

THE BALLENGER–GREEN DIVERSITY PAPER

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BUILDING ALASKA NATIVE VILLAGE RESILIENCE IN A POST-PEAK WORLD

INTRODUCTION

A bright arctic sun rises on Fort Yukon, a remote village in interior Alaska, home to several hundred residents from the Gwich'in tribe. But the sunlight reveals a different way of life than has traditionally existed in this village. Visible on the horizon is a bush plane loaded with another round of gasoline, heating fuel, commercial food products, and modern household supplies making its regular drop-off. While some villagers spend the morning fixing a bowl of Cheerios inside their oil-heated homes, two men on a motorboat cruise up the Yukon River with high-powered rifles on their way to hunt moose.

Meanwhile in Northwestern Alaska, the Inupiat village of Kivalina prepares for its traditional holiday feast. But this year, due to shifting migration patterns, the village was unable to take a single ceremonial bowhead whale.¹ However, the village of Nuiqsut, 377 miles to the northeast, caught three whales this year with the help of motorboats and exploding harpoons, and graciously offered to provide a whale to Kivilina.² But without roads between the two, the only way to ship the whale is to fly it, so Kivilina tried to charter a cargo plane to transport it.³ A publicity-seeking oil company even offered a donation to fund this endeavor, but

1. Jill Burke, *Inupiat Alaska Villages Struggle to Share Subsistence Whale Harvest*, ALASKA DISPATCH, Nov. 22, 2011, <http://www.alaskadispatch.com/article/inupiat-alaska-villages-struggle-share-subsistence-whale-harvest>.

2. *Id.*

3. *Id.*

ultimately this bowhead stayed in Nuiqsut.⁴ In Barrow, after a successful bowhead hunt, villagers routinely use a forklift to bring the animal ashore.⁵ Several villagers equipped with traditional long knives will then begin the arduous work of cutting up the whale while other villagers take pictures, post Facebook messages, and prepare for the ceremonial feast.⁶

Across Alaska, Native villages that have traditionally relied on subsistence hunting and fishing as their sole means of survival now increasingly rely on fossil fuels, modern technology, and the dominant economic system, much like other Americans and the world at large. While modern technology has found its way into rural Alaskan villages, for many Natives, subsistence continues to play a tremendously significant cultural and economic role. Cultural values and traditions revolving around subsistence have been handed down from generation to generation and still persist in rural Alaska. These values include an emphasis placed on not wasting wild meat or animal parts, having a profound respect for the spiritual value of animals, sharing as much meat as possible with others, and participating in ceremonies such as the Athabaskan Potlatch, a gathering involving food sharing and dance, or the Inupiat nalukataq festival, which celebrates the spring whaling hunt.⁷

Hunting and fishing with powerboats, ATVs, and snow machines requires fuel, and fuel requires money. Yet in many rural Alaskan communities there is no work, which results in some of the most economically depressed communities in the nation.⁸ With fixed government assistance as the only source of income in many cases, indigenous communities are finding it increasingly difficult to afford the rising costs of gasoline needed to harvest for subsistence, heating oil to keep their homes warm in the long Alaskan winter, and the cost of shipping the majority of their food by bush plane.⁹ This situation, the “Rural Alaska Energy Crisis,”¹⁰ has had a devastating impact on Native communities throughout Alaska.

4. *Id.*

5. William Yardley, *With Powerboat and Forklift, a Sacred Whale Hunt Endures*, N.Y. TIMES, Oct. 16, 2011, http://www.nytimes.com/2011/10/17/us/in-sacred-whale-hunt-eskimos-use-modern-tools.html?_r=1&ref=us.

6. *Id.*

7. Telephone Interview with James Van Lanen, Subsistence Res. Specialist, Alaska Dep't of Fish & Game, Div. of Subsistence (Jan. 27, 2012); J. Sydney Jones, *Inuit, COUNTRIES AND THEIR CULTURES*, <http://www.everyculture.com/multi/Ha-La/Inuit.html> (last visited Sept. 11, 2012).

8. ALASKA FED'N OF NATIVES, ALASKA ENERGY BRIEF 5 (2012), available at <http://www.nativefederation.org/images/documents/alaska-day-2012.pdf>.

9. *Id.*

10. *Id.*

Like our current United States politicians, many subsistence communities view the rising price of gas as a temporary phenomenon¹¹ that—with the right combination of increased domestic drilling, security in the Middle East, and calm within energy markets—will abate in the future.¹² However, as this Note will show, we are witnessing the end of cheap oil and other fossil resources. So, while prices may fluctuate in the near term, a long term rise is inevitable. Moreover, climate change will pose additional threats to Native communities. Given their remoteness and extreme climate, subsistence communities will need to find ways to adapt to the coming age of fossil fuel scarcity and climate change. At risk is not just their livelihood, but also their very cultural identity.

This Note provides a holistic view of socioeconomic, governance, and ecological situations that demonstrates the energy and subsistence problems Alaska Natives face. Many indigenous cultures have found ways to assimilate into the dominant culture and the modern economic model while retaining their cultural identity. This Note does not take a position that criticizes Alaska Natives' cultural choices regarding their use of modern technologies or the associated environmental impacts. Rather, this Note argues that Alaska Natives are threatened by a reliance on fossil-fuel based technologies because of both the coming scarcity of fossil fuels and the effects of climate change. Native communities need to start planning and implementing measures to reduce their fossil fuel needs, lower their cost of living, and free themselves from dependence on outside sources so that they can continue to inhabit their ancestral lands in rural Alaska.

This Note first provides background information about Native subsistence hunting and fishing in Alaska and lays out the complex legal regime for managing subsistence activities. It then discusses the degree of sovereignty local and tribal governments possess and how to tailor a policy response to fossil fuel reliance to the existing regulatory scheme and governance structure. Next, the Note juxtaposes the village economy with the context of the global economic system. Finally, this Note recommends a range of policy responses at the local, state, and federal levels to reduce fossil fuel reliance. These measures include adopting wildlife regulations that incorporate fossil fuel use into subsistence activities, incentivizing energy efficiency and renewable energy projects in villages, growing food locally within villages, and incorporating subsistence into public education. Ultimately, all measures should aim to ensure the survival of the traditional subsistence culture of Alaska Natives and also ensure that future

11. Van Lanen, *supra* note 7.

12. Liam Plevin, *As Gas Prices Fall, a Sigh of Relief*, WALL ST. J., May 7, 2012, <http://online.wsj.com/article/SB10001424052702303630404577390502832273754.html>.

generations can continue to live inhabit rural Alaska ancestral lands in an ever-changing world.

I. SUBSISTENCE HUNTING BACKGROUND

Indigenous populations have inhabited Alaska for thousands of years.¹³ Within Alaska, there are many distinct indigenous groups with their own sets of cultures and social organizations, collectively referred to as “Alaska Natives.”¹⁴ The most prevalent are the Inupiat, Y’upik, Aleut, Athabascan, Tlingit, Haida, and Tsimshian peoples.¹⁵

One defining characteristic of most Alaskan Native cultures is subsistence hunting and fishing. Alaska Natives have passed on traditional methods of harvesting and preserving wild foods through generations for thousands of years.¹⁶ Federal law defines “subsistence” as the “customary and traditional uses by rural Alaska residents of wild, renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation.”¹⁷ However, to Alaska Natives, subsistence plays a much larger role than this legal definition implies—in addition to providing sustenance, subsistence has an economic dimension that impacts the core of Alaska Native identity and culture.¹⁸ Moreover, participating in subsistence “promotes transmission of traditional knowledge from generation to generation and serves to maintain people’s connection to the physical and biological environment.”¹⁹ As Tim Towarack, the president of Bering Straits Native Corporation puts it, “[s]ubsistence is not just a way of life, it is life itself.”²⁰ In fact, Alaska relies more heavily upon wild food than any

13. Andrew Josephson, *Katie John & Totemoff: The United States and Alaska Clash over the Reserved Water Rights Doctrine and Native Alaska Hunting and Fishing Rights—the U.S. Supreme Court Passes on an Opportunity to Resolve the Subsistence*, 6 DICK. J. ENVTL. L. & POL’Y 225, 228 (1997) (discussing the Alaska Constitution’s Equal Protection Provision in light of the federally mandated subsistence priority).

14. See generally Eric Smith & Mary Kancewick, *The Tribal Status of Alaska Natives*, 61 U. COLO. L. REV. 455 (1990) (arguing that Alaska Natives should qualify as federally recognized “tribes”); see also 43 U.S.C. § 1602 (2006) (defining the term “native”).

15. Josephson, *supra* note 13, at 228.

16. See U.S. FISH & WILDLIFE SERV., *About the Program*, FED. SUBSISTENCE MGMT. PROGRAM, <http://alaska.fws.gov/asm/about.cfml> (last updated June 3, 2008) (discussing modern reliance on traditional subsistence methods).

17. 16 U.S.C. § 3113 (2006) (defining “subsistence users”).

18. DAVID CASE, *ALASKA NATIVES AND AMERICAN LAWS* 257 (2002).

19. NEWFIELDS COS., *HEALTH IMPACT ASSESSMENT FOR PROPOSED COAL MINE AT WISHBONE HILL, MATANUSKA-SUSITNA BOROUGH ALASKA 52–53* (Mar. 5, 2012) (draft report), available at <http://www.epi.alaska.gov/hia/WishboneHillDraftHIA.pdf>.

