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# The Effects of Climate Change on American Indian and Alaska Native Tribes

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Climate change will affect American Indian tribes differently than the larger American society. Tribal cultures are integrated into the ecosystems of North America, and many tribal economies are heavily dependent on the use of fish, wildlife, and native plants. Even where tribal economies are integrated into the national economy, tribal cultural identities continue to be deeply rooted in the natural world. As global warming disrupts biological communities, the survival of some tribes as distinct cultures may be at risk. The loss of traditional cultural practices because important plants and animals are no longer available may prove to be too much for some tribal cultures to withstand on top of the external pressures they have faced during recent generations.

In some tribal communities, especially those in Alaska, the impacts of climate change have been evident for some time. *The Fourth Assessment Report of the UN Intergovernmental Panel on Climate Change Working Group II* recognizes that American indigenous communities are among the most sensitive to climate change in North America and that “indigenous communities in northern Canada and Alaska are already experiencing constraints on lifestyles and economic activity from less reliable sea and lake ice (for travelling, hunting, fishing and whaling), loss of forest resources from insect damage, stress on caribou, and more exposed coastal infrastructure from diminishing sea ice.” [www.ipcc.ch/ipccreports/ar4-wg2.htm](http://www.ipcc.ch/ipccreports/ar4-wg2.htm). Responding to these impacts, Cheyenne Elder Henrietta Mann, speaking at the National Museum of the American Indian in Washington, D.C., issued an American Indian “Call to Consciousness” on global climate change that calls “upon all the peoples of the world to awaken and respond to our collective human responsibility to the seventh generation.” Jose Barreiro, *A Call to Consciousness on the Fate of Mother Earth*, 8:3 NATIONAL MUSEUM OF THE AMERICAN INDIAN MAGAZINE 34, 36 (Fall 2007). This article will discuss how tribal governments fit into this collective human responsibility.

American Indian tribes have a unique legal status in our federal system of government. Tribes retain inherent sovereign powers that predate the formation of the United States and which are recognized in a complex body of federal law that includes treaties, acts of Congress, executive branch poli-

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cies and regulations, and federal court decisions. *See generally*, COHEN’S HANDBOOK OF FEDERAL INDIAN LAW, (Nell Jessup Newton, et al., Lexis/Nexis, Mathew Bender, 2005 ed.). Although federal Indian law is complex, there are several background principles which generally inform potential tribal roles in addressing climate change. Tribes retain inherent sovereign powers and broad jurisdictional authority over their members and activities on their lands. Congress has broad powers in the arena of Indian affairs, and state authority over tribes and reservation lands is limited by operation of federal law. The United States has a trust responsibility to tribes, which includes fiduciary obligations to tribes for the management of tribal trust lands and resources. The federal trust responsibility has evolved over history and includes a duty to protect the sovereignty of each tribal government. 25 U.S.C. § 3601. In the modern era, as tribes have increasingly assumed governmental functions formerly performed by the Bureau of Indian Affairs and Indian Health Service, the relationship between the federal government and the tribes is often described as a government-to-government relationship. *See* Exec. Order No. 13,175, 2, 65 Fed. Reg. 67,249 (Nov. 6, 2000). Tribes also typically have reserved rights in water and natural resources within their reservations, and many tribes have off-reservation hunting, fishing and/or gathering rights secured by treaties or statutes.

In response to the challenge of climate change, many non-tribal people and organizations have called for action at all levels of government. In the United States, it is a common practice to view “all levels” as federal, state, and local and not to think about how Indian tribal governments might fit into the mix. For example, the U.S. Environmental Protection Agency (EPA) Web page on climate change includes a topic on state and local governments but none on tribal governments. *See* [www.epa.gov/climatechange/](http://www.epa.gov/climatechange/).

The framework of climate change law that is emerging in the United States has not yet solidified. Rather, there are only miscellaneous federal laws that relate to climate change. In the absence of comprehensive federal climate change legislation, many regional, state, and local efforts have emerged. *See generally* GLOBAL CLIMATE CHANGE AND U.S. LAW (Michael B. Gerrard, ed., ABA Section of Environment, Energy, and Resources (SEER) 2007).

The law of climate change in the United States is currently evolving at the intersection of two areas of law—energy law and environmental law. *See* John C. Dernbach, *U.S. Policy*, in CLIMATE CHANGE AND U.S. LAW at 61, 65. Both of these sub-

ject matters are characterized by a federalist framework in which the federal government is prominent in some ways and the states in others. In the realm of environmental law, many of the federal statutes have been amended to authorize EPA to treat tribes like states. See generally Dean B. Suagee, *Indian Country Environmental Law*, in ENVIRONMENTAL LAW PRACTICE GUIDE (Michael B. Gerrard, ed., Matthew Bender 1998); COHEN'S HANDBOOK, Ch. 10. A number of tribes have taken on roles in this environmental regulation framework. In the realm of energy law, there is a long history of extracting fossil fuel resources from many Indian reservations, and there is some history of tribal governments performing regulatory roles comparable to the states. In the context of extractive resource development, there is a body of federal law recognizing tribal regulatory authority, including provisions in the Energy Policy Act of 2005 (EPA 2005) authorizing Tribal Energy Resource Agreements through which a tribe can take over some of the approval functions otherwise assigned to the secretary of the interior. 25 U.S.C. § 3504. See Thomas H. Shipp, *Tribal Energy Resource Agreements: A Step Toward Self-Determination*, 22 NAT. RES. & ENVT. 55 (ABA SEER Summer 2007). In the context of the electric utility industry, there are a few tribal electric utilities, and a growing number of tribes are showing interest in creating their own utilities or otherwise becoming involved on the supply side of electric power.

