

Addressing Climate Change at a Tribal Level¹

By Steve Robinson and Michael T. Alesko²

A global issue poses particular challenges to indigenous peoples everywhere. How can tribes respond locally?

Abstract:

Global climate change arguably is an overwhelming and unavoidable environmental, social, political and economic issue which is already at a crisis stage and only becoming more so. Indigenous peoples are the first affected and in many cases among the most affected. They also have been among the most vocal proponents of solutions but their advocacies, as these peoples themselves, often are marginalized. This case study begins by examining the macro realities of the global climate change crisis as it pertains to indigenous peoples then segues into a more micro examination of why and how it can be addressed -- and is being addressed -- by Native American tribes, in particular in this case the Swinomish Tribe of Washington State. The Tribe is in the midst of the Swinomish Climate Change Initiative, a two-year project which in its own words is to "assess local impacts, identify vulnerabilities, and prioritize planning areas and actions to address the possible effects of climate change." An action plan and other long-range solution products are to emerge from the effort.

Background

From one part of the world to another, the story is much the same. Indigenous people are the first to be affected by the impacts of climate change. These impacts are not something merely imagined in an Al Gore movie; they are very real, and they are already happening in the form of droughts, floods, melting glaciers, dying forests, invasive species, fish kills, warmer waters, giant algal blooms, hypoxia and tempests far more severe than most people have ever imagined. To indigenous people -- already marginalized -- these impacts equate to even more serious health problems, even greater cultural impacts resulting from changes in plants and wildlife, food shortage problems, dwindling shorelines and even portions of villages falling into the sea. Such

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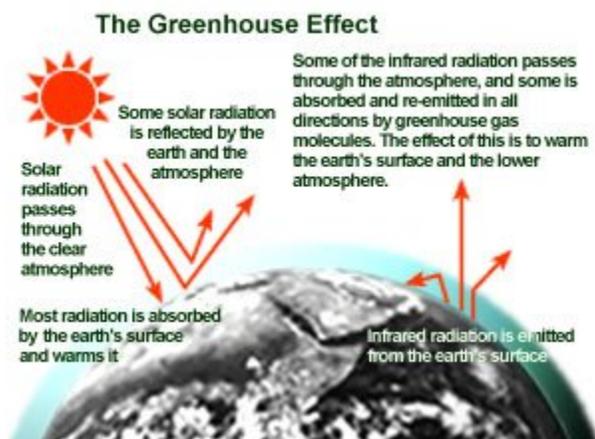
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threats have already caused major impacts on tribal cultures, lifestyles, economies, social and political relations and overall sustainability. More such impacts are on the horizon.

Overview of Climate Change According to the U.S. Environmental Protection Agency

Climate change refers to any significant change in measures of climate (such as temperature, precipitation or wind) lasting for an extended period (decades or longer). As through much of its history, the Earth's climate is changing. Right now it is getting warmer. Most of the warming in recent decades is very likely the result of human activities (US., EPA, Science – Climate Change)

The National Oceanic and Atmospheric Administration's (NOAA) State of the Climate Report and the National Aeronautics and Space Administration's (NASA) Surface Temperature Analysis indicate the average temperature of the Earth's surface has increased by about 1.2 to 1.4°F since 1900. Other aspects of the climate are also changing such as precipitation patterns and storminess. (EPA Science – Climate Change)



Source: US, EPA Science – Climate Change

The Earth's climate is controlled largely by the sun. The Earth takes in energy from the sun, then bounces it back into space, although a lot of it is absorbed by “greenhouse gases” and most of that energy comes back to the Earth. Our climate is warmer than it would be if it didn't have these gases. This natural greenhouse effect keeps life going on the planet. Without it, temperatures would probably be 60 degrees lower than they are now and life as we know it would be quite different.

However, over the past hundred years people have added huge amounts of greenhouse gas to the atmosphere. This has been caused by the burning of fossil fuels in our cars, factories, etc. and the gases—mostly carbon dioxide and methane—cause the greenhouse effect to increase. That means hotter temperatures. (U.S. EPA, Science – Climate Change) See Appendix I for additional information on climate change.

Tribal Implications

Frankly, the Native peoples whose nations exist in the U.S. or other nation states have never needed the confirmation of those states to know that climate change exists, that it is already having historic impacts or that its greatest impacts are yet to be endured. Terry Williams of the Tulalip Tribes and his associate Dr. Preston Hardison, have both travelled the globe for the past three decades in an effort to convince United Nations forums of this fact. Williams, a Commissioner with the Northwest Indian Fisheries Commission, has also made tenacious efforts to convince peoples in this country, and after hundreds of presentations and dozens of major reports, his efforts have begun to bear fruit. More and more he is seen as the visionary he is and his studies are taken seriously—particularly by Indian nations who are witnessing the most dire effects of the phenomena firsthand—due in large measure to their very direct ties with the land.

While it seems easy to non-Natives who are finally beginning to see the impact from strictly a matter of dollars and cents, Mr. Williams has, from the beginning, seen it from a more holistic and traditional view. He has realized its implications to cultural values that have identified the Indian people from the beginning of time. As remaining forests begin to die off due to dryness and resulting disease and insect infestation, as indigenous grasses used in traditional arts and crafts dry up, as beaches erode due to sea level rise and invasive species replace the salmon and other traditional species, the identity of Northwest Indians will be more and more jeopardized, even as ravages from hunger to storms and beyond affect all who live here.