20. ALASKA FED’N OF NATIVES, *THE RIGHT TO SUBSIST: FEDERAL PROTECTION OF SUBSISTENCE IN ALASKA 75* (2010), available at <http://www.nativefederation.org/documents/CompleteSubsBinder4-8-10.pdf>.

state in the nation, with the average rural resident harvesting 375 pounds of wild food per year,²¹ sixty percent of which is fish.²²

Where Native communities once independently managed wildlife populations using traditional principles of sustainability, management is now divided through a patchwork of state, federal, and international law. In the lower forty-eight states treaties protected Indian tribes' hunting and fishing rights.²³ However, in Alaska, Natives do not have treaties with the federal government to protect their subsistence rights because the federal government stopped making treaties with tribes in 1871.²⁴ Before the arrival of westerners, Native Alaskans held aboriginal title to the vast majority of land in Alaska—approximately 365 million acres.²⁵ From 1867, when the United States purchased Alaska from Russia, until 1971, when Congress passed the Alaska Native Claims Settlement Act (ANCSA), Alaska Natives' title to the land, and by extension, their hunting and fishing rights were fiercely disputed and the legal status of aboriginal title was left uncertain.²⁶ After statehood in 1959 and the discovery of oil in Prudhoe Bay, it was critical to settle the land claims of Alaska Natives.²⁷ After many years of debate, in 1971, Congress passed ANCSA, extinguishing aboriginal title to Native lands.²⁸ ANCSA provided Natives a one-time cash settlement of \$963 million as compensation for the lands taken from them,²⁹ and granted Natives title to forty-four million acres of land.³⁰ Furthermore, the Act established thirteen regional and over 200 village Native corporations to take title to this land.³¹ However, in exchange for the granted lands, Alaska Natives were dispossessed of 320 million acres of traditional lands, including oil-rich Prudhoe Bay.³² On the

21. U.S. FISH & WILDLIFE SERV., *supra* note 16.

22. *Id.*

23. Elizabeth Barrett Ristroph, *Alaska Tribes' Melting Subsistence Rights*, 1 ARIZ. J. ENVTL L. & POL'Y 47, 67 (2010) (discussing the dissolution of subsistence rights and the implications of climate change for Alaska Natives).

24. Lisa Jaeger, *Tribal Court Development*, TANNA CHIEFS CONF. (2002), http://thorpe.ou.edu/AKTribalct/chapter_one.html#BriefHistoryOfAlaska.

25. ALASKA FED'N OF NATIVES, *supra* note 20, at 4; CASE, *supra* note 18, at 157.

26. See CASE, *supra* note 18, at 44–58.

27. Josephson, *supra* note 13, at 230.

28. 43 U.S.C. § 1603(a) (2006).

29. 43 U.S.C. § 1605 (2006); CASE, *supra* note 18, at 165 n.64.

30. 43 U.S.C. § 1611; CASE, *supra* note 18, at 160–61.

31. CASE, *supra* note 18, at 160. All of the 80,000 Natives alive on the date of ANCSA's enactment were issued shares in a regional and village corporation. *Id.* at 159. Every village with a minimum population of twenty-five residents, the majority of whom were natives and “not of a modern and urban character,” were enrolled in a village corporation, as well as one of the twelve regional corporations in whose region the village was located. 43 U.S.C. § 1610(b)(3) (2006).

32. BILL HESS, GIFT OF THE WHALE: THE INUPIAT BOWHEAD HUNT, A SACRED TRADITION 5 (2d ed. 2003).

remaining land, ANCSA extinguished “any aboriginal hunting or fishing rights that may [have existed].”³³

The next major development in subsistence law came in 1980 with the passage of the Alaska National Interest Land Conservation Act (ANILCA).³⁴ Though ANILCA was most notable for setting aside 104 million acres of land as national park, forest, or monument, it also gave “rural” subsistence users priority over other users for hunting and fishing on federal public lands.³⁵ ANILCA also offered Alaska the option of managing subsistence on federal public lands in addition to managing state and private lands if the State would adopt a law granting “rural” users subsistence priority.³⁶ In an attempt to comply with ANILCA, Alaska enacted legislation codifying the subsistence priority.³⁷ The Alaska Board of Fish and Game defined which “rural” Alaskans qualified for the subsistence priority.³⁸ This quickly led to problems because urban, sport, and commercial hunting and fishing interests despised the rural priority.³⁹ Additionally, some areas not designated as “rural,” including some Native villages, were not given subsistence priority.⁴⁰ Litigation ensued challenging the Board’s regulations, and subsequently ANILCA itself.⁴¹ The regulations were the first to fall in 1985.⁴² Then in 1989, the Alaska Supreme Court ruled in *McDowell v. State* that ANILCA’s rural priority violated the “common use,” “no exclusive right,” and “equal application” provisions of the Alaska Constitution, ending the state’s compliance with ANILCA.⁴³ *McDowell* initiated the state’s “all Alaskans” subsistence policy, which gives subsistence priority to every resident in the state. In essence, this is no priority at all.⁴⁴

33. 43 U.S.C. § 1603(b) (2006).

34. Alaska National Interest Lands Conservation Act of 1980, Pub. L. No. 96-487, 94 Stat. 2371 (1981) (partially codified in scattered sections of 16 U.S.C. and 43 U.S.C.).

35. Ristroph, *supra* note 23, at 69; Josephson, *supra* note 13, at 230. An original ANILCA bill had a “Native” priority but this was later changed to “rural” because the state claimed a Native priority would violate the Alaska Constitution, whereas a priority based on residency would not. ALASKA FED’N OF NATIVES, *supra* note 20, at 7. Less than two decades later, the Alaska Supreme Court found that the “rural” priority violated the Alaska Constitution. See *McDowell v. State*, 785 P.2d 1, 9–10 (Alaska 1989).

36. ALASKA FED’N OF NATIVES, *supra* note 20, at 7.

37. *Id.*

38. Josephson, *supra* note 13, at 252 n.41.

39. *Id.* at 233.

40. *Id.*

41. See *Madison v. Alaska Dep’t of Fish & Game*, 696 P.2d 168, 172 (Alaska 1985) (“[Plaintiffs] challenged the validity of the board’s subsistence criteria . . . on several grounds. They claimed that: (1) the criteria were inconsistent with the statutory language and legislative intent of the 1978 subsistence law; (2) the board failed to comply with the Administrative Procedure Act in adopting the criteria; and (3) their equal protection and due process rights were violated by the board’s action.”).

42. *Id.* at 178.

43. *McDowell v. State*, 785 P.2d 1, 18–19 (Alaska 1989).

44. *State v. Morry*, 836 P.2d 358, 368 (Alaska 1992).

As a result of *McDowell*, the federal government now manages subsistence uses on federal public lands and all “reserved navigable waters”⁴⁵ in Alaska, which accounts for about 230 million acres—or sixty percent—of the land within the state.⁴⁶ To help carry out the responsibility for subsistence management, the Secretaries of the Interior and Agriculture delegated responsibility for administering subsistence harvesting on federal lands to the Federal Subsistence Management Program and the Federal Subsistence Board.⁴⁷

The federal government has a two-tiered system for managing subsistence resources that asks two questions. The first question is whether the person is a ‘rural’ Alaskan citizen, as only citizens from “rural areas or rural communities” may take fish or wildlife for subsistence uses.⁴⁸ The next question is whether the Federal Subsistence Board has designated a given fish or wildlife population as only available for “customary and traditional use” by certain communities.⁴⁹ If so, only residents of the listed communities may take the fish or wildlife for subsistence purposes.⁵⁰ If this designation does not apply, then all rural Alaskans may harvest that species for subsistence.⁵¹ All subsistence users on federal lands must obtain a subsistence license and apply for a permit to take individual species.⁵²

The State of Alaska manages subsistence on state-owned and private lands, which includes Native corporation lands.⁵³ Alaska law directs the Department of Fish and Game Division of Subsistence, the Board of Fisheries, and the Board of Game to determine which uses of fish and game, and which methods of hunting and fishing, should be eligible for subsistence use.⁵⁴ Moreover, the Division of Subsistence is statutorily responsible for compiling data, conducting studies about subsistence

45. “Reserved navigable waters” are those in which the United States has an interest by virtue of the reserved water rights doctrine, which reserves federal water rights to waters that “pass through, or touch, or otherwise affect major federal lands and Conservation System Units - e.g., parks, monuments, wildlife refuges, forests.” ALASKA FED’N OF NATIVES, *supra* note 20, at 9; *see also* Alaska v. Babbitt (Katie John II), 72 F.3d 698, 701 (9th Cir. 1995) (holding that the United States implicitly reserved unappropriated waters that ran through land designated by ANILCA).

46. U.S. FISH & WILDLIFE SERV., *supra* note 16; Jack B. McGee, *Subsistence Hunting and Fishing in Alaska: Does Anilca’s Rural Subsistence Priority Really Conflict with the Alaska Constitution?*, 27 ALASKA L. REV. 221, 240 (2010) (describing the current state of federal subsistence management).

47. U.S. FISH & WILDLIFE SERV., *supra* note 16.

48. 50 C.F.R. § 100.5 (2011).

49. *Id.*

50. *Id.*

51. *Id.*

52. 50 C.F.R. § 100.6 (2011).

