ARTICLE

TURNING "TRADITIONAL" ON ITS HEAD: SUBSISTENCE ACCESS TO KATMAI NATIONAL PRESERVE IN THE AGE OF CLIMATE CHANGE

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ABSTRACT

The concept of "tradition" gained widespread usage throughout the twentieth and early twenty first centuries, as members of rural communities sought to identify their uniqueness, especially in relation to new ideas and technologies associated with modern globalization. In turn, ideas about what is "traditional" are often used to critique contemporary subsistence practices that use "modern" technology. In this article, we critically examine a legal framework for "traditional" subsistence practice in Alaska's National parks, monuments, and preserves, outlined in the Alaska National Interest Lands Conservation Act (ANILCA; U.S. 96th Congress 1980). We examine this framework in the context of an ethnographic case study, in which residents of Kokhanok and Igiugig, Alaska, submitted formal requests to the National Park Service for authorization to access Katmai National Preserve using off-road vehicles (ORVs). Through participant observation and ethnographic interviews, we explore the challenges subsistence hunters face as technological adaptation creates tension between etic notions of "traditional" subsistence and the emic experience of contemporary subsistence in a climate-changed environment. With an eye toward applied outcomes, our intent is largely to inform federal policy and decision-making.

INTRODUCTION

The concept of "tradition" gained widespread usage throughout the twentieth and early twenty-first centuries as rural peoples and communities became increasingly connected to the outside world (Babadzan 2000). Rural communities, and those who seek to contrast rural communities with urban counterparts, often employ the concept of tradition to identify their uniqueness, especially in relation to new ideas and technologies associated with modern globalization (Kuligowski 2014). In turn, ideas about what is "traditional" are often used to critique contemporary subsistence practices—especially Indigenous hunting practices—that use "modern" technologies adopted from other cultures. In these critiques, the use of technologies like motorized vehicles and firearms are characterized as practices that "no longer serve truly subsistence needs or represent authentic cultural traditions" (Reo and Whyte

2012:16). While these critiques ignore one of the hallmark characteristics of subsistence economies—the ability to "adapt to political, economic, and environmental changes"—they have permeated political discourse and law governing Indigenous subsistence rights in many regions of the world (Reo and Whyte 2012:16).

In this article, we critically examine one example of federal regulation developed to regulate "traditional" subsistence practices. Specifically, we examine language in the Alaska National Interest Lands Conservation Act (ANILCA 1980), which designated more conservation land in the United States than has any other piece of legislation. The act prohibits certain types of motorized access to hunting areas within national parks, monuments, and preserves, except where those vehicles are "traditionally employed" in subsistence contexts (ANILCA Section 811(b)). Drawing on participant observation as well as semistructured and unstructured interviews with federal agency staff and subsistence hunters, we examine regulatory discourse surrounding ANILCA's "traditional" access provisions through a case study in which the concept of traditional subsistence precludes adaptations to climate change and socioeconomic shifts among subsistence communities that hunt in Katmai National Preserve.

Katmai National Preserve has remained closed to off-road vehicle (ORV) access since ANILCA was signed into law. This prohibition has become increasingly problematic as subsistence hunters rely more on ORVs to access caribou and other resources inside the preserve. The two communities closest to the preserve, Kokhanok and Igiugig, have requested ORV access since the act's passage in 1980, most recently renewing their formal request to the National Park Service (NPS) in 2022.

BACKGROUND

Katmai National Park and Preserve comprises four million acres of rugged fjords, wetlands, tundra, mountains, lakes, rivers, and volcanos between Shelikof Strait and Bristol Bay on the northern reaches of the Alaska Peninsula (Fig. 1). United States President Woodrow Wilson originally created Katmai National Monument to protect the volcanic area surrounding Mount Katmai and the Valley of Ten Thousand Smokes after the eruption of Novarupta in June 1912. Since then, the U.S. federal government has expanded Katmai four times, finally redesignating the unit as a national park and preserve in 1980. The NPS presents Katmai to the public as "a vast wilderness" characterized by immense diversity of flora, fauna, topography, and geological processes. The purpose of Katmai, outlined in Title II of ANILCA, is to protect "wilderness character" and, in the preserve, ensure the "continuation of the opportunity for subsistence."