Mr. Williams has long known that that the time has arrived to focus on adaptation to changes that are upon us, as well as restoring natural landscapes and protecting streams, rivers and wetlands to the best of our ability to help prevent what impacts we can. He has also experienced, firsthand, the inability of Congress to apply meaningful investment toward these ends, particularly toward the tribes, which are in the best position to do something meaningful about it. Energy and climate legislation in Congress in 2009 (the Kerry-Markey bill, for example) was a case in point when tribes nationwide had to work incessantly, to little avail, to convince Congress not to throw a tiny percentage toward the tribes in the form of competitive grants rather than direct funding. Mr. Williams knew that the tribes, more than anyone, have natural resource management as a primary objective and are working day in and day out to manage natural resources holistically and properly rather than treat them exclusively as commodities to be harvested without a thought toward tomorrow. (Interview with Williams and Hardison)

From the time when European ships first appeared on the horizon, when frontiersmen first wandered aimlessly through the forest and settlers first trudged across the trails to stake their claims to Indian lands and resources, things have been in a constant state of change. Non-Indians have subjugated the red man at every opportunity, spread diseases, violated treaties and built towns, roads and cities. They have poisoned the air and polluted the water with little remorse and it was not until the tribes successfully reasserted their rights and a few caring non-tribal people finally discovered there are things more important in life than money began to organize into environmental groups that there was any challenge to the gluttonous resource frenzy and wanton savage scourge to Mother Earth. But even now it goes on, bandaged here and there perhaps by

the occasional hand slap from an underfunded government bureaucracy, incessantly talked about in the halls of Congress, but nonetheless ravaged by a population that has doubled, then tripled and an unquenchable thirst for water that has become more scarce by the generation.

On top of all of this comes climate change. But climate change is more than just some afterthought problem that sits on the heap of other environmental challenges we face. Rather it is the culmination of 100 years and more of greedy people searching for gold and other resources found to have value and not giving a damn who or what they push out of the way to get it. It's the result of partitioning the land in a selfish fight for what's mine and to hell with you, and to hell with what we do to the land to get it. It is Nature slapping back at man for the insensitivity he has demonstrated for the past seven generations—over the objection of the Native American.

Climate Change as a Universal Indigenous Peoples Challenge

While local tribal response to climate change may be the practical imperative, it remains to be informed by the challenges – and sometimes laggard response to them – on a more universal scale. The 2009 Indigenous People's Global Summit on Climate Change provides a good window into the issues. This is, incidentally, not the only international indigenous event which has occurred. Many have occurred, at United Nations forums (some more successful than others, in terms of acceptance), among other entities, including the White House and Congress, and exclusively among indigenous peoples. In fact, indigenous peoples have come from all habitable continents on numerous occasions and developed consensus proposals to deal with climate change. But they have had to do so while the nation states of the world, including the United States, remain still hung up on frivolous details and spend far more time arguing with one another—as the impacts of climate change have surrounded us.

International Indigenous Day was designated on December 12, 2009 -- an opportunity to take stock of what indigenous peoples have achieved in advocating for their rights in the Climate Change negotiations and to define the next steps on how to integrate their concerns into the agreements reached in Copenhagen and beyond. It was organized with the financial support of the Danish Ministry of Foreign Affairs, The Christensen Fund, and the National Museum of Denmark. There have been international indigenous gatherings in Barcelona, Bangkok, Bonn and other parts of the world. They have just taken place in South America, among the indigenous peoples of the Latin American states and more are planned.

In Anchorage, Alaska, April 23, 2009, Indigenous Peoples joined from every inhabited continent in the world and developed a consensus agreement. I, Steve Robinson, had the honor of serving as a delegate to this gathering. While this summit was not without debate and controversy, I can attest there was brotherhood and sisterhood among the indigenous peoples of the world based on the common goal and understanding that we must do all we can to save Mother Earth for our children and look past differences to find our common objectives—our need to preserve clean air, clean water and sustainability. That level of camaraderie, while a critical need among nation states, has rarely existed. Just one of the provisions resulting from this indigenous summit called for a binding (carbon dioxide) emissions reduction target for developed countries of at least 45% below 1990 levels by 2020 and at least 95% by 2050. In recognizing the root causes of climate

change, participants called upon states to work towards decreasing dependency on fossil fuels. These agreements were light years ahead of any agreements that exist between nation states.

H.E. Mr Miguel d'Escoto Brockmann, then President of the 63rd Session of the United Nations General Assembly, was present with us in Anchorage, and was so moved by what he witnessed that he signed the declaration on the spot. Part of his statement was that:

1. 2009 Indigenous People's Global Summit on Climate Change :

Indigenous peoples are among those who contributed least to the climate change crisis because of their traditional livelihoods and sustainable lifestyles. It is a bitter irony, however, that they are suffering the worst impacts of climate change. They were the ones who made the first clarion call on climate change as they felt the impacts of this on their lands and waters. Indigenous peoples have demonstrated their resilience and their capacity to adapt to changes happening in their communities and they have accumulated substantial experience and knowledge in this process. They also have contributed significantly in keeping carbon under the ground as a result of their struggles to stop devastating oil, gas and mineral exploitation. They save the carbon in the trees because of their fights against loggers and deforesters. Climate change poses threats and dangers to the survival of indigenous communities worldwide, even though they contribute the least to greenhouse emissions. In fact, indigenous peoples are vital to the many ecosystems in their lands and territories and help enhance the resilience of these ecosystems. In addition, indigenous peoples interpret and react to the impacts of climate change in creative ways, drawing on traditional knowledge and other technologies to find solutions that society at large can replicate to counter pending changes.