53. CASE, *supra* note 18, at 301.

54. ALASKA STAT. § 16.05.094(4) (2010).

hunting and fishing, and reporting that information to the public.⁵⁵ The State also designated certain areas around Anchorage, Juneau, and Fairbanks as “nonsubsistence area[s] . . . where dependence upon subsistence is not a principal characteristic of the economy, culture, and way of life.”⁵⁶

On state-owned lands, Alaska has also employed a tiered system of managing subsistence, but there are some substantial differences from the federal system.⁵⁷ First, all Alaskan residents are eligible for subsistence regardless of whether they are rural or urban, provided that there is a harvest “consistent with sustained yield” available for a particular resource.⁵⁸ If a harvestable surplus of a species is available—Tier I—then the Department of Fish and Game need not give subsistence users priority, but only ensure that their regulations provide for an amount of animal or fish that is “reasonably necessary for subsistence uses.”⁵⁹ If a harvestable surplus is not available—Tier II—then only subsistence users can harvest. The Department of Fish and Game can set limits that distinguish among subsistence users so that species populations can rebound.⁶⁰ This system has given urban residents the ability to sport fish and hunt largely unimpaired by the subsistence priority.⁶¹

This system of dual and sometimes overlapping federal and state jurisdiction requires that a subsistence user be familiar with both federal and state regulations. Faced with these numerous restrictions on their ability to control subsistence, Alaska Natives have attempted to retain some authority in co-managing wildlife resources with state and federal governments.⁶² The Alaska Eskimo Whaling Commission has a meaningful role in managing bowhead whales jointly with federal agencies and the International Whaling Commission.⁶³ Tribal groups also participate in game management with the Marine Mammal Protection Act, Yukon Flats Cooperative Moose Management Plan, and the Alaska Migratory Bird Co-Management Council, but their recommendations in management decisions

55. ALASKA STAT. § 16.05.094 (2010).

56. ALASKA STAT. § 16.05.258(c) (2010); *Subsistence in Alaska, Nonsubsistence Areas*, ALASKA DEP'T OF FISH & GAME, <http://www.adfg.alaska.gov/index.cfm?adfg=subsistence.nonsubsistence> (last visited Sept. 6, 2012).

57. ALASKA STAT. § 16.05.258 (2010).

58. ALASKA STAT. § 16.05.258(b) (2010).

59. *Id.*

60. ALASKA STAT. § 16.05.258(b)(4) (2010).

61. JAMES A. FALL, ALASKA DEP'T OF FISH & GAME, DIV. OF SUBSISTENCE, *SUBSISTENCE IN ALASKA: A YEAR 2010 UPDATE 4* (2012), available at http://www.adfg.alaska.gov/static/home/library/pdfs/subsistence/subsistence_overview2010.pdf.

62. Ristroph, *supra* note 23, at 73.

63. Hess, *supra* note 32, at 8.

in these regimes are advisory only.⁶⁴ Similarly, at the state level, the Department of Fish and Game is “committed to consulting with tribes in Alaska as early in the department’s decision-making process as practicable,” but this policy does not “diminish or limit the sovereignty held by the state.”⁶⁵ While the state and federal governments made commendable efforts to include Natives in fish and game management decisions, the state and federal agencies retain final authority over setting fish and game policy.

II. LOCAL AND TRIBAL GOVERNANCE

Unlike tribes in the lower forty-eight, Alaska Natives have long endured a strenuous battle for formal state and federal recognition of their tribal status. The American political system vests “tribes” with a special political status—they are sovereign entities that “generally possess a wide variety of powers, privileges, and immunities, including the authority to govern the affairs of their members, civil jurisdiction over non-Natives within their territorial jurisdiction, considerable immunity from state regulation and taxation within that jurisdiction, entitlement to special services and funding from the federal government.”⁶⁶ In the lower forty-eight, tribes will usually qualify as a “tribe” because they have been “recognized” as such by Congress in treaties or statutes, but in Alaska the situation is much different.⁶⁷

In 1885, the federal relationship with Alaska Natives slowly began to develop. Initially, the Bureau of Education developed Native village schools, cooperative stores and reindeer and salmon industries, and extended medical care specifically for the benefit of Alaska Natives.⁶⁸ Federal representatives met with representatives from Native governments to create federal programs, and thus established an intergovernmental relationship.⁶⁹ The Indian Reorganization Act (IRA), which established federally approved constitutional forms of tribal governments that overlaid a base of traditional Native council governance, recognized Alaskan tribes in 1936.⁷⁰ After Alaska

64. Ristroph, *supra* note 23, at 74; E-mail from James Van Lanen, Subsistence Res. Specialist, Alaska Dep’t of Fish & Game, Div. of Subsistence, to author (March 23, 2012, 19:52 EST) (on file with author).

65. ALASKA DEP’T OF FISH & GAME, ALASKA BDS. OF FISHERIES & GAME, POLICY ON GOVERNMENT-TO-GOVERNMENT RELATIONS WITH THE FEDERALLY RECOGNIZED TRIBES OF ALASKA 1, 3 (2002), available at <http://www.adfg.alaska.gov/static/regulations/pdfs/tribepol.pdf>.

66. Smith & Kancewick, *supra* note 14, at 455–56 (detailing the fight for tribal status among Alaska Natives).

67. *Id.*

68. Jaeger, *supra* note 24.

69. *Id.*

70. THE ECON. RESOURCE GRP. ET AL., *Achieving Alaska Native Self Governance: Toward*

became a state in 1959, land claims were settled with ANCSA, and Congress established regional and village corporations instead of the reservation system that existed in the lower forty-eight.⁷¹ The federal government treated Alaska Native villages as tribes in a number of federal programs throughout the 1970s and '80s. However, they were not specifically listed as tribes until 1993, when the Department of Interior included Native villages in a list of recognized tribes and declared that they have the same privileges and immunities, responsibilities, and powers as other federally recognized tribes.⁷²

Until the 1990s, the State of Alaska vehemently opposed recognizing tribal status and sovereignty. The State interpreted ANCSA as treating the Native village the same as any other Alaskan corporation.⁷³ In the late 1980s the Alaska Supreme Court ruled that there were no "tribes" in Alaska, with only a few possible exceptions.⁷⁴ In 1990, Governor Steve Cowper issued a tribal status policy recognizing that tribes exist in Alaska, but with very limited powers.⁷⁵ These powers include the right to "define the tribe's own membership and to regulate its own purely internal affairs," and any "powers expressly granted to [the tribe] by the federal government."⁷⁶ However, the State "did not recognize tribes to have broader powers such as those held by tribes on reservations" including the power to exclude non-members or to regulate fish and game.⁷⁷

Alaska began to shift direction in the late 1990s when it started the process of recognizing tribes. In the 1999 decision *John v Baker*, the Alaska Supreme Court acknowledged the existence of federally recognized tribes and their inherent powers of self-government over their members.⁷⁸ In 2000, Governor Knowles established a tribal-state negotiations team to develop a tribal-state cooperative framework, a critical step to building government-to-government relations between tribes and the Alaska government.⁷⁹

Implementation of the Alaska Natives Commission Report at 14 (May 1999), available at <http://www.ankn.uaf.edu/curriculum/AFN/selfgov.pdf>.

71. *See id.* Only one community exists within a federal reservation in Alaska: Metlakatla in Southeast Alaska. *Metlakatla*, ALASKA DEP'T OF COMMERCE, DIV. OF CMTY. & REG'L AFFAIRS, http://www.commerce.state.ak.us/dca/commdb/CIS.cfm?Comm_Boro_name=Metlakatla (last visited Sept. 7, 2012).

72. Indian Entities Recognized and Eligible to Receive Services from the United States Bureau of Indian Affairs, 58 Fed. Reg. 54, 364 (Oct. 21, 1993); Jaeger, *supra* note 24.

73. *Native Vill. of Stevens v. Alaska Mgmt. & Planning*, 757 P.2d 32, 41 (Alaska 1988).

74. *Id.* at 35–36.

75. Governor Steve Cowper, Alaska Admin. Order No. 123, STATE OF ALASKA, OFFICE OF THE GOVERNOR (Sept. 10, 1990), available at <http://www.gov.state.ak.us/admin-orders/123.html>.

76. *Id.*

77. Jaeger, *supra* note 24.

78. *John v. Baker*, 982 P.2d 738 (Alaska 1999).

79. Jaeger, *supra* note 24.

Today, Native governance in Alaska differs from most tribes in the lower forty-eight in that it is decentralized. Powers over lands, natural resources, and governmental programs are “fragmented and widely dispersed” among IRA governments, traditional councils, state-recognized cities and boroughs, and for-profit and non-profit regional corporations.⁸⁰ There are 71 IRA governments, many of which operate within organized city and borough governments. IRA governments have federally recognized powers to make, enforce, and interpret laws and regulations that govern their members—including the powers to tax,⁸¹ establish courts, regulate property, negotiate with other governments, administer federal programs, and assert sovereign immunity.⁸² The federal Bureau of Indian Affairs provides the primary funding for IRA governments, and those governments have substantial flexibility in spending these funds.⁸³ However, because there is a lack of economic activity in many villages, and because tribes cannot tax non-member business ventures occurring on their lands,⁸⁴ Alaska Native villages are often “at the mercy of ebbs and flows of federal Indian funding.”⁸⁵

Many traditional councils still exist today, but they range from informal arrangements derived from centuries of cultural development to formal institutions with written constitutions and bylaws. Of the 229 federally recognized Alaskan tribes, 150 have traditional council governments.⁸⁶ These councils have similar powers and funding sources to those of IRA governments, but IRA governments can offer greater protection to tribally owned lands.⁸⁷

Some Alaska Natives elect to incorporate into state-recognized municipal and regional forms of government. Alaska allows for the creation of three types of city government with declining degrees of power: home rule,

80. THE ECON. RESOURCE GRP., *supra* note 70, at 14, 32.

81. The power to tax nonmembers is only available to tribal governments in “Indian country,” a term that is broadly defined and includes reservations, dependent Indian communities, and Indian allotments. *Alaska ex rel. Yukon Flats Sch. Dist. v. Native Vill. of Venetie (Venetie I)*, 856 F.2d 1384, 1390 (9th Cir. 1988) (reasoning that the tribal power to tax nonmembers is confined to “Indian country”); *Oklahoma Tax Comm’n v. Sac & Fox Nation*, 508 U.S. 114, 123 (1993) (defining “Indian country”). The term does not include lands conveyed under ANCSA. *Alaska v. Native Vill. of Venetie Tribal Gov’t (Venetie II)*, 522 U.S. 520, 527 (1998).

