades fighting for the right to fish in “usual and accustomed places.” But these places are already being affected by the reduction of rainfall and snowmelt in the mountains, the melting glaciers, and warmer temperatures and shifts in ocean currents.

A “dead zone” has been growing off the Washington and Oregon coasts, where fish and crab are being starved of oxygen by wild “upwellings” of micro-organisms that feed on oxygen. This crisis was caused by ocean current shifts tied to climate change. The Quinault Tribe is now using a submarine to study hypoxia (oxygen starvation) in the ocean.

Increasing levels of domoic acid in the warming ocean affects the gathering of crab and shellfish due to human health concerns, such as short-term memory loss and other neurological problems. It also affects birds and marine mammals who eat shellfish. The Quileute Tribe is now testing shellfish for domoic acid.

Shifts in species. Warmer ocean temperatures have caused marine species to shift northward. Some plant species are also shifting northward, or up mountain slopes. Once the species reach the top of a land mass or a slope and can go no farther, they may go extinct. Tribes may no longer have access to some natural resources guaranteed to them in treaties, as the species shift outside of treaty-ceded territories.

Quinault and Quileute fishers report catching anchovies and sunfish for the first time off their coast, and a major reduction in the smelt catch and kelp beds. Some fish, eggs and plants are no longer available for the First Foods Feast.

The brown pelican and giant Humboldt squid have migrated up from central California in recent years; both are voracious eaters of fish. Large turtles and Great White Sharks are also newcomers to the area.

Some grasses are no longer available to coastal basketmakers, because the species have shifted northward. Invasive plants arriving from the south, such as Japanese Knotweed, have also displaced native plants.

Changes in forestry. Northwest forests are already being affected by inland drought conditions, and the northward shifts of diseases and pests. It is not known whether specific fires have been caused by climate change, but certain patterns of fires have been caused by climate instability.

Warmer winters mean greater survival for many pests and disease. Pest infestations make the trees useless for harvest, and dry logs are vulnerable to very hot fires.

The spruce bark beetle has infested more than 12 million acres in B.C., Yukon, and southern Alaska. Huge swaths of forest have been killed by the infestations and the resulting catastrophic wildfires.

In another “fingerprint of climate change,” mountain pine beetles have killed more than 40 million acres of forest from Colorado to Alaska—twice the area of Ireland.



Parts of the coast have become an oxygen-starved “Dead Zone” (Map: U.S. Global Change gram).



Humboldt Squid have arrived off our coast from California (Photo: Smithsonian.com).

CLIMATE CHANGE:

IT DOESN'T AFFECT EVERYONE THE SAME... NATIVE PEOPLE HAVE MORE AT STAKE

4

Climate change is a potential Culture Killer. Native rights are primarily placed-based rights, dependent on a longtime attachment to local tribal territories. Climate change shifts and disrupts plant and animal habitats, and in doing so forces tribal cultures to move, adapt to new conditions, or die. Politicians and the media treat climate change as a large-scale global or national crisis, with all communities evenly affected in the same ways. But Native peoples have more at stake than other North Americans, particularly here in the Northwest.

A landslide on the Skokomish Reservation closes a major highway for more than four days
(Photo by Mark Warren, *Souder*, 2006)



Hoh tribal headquarters are permanently sandbagged due to chronic flooding.
(Photo: Elaine Thompson /Associated Press).

Coastal sea level rises. In the Pacific Northwest, many reservations are located on the coast or near the fishing grounds at the mouths of rivers. This makes them vulnerable to rises in sea level and coastal erosion. Higher seas will intensify storm damage, coastal flooding, and the risk of saltwater contaminating freshwater.

The Quileute Reservation at LaPush, Washington, has asked to be relocated to higher ground because of the risk of tsunamis and storm surges, which will only be made worse by rising seas. Waves from one severe storm pushed huge driftwood up next to the tribal school.

The Hoh Tribe is receiving federal assistance to move to higher ground. Their tribal headquarters are now permanently sandbagged due to severe flooding, and homes have fallen into the water. A tribal council member says, “How are we going to save what land base we have left, because you can’t create more land.”

A moderate 14-inch rise in ocean levels would inundate 40 percent of Puget Sound mudflats, wiping out a significant habitat for shellfish and waterfowl.