I appeal to the parties of the United Nations Framework Convention on Climate Change to ensure that the rights of indigenous peoples, as contained in the UN Declaration on the Rights of Indigenous Peoples, be respected and implemented.

This includes respecting the right of indigenous peoples to have their free, prior and informed consent obtained before any climate-change-related project is brought into their communities. We must also ensure that indigenous peoples, who value the importance of maintaining a harmonious relationship with nature and have the lightest ecological footprints, participate in designing, implementing, monitoring and evaluating climate change policies and programs at all levels.

(Indigenous Peoples' Global Summit on Climate Change)

The preponderance of scientists in the world know climate change exists. So do 90 percent of the people in the country now, even though the remaining 10 percent make more than half of the noise. Tribal members who listen to the messages of their ancestors have known it's been with us for years. They have listened to the lessons that have been carried from generation to generation for thousands and thousands of years and they know that the changes we are witnessing now are not just some trend that the Earth goes through naturally every now and then as a normal course of events. They know that what we are witnessing, and what we are about to witness in the form of warming, offset by freezes, and massive algal blooms and sea level rise, acidification of the

waters and hypoxia-caused fish kills, massive shellfish deterioration and intensified storms accompanied by hurricanes, tornadoes, floods and droughts, dryness, forest fires, tsunamis, species depletion, invasive species invasions and salt water intrusion are unlike anything experienced for millennia. They know that what we are experiencing and what we are about to experience has been brought on by man's arrogant behavior and wasteful ways.

Over the years enough poison has been belched into the air through smoke stacks and exhaust pipes, enough forests have been cut down here and around the world, enough land has been covered by asphalt and concrete, enough wetlands have been destroyed and enough CO2 has been ejected into the skies in a hundred other ways that now..... the piper has to be paid.

The Tribes have known for a long time that you don't spit upon Mother Earth and expect any different result. That is a simple fact that sixty percent of Americans just don't understand.

Amazingly, after everything that has been proved, only 40 percent of Americans now believe that climate change has been induced by man's activities. From one perspective, that amazing figure may not matter. Climate change is here. We're seeing its effects. They will get worse, and we have to adapt to survive. As far as that goes, one might say that it doesn't matter what caused it. It's more important to have a pretty good handle on its effects, so we can be better prepared to adapt to it.

Bringing the Challenge Home

The indigenous focus and reaction to climate change has resulted in substantive programs in places across the world ranging from Kowanyama and Kuku Nyungkal, Australia to Borneo. But here on American soil, where efforts at the tribal levels may still be nascent, one can ask if there is not clearly a vacuum and opportunity to be filled in the seeming absence of national political leadership and commitment? This is evident even as Congress fails to take definitive action on climate change, and the U.S. still continues to be one of two nations in the world failing to sign onto the U.N. Declaration on the Rights of Indigenous Peoples. It has also failed to consistently include indigenous representatives into its UN forums and the President is even strongly advocating for "clean coal" as well as nuclear energy and offshore drilling. Moreover, when the opportunity arose in Copenhagen (UN Climate Change Conference 2009) for the nation states of the world to embrace action, the results were pitiful at best, with the U.S. arguably taking a play-it-safe-offend-no-one stance. In fact, some are making a good case that the Copenhagen Accord is actually undermining multilateralism. The commitments sent so far would, some say, not result into a limiting the temperature rise to 2 degrees Celsius but to a high of 4 degrees.

For many indigenous peoples, such failure could mean destruction of the ecosystems which we have tried to protect and which are the very basis of our survival and cultures. The negotiations in Copenhagen ended without a fair, ambitious or legally binding treaty to reduce greenhouse gas emissions. Although spin masters have said that what emerged was an agreement that will, at the very least, cut greenhouse gases, set up an emissions verification system, and reduce deforestation, the Copenhagen Accord clearly left most issues undecided. Among them are any emissions targets industrialized nations will accept. The Accord essentially allows countries to

set their own greenhouse gas emissions reduction goals for 2020, something they have utterly failed to do so far. (Mother Earth Journal)

It is little wonder, then, that indigenous peoples and governments from around the world have stepped up their efforts to identify goals and objectives related to adaptation, mitigation and preventive solutions to climate change impacts. It is a matter of survival, which the nation states of the world have consistently demonstrated an ineptness to respond to in any meaningful, united way.