82. THE ECON. RESOURCE GRP., *supra* note 70, at 15–16.

83. *Id.* at 16.

84. *See Alyeska Pipeline Serv. Co. v. Kluti Kaah Native Vill. of Copper Ctr.*, 101 F.3d 610, 614 (9th Cir. 1996) (holding that an ANCSA village corporation could not tax the Alyeska Pipeline Company for a pipeline running through village lands because the pipeline was not located in “Indian country”).

85. THE ECON. RESOURCE GRP., *supra* note 70, at 17.

86. *Id.* at 18.

87. *Id.*

first class, and second class.⁸⁸ There are 145 city governments in Alaska, comprising 26% of the state's total population.⁸⁹ The Alaska Constitution also requires that all of its land be divided into organized or unorganized "boroughs."⁹⁰ Organized boroughs perform regional government functions such as taxation, education, and land use planning.⁹¹ For example, the Inupiat formed the North Slope Borough in 1972 and began building housing, schools, power and sewage plants, as well as levying taxes.⁹² Both cities and organized boroughs enjoy broad powers of "maximum local self-government" under the Alaska Constitution.⁹³ The unorganized borough is a unit of state government where the state provides some services such as public education through Regional Education Attendance Areas (REAA) and coastal management.⁹⁴ The unorganized boroughs comprise 57% of the state's land area, and many Native villages are located within these boroughs.⁹⁵

Regional Native corporations, village corporations, and non-profit associations emerged out of ANCSA. After the passage of ANCSA, regional and village corporations selected land in and around Native villages in proportion to their enrolled populations.⁹⁶ Whereas village corporations own only the surface rights to their selected lands, regional corporations own the subsurface rights of both their own selected lands and those of the village corporations.⁹⁷ Under the terms of ANCSA, regional corporations are incorporated under state law and certain Natives are given shares in the corporation.⁹⁸ Through this mechanism, Native assets are put toward productive investments for shareholders, which have historically included natural resource development.⁹⁹ ANCSA village corporations have the power to buy and sell land, develop surface resources, own and operate businesses and execute federal and state contracts.¹⁰⁰ Like the regional corporations, they are primarily tasked with maximizing profits for shareholders; however, they

88. DAN BOCKORST, ALASKA DEP'T OF CMTY & ECON. DEV., LOCAL GOVERNMENT IN ALASKA 3, 8 (2001), available at http://www.commerce.state.ak.us/dca/lbc/pubs/local_gov_ak.pdf.

89. *Id.* at 1.

90. ALASKA CONST. art. X.

91. BOCKORST, *supra* note 88, at 10.

92. Hess, *supra* note 32, at 7.

93. ALASKA CONST. art. X.

94. BOCKORST, *supra* note 88, at 12–14.

95. *See id.* at 2 (detailing the land comprised by organized boroughs).

96. Linda O. Smiddy, *Responding to Professor Janda—The U.S. Experience: The Alaska Native Claims Settlement Act (ANCSA) Regional Corporation as a Form of Social Enterprise*, 30 VT. L. REV. 823, 828 (2006).

97. *Id.*

98. *Id.*

99. THE ECON. RESOURCE GRP., *supra* note 70, at 23–24.

100. *Id.* at 28.

are occasionally called upon to provide services.¹⁰¹ Regional non-profit associations provide services to Natives, with the goal of addressing socio-cultural programs. They have essentially become “rudimentary borough governments”¹⁰²—or more aptly, tribal consortia—administering grants to provide public health services, education, employment, community and regional planning, and natural resource management.¹⁰³

III. VILLAGE ECONOMICS IN A GLOBAL SYSTEM

Native villages have unique local economies. Lee Husky, Professor of Economics at the University of Alaska, Anchorage, described the Native village economy as “three related economies” consisting of subsistence, transfer, and market sectors.¹⁰⁴ In the subsistence sector, residents hunt and fish for their own consumption.¹⁰⁵ The transfer sector relies on funding from the state and federal government in the form of welfare, jobs in public agencies, and funding for public schools and services.¹⁰⁶ In the market economy, village residents either work for wages or sell resources—fish, timber, or minerals—to others and then buy goods for their own use.¹⁰⁷

While there is no monetary exchange, subsistence plays an important economic role because it can help offset the need to go to the store to purchase food.¹⁰⁸ If we assume that subsistence resources could be replaced at \$3.50–\$7.00 per pound, then, given the amount of subsistence resources harvested annually in rural Alaska, it would take \$134–\$268 million to replace those resources with store-bought food.¹⁰⁹ Since their first contact with Western civilization, Native villages have struggled to maintain their self-reliance while increasingly becoming more dependent on outside sources.¹¹⁰ In the 1980s, village economies grew as a result of the expanding transfer economy with state and federal jobs and assistance programs.¹¹¹ With

101. *Id.* at 29.

102. *Id.* at 26.

103. Interview with Carol Daniel, Att’y, Alaska Fed’n of Natives, in Anchorage, Alaska (June 28, 2012).

104. Lee Husky, *Alaska’s Village Economies*, 24 J. LAND RESOURCES & ENVTL. L. 435, 436 (2004).

105. *Id.*

106. *Id.*

107. *Id.*

108. Most villages operate in a “mixed economy” where they purchase staples from the store but rely on subsistence for the bulk of their protein needs. Daniel, *supra* note 103.

109. FALL, *supra* note 61, at 3.

110. See Husky, *supra* note 104, at 447 (describing an increasing reliance on cash and modern technology among subsistence producers).

111. *Id.* at 436.

this money, many villagers purchased modern vehicles such as motorboats, ATVs, and snowmobiles to help carry out subsistence.¹¹² But these machines require cash to operate, which comes from the transfer or market sectors.¹¹³ However, securing income through the transfer sector is risky, since funding amounts are transitory and decisions are made by outsiders without consulting Natives.¹¹⁴ If a government experiences a budget crisis or cuts an assistance program, great hardship can occur in the villages.

Currently, the market economy plays a small role in village economics, but has great promise for increasing village self-reliance. Economic development in Native villages is limited by their extreme remoteness, high power costs, jobs going to non-Natives, and an inability to form competitive economies of scale.¹¹⁵ The village market economy is primarily based on natural resource development, which supplements subsistence harvesting. Fishing, cannery work, trapping, mining, and petroleum production have historically formed the majority of the economic base.¹¹⁶ However, high energy prices, overproduction of commercial fisheries, and the depletion of mineral resources pose a limit on growth of the market sector. The key to village self-sufficiency is building up the market sector with sustainable local enterprises while ensuring a robust subsistence sector.

As long as villages are dependent on the transfer sector, the health of village economies is also tied to the health of the global economy. Richard Heinberg argues that the current global “recession” is not a temporary slump, but is actually part of the inevitable end to economic growth.¹¹⁷ The reasons why growth can no longer continue globally are threefold: 1) depletion of resources, specifically fossil fuels; 2) negative environmental impacts arising from extraction and use of those resources, specifically climate change; and 3) broken financial systems.¹¹⁸ Whether or not Heinberg is correct, each of these reasons provides an incentive for villages to focus on self-sufficiency.

Of the three factors that Heinberg lists, the depletion of fossil resources has the most immediate bearing on Native villages. Heinberg has written books on the phenomenon of “peak oil” for the last decade. In short this phrase refers to the depletion of the world’s petroleum reserves—the “peak” signifies the point where oil production “achieves its maximum rate before

112. *See id.* at 447 (describing the growing nexus between subsistence producers, cash, and technology).

113. *Id.*

114. *See id.* at 454 (describing the transfer economy and its relationship to villagers).

115. *Id.* at 456.

116. *Id.*

117. RICHARD HEINBERG, *THE END OF GROWTH* 1–2 (2011).

118. *Id.* at 2.

beginning its inevitable decline.”¹¹⁹ While there had been some debate about when this event would occur, the International Energy Agency, the world’s foremost authority on global oil reserves, affirmatively settled the matter in its 2010 World Energy Outlook, announcing that crude oil would never reach the global production levels it achieved in 2006.¹²⁰ This is because the low-hanging fruit—large, easy to tap oil and natural gas fields—has already been picked and the remaining oil sources are smaller, more remote, and difficult to extract from.¹²¹

We see this phenomenon play out as the oil and natural gas industry increasingly resorts to extreme drilling techniques such as deep water exploration in the Gulf of Mexico, fracking of the Marcellus shale, extraction of Canadian tar sands, and offshore drilling in the storm-ridden Arctic Ocean.¹²² These techniques are costly and so energy intensive that they barely produce more energy than is required to extract the resource.¹²³ The industry also acknowledges this phenomenon. Jeremy Gilbert, former chief petroleum engineer for BP, described his drilling strategy as such: “The current fields we are chasing we’ve known about for a long time in many cases, but they were too complex, too fractured, too difficult to chase. Now our technology and understanding [are] better, which is a good thing, because these difficult fields are all that we have left.”¹²⁴ Moreover, North America’s largest oil field, Prudhoe Bay, has been declining since 1988 and could quite possibly shut down before 2035.¹²⁵

What does this mean for gas prices now and in the future? In 2000, petroleum geologist Collin Campbell predicted that oil prices will soar until the economy crashes and prices lower temporarily, but then will rise back up higher than before in a series of volatile cycles.¹²⁶ There will be increasing competition amongst nations to secure oil. Campbell’s predictions turned out to be true a lot sooner than expected, as oil was a large factor in U.S. military engagement in the Middle East over the last decade. Consistent with Campbell’s predictions, oil prices soared to \$150 a

119. *Id.* at 107.