Species and treaty boundaries. According to the Tulalip Natural Resources Department, “For the tribes, range shifts in native species will threaten their cultural existence. The treaty-protected rights of tribes to hunt, fish, and gather traditional resources are based on reservation locations and usual and accustomed areas on public lands. These locations are chosen to ensure access to culturally significant resources, whose locations were thought to be fixed. If the traditionally significant plants, animals, and aquatic species shift out of these areas, tribes will no longer have the same legal rights to them.”

The Tulalip add, “Even if rights to these species could be secured, without access, to use of these species will be virtually impossible... Few tribes can afford to purchase large territories of new land, and federal laws prohibit the transfer or expansion of tribal jurisdiction.”

Loss of traditional knowledge. The loss or mitigation of culturally important species on which traditional knowledge depends will make it more difficult for elders to practice and pass their knowledge to the next generation. Some climate stresses will fall to the elders who are more vulnerable to heat waves, and food and water stress.

Tribal youth are also in danger of losing touch with traditional hunting, fishing, and gathering, as warmer weather keeps them indoors (up to 4 degrees by 2040).

Western scientific studies often take many years to fund, implement, review, and publish. Traditional knowledge comes directly from the harvesters themselves on the land and waters. This knowledge provides an early warning system for policymakers, saving precious time in an era of rapid climate changes.

Photo by Sheila McCloud,
Northwest Indian Fisheries Commission



CLIMATE CHANGE:

IT'S NOT JUST DEPRESSING... NATIVE COMMUNITIES ARE RESPONDING.

5

Native communities have a number of unique advantages in dealing with climate change that non-Native communities rarely possess:

*** *Traditional Ecological Knowledge:*** Indigenous cultures have centuries of experience with local natural resources, so they recognize environmental changes before Western scientists detect them, and can develop our own ways to respond to these changes.

*** *A Sense of Community:*** In contrast to the non-Native population, *we still have community.* We still have extended families that care for each other, assume responsibility for each other, and extend hospitality in times of need.

*** *Political Sovereignty:*** Because tribes have a unique status as nations, we can develop our own models of dealing with climate change, and managing nature in a sustainable way.

Gather and share information. As tribal people who have survived against all odds in the past, we will survive the changes associated with global warming--if we prepare now. Climate change is too large a concern to leave to the sole concern of a tribal department. The tribal government and members together need to gather and share the information.



In Alaska, Inuit and Aleut villages have held community workshops of elders, hunters, harvesters, and youth to document changes in the resources, to collect samples, and educate their communities.

Native Peoples/Native Homelands conferences have brought together tribal members from around the country to document changes in their regions, based on both Western and traditional Native science, and plan for responses.

Northwest tribal agencies have met to discuss not only the existing and predicted effects of climate change, but how to mitigate (lessen) the effects or adapt to them in ways that can help protect cultural lifeways.

Involve the youth. The young people of today are going to be the ones most affected by climate change. If youth become aware of these issues and get active, youth can educate their community. Middle school and high school students (and other youth) can form climate action groups.

Alaska Youth for Environment Action collected thousands of signatures on their climate change petition, which was presented to Congress. Youth from the Indigenous Environmental Network have been involved in the Powershift youth movement on climate change.

First Nations youth in British Columbia have gathered data and mapped their traditional resources to protect them from timber companies and non-Native claims. Similar youth teams could also look at how to “harden” their communities against climate change.

Tribal youth trainings have included discussion and videos on climate change. Native youth could also set up their own groups to educate their community using booklets, films, art, theater, music, etc. to educate families and communities about the climate crisis.

Use treaties to protect habitat. Because dumping carbon into the atmosphere destroys habitat for tribal resources, climate change can be seen as a violation of treaty rights. By using the treaties to protect the habitat of fish, shellfish, wild game and plants, tribes can strengthen their case against these violations.

Tribes can pressure the federal government to fulfill its trust duty to protect tribal homelands, by reducing U.S. carbon emissions.

Intertribal fish commissions are already protecting or co-managing fish habitats (under federal court decisions such as the Boldt and Culvert cases) but their work also protects the resources from climate change, for future generations.

Tribes on the Olympic Coast have used their treaty standing to negotiate agreements with the State to prolong fishing seasons after stormy weather, and to jointly manage a National Marine Sanctuary.