With growing awareness of the need to deal with climate change and calls for action at all levels of government, a number of questions should be asked about the role of tribal governments: What opportunities do tribes have under existing federal and state law to contribute to efforts to deal with climate change? What can tribal governments do through the exercise of their inherent sovereign powers? What should be done to include the tribes in federal policies that seek to engage states and local governments? When states and local governments take action, what can they do to include the tribes? At a more basic level, why should tribes have a place at the table when the issues are debated? Such questions should be considered not just by tribal leaders and tribal advocates, but also by those who shape, or who seek to shape, policy at the federal, state, and local levels. This article does not try to answer all of these questions. Rather, it offers some observations on why tribes need to be at the table. It also notes a few of the steps that some tribes and intertribal organizations have taken to help deal with global warming, and it offers some suggestions on how tribes could fit into the mix, both within the framework of federal law and through the exercise of tribal sovereignty.

### **Impacts of Climate Change on Native Americans**

The predicted environmental impacts of global warming can be expected to cause severe distress for tribal communities in various regions of the country. In the Pacific Northwest, where salmon are a fundamental part of tribal cultures, salmon populations have drastically declined over the past century

due to dams, loss of habitat, pollution, deforestation, and other factors. The impacts of climate change will put additional stresses on salmon populations, as ocean water temperature rises and streamflow patterns change in response to reduced mountain snowpack and earlier spring snowmelt. JONATHAN M. HANNA, NATIVE COMMUNITIES AND CLIMATE CHANGE: PROTECTING TRIBAL RESOURCES AS PART OF NATIONAL CLIMATE POLICY 5–8 (University of Colorado Law School Natural Resources Law Center 2007), [www.colorado.edu/law/centers/nrlc](http://www.colorado.edu/law/centers/nrlc). Off-reservation treaty fishing rights will be of little practical value if there are no salmon runs left.

In the Southwest, where water rights have been litigated, negotiated, and legislated for more than a century, climate change can be expected to exacerbate conflicts, given the predictions of water shortages. For example, by 2050, streamflow in the Colorado River is predicted to be reduced by perhaps as much as 45 percent due to reduced snowpack in the mountains of its watershed. Brad Udall, *Recent Research on the Effects of Climate Change on the Colorado River*, INTERMOUNTAIN WEST CLIMATE SUMMARY 2, 6 (May 2007); see also P.C.D. Milly, et al., *Global Pattern of Trends in Streamflow and Water Availability in a Changing Climate*, 438 NATURE 347 (2005). All of the tribes in Arizona and several more in New Mexico, Colorado, Utah, Nevada, and California have reservation lands within the Colorado River watershed. These tribes, under the *Winters* doctrine, have implied federally reserved water rights. *Winters v. United States*, 207 U.S. 564 (1908). Many of the tribes in the Colorado River watershed have established water rights either through litigation or through federal legislation. Whether or not their water rights have been formally quantified, water is critical for the agriculture, industry, community development, and tourist-oriented development sectors of tribal economies. Given the predicted scale of impending water shortages, there can be no guarantees that settled tribal water rights will not be subject to reopening.

In addition to conflicts over legal rights to water resources, scarcity of water will likely affect the ecosystems of the Southwest in ways that will stress tribal communities. Some impacts are being witnessed on the Navajo Reservation, which encompasses about 25,000 square miles of land in the Southwest. Sand dunes cover approximately one-third of this land. U.S. Geological Survey, *Navajo Dunes* (2003), [http://esp.cr.usgs.gov/info/sw/swdunes/navajo\\_dunes.html](http://esp.cr.usgs.gov/info/sw/swdunes/navajo_dunes.html). The dunes have been stabilized by vegetation, but mobilization has been observed in recent years in some areas, causing significant damage to many homes on the Navajo reservation. Dune movement is causing transportation concerns as well, as wind storms deposit sand along roadways, impairing sight and creating hazards for drivers. Most of the active dunes had been vegetated with Russian thistle (tumbleweeds), an invasive species that dies and detaches during dry and windy periods; dunes with native vegetation appear to be more stable, but dune movement may also be contributing to the loss of native plants as habitat diminishes. Dunes can be an indicator for climate change, as mobilization depends on precipitation, soil-moisture balance, and wind patterns. The pro-