120. INT’L ENERGY AGENCY, WORLD ENERGY OUTLOOK 2010 6 (2010), available at <http://www.iea.org/Textbase/npsum/weo2010sum.pdf>.

121. HEINBERG, *supra* note 117, at 109.

122. FREEDOMLAB FUTURE STUDIES, *Efficiently Consuming Too Much Energy*, http://www.webpages.uidaho.edu/sustainability/casestudies/case_study-efficiently_consuming_too_much.html (last visited October 7, 2012).

123. *Id.*; Zachary Moitoza, *A New Oil Boom?*, POST CARBON INST. (Feb. 10, 2012), <http://www.energybulletin.net/stories/2012-02-10/new-oil-boom>.

124. Heinberg, *supra* note 117, at 109–10.

125. U.S. ENERGY INFO. ADMIN., ANNUAL ENERGY OUTLOOK 2012 52 (2012), available at <http://www.eia.gov/forecasts/aeo/pdf/0383.pdf>.

126. Heinberg, *supra* note 117, at 16.

barrel in 2008 and crashed to \$40 a barrel within a matter of months before climbing back up to \$120 a barrel in 2012.¹²⁷ Prices at the pump this year around the nation have been volatile, averaging as high as \$3.84 per gallon.¹²⁸ While short term prices may fluctuate, given that the world has moved beyond peak oil production, long term prices can only be expected to rise. Contrary to popular belief, increasing domestic drilling—mostly in Alaska—would not abate these prices even temporarily because oil is a globally-traded commodity. Any amount that we could produce domestically would be such a small fraction of global production that it would hardly affect the global price of crude.¹²⁹ Moreover, if a spill occurred when drilling in the turbulent Arctic Ocean, it would have disastrous consequences for the subsistence communities that depend on bowhead whales and seals. This combination of high oil prices and future unavailability has been particularly challenging for the residents of rural Alaska.

IV. THE RURAL ALASKA ENERGY CRISIS

The Alaska Native tradition of subsistence is both a crucial cultural tradition and an important economic activity. However, communities have become increasingly dependent on modern technologies and particularly on fossil fuels in all of their subsistence activities. James Van Lanen, a Subsistence Resource Specialist with the Alaska Department of Fish and Game's Division of Subsistence,¹³⁰ has characterized many subsistence communities as having a "complete and total dependence on fossil fuels."¹³¹ On the federal side, Carl Johnson, Council Coordination Division Chief for the U.S. Fish & Wildlife Service Office of Subsistence Management, echoed this concern when he noted that "fuel prices were the principal barrier to subsistence."¹³² Whaling communities in the northern arctic region increasingly use motorboats and heavy construction vehicles to

127. *Id.* at 18; Jonathan Fahey, *Spring: A Time for Flowers, High Gasoline Prices*, SEATTLE PI, Apr. 9, 2012, <http://www.seattlepi.com/news/article/Spring-A-time-for-flowers-high-gasoline-prices-3468422.php>.

128. *Gasoline and Diesel Fuel Update*, U.S. ENERGY INFO. ADMIN. (Sept. 4, 2012), <http://www.eia.gov/petroleum/gasdiesel>.

129. Michael Conathan, *More Drilling Won't Lower Gas Prices*, THINK PROGRESS (MAR. 1, 2012), <http://thinkprogress.org/climate/2012/03/01/435330/more-drilling-wont-lower-gas-prices> (last visited July 3, 2012).

130. As part of his role as a Subsistence Resource Specialist, James visits many subsistence communities across the states and interviews subsistence users.

131. Van Lanen, *supra* note 7.

132. E-mail from Carl Johnson, Council Coordination Div. Chief, Office of Subsistence Mgmt., U.S. Fish & Wildlife Serv., to author (Apr. 10, 2012) (on file with author).

harvest whales.¹³³ Moose hunters in the interior region rely on motorboats and snowmobiles to access distant hunting grounds.¹³⁴

Not only are Natives dependent on petroleum products for transportation in subsistence uses, but they also rely on gasoline in many ways: for personal transportation around the villages, heating oil to heat their homes in the winter, diesel to run electric generators, and aviation fuel to supplement their subsistence-based harvest with flown-in commercial food products. Oil has essentially become the lifeblood of these rural villages. For instance, in Van Lanen's visits to the villages, some people rode four wheelers to travel two blocks instead of walking.¹³⁵ In many villages, inefficient oil furnaces and diesel generators supply heat and electricity. Alaska has more days that require home heating than any other state in the nation,¹³⁶ and since many of these homes have very limited insulation,¹³⁷ villages understandably consume a great deal of heating oil. In fact, it can cost up to \$2000 per month to heat a village home throughout the long Alaskan winter.¹³⁸ Due to the high cost of heating oil, the State subsidizes the heating fuel and electricity costs of many villages through the Alaska Energy Authority's Power Cost Equalization program.¹³⁹ While these subsidies may make living in rural Alaska possible in the short term, they do nothing to lower the long-term total cost of heating and electricity.

Native communities have already experienced some of the negative consequences of relying on fossil fuels. For example, in the village of Fort Yukon, there is virtually "no economy" except for "outside money coming in through grants and government programs."¹⁴⁰ Yet a life that depends on modern conveniences such as fuel for hunting needs and flown-in store-bought food costs money. In fact, it costs a lot of money, even in a state with the second most proven oil reserves in the United States.¹⁴¹ Prices for a

133. Yardley, *supra* note 5.

134. Van Lanen, *supra* note 7.

135. *Id.*

136. *Energy Consumption in Alaska Homes*, U.S. DEP'T OF ENERGY, ENERGY EFFICIENCY & RENEWABLE ENERGY, <http://apps1.eere.energy.gov/states/residential.cfm/state=AK> (last visited Dec. 9, 2012).

137. *Sustainable Northern Communities Monitoring*, COLD CLIMATE HOUSING RES. CTR, <http://cchrc.org/sns-monitoring> (last visited Sept. 7, 2012).

138. ALASKA FED'N OF NATIVES, *supra* note 8, at 5.

139. ALASKA DIV. OF CMTY. & REG'L AFFAIRS, CURRENT COMMUNITY CONDITIONS: FUEL PRICES ACROSS ALASKA 5 (2011), available at http://www.dced.state.ak.us/dca/pub/Fuel_Report_Jan_2011.pdf; *Power Cost Equalization*, ALASKA ENERGY AUTH., <http://www.akenergyauthority.org/programspce.html> (last visited Sept. 7, 2012).

140. James Van Lanen, *Ethnographic Findings: Respondent Concerns Regarding Socio-Economic Vulnerability, Youth, and the Future of Subsistence on the Yukon Flats 1* (Apr. 16, 2012) (unpublished draft) (on file with author).

141. Charles B. Stockdale, *The Most Oil-Rich States*, 24/7 WALL ST. (Apr. 3, 2012, 6:56 AM), <http://247wallst.com/2012/04/03/ten-most-oil-rich-states/3/>.

gallon of gasoline in many of the Native villages are currently over \$6 per gallon and prices have gone to \$10 per gallon in the past.¹⁴² Moreover, when one looks at a chart of average gasoline and heating oil prices across Alaska—including large cities—there is a steady rise from under \$4 per gallon in 2005 to over \$6 per gallon in 2012.¹⁴³ Prices in the Native villages tend to be so high because the villages are located off road systems, where fuel must be flown or barged in.¹⁴⁴ These transportation costs raise fuel prices by roughly \$2 per gallon over what it would cost if communities were serviced by road.¹⁴⁵

Faced with such extreme fuel prices, subsistence communities' ability to harvest fish and wildlife is substantially diminished. Villagers routinely have to travel long distances to access prime hunting and fishing grounds because rural Alaskans overuse many areas immediately surrounding the villages. This overuse is due to the increasingly heavy demand for subsistence foods from rural Alaskans, the many years of cheap fuel availability that allowed people to take a greater quantity of fish and game, outsiders with the financial ability to fly into remote locations for sport fishing and hunting, and overfishing from the commercial fishing industry.¹⁴⁶

Buying food and supplies from the store is not a viable option for many Native Alaskan communities. For instance in Nome, it costs \$40 for a twelve-pack of paper towels, \$5 for a two-liter bottle of Diet Coke, and \$16 for breakfast for one at an average restaurant.¹⁴⁷ As one Point Hope resident pointed out, “[w]e need the foods from our lands and waters to feed our families. . . . We cannot afford to buy the foods that come up to the Arctic. The costs of transportation increase these costs, so that it can take your whole paycheck to try to feed your family from the store.”¹⁴⁸

Dependence on motorized transport and the high cost of fuel have created a situation where the ability to harvest subsistence resources is dependent on household income. Studies have found that those villagers with the highest incomes often harvest more subsistence resources than those with

142. ALASKA DIV. OF CMTY. & REG'L AFFAIRS, CURRENT COMMUNITY CONDITIONS: ALASKA FUEL PRICE REPORT 5 (2012), available at http://www.commerce.state.ak.us/dca/pub/Fuel_Report_2012_July.pdf (last visited Oct. 22, 2012).

143. *Id.* at 6.

144. *Id.* at 3.

145. *Id.*

146. Van Lanen, *supra* note 64.

147. Mark Thiessen, *Nome Residents Roll with Higher Fuel Prices*, ANCHORAGE DAILY NEWS, Mar. 30, 2012, <http://www.adn.com/2012/03/29/2397173/nome-residents-roll-with-higher.html>.