Develop renewable energies. Tribes are in a unique position to develop renewable energies, to convert from fossil fuels to cleaner and more locally controlled power sources. Tribes can select the most appropriate energy sources for the natural region: wind, solar, biomass, wave, tidal, and others. These energy sources can provide a source of tribal income, through selling the power to non-Native communities, and also provide an example to their neighbors.

At Native Renewable Energy Summits, city governments committed to reducing their carbon emissions began to discuss purchasing renewable energy (such as wind power) from tribes.

The Tulalip Tribes in Washington state have developed a biogas energy project with local dairy farms, to generate electricity by burning methane (thereby keeping cattle waste out of the river).

Yakama Power is monitoring wind on the reservation as part of a wind energy assessment. The Makah Tribe has studied potential electrical power from wave energy.

Get involved in the global process. For the past decade, indigenous organizations from around the world have attended the annual conferences of the United Nations Framework Convention on Climate Change (UNFCCC).

Native non-governmental organizations have asked for special status for indigenous nations as the people most affected by climate change. Their case can be strengthened by the direct participation of tribal governments, who have greater powers to pressure federal government.

An Inuit lawsuit in an interamerican human rights court charges the U.S. with violating their human rights to their culture and hunting. This is the first example of an indigenous people using international law to protect their homeland from climate change. The Alaskan community of Kivalina has also sued the oil companies for damages in U.S. court.



Tulalip natural resources staff join local farmers and fishers to tour a Monroe dairy farm that supplies cattle waste to their biogas energy plant. Photo: Qualco Energy

CLIMATE CHANGE: IT'S NOT JUST HOPELESS... THERE'S A LOT THAT TRIBES CAN DO!

6

We can see that climate change is going to devastate us if we are not prepared, so we have to go out and meet it. The people of the world and especially our Native communities, no longer have 5 to 10 years to begin planning. We must begin *today!*

Tribes can respond to climate change by securing freshwater supplies and food supplies, protecting our region's fish, wildlife and plant life, planning with local governments, and building intertribal relationships. There are many responses that tribes can take, but it is urgent that *we begin now.*

Secure freshwater supplies. Tribes need to secure access to fresh water supplies. Tribes need to assert their water rights not just for present development needs, but can start thinking ahead to future shortages.

Some mountain streams can be redirected so the water runoff recharges the aquifers (underground water) so the area does not dry up.

Tribes can work with local governments to plan water conservation measures, water treatment, and protection of local supplies. Concerns about sea-level rise contributed to a partnership between the Nisqually Tribe and Olympia to relocate their freshwater source from McAllister Springs to wells on higher ground. The move will also help restore water flows to Medicine Creek.



Secure food supplies. Native communities need to be thinking ahead to a situation of food shortages, and not be completely dependent on supermarkets for basic needs. Tribes can plan both perishable and non-perishable food storage facilities. Tribal nations can become part of the growing trend toward emphasizing Native traditional foods, to protect the health of tribal members and to keep local control.

Tribes that have agricultural crops should research and adopt drought-resistant seed varieties.

Tribes that do not have an agricultural base can create agreements with tribes that have food crops and animal herds, so members can have greater food security in times of need.

Prepare for impacts on species. We need to prepare for some culturally important plant and animals species to move out of our region, and determine whether adaptation will provide alternative sources of plant and animal species. As climate change changes our landscape, inevitably we will see the disappearances of fish runs, and entire fisheries may be replaced by other runs of species that are shifting north.

Droughts will also influence plant and animal species that have sustained Indigenous peoples as subsistence food sources or as essential to their ceremonial life. Tribes may have to adapt as fish and other marine life, and land-based animals and plants shift northward.

Tribal communities can begin to teach each other how to develop and harvest the new resources coming into their area. We can begin to draw on relationships with other tribal communities to their south to anticipate the species that are moving into their area. Likewise, tribes can also draw on relations to their north to teach them about the useful or harmful species that will be migrating in that direction.

Plan locally with neighbors. Tribes and local communities have the ability to work together as neighbors around common interests, such as land-use planning to prevent climate change problems, and emergency planning for the more disastrous impacts of climate change. Tribes can search for common ground with local, municipal and county governments, and provide models for them to learn from. In unstable climate conditions, local relationships are the most important. *We cannot rely on state or federal assistance: look what happened after Hurricane Katrina.* The smaller size of tribal and local governments can make them more flexible.