In this context, the term "wilderness" carries legal meaning grounded in Western conservation ideals. The conservation of "wild" land and "resources" has dominated political discourse and policy in Alaska for most of its history as a U.S. territory and later a state. Political narratives often refer to Alaska's vast and incredible landscapes as "wild," suggesting that they are untouched or "untrammeled by man" (Wilderness Act; U.S. 88th Congress 1964). However, humans have occupied Alaska for thousands of years. Alaska's Indigenous inhabitants have carefully lived with and stewarded the land, fish, and wildlife since the arrival of the first humans in North America. Alaska Native people have stewarded their land so well, in fact, that Western settlers often incorrectly assumed that they were the first humans to ever step foot in many of Alaska's so-called "wild" landscapes. Indeed, after leading early National Geographic Society expeditions in Katmai, which largely contributed to the designation of Katmai National Monument in 1918, geologist Robert Griggs advocated strongly for the protection of the area's "wilderness character" as "a great national park . . . like Yellowstone." Griggs further presented Katmai in his writings as an "uninhabited wilderness" that would be completely degraded by hunting (Hussey 1971:74). Nonetheless, bureaucratic conservation agencies have historically ignored Alaska Native stewardship in their limited time managing land in Alaska.

Many social scientists argue that conservation—particularly large landscape conservation like national parks and wildlife refuges—coupled with ecotourism, exacerbates poverty and hardship in nearby rural areas (Brockington et al. 2012; Büscher and Fletcher 2009; Igoe and Croucher 2007; West and Carrier 2004; West et al. 2006). This perspective is grounded in the understanding that Western notions of "wilderness" inform environmentalist agendas seeking to separate (and thereby protect) wild spaces and nonhuman environments from humans (Fletcher 2009). Since most of the land in Alaska is incorporated into various kinds of conservation units—national parks, monuments, preserves, forests, and wildlife refuges—Indigenous lifeways in the Arctic and Subarctic