148. Richard Harris, *Native Alaskans Divided On State's Oil Drilling Debate*, NPR (Mar. 20, 2012), <http://www.npr.org/2012/03/20/148754357/native-alaskans-divided-on-states-oil-drilling-debate>.

lower incomes because they can afford more equipment and fuel.¹⁴⁹ These higher-income villagers routinely share food with residents that are unable to afford subsistence.¹⁵⁰ When they cannot afford the price of fuel to travel long distances, some subsistence users employ creative methods to conserve fuel and overcome the financial barriers to practicing subsistence. For example, some Natives only hunt and fish when they have the best chances of taking something.¹⁵¹ Some moose hunters use their boat's engine to go upriver to hunting grounds, then drift back down the river.¹⁵²

These types of strategies may serve as temporary measures that allow subsistence activities to continue with modern technologies still in place. However, what will happen as prices rise to the point that subsistence activities using fossil fuel based technologies become entirely unaffordable or unavailable? Such a scenario is not only likely, it is inevitable given peak oil. Despite close proximity to some of the nation's largest oil fields, rural Alaska will most likely be the first place in the country where people do not have access to fossil fuel based energy because of their extreme remoteness.¹⁵³ For instance, in Nome this past winter, a single miscalculation about the amount of gasoline and heating fuel needed for winter threatened to leave the village fuel-less in the middle of a brutally cold winter.¹⁵⁴ Fortunately, the village was spared by the heroic efforts of a Russian tanker and Coast Guard Icebreaker that broke through thousands of miles of sea ice.¹⁵⁵ This event showcased the vulnerability of rural Alaskan communities to fuel shortages, where each food flight and shipment of heating oil and diesel generator fuel makes the difference between life and death.¹⁵⁶

In addition to the threat of fuel unavailability, native villages are already experiencing the negative impacts of climate change. "Over the past fifty years, Alaska has warmed at more than twice the rate of the rest of the United States. Its annual average temperature has increased by 3.4°F, and

149. Van Lanen, *supra* note 140, at 4.

150. *Id.* at 10–11.

151. Van Lanen, *supra* note 7.

152. *Id.*

153. *Id.*

154. William Yardley, *A New Race of Mercy to Nome, This Time Without Sled Dogs*, N.Y. TIMES, Jan. 9, 2012, <http://www.nytimes.com/2012/01/10/us/icebreaker-slowly-carves-path-for-tanker-to-bring-emergency-fuel-to-alaska.html>.

155. *Id.*

156. ReturnToResilience, Comment to *Real Threat to Alaska Native Culture Isn't Oil Development. It's a World Without Oil*, ALASKA DISPATCH (June 25, 2012, 4:11 PM), <http://www.alaskadispatch.com/article/real-threat-alaska-native-culture-isnt-oil-development-its-world-without-oil>.

winters have warmed even more, by 6.3°F.¹⁵⁷ These warming temperatures have already caused numerous impacts to game species. For instance, the Caribou's food supply is diminishing because the tundra shrubs that they rely on are now pelted with a heavy icy rain during the winter instead of fluffy snow, freezing the shrubs and rendering them inedible.¹⁵⁸ In the northern Interior, warmer temperatures in early fall are impacting the moose hunt.¹⁵⁹ In the future, climate change is expected to make access to game populations increasingly volatile due to shifting migration patterns. Not only does climate change threaten animal and plant species, but it can also threaten the village itself. For example, residents of Kivilina, Newtok, Koyukuk, and Shishmaref will be America's first climate refugees because melting permafrost and coastal erosion are forcing them to move their entire villages.¹⁶⁰

V. THE CULTURAL DIVIDE

While some Natives see the peril in a world without cheap energy, others deny that there is a problem. Fossil fuel dependence is a very sensitive issue within Native communities. Often, when concerned community members raise the issue, the general response is denial.¹⁶¹ But some community members realize the gravity of the situation. For example, a village elder from Fort Yukon stated:

Living only off the store really scares me, because there's so little jobs and the prices are so high. Press a button and get this little Quest card and buy all you want. I always wonder how my grandchildren will be. I always did worry about that part. How they'll get their moose like we do. Things change so fast year after year you know and jobs are getting scarce and the climate is changin' . . . I always think we are getting in a crisis yet to come.¹⁶²

157. U.S. GLOBAL CHANGE RESEARCH PROGRAM, CLIMATE CHANGE IMPACTS IN THE UNITED STATES 139 (2009), available at <http://downloads.globalchange.gov/usimpacts/pdfs/alaska.pdf>.

158. *Endangered Reindeer*, LIVING ON EARTH (Dec. 16, 2012), available at <http://www.loe.org/shows/segments.html?programID=11-P13-00050&segmentID=9>.

159. Shannon M. McNeeley et al., *Anatomy of a Closing Window: Vulnerability to Changing Seasonality in Interior Alaska*, 21 GLOBAL ENVTL. CHANGE 464, 472 (Mar. 2011) (discussing the implications of climate change for Native subsistence communities in Interior Alaska).

160. William Yardley, *Victims of Climate Change, a Town Seeks a Lifeline*, N.Y. TIMES, May 27, 2007, http://www.nytimes.com/2007/05/27/us/27newtok.html?_r=2; U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-04-142, ALASKA NATIVE VILLAGES: MOST ARE AFFECTED BY FLOODING AND EROSION, BUT FEW QUALIFY FOR FEDERAL ASSISTANCE 4 (2003), available at <http://www.gao.gov/new.items/d04142.pdf>.

161. Van Lanen, *supra* note 7.

162. Van Lanen, *supra* note 140, at 1.

This elder's viewpoint illustrates how fossil fuel dependence, climate change, and a lack of interest in subsistence by the younger generation are all contributing to a building crisis.

Others specifically worry about being dependent on motorized transportation to and from subsistence activities. The potential loss of access to fuel raises a question as to whether Natives have retained the knowledge and skills required to adapt to a world without fossil fuels. Without motorized transport, "subsistence activities would be concentrated to small, easily accessed locations and thus eventually lead to unsustainable use patterns."¹⁶³ As this resident of Venetie stated:

Everybody's really dependent on machines . . . it takes away the value of, you know, when you go out hunting My values, you know, were taught from my grandfather . . . and he gave me, you know, the values of "what would happen if there was no fuel?" You know, would people be able to survive? I know I would be able to [because] I know how to, I know where to go and where to hunt and where to fish, but I mean some of these other people they just get in a boat and, you know, drive around 'til they see a moose.¹⁶⁴

While many Native communities retain elements of traditional subsistence methods, an abrupt shift to harvesting entirely without fuel would be an enormous challenge. This Venetie resident's comment touches on an issue that other Natives have also expressed: that being dependent on modern machinery for subsistence has created problems beyond the inability to harvest. This dependence led to a loss of traditional ways of hunting and the ecological knowledge that comes from moving slowly and having intimate interactions with nature. Some village elders have observed that traditional subsistence life offers a harder but more rewarding lifestyle that creates a "resilient and hardworking character."¹⁶⁵ As one Fort Yukon elder explained:

We only lived off the land up there because those days they didn't get energy assistance, food stamps, [or welfare], but we had to work hard for our food and stuff, we lived off the land We had nothing, eleven kids with little food, but we made it with

163. *Id.* at 2.

164. *Id.*

165. *Id.* at 4.

berries, rabbits, ground squirrel, fish, caribou, moose meat . . . I mean that's the way we grew up. That's the way I'm trying to teach my little ones to eat the Native food, you know, instead of chicken, hamburger. We never grew up on stuff like that. Out in the woods it's harder. But I like that livin' better once we get settled down.¹⁶⁶

This passage highlights that education is one of the keys to restoring traditional methods of subsistence harvesting is. If young people are taught to utilize traditional methods, they can decrease their reliance on fossil fuels and insulate themselves from the deleterious consequences of future fuel shortages and unavailability.

VI. SOLUTIONS

The goal of a campaign to build self-reliance among Alaska Natives is to build socio-economic resilience—the ability to adapt through periods of ecological disturbance and change in the wider economy. It is imperative that the village economies localize, both by building up the market sector with sustainable initiatives and by assuring that subsistence will continue to be an option in the future. To accomplish this, those in a position to effect changes need to drop any defensiveness or denial of the problem and think about creative steps to build resilience. Unfortunately, there is no silver bullet technology which will substitute for fossil fuels. However, implementing a combination of traditional techniques and sustainable modern technologies can help fight fossil fuel dependence and free up much needed money for villages.

A. *Changing the Way that Subsistence is Done*

For the last two decades Native groups, sport and commercial hunting and fishing interests, the State of Alaska, and the federal government have waged a harrowing legal and political battle over who should manage subsistence.¹⁶⁷ While it is important that subsistence users be given a meaningful priority over other users, the narrow focus on jurisdiction—who should be managing subsistence—accompanied by the parties' dogmatic political positions has obfuscated the larger problem of declining wildlife populations near villages and high gasoline prices, both of which

166. *Id.*

167. See generally ALASKA FED'N OF NATIVES, *supra* note 20, at 7–14 (detailing the political and legal history of subsistence management in Alaska).

make subsistence impossible. Regardless of whether the state or federal government is managing subsistence, to ensure continued availability of subsistence resources, it is critical that the management structure changes to reflect the lack of subsistence resources close to villages and the need to insulate against anticipated fuel shortages. However, no subsistence scheme will succeed in this regard unless Natives are given a more substantial role in the sustainable management of subsistence resources.

The goal of the new management scheme would be to allow fish and game populations directly surrounding the villages to rebound and to develop new techniques for subsistence harvesting that minimize fuel use. To accomplish this goal, regulations need to be put in place that would allow for the use of traditional stewardship knowledge possessed by Natives. Natives have a cultural belief in conservation and a respect for the land that has passed down through the generations. However, in recent times, the availability of mechanized transport has alienated many Natives from traditional culture. Therefore, regulations need to be put in place that incentivize transportation that does not rely on fossil fuels.