Tribal and local governments can cooperate in joint land-use planning to prevent climate change problems, such as moving or building homes above floodplains, conserving and treating water, protecting shorelines and beaches from erosion, building and retaining floodplain walls, and controlling pests and diseases through local education.

The Swinomish Tribe has faced severe seasonal flooding, but is now working with neighboring Skagit River Delta governments on an adaptation and mitigation plan (Swinomish Climate Change Initiative).

There is also a need for cooperation with local governments in emergency planning, such as identifying community shelters, identifying evacuation procedures and routes, sharing emergency food, water, and heat, and cooperating on medical and fire services.

Cooperate with other tribes. In order to survive, tribes have to work with other Indigenous nations across imposed colonial boundaries, on the basis of being part of the same natural region. First Nations in the U.S. and Canada need to cooperate to decolonize ancestral territories and protect our common property (the air and water) for future generations.

First Nations can share skills and knowledge about shifting animal and plant species, and exchange ideas and training about community adaptation, climate change mitigation, and renewable energies.

Indigenous nations around the Pacific Rim region can use the United League of Indigenous Nations Treaty process as a way to build political alliances and practical cooperation to jointly respond to climate change.



Traditional varieties of white flint corn, grown by the Oneida Nation at its Tsyunhehkwā Farm in Wisconsin. Photo: Michele Shaw.

RECOMMENDATIONS FOR TRIBAL LEADERS

From the *Climate Change and Pacific Rim Indigenous Nations report*,
by the Northwest Indian Applied Research Institute (NIARI), 2006

1. Educate tribal membership on the present and future effects of climate change on tribal homelands.
2. Secure sources of fresh water now to meet future needs of tribal communities located in drought- and flood-impacted areas.
3. Secure a future source of food stocks, long-term storage capacity, and production capabilities (including intertribal trade) for crops that can adapt to climate change.
4. Prepare for impacts on culturally significant wild plant and animal species, and teach each other about both harvestable and invasive species that are shifting northward.
5. Develop relationships with neighboring governments and communities regarding land use planning to prevent worsening storm effects, and emergency plans for the more disastrous impacts of climate change.
6. Consider alliances with local governments to build and market renewable energy capacity, such as wind and biogas power.
7. Consider strategies to unite tribes around habitat protection, looking ahead to the inevitable effects of climate change.
8. Get actively involved as sovereign governments in U.N. climate change negotiations, and pressuring national governments to reduce emissions.
9. Get youth involved in cultural education, and defending the future of the tribe from harmful climate change.
10. Work with other Indigenous nations in a treaty relationship transcending colonial international boundaries.

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NIARI Climate Change and Pacific Rim Indigenous Nations Project

Copies of booklet: <http://academic.evergreen.edu/g/grossmaz/climatechangebooklet.pdf>

Report: <http://academic.evergreen.edu/g/grossmaz/IndigClimate2.pdf>

Powerpoint: <http://academic.evergreen.edu/g/grossmaz/IndigClimate2009.ppt>

Article: [http://academic.evergreen.edu/g/grossmaz/Indigenous Nations' Responses.pdf](http://academic.evergreen.edu/g/grossmaz/Indigenous%20Nations%20Responses.pdf)

Other Links: <http://academic.evergreen.edu/g/grossmaz/climate.html>

RESOURCES AND LINKS

Northwest Indian Fisheries Commission (NWIFC) www.nwifc.org

NWIFC video Shadow of the Salmon and Resource Guide
www.salmondefense.org/projects/shadow-of-the-salmon
[http://education.wsu.edu/nativeclearinghouse/achievementgap/ShadowoftheSalmonCurriculumGuide\(4\).pdf](http://education.wsu.edu/nativeclearinghouse/achievementgap/ShadowoftheSalmonCurriculumGuide(4).pdf)

Columbia River Inter-Tribal Fish Commission (CRITFC)
www.critfc.org/tech/climate/cc_workshop.html

United League of Indigenous Nations www.uln-web.org

UN Permanent Forum on Indigenous Issues (UNPFII)
www.un.org/esa/socdev/unpfii/en/session_seventh.html