Pointing the Way to Localized Responses

If the nation states of the world are going to fail to come together, in a united way, to take positive and concerted action to adapt to and possibly turn the tide on the impacts of climate change—in order to slow and ultimately stop glacial melting, slow and ultimately stop deforestation and species annihilation, food eradication, etc., it would seem to argue in favor of a united front of indigenous nations stepping forth to tackle the challenge. But there are certain problems to this as well. Most indigenous nations are not self-sustaining, for example, but as in the United States need federal support to provide their programs, including natural resource management programs. Another challenge is that indigenous nations do not necessarily hold onto a united front forever. Just because they have one now on this issue does not necessarily mean it will last forever. Still another problem is that even if financial support is found to fund the scientific, research and policy level programs for the indigenous nations of the world to sustain a united effort, how would that keep non-Native governments and communities from surging forth with carbon emissions and polluting of the air and other components of the environment? Climate change, like other pollution-related problems, knows no borders.

But into this miasma of uncertainty comes an opportunity and imperative for tribes at their local levels. After all, tribal councils have a responsibility to their members—their health and well being. The tribes have a responsibility to follow their own constitutions and the heritage and legacies that have been provided to them by their ancestors. They have a responsibility to sustain the resources that will protect the Tribes, their identities and their future generations. They have a responsibility to survive.

While tribes arguably can and should continue to work toward international unity they now have a logical stage and need to do and the planning necessary to deal with and plan for the impacts of climate change on their own traditional lands and watersheds. For the remainder of this case study, we will look at an example Tribe, which is producing a climate change plan to cover its full watershed—The Swinomish Tribe.

Swinomish Tribe and Climate Change

Like many tribal people, the people of the Swinomish Nation have endured many hardships over the generations. These have included, but certainly not been limited to loss of lands and resources, diseases brought from other continents, settlement by millions of immigrants, and—in many ways—displacement from their way of life. Climate change is another one of these hardships. The scientific evidence that it exists, both traditional science and contemporary

science, is clear. Climate change is real. There is a warming trend. The glaciers in the mountains are melting. Sea water levels are increasing, river flow levels are decreasing. These and other factors point inevitably to this fact. (Swinomish Climate Change Initiative)



Aerial view of Swinomish Indian Reservation and La Conner vicinity. The Reservation occupies the southeast peninsula of Fidalgo Island and is surrounded on three sides by water, being separated from La Conner and the lower Skagit valley mainland by the Swinomish Channel. Elevation ranges from sea level to a few hundred feet at the interior forested uplands. (Swinomish Indian Tribe, used by permission)

The Initiative

As the Swinomish website explains:

A climate change report issued in late 2006 by the State of Washington Department of Ecology identified the lower Skagit River area as one of two “high-risk” areas within the state for sea level rise. The potential for sea level rise impacts was demonstrated prior to that in February of 2006 when a strong low pressure system and storm surge, combined with a high tide, pushed water several feet above normal, resulting in some flooding and damage to property on the Reservation and in LaConner. This event heightened awareness of the potential for local changes and impacts, and it helped provide a catalyst for developing a project to more thoroughly examine potential climate change issues and responses. (Swinomish Climate Change Initiative)

The tribal website further details:

In the face of growing scientific consensus and mounting verifiable evidence, the Swinomish Indian Tribal Community has begun a project to look at how climate change may affect the Swinomish Indian Reservation. Given the geographic location and characteristics of the Swinomish Indian Reservation, potential climate change impacts could be both significant and long-term. In recognition of this, the Tribal Senate issued a Proclamation in October of 2007 directing action to respond to climate change challenges. (Swinomish Climate Change Initiative)

The proclamation acknowledged the potential for issues and impacts in the vicinity of the Swinomish Indian Reservation and directs tribal departments and staff to undertake efforts and studies for promoting long-term proactive action. The proclamation follows:



(Swinomish Indian Tribal photos, used by permission)

**PROCLAMATION
OF
THE SWINOMISH INDIAN SENATE
ON
A SWINOMISH CLIMATE CHANGE INITIATIVE**

WHEREAS, there is overwhelming evidence of climate change occurring both globally and regionally, as supported by scientific documentation of the effects of climate change and global warming; and

WHEREAS, the effects of climate change, while evident globally and regionally, have the potential for significant impacts on the local community, including the Swinomish Indian Tribal Community, the Swinomish Indian Reservation, and Swinomish Usual and Accustomed areas, due to projected impacts from rising temperatures, rising sea level, and other associated effects on the local environment, natural resources, water supplies, fish and wildlife, and critical infrastructure on which the Swinomish Indian Tribal Community has traditionally relied; and

WHEREAS, the projected impacts of climate change may include loss of tidelands and habitat, reduced viability of fish and wildlife species, damage to shoreline property and forest resources, damage to infrastructure and facilities, and associated risks to public health and welfare; and

WHEREAS, it is the duty and responsibility of the Swinomish Indian Senate to provide for the well-being of the Swinomish Indian Tribal Community, as well as attend to the well-being of those resources, natural systems, and human systems which provide crucial support to the Swinomish Indian Tribal Community and the Swinomish Indian Reservation; and

WHEREAS, the Senate has considered the potential effects and impacts of climate change on the Swinomish Indian Tribal Community, the Swinomish Indian Reservation, and attendant resources, natural systems, and human systems sustaining the community, and has registered concern for such effects and impacts;

NOW THEREFORE, THE SENATE HEREBY PROCLAIMS support for a Swinomish Climate Change Initiative and declares the intent and commitment of the Senate to address the potential effects of climate change, and also hereby declares and directs the following actions to be taken under this Initiative:

To undertake efforts as possible to determine the potential local effects of climate change as may affect the Swinomish Indian Tribal Community and the Swinomish Indian Reservation, including effects and projected impacts on the local environment, forestry resources, agriculture, fish and wildlife, water resources, and shorelines, as well as critical infrastructure and public health;

To develop appropriate policies and strategies for addressing effects and projected impacts of climate change on the Tribe and the Swinomish Indian Reservation and for contributing to reduction of the causes of climate change and global warming;

To develop appropriate goals for addressing effects of climate change and for contributing to reduction of the causes of climate change;

To develop potential programmatic and/or regulatory actions and changes consistent with said policies, strategies, and goals as appropriate to addressing the effects of climate change and contributing to reduction of the causes;

To communicate and coordinate with local, state, regional, and national entities and jurisdictions on addressing projected impacts of climate change, including government-to-government cooperation and identification of funding sources and opportunities as possible and available; and

To communicate to and with the local community about issues and concerns regarding the effects and projected impacts of climate change; and

BE IT FURTHER PROCLAIMED that all Swinomish governmental committees and departments shall assess how best to implement the actions under this Initiative as specified above, how best to incorporate such actions into ongoing programs and activities or into such new activities as may be proposed, and that the Senate hereby designates a Swinomish Climate Change Task Force to be comprised of designated representatives of the Swinomish Office of Planning and Swinomish Public Works Department, working in cooperation with the Swinomish Utility Authority and Skagit River System Cooperative, to coordinate implementation of this Initiative and to provide support for Swinomish governmental committees and departments in this effort, under the guidance and direction of the Senate.

By the authority vested in the Swinomish Indian Senate, this Proclamation is made this 2nd day of October, 2007.


M. Brian Cladoosby, Chairman
Swinomish Indian Senate

(Swinomish Climate Change Initiative)



(Swinomish Indian Tribal photos, used by permission)

Efforts of the Swinomish Office of Planning and Community Development

In the aftermath of the proclamation, the tribe received funding from the U.S. Department of Health & Human Services and the Administration for Native Americans (ANA), to support a major new \$400,000 Climate Change Initiative. The ANA is providing 80 percent of the funding, and the tribe is matching the remaining 20 percent. The Swinomish Reservation, which is located on the southeastern peninsula of Fidalgo Island, is surrounded by water on three sides next to low-lying mainland areas.

The Swinomish Climate Change Initiative is a two-year project to measure local climate change impacts and vulnerabilities as well as prioritize planning. The objective it had was to develop an action plan based on this study. The ultimate plan will focus on strategies for adaptation as well as mitigation of impacts. It will rely on expert analyses of data and coordination with local jurisdictions where common interests exist. The project has three basic objectives over two years. The first year a technical work group has analyzed scientific data and the big picture. Possible local impacts have been looked at and areas of potential risk and vulnerability have been identified. This information has been summarized in a technical impacts report. Simultaneously, an advisory group has been developing a broad framework for preparedness response strategies and an assessment of priority issues

In year two, the results the tribe will define specific mitigation and adaptation actions for its community and publish an action plan. It will be shared as an example that other tribes and communities might choose to learn from or follow (Swinomish Climate Change Initiative)

A Partnership Effort and Model

The Tribe has realized that it cannot work in a vacuum to achieve its goals in climate change, and has therefore obtained the participation of the Climate Impacts Group of the University of Washington Center for Science in the Earth System (CIG) for professional scientific review and advisory services; the Tribe also invited Skagit County, the Town of LaConner, and the Shelter Bay Community, as neighboring jurisdictions and entities with interests in common, to participate in an advisory group, and enlisted the support of the Skagit River System Cooperative, as the fisheries branch of the Tribe, to advise on local conditions, projections and climate research data in this program.

Even as the tribe has been proceeding with the hands-on technical side of its climate change initiative it is engaging in further communication and partnership efforts with many other relevant players in the region. In March 2010 the Tribe hosted the Skagit Watershed Climate Change Workshop at the Padilla Bay National Estuary Reserve Station in Mount Vernon. Thirteen expert presenters analyzed the local and regional effects of climate change from numerous angles. (See Appendix 2 for a list of presenters)

There also were three workshops: Meteorology, Snowpack and Hydrology; Riverine and Upland Ecosystems; and Estuary and Puget Sound Ecosystems.

In addition, Swinomish participated in and helped facilitate a Coast Salish Climate Change Summit in April of 2010 to bring together tribal and First Nations leaders from the U.S. and Canada to discuss the broad common interests in addressing climate change cross-boundary implications.