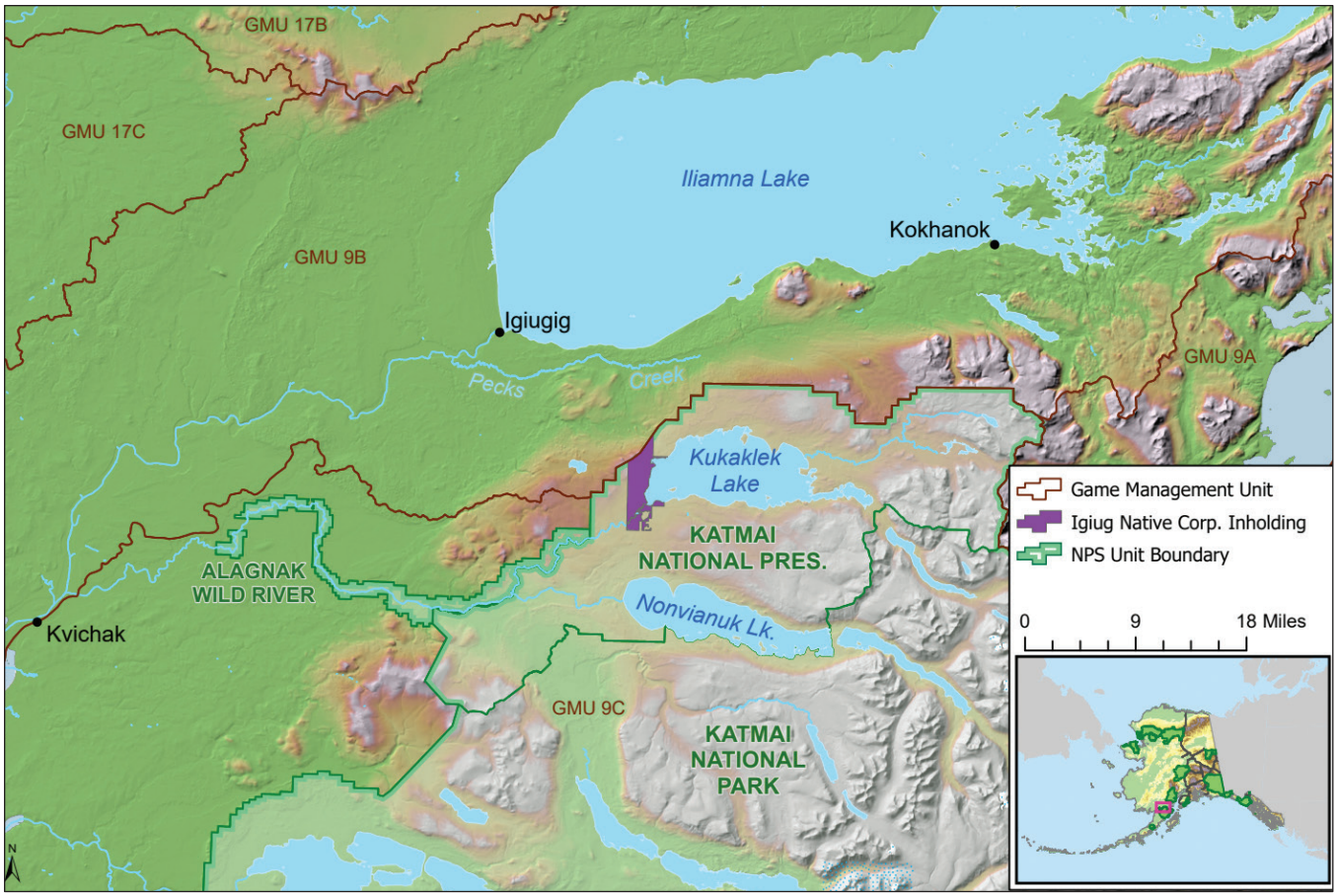

Figure 1. Kokhanok and Igiugig sit on the southern banks of Iliamna Lake, approximately 15 miles from Katmai National Preserve's northern boundary. The area around Kukaklek Lake, sometimes called the Kukaklek Bench, is an important subsistence area that is increasingly difficult to access due to climate change and regulatory restrictions. Map produced by Dillon Patterson and Martin Byrne, 2024.

regions of North America are highly regulated in terms of wildlife conservation, constantly under the scrutiny of conservation-minded bureaucrats (Nadasdy 2003).

Katmai encompasses the homelands of Dena'ina, Yup'ik, and Sugpiat/Alutiiq peoples, including present-day communities such as Kokhanok, Igiugig, Naknek, South Naknek, King Salmon, Egegik Levelock, Nondalton, Illiamna, Newhalen, Pedro Bay, and Perryville (Norris 1996). Part of the complex history of the Russian-American colonization of Alaska, the lands now within Katmai were forcefully taken from Alaska Native peoples through direct violence, sociocultural assimilation tactics, coercion to participate in international fur trade, and "extra-legal force," which included "a race-based system of punishment in the penal code" (Chowdhry and Beeman 2007:28; see also Arndt 2013; Jones 2013). Today, many Alaska Native communities maintain ties to Katmai primarily through the practice of subsistence hunting, fishing, and trapping. However, their ability to do so is confined by complex, top-down bureaucratic structures that regulate subsistence according to principles of ecological conservation and etic notions of "traditional" subsistence activity, which is situated in a broader wilderness framework that narrowly defines what type of human activity is acceptable (Dear and Myers 2005; see also Pratt 1994).

Local Alaska Native communities use long-established trail systems to seasonally access important cultural sites and subsistence foods across the Katmai. Local Elders explain that many of these trail systems have existed for thousands of years. Over time, travel along these trails has changed from foot to dog- and reindeer sleds to snowmachines and ORVs. In regulation, ORVs are defined as "any vehicle designed for or capable of cross-country travel on or immediately over land, water,

sand, snow, ice, marsh, wetland or other natural terrain, except snowmachines or snowmobiles" (36 CFR § 13.1). This definition includes four-wheelers, which are a primary means of transportation in present-day Kokhanok and Igiugig as they are in many rural Alaska communities. Yet, four-wheelers remain prohibited in Katmai National Preserve as they are in most national parks, monuments, and preserves.