Reverting to traditional non-fossil based subsistence techniques is challenging, but has rewards in addition to reducing fossil fuel dependence. Walking, paddling a canoe, or mushing a dog-sled to carry out subsistence can help restore “traditional ecological knowledge generated by more slow moving, and thus more intimate, interactions with local ecosystem processes.”¹⁶⁸ In one village, rather than taking a boat ninety miles up a circuitous river as was custom, moose hunters instead travel ten miles on foot to reach the same location.¹⁶⁹ In Beaver, residents have successfully hunted moose by mountain bicycle.¹⁷⁰ Other moose hunters set up camp for up to two weeks at a time, waiting for the moose to come to them rather than pursuing the moose by vehicle.¹⁷¹ The challenge in any of these activities is to ensure that the energy expended in travelling to hunting or fishing grounds, killing the fish or animal, and packing it out is not greater than the energy derived from eating it. However, only a few generations back, Natives “survived on this land by their own accord, under their own terms, without any government assistance, and without any grocery store or concentrated fossil energy.”¹⁷² Relearning these skills would be entirely practical as certain elders have retained traditional subsistence knowledge. For instance, across Alaska, one traditional skill set that persists among

168. Van Lanen, *supra* note 140, at 4.

169. Van Lanen, *supra* note 7.

170. ReturnToResilience, *supra* note 156.

171. Van Lanen, *supra* note 7.

172. ReturnToResilience, *supra* note 156.

Natives is the ability to preserve salmon without the need for a freezer, which leads to substantial energy savings.¹⁷³

Another option that can accompany a reversion to traditional subsistence techniques is the use of electric motors with batteries recharged via renewably generated electricity. Electric ATVs are now available¹⁷⁴ and hybrid electric snowmobiles and solar powered boats are nearing commercial viability.¹⁷⁵ The advantage of incorporating electric vehicles into subsistence is that they would allow for long-range subsistence activities without a dramatic shift in the level of human energy required to harvest the resource. With the right techniques and technologies in place, Native communities can continue practicing subsistence while game populations surrounding villages rebound. However, in the meantime, measures should be taken that will allow villages to free up their income to afford subsistence.

B. Reshaping the Native Village

To provide for a more independent, prosperous economy for Native villages and to free up money for subsistence, villages can implement projects that promote renewable energy, energy efficient buildings, and locally-grown agriculture. By spending less money on commercial foods, heating, and electricity, money can be allocated to subsistence purposes. Implementing these measures would allow villages to develop their own local economy and insulate themselves from the dominant economic system. All of these measures require upfront funding which can be leveraged from many sources, including non-profit and for-profit regional Native corporations and the federal and state governments. However, once the initial funding is supplied, these measures are designed to be self-supporting.

Alaska is blessed with some of the highest concentration of undeveloped renewable resources on Earth, including wind, solar, geothermal, hydropower, biomass, tidal, and wave power.¹⁷⁶ However, in Native villages, most of the power is supplied by inefficient, centralized diesel generators.¹⁷⁷ As fuel costs rise, developing these renewable technologies is becoming a

173. Van Lanen *supra* note 7.

174. See ELECTRIC VEHICLE SYS., *Electric All Terrain Vehicle the E-Force ATV*, ECO ELECTRIC ATV, <http://www.ecoatv.com> (last visited Sept. 6, 2012).

175. THE CANADIAN PRESS, *Operation Silent Snowmobile: New Vehicle Planned for Covert Arctic Ops*, HUFFINGTON POST CANADA, (Aug. 21, 2011), http://www.huffingtonpost.ca/2011/08/21/operation-silent-snowmobile_n_932334.html; *Aequus Solar Boat Has Summer Debut*, GETSOLAR.COM (July 7, 2010), <http://www.getsolar.com/blog/aequus-solar-boat-has-summer-debut/8882/>.

176. ALASKA ENERGY AUTH., ALASKA ENERGY: A FIRST STEP TOWARD ENERGY INDEPENDENCE 22 (2009), available at <http://www.akenergyauthority.org/PDF%20files/AK%20Energy%20Final.pdf>.

177. *Id.* at 33.

more cost-effective option. Additionally, state and federal incentives and grants for renewable energy have begun to take shape, which only increases the attractiveness of these alternative technologies.

With the aim of further developing renewable resources, in 2008, the Alaska legislature created the Renewable Energy Grant Program, which provides \$50 million per year to fund renewable energy projects for five years.¹⁷⁸ Electric utilities, independent power producers, governments, and agencies can apply to the Alaska Energy Authority (AEA) for a grant. The AEA awards the grant money based on the project's sustainability, public benefit, and economic feasibility.¹⁷⁹ Since the legislature established the fund in 2008, it has awarded \$176 million to renewable energy projects. The legislature recently extended the fund for five more years.¹⁸⁰

The AEA awarded \$4 million in funding for a six-turbine wind project in Unalakleet.¹⁸¹ By producing energy without fuel costs, the project will save the community thousands of dollars annually in avoided diesel fuel expenditures and will stabilize the cost of electricity.¹⁸² The project was funded by a utility company, Native non-profit associations, and an ANCSA village corporation.¹⁸³ This project demonstrates that investing in renewable energy can be a great option for Native governments and businesses.

There are sizable barriers to implementing renewable energy projects in the villages. The cost of transporting infrastructure to remote villages, the lack of private capital for investment, small-scale projects that only serve a few hundred residents, impediments to public grant access and private capital investment, and the lack of trained workers to install and maintain the projects are all formidable obstacles.¹⁸⁴ However, there have been recent federal efforts to confront these barriers. The Department of Energy's (DOE) Strategic Technical Assistance Response Team (START) program is a good example of how the federal government can assist tribes to develop

178. *Id.* at 53.

179. *Id.*

180. Dave Donaldson, *House Approves Five More Years of Renewable Energy*, RENEWABLE ENERGY ALASKA PROJECT (Mar. 20, 2012), <http://alaskarenewableenergy.org/2012/03/house-approves-five-more-years-of-renewable-energy>.

181. *Nome, Unalakleet Fire Up with Wind Power on the Iditarod Trail*, RENEWABLE ENERGY ALASKA PROJECT (Feb. 23, 2010), <http://alaskarenewableenergy.org/2012/02/nome-unalakleet-fire-up-with-wind-power-on-the-itarod-trail>.

182. *Unalakleet Valley Electric Cooperative Wind Farm, Unalakleet, AK*, N. POWER SYS., <http://northernpower.kiosk-view.com/unalakleet> (last visited Sept. 6, 2012).

183. *Id.*

184. *See* ALASKA FED'N OF NATIVES, CHALLENGES & OPPORTUNITIES FOR RENEWABLE ENERGY IN ALASKA: ALASKA DAY AT THE CENTER FOR AMERICAN PROGRESS 4-7 (2012), available at <http://www.nativefederation.org/documents/afn-cap-report-2012.pdf> (discussing the deterrent effect on investments in rural Alaskan projects caused by the difficult terrain and small village sizes).

sustainable energy solutions.¹⁸⁵ Through the START program, five Native villages in Alaska were selected to receive assistance from the DOE to conduct strategic energy planning; train and educate local workers, tribal leaders, and community members; navigate the grant application and financial process; and maintain the energy projects through a comprehensive monitoring program.¹⁸⁶ The START program stresses the importance of collaboration and communication, and provides a hands-on approach to actually implementing renewable projects, providing jobs for village residents, and lowering the long term cost of energy.¹⁸⁷

Alaskans use more energy per capita than any other state in the country—three times the national average—in large part due to the cold climate and heating needs.¹⁸⁸ In many rural communities, homes are poorly-constructed and unable to withstand Alaska’s climate extremes.¹⁸⁹ Investing in energy efficiency is among the most immediate and effective ways for Native villages to lower energy costs.¹⁹⁰

To help develop energy efficient and affordable homes in rural villages, the Cold Climate Housing Research Center (CCHRC), a non-profit corporation, built a prototype house in Anaktuvuk Pass in 2009.¹⁹¹ Anaktuvuk Pass is a remote Nunamiut village in the North Slope Borough.¹⁹² The prototype house was specifically designed based on the needs of community members.¹⁹³ It incorporates both modern technologies, such as solar panels and spray foam insulation, as well as traditional features such as *qingok*—a passive venting system—and soil berms to act as a wind buffer.¹⁹⁴ This prototype house uses 73% less fuel than a typical rural home.¹⁹⁵ If

185. *Start Program*, U.S. DEP’T OF ENERGY, OFFICE OF INDIAN ENERGY POLICY & PROGRAMS, <http://energy.gov/indianenergy/resources/start-program> (last visited Sept. 7, 2012).

186. Interview with Pilar Thomas, Deputy Dir., Office of Indian Energy Policy & Programs, in Anchorage, Alaska (June 7, 2012).

187. *Id.*

188. *Alaska Energy Fact Sheet*, U.S. ENERGY INFO. ADMIN., <http://www.eia.gov/state/state-energy-profiles-analysis.cfm?sid=AK> (last updated Oct. 2009).

189. COLD CLIMATE HOUS. RESEARCH CTR., *supra* note 137.

190. JOHN N. DAVIES & KATHRYN E. DODGE, COLD CLIMATE HOUS. RESEARCH CTR., ENERGY EFFICIENCY POLICY RECOMMENDATIONS FOR ALASKA: FINAL REPORT FOR THE ALASKA ENERGY AUTHORITY 5 (2012), *available at* <http://www.akenergyauthority.org/EfficiencyPolicyRecommendations2012.pdf>.

191. Robbin Garber-Slaght, COLD CLIMATE HOUS. RESEARCH CTR., MONITORING AND VERIFICATION OF SUSTAINABLE NORTHERN SHELTER BUILDING PERFORMANCE: ANAKTUVUK PASS PROTOTYPE HOUSE FINAL REPORT 3 (2011), *available at* http://cchrc.org/docs/reports/NREL_DEC2011_AnaktuvukPass.pdf.