The Initiative's Work Products

The Swinomish Tribe has acknowledged, as have most scientists in the world, that there is adequate scientific evidence to support the fact that climate change does exist, and is largely man-caused. (Belfast Post) The tribe has reacted to this finding by issuing a proclamation and by taking action. This action has had to include the studying of possible effects of climate change on the Swinomish community. So, the tribe initiated a two-year project in late 2008 to develop strategies to address these potential impacts. The result has actually been the pursuit of three key reports: the *Impact Assessment Technical Report*, a preliminary Adaptation Strategy Report, and a Community Action Plan with recommendations for future adaptation options and strategies. The technical report is the first milestone. It is the work of a multidisciplinary team led by staff of the Swinomish Office of Planning & Community Development, in partnership with the University of Washington Climate Impacts Group, with further scientific assistance from Skagit River System Cooperative. The report describes the scientific data and potential climate change impacts, and identifies specific areas of potential risk from these climate change effects. (Swinomish Climate Change Initiative Impact Assessment)

It was in October 2009 that the Swinomish produced the first main work product of the Swinomish Climate Change Initiative , the *Impact Assessment Technical Report*. It is scheduled to be followed with a preliminary Adaptation Strategy Report, and a Community Action Plan with recommendations for future adaptation options and strategies. That plan is due in September 2010. The technical report spells out myriad climate change impending impacts for the tribal lands and people. It notes that among many impacts detailed “other significant or notable impacts include effects on public health, marine resources, and cultural resources.”

In a section of the Technical Report’s Executive Summary titled Report Disposition, the tribe shows just how comprehensive its Climate Change Initiative is and how it is inclusive of external partnership. That section notes that its report lays a foundation for response strategies. The objective of this, and subsequent reports, was to lay out a path of policy recommendations. At the same time, an advisory group has worked toward a broad planning strategy and assessment of priority issues/impacted disciplines. Ultimately, there will be an action plan for the future, combining this technical report with the advisory group’s recommendations—describing areas of recommended adaptation or potential climate change impacts. Included will be areas of recommended coordination with other jurisdictions where there are common interests, a good look at capacity and funding requirements. The final report will be shared, again as a model for others to learn from and possibly follow. It’s expected this project will be the first in a continuing, long term series of steps to come. (Swinomish Climate Change Initiative and interview with tribal technical staff.)

Findings

Based on assessment of current documented models and scenarios, the principal areas and resources within the Swinomish Indian Reservation vulnerable to climate change impacts are shorelines, beaches, low-lying terrain, and forests, along with the assets within those areas. Impacts to some of these vulnerable areas are potentially high within 20-50 years, increasing through the end of the century and beyond. (Swinomish Climate Change Initiative Impact Assessment Technical Report)

More than 1,100 acres of Swinomish lands , are potentially at risk of being flooded from increasing sea level rise, including the only agricultural lands within the reservation. These are the Tribe’s primary economic development lands and sensitive shoreline areas. About 160 residential structures are potentially at risk of inundation from sea level rise and/or tidal surge, and they are currently valued at more than \$83 million. About 18 non-residential or commercial structures are at risk from sea level rise. These are currently valued at almost \$19 million. About 2,218 acres of uplands and more than 1,500 properties are in a high risk zone for potential wildfire. The total value of these is estimated at more than \$518 million and a lot of other areas within the reservation are at least at moderate risk of wildfire due to increased heat. Vital transportation links and access routes to the reservation are at risk of flooding. This could isolate the reservation from the mainland. Beach seining sites and shellfish beds along the west shore of

the reservation, as well as areas of traditional tribal harvest, are at great risk of permanent flooding and potential loss. Important “keystone” species such as shellfish and salmon are at risk of higher levels of contamination from algal blooms, hypoxia and other diseases that may be exacerbated by increased temperature and other changes. The human population on the reservation population, particularly those who are ill or elderly is at risk due to a variety of heat-related illnesses during isolated or extended high heat episodes, and tribal members in particular may be at risk of increased cases of asthma from potential increased pollutants. Sensitive cultural sites within low-lying areas are at risk, and traditional native species may be lost as they are forced to migrate or adapt to hotter, drier climates. There are many additional potential impacts. (Swinomish Climate Change Initiative Impact Assessment Technical Report)

SOLUTIONS

Fundamentally speaking, most solutions to such challenges do not have to be complicated. Cut down on the CO² in the air, restore and protect natural habitat—such as wetlands, estuaries, forestlands, etc. But the fact is that much of the damage has been done and many impacts are going to occur. Therefore, much of the response has to take the form of adaptation. There will be eroding tidelands and elevating sea levels. There will be fish kills, just like we have already witnessed off the coast. There will be invasive species and there will be tempests like we haven’t experienced before. But, with adaptation and good stewardship, we can have an impact. We can help save salmon and we can bring back some of the other cultural resources that the tribes have lost or are in the process of losing.

Much of the solution to climate change is adaptation, because many of the effects will come, and survival will mean change. Just as many tribes have adapted to gaming income to help deal with massive unemployment challenges, and some have increased their dependence on shellfish harvest as their salmon runs have dwindled, the tribes of the future will have to adapt to new forms of income. But one truth remains constant. The tribes are caretakers of the land, their identity will revolve around salmon. The Northwest tribes are fishers, hunters and gatherers. This part of their culture must be maintained in some capacity for them to remain true to themselves. They will always fight to protect and restore habitat, so that salmon, in whatever numbers will have a home to come back to, and so that hopefully those numbers will increase.

The tribes have also distinguished themselves as good co-managers, even if their good intentions have been not appreciated, ignored, undervalued, misunderstood, or taken for granted. There is wisdom in understanding that this part of the world, like the rest of the world, is occupied by people from other lands now. And these people must learn to conserve. They must learn to exploit less and invest more of their time, energy and money in habitat restoration. They must be better stewards and better neighbors and mend their wasteful ways. If they don’t, the hill will be too steep to climb and we will never be able to catch up with the pace of wastefulness and pollution they have established. We must walk the path of respect together, to the fullest degree possible, government-to-government and hand-in-hand. We must all learn to care about our children.