Guide on Climate Change and Indigenous Peoples (UNPFII)
www.tebtebba.org/index.php?option=com_docman&task=cat_view&gid=18&Itemid=27

Anchorage Declaration on Climate Change (2009)
www.indigenoussummit.com/servlet/content/declaration.html

UN Framework Convention on Climate Change (UNFCCC)
<http://unfccc.int/2860.php>

UN Intergovernmental Panel on Climate Change (IPCC) www.ipcc.ch

Native Climate Commons (UN & Tulalip Tribes)
<http://climate.nativecommons.net>

National Tribal Environmental Council (NTEC) www.ntec.org

Native Peoples - Native Homelands climate change workshops
www.usgcrp.gov/usgcrp/Library/nationalassessment/native.pdf (1998)
www.nativepeoplesnativehomelands.org (2009)

Native Communities and Climate Change (2007)
www.colorado.edu/Law/centers/nrlc/publications/ClimateChangeReport-FINAL%20_9.16.07_.pdf

Planning for Seven Generations (2008) www.cbp.ucar.edu/tribalconfhome.html

Global Climate Change Impacts in the United States (2009) www.globalchange.gov/publications/reports/scientific-assessments/us-impacts/download-the-report

Tribal Climate Change Forum (2009) www.sustainablenorthwest.org/programs/policy/tribal-climate-change-policy-training-meeting-materials/?searchterm=tribal%20climate

Indigenous Environmental Network (IEN) Climate Justice Campaign
www.ienearth.org/climatejustice.html

Native Energy / Intertribal Council on Utility Policy (COUP) www.intertribalcoup.org
Native Wind www.nativewind.org

National Wildlife Federation www.tribalclimate.org

Coast Salish Gathering www.coastsalishgathering.com

Climate Change at Quileute and Hoh <http://academic.evergreen.edu/g/grossmaz/papiez.html>

Tribes and Climate Change (N. Arizona Univ.)
<http://www4.nau.edu/tribalclimatechange/tribes/northwest.asp>

Swinomish Climate Change Initiative
www.swinomish-nsn.gov/departments/planning/climate_change/climate_main.html

Energy Planning: A Guide for Northwest Indian Tribes
www.nwseed.org/documents/NWSEED_Tribal%20GB_Final.pdf

Climate Impacts Group (Pacific Northwest) www.cses.washington.edu/cig

Sea-level Rise on Pacific Northwest Coast www.nwf.org/sealevelrise/Maps_of_the_Pacific_Northwest_Coast.cfm

State of the Salmon www.stateofthesalmon.org

Environmental Justice and Climate Change (EJCC) Initiative www.ejcc.org

Energy Justice Network www.energyjustice.net

Qualco Energy (Tulalip biogas energy plant) www.qualcoenergy.com

THANK YOU to the San Manuel Band of Serrano Mission Indians for funding this project www.sanmanuel-nsn.gov

“Our elders used to tell us that they knew it was coming. They would tell us: ‘One day this water, these mountains, you will see a time of change where it is going to hurt our people.’ That almighty dollar...is what is hurting our climate today, and hurting our people, our animal life, and our water supply, and all our mountains where our berries are. We never used to get the kind of heat we see today in Washington and Oregon. We never did see our waters, our rivers, or our lakes get so warm. Who is creating it? Not the Indian people.”

**--Chief Johnny Jackson,
Klickitat Band of Yakama
1998**

“The message that I would send to young people in terms of the impacts of future problems associated with global warming would be to keep passing on your knowledge, our values associated with nature, the love for Mother Earth, and protection of the environment. The other day I talked to kids about some of the things I feel were occurring and it seems to go in one ear and out the other. But then I think back about my youth, and my father talked to me and taught me. I think my father felt the same way, that it all went in one ear and out the other and that I didn’t learn anything. But when I think back, I value those things that I was told. Whether we think they are listening or not, we need to protect the environment. They’ll pick it up. There is no doubt in my mind that the younger generation will continue with the things that we believe in . . .”

“We will be the last ones to have the last green areas remaining on the Earth in the future because of all the development in other areas. And we should continue to hold our values. We treasure nature and it shows in our Native lands.” **--Caleb Pungowiyi, Alaskan Yupi’k leader**