192. *Id.* at 3.

193. *Id.* at 4.

194. *Id.*

195. *Id.* at 13.

implemented on a wide scale, these projects can save villages millions of dollars in energy costs and reduce dependence on heating fuels.

Installing the energy efficiency measures (efficient appliances, weatherization, etc) is just one step toward achieving the ultimate goal of reducing energy bills. The other aspect is changing community behavior. To help communities learn more about their energy use, RurAL CAP, a non-profit organization that partners with the state and federal government, established the Energy Wise program.¹⁹⁶ Through this program, locally-trained crews visit village residents, assess their energy use, and educate them about ways to change their behavior in order to save on their electric bills. For a cost of less than \$2,000 per household, this program yielded an average electric savings of \$708 per year (not including heating savings), provided up to two months work for many rural Alaskans, and trained thousands of rural Alaskans on energy efficiency and energy conservation strategies.¹⁹⁷

Gardening in rural Alaska is a challenge because of a short growing season and the lack of good soil.¹⁹⁸ However, the technology for growing food both indoors and outdoors is improving dramatically and some villages have built community gardens and greenhouses.¹⁹⁹ For example, Chickaloon has a tribally sponsored greenhouse that runs partially on solar and wind power and is capable of growing food throughout the year.²⁰⁰ This greenhouse was built with local and recycled materials that are available to many other communities in Alaska.²⁰¹ Another increasingly popular growing method in rural Alaska is permaculture, “a holistic design process, using ecology as a basis for designing integrated systems: food production, community, economics, housing, with an embued ethic of caring for the earth, caring for people and sharing the surplus . . . chang[ing] the patterns of our behavior to match nature's systems.”²⁰² Locally grown food has many advantages. It is much healthier than the commercial foods that many villages

196. *Energy Wise Program*, RURAL COMMUNITY ACTION PROGRAM, http://www.ruralcap.com/index.php?option=com_content&view=article&id=530&Itemid=348 (last visited Sept. 11, 2012).

197. *Id.*; *Energy Wise Program Fact Sheet*, RURAL COMMUNITY ACTION PROGRAM, http://www.ruralcap.com/attachments/530_Energy%20Wise%20Fact%20Sheet%20-%20revised%203-19-12.pdf (last visited Sept. 12, 2012).

198. Fran Durner, *The Challenges of Growing Food in Rural Alaska*, ANCHORAGE DAILY NEWS (Feb. 11, 2009, 11:34 AM), <http://community.adn.com/node/137868> (last visited Sept. 6, 2012).

199. *Id.*

200. *Chickaloon Village Four-Season Greenhouse*, ATHABASCAN NATION CHICKALOON VILLAGE, http://www.chickaloon.org/index.php?option=com_content&view=article&id=143&Itemid=158 (last visited July 15, 2012).

201. *Id.*

202. *What is Permaculture?*, ALASKA PERMACULTURE http://akpermaculture.ning.com/?xg_source=badge (last visited Sept. 6, 2012).

currently depend on.²⁰³ In addition, supplementing subsistence with local growing would allow game species populations near villages to rebound. Finally, by supplying their own food, villages can save millions of dollars per year that they would otherwise spend transporting commercial food.

C. *Teaching the Youth Traditional Subsistence Skills*

Concerns about the lack of traditional knowledge and skills being taught to Alaskan Native children are not new. In 1983, Yukon Flats elders believed “the future would bring ‘disruptions’ to the modern food shipping system and that younger generations would likely find great difficulty adapting to such events.”²⁰⁴ In addition, the elders believed that knowledge of how to use the land and wild resources must be passed on to younger generations to ensure economic and cultural survival.²⁰⁵ Today, elders in this community continue to emphasize the need to educate Native youth in traditional subsistence skills.

Historically, subsistence knowledge and education has been taught by parents and village elders to children informally and at summer camps. Some parents and elders still teach their children subsistence skills; however, these parents may be in the minority. Many parents do not pursue a subsistence lifestyle themselves, and do not instill the value of subsistence in young people.²⁰⁶ As one Levelock elder explained, “[p]eople are changing. Like my grandchildren, the way of subsistence for them is ‘umpa, do you got a dollar, I wanna go to the store.’ That’s their way of subsisting.”²⁰⁷

Many blame the modern public education system for the alienation of Alaska Native children from the land. Some believe that the school system is even alienating children from their own families. As one elder from Fort Yukon stated:

It’s a good thing that kids get schooling, but I think that was what broke up most of the families, you know, because when you’re out there [pursuing subsistence activities] all kids they had their own work to do too . . . now what do they do? They play that little game, you know, and watch TV.²⁰⁸

203. Daniel, *supra* note 100.

204. Van Lanen, *supra* note 140, at 5.

205. *Id.*

206. *Id.*

207. E-mail from James Van Lanen, Subsistence Res. Specialist, Alaska Dep’t of Fish & Game, Div. of Subsistence, to author (July 11, 2012, 14:45 EST) (on file with author).

208. Van Lanen, *supra* note 140, at 5.

A report from the Alaska Natives Commission (ANC), a joint federal–state task force commissioned by Congress to examine Native issues, further illustrated some problems associated with the schooling of Natives.²⁰⁹ For instance, the Alaska public school system has a dearth of Native teachers.²¹⁰ This has led to poor performance among Native students because of the emphasis placed on the individual in classic American education, as opposed to the high value that Native culture places on cooperation.²¹¹ In addition, public schools have waged an assault on indigenous language—“the very core of a child’s identity.”²¹²

To instill a greater value for subsistence in children and ensure greater resilience to economic disruptions in the future, public schools in Alaska should begin to incorporate traditional subsistence education into their curricula. The ANC highlighted the need for the Alaska Native education system to embrace “an integrated education that encompasses two sets of skills and two sets of values.”²¹³ The first set of skills are those necessary to succeed in “traditional Native lifeways.”²¹⁴ The second set are those that would allow children to succeed in Western Society. Learning both skill sets is essential for empowering Native children in both cultures.²¹⁵ By learning about subsistence and traditional knowledge, Native children will not only acquire a practical skill set that will allow them to adapt to future challenges, but also retain their cultural heritage. As one parent from Newhalen explained:

That’s what I have been trying to tell all the kids. Eat what you can from the land. Learn how to do it. Put it away, and in the long run everybody is going to be looking for food and you’re the only one that’s gonna have it. You know how to can it, put it away, store it. We survived with nothing for thousands of years. It is knowledge. Know where to go, go out there and find out. Where is the best place to put out a trap? Where is the best place to gather? Where is the best place to go during a certain time of the year to get what you need? If we have education on subsistence, in the long-run I

209. ALASKA NATIVES COMM’N, REPORT OF THE EDUCATION TASK FORCE (1991), *available at* http://www.alaskool.org/resources/anc2/ANC2_sec4.html.

210. *Id.*

211. *Id.*

212. Edna Ahgeak MacLean, *Culture and Change: Inupiat and Yupiks of Alaska*, ALASKOOL, http://www.alaskool.org/native_ed/articles/EMaclean-CC.htm (last visited Sept. 7, 2012).

213. ALASKA NATIVES COMM’N, *supra* note 207.

214. *Id.*

215. *Id.*

think all the kids, I don't care what race they come from, they'll learn how to live in Alaska without barely nothing.²¹⁶

By using Western education strategies, children become responsible citizens in a global community able to build political power, engage in advocacy, and understand the wider issues that affect every one of us.

Education of Alaska Natives is currently carried out through REAAs (state level), borough governments, or non-profit associations.²¹⁷ With federal and state assistance, these entities can redesign the Native education system to provide traditional subsistence skills. To work towards this end, Native communities, including parents and community leaders, need to first speak with a “compelling voice” for greater self-determination of children’s education and then become more involved with their children’s schooling.²¹⁸ Native children would also benefit from greater local control over schools’ curricula by incorporating Native concerns and hiring Native administrators.²¹⁹ The Alaskan education system should seek to incentivize the teaching profession for Natives and hire more Native teachers.²²⁰ It can also supply non-Native teachers with knowledge of Native culture.²²¹ Finally, future facilities need to be designed so that “students see the schools as an extension of their community’s local culture.”²²² Ultimately, it is the younger generation that will ensure the continued survival of traditional culture, and with crisis impending, the continued transmission of this knowledge will be more important than ever.

CONCLUSION

Climate change and peak oil are major problems. The goal of the solutions I suggest is not to tackle climate change or peak oil head on, but rather to build socio-economic resilience—Alaska Natives’ ability to adapt to ecological disturbance and change in the wider economy. It is essential that villages take measures to insulate themselves from the dominant economic system by building up their local economies with sustainable ventures.

216. E-mail from James Van Lanen, Subsistence Res. Specialist, Alaska Dep’t of Fish & Game, Div. of Subsistence, to author (July 11, 2012, 17:36 EST) (on file with author).

217. *See supra* Part III.

218. ALASKA NATIVES COMM’N, *supra* note 209.

219. *Id.*

220. *Id.*

221. *Id.*

222. *Id.*

Rural Alaska is a very special place. What makes it unique is that Natives “still live on their lands, [and] are still attached to it spiritually [and] culturally.”²²³ It is critical that Alaska Natives be able to continue living on their ancestral lands. Measures need to be put in place to preserve the tradition of subsistence hunting and fishing because without a revamped approach, this inter-generational knowledge may be forever lost. These measures will ensure that subsistence can continue to play an important role in cultural traditions and build socioeconomic resilience in an uncertain future.

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223. See ALASKA FED’N OF NATIVES, *supra* note 184, at 12.

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