If the various jurisdictions can learn to love their Mother Earth, as the tribes love her, and treat her with the respect she deserves, we will find a way to deal with the effects of climate change. Unity and brotherhood are absolutely key to our success.

It has been pointed out that tribes have been the most assertive of governments in the response to climate change challenges. It follows that traditional knowledge, as well as contemporary knowledge, and application, play important roles in this response. One of the challenges in traditional knowledge is a point of reference. People today, even indigenous people, are born without the same visible frame of reference as their ancestors. The forest is not the same. Even the rivers have changed. But although they have certainly dwindled, oral histories, customs and cultures have survived from one generation to the next to an extent that when combined with the physical evidence of our villages and our tools and the gut level instincts we feel as a people, we know that the juvenile trees that cover our mountainsides are not doing the job that the giant cedars once did. We know that the salmon we harvest today are not the same as the 100 pounders they once were. We know the industrious beavers who did so much to make our rivers healthy are gone and that the multitude of animals who contributed to the thick forest duff are no longer among us. Look at the roots of a forest tree and you do not see pools of water among rising roots, being held and filtered slowly into the aquifers as they once did. We know the ecosystem is not healthy. It has changed, and not for the better. We live in a sick world.

But there are ways to cure some of this sickness. There are things we can do—if we open our eyes to the challenge, and choose to do so—now. The tribes are working, hard, on each watershed, every day, to restore wetlands and pools, to rehabilitate an environment that can once again sustain fish and wildlife. We can let trees grow in some areas, and not cut them down. We can recruit forest duff, and reintroduce beavers to the natural environment. We can choose to leave some of what the Creator made alone, and not disturb it. We can choose to work together. Working together, we can clean up the waters, restore the natural habitat, manage the forests properly and do the work that is necessary to survive.

Concluding Questions

Obviously, the Swinomish Tribe is working to find its path forward towards adaptation and solution to the climate change challenge. Just as obviously, the countries of the world, as a whole, are fumbling the issue, even as the arms of the climate phenomena are closing around us. Indigenous nations of the world have taken the challenge far more seriously and stepped forward to take action, but are typically proposing steps that most countries do not seem ready for, even if they are the correct steps for the sake of future generations.

Tribes are reaching out to be inclusive, even if they are largely being ignored in international governmental circles, and by the United States. In carrying out their own comprehensive climate change initiative among these voids and challenges, are the Swinomish not also being true to their traditions and the legacies of their ancestors and speaking out on behalf of the land that sustains them? Should they not keep pushing their efforts even as the impacts of climate change affect us more and more each year? Are there not good lessons here -- if not substantial

inspiration as well – in how and why such efforts can be birthed and developed; how partnerships can further these efforts; and how other tribes can learn from this example?



Photo by Steve Robinson

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Additional Resources:

An excellent and primary resource for this case study is the web site of the Swinomish Indian Tribal Community. It is suggested that students first peruse the web site overall to gain a good sense of who the Swinomish are, where their tribal lands lie, and for more overall context of the tribe as part of the fabric of Northwest Native American tribes. Then case study users should study in particular the section of the Swinomish web site dedicated to the Swinomish Climate Change Initiative. Under the project information and reports link of that section is a pdf-accessible presentation of the full Impact Assessment Technical Report (October 2009) which is the major work product now extant (as of June 2010) from the Initiative. The Swinomish tribal website's Initiative section also features a subsection with numerous external links on climate change. One of particular interest and relevance is that of the Intergovernmental Panel for Climate Change (IPCC.)

The web site of the University of Washington, Climate Impacts Group, one of the Swinomish's partners in their Initiative, provides another valuable resource. The web site of Sustainable Northwest features a section on climate change with notes and other resources on recent Northwest tribal climate change conferences. Their site also has policy papers on the climate change issue as it pertains to the Northwest. The Tribes and Climate Change site is part of the Northern Arizona University, Institute for Tribal Environmental Professionals organization. It features a wealth of information on climate change as it pertains to tribes.

The National Congress of American Indians (NCAI) site provides policy and other information on climate change as it pertains to advocacy by Native Americans on the national level. Students also may wish to examine the web sites of the Hoh and Quileute Tribes of Washington State for study and considerations of the climate change issue which they are involved with.

Web Site References:

Swinomish Indian Tribal Community -- <http://www.swinomish-nsn.gov>

Swinomish Indian Tribal Community. Swinomish Climate Change Initiative.
http://www.swinomish-nsn.gov/departments/planning/climate_change/index2.html

Intergovernmental Panel for Climate Change (IPCC)-- www.ipcc.ch

Sustainable Northwest -- www.sustainablenorthwest.org

University of Washington, Climate Impacts Group -- <http://ces.washington.edu/cig>

Quileute Tribe -- www.quileutenation.org

Hoh Tribe -- <http://hohtribe-nsn.org/news.html>

Northern Arizona University, Tribal Environmental Professionals, Tribes and Climate Change --
www4.nau.edu/tribalclimatechange/index.asp

Coastal Salish Gathering -- www.coastalsalishgathering.com

National Congress of American Indians (NCAI) -- www.ncai.org

Appendix I

Climate Change from: Tribes and Climate Change

<http://www4.nau.edu/tribalclimatechange/basic/index.asp>

Earth's climate has changed many times over the course of the planet's history, ranging from ice ages to long periods of intense heat. Until now, these changes have occurred in response to natural events, like volcanic eruptions or variations in the amount of energy produced by the sun. However, in the 18th century, during the time of the Industrial Revolution, human activities began to significantly contribute to a worldwide warming trend.¹ People began to burn fossil fuels like coal and oil and deforest the land at rates unprecedented in Earth's history.² These activities have changed the composition of the atmosphere and are therefore almost certainly changing Earth's climate.

Climate change is a complex problem stemming from unsustainable policies and practices in almost every corner of the world. Yet the basic science behind climate change is quite simple. The sun radiates vast amounts of energy onto Earth. Most of the energy bounces off the surface of the planet and returns to space. But some of the energy is trapped by greenhouse gases, like carbon dioxide and methane, which form a sort of buffer around the planet. The heat-trapping effect is vital for life to exist because it keeps the planet far warmer than it otherwise would be. Without greenhouse gases, the planet would be far too cold to inhabit.³

Naturally occurring levels of greenhouse gases allow life to flourish on Earth. Yet over the past two centuries, certain human activities have caused an overabundance to build up in the atmosphere. Carbon dioxide, a by-product of burning fossil fuels, is one major contributor to climate change. This problem is intensified by deforestation: cutting down the trees that use carbon dioxide to grow. Because all plants are made of carbon, forests are one of the most important storehouses of carbon on the planet.⁴ Countless human activities, like transportation, livestock management, and agriculture, add more greenhouse gases to the atmosphere every year.

As concentrations increase, too much heat is trapped around the planet. This leads to rising global temperatures, and countless other associated effects. According to the National Oceanic and Atmospheric Administration (NOAA) and National Aeronautics and Space Administration (NASA), the average surface temperature of Earth has risen about 1.2° Fahrenheit (F) in the last 100 years.⁵ The warmest year ever recorded occurred in 2005.⁶ While such a small change may

seem insignificant, Earth's delicate balance has been disrupted, leading to rapid environmental change. If climate models are accurate, the average temperature of Earth's surface will only continue to rise. Models predict that the global average temperatures will increase from 3.2° to 7.2° F above 1990 levels in the next 90 years.⁷

The Tribes and Climate site gives an overview of the widespread environmental consequences that may result from climate change. To find out more, visit the [Resources page](#) for a comprehensive list of web resources.

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Reprinted from Northern Arizona University, Institute for Tribal Professionals, Tribes and Climate Change: <http://www4.nau.edu/tribalclimatechange/basic/index.asp>

Appendix II

Presenters at the Skagit Watershed Climate Change Workshop, March 2010 at Padilla Bay National Estuary Reserve Station

There were presentations by Alan Hamlet. University of Washington. “The Skagit River Basin: a Crucible for Climate Change Impacts in the Pacific Northwest,” Jon Reidel. North Cascades National Park Complex. “Response of North Cascades Glaciers to Climate Change” Jessica Lundquist. University of Washington. “Effects of Climate Change on Air Temperatures and Snowmelt in the North Cascades”, Greg Hood. Skagit River System Cooperative. “Assessing the Impacts of Climate Change on Ecological Communities in the Skagit Estuary”. John Rybczyk. Western Washington University. “Effects of Sea Level Rise on Estuarine Habitat: an Integrated Field and Modeling Approach for the Skagit System”, Tarang Khangaonkar. Pacific Northwest National Laboratory. “Application of a Hydrodynamic Simulation Model for Predicting the Impacts of Climate Change in Skagit Bay and Skagit River Estuary”. Gardar Johannesson. U.S. Dept. of Energy, Lawrence Livermore National Laboratory (LLNL). “Statistical Downscaling Global Climate Models to the Upper Skagit Watershed”. Joe Casola. University of Washington. “Assessing the Impact of Global Warming on Snowpack of the Skagit Watershed using a Sensitivity Approach”. Wing Chen. Seattle City Light. “Performance of Hydroelectric Projects in the Face of Climate Change: A Case Study of the Skagit Hydroelectric Project”. Correigh Greene. NOAA Northwest Fisheries Science Center. “Evaluating the Effects of Climate Change on Chinook Salmon using Life History Models”. Jonathan Reum. University of Washington. “The Role of Climate in Nearshore Pelagic Fish Communities of Skagit Bay and the Whidbey Basin”, Roger Fuller. The Nature Conservancy. “Decision Support Tools for Evaluating the Impacts of Climate Change on Coastal Wetlands and Estuaries”, Ed Connor. Seattle City Light. “Predicting the Impacts of Climate Change on Steelhead in the Skagit River”.

There also were three workshops: meteorology, snowpack and hydrology; riverine and upland ecosystems, and estuary and Puget Sound ecosystems.

In addition, Swinomish participated in and helped facilitate a Coast Salish Climate Change Summit in April of 2010 to bring together Tribal and First Nations leaders from the U.S. and Canada to discuss the broad common interests in addressing climate change cross-boundary implications.