Ironically, one of the primary driving factors in the shift from "traditional" technologies to ORVs was adaptation and response to colonial expansion of the United States in the Alaska territory. Colonial assimilation practices—like the push toward Western education systems (Barnhardt 2001), a capitalist economy (e.g., the creation of for-profit organizations under the Alaska Native Claims Settlement Act [U.S. 91st Congress 1971]), pastoralism (e.g., reindeer herding [see Salmon 2014]), and centralized governments (e.g., those implemented under the Indian Reorganization Act [U.S. 73rd Congress 1934])—played an important role in the transition of many Alaska Native peoples from seminomadic hunter-gatherers to communities organized as tribes and villages (Banks 2007). As Alaska Native peoples became less nomadic, the adoption of new technologies, like ORVs, enabled subsistence hunters, fishers, and gatherers to travel efficiently across their homelands, beyond village boundaries, while living in permanent, year-round homes and maintaining employment in cash economies. Thus, the adoption of ORVs is, in part, an adaptation to postcolonial life.

Similarly, ORVs are increasingly used to adapt to rapid climatic and environmental shifts across the Circumpolar North (Deur and Callaway 2008). Snowfall is becoming more erratic, winter ice less reliable, tundra landscapes replaced by brush, all while wildlife populations are declining and changing in dispersion. These environmental shifts require technological adaptation. For Kokhanok and Igiugig hunters, decreasing annual snow cover shifts transportation needs away from snowmachines toward a greater reliance on four-wheelers. This is especially so during fall hunting seasons as fall and early winter snowfall decreases. The hunters we interviewed expressed frustration with ANILCA's rigid formulations of "traditional" subsistence activity, which effectively criminalizes climate change adaptation and resilience.

ANILCA defines subsistence uses 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; for the making and selling of handicraft articles out of nonedible byproducts of fish and wildlife resources taken for personal or family consumption; for barter, or sharing for personal or family consumption; and for customary trade." However, at the time of this writing the NPS has not been able to determine whether ORVs were "traditionally employed" by local communities in Katmai, as ANILCA does not define "traditional" use. Thus, contemporary ORV access by local subsistence communities remains illegal, effectively limiting people's access to their ancestral homelands and subsistence foods.

The harvest of fish and wildlife in Alaska is regulated under a dual management system, operated by the State of Alaska and the United States Departments of Interior and Agriculture (Wheeler and Thornton 2005; see also Fall 1990). This system, unique to Alaska, is the unintentional result of legal friction between Alaska's State Constitution and ANILCA's rural subsistence priority. The crux of this friction stems from ANILCA's provision for a subsistence priority over all other "consumptive uses" (i.e., sport and commercial hunting and fishing). ANILCA defines subsistence as harvest by *rural* Alaska residents; when resources are scarce, rural subsistence users are entitled to priority over all other stakeholders on federal public lands. In contrast, the Alaska State Constitution prohibits prioritization of one stakeholder group over another in the context of fish and wildlife harvest, regardless of historical practice or ties to the land. In response to the State of Alaska's inability to prioritize subsistence under state law, the federal government assumed control of subsistence management on federal public lands in Alaska in 1991.[1]

There is a disconnect between what "subsistence" means in this legal context and how "subsistence" is embodied in Alaska Native and rural Alaskan lifeways. Most subsistence communities harvest fish and wildlife under both State of Alaska regulations and federal subsistence regulations. While the Federal Subsistence Management Program characterizes state regulations as "sport" and "commercial" opportunities, subsistence communities make little distinction when hunting and fishing. Rather, both sets of regulations allow for subsistence harvest opportunities across a patchwork of land ownership—land owned by the federal and state governments, private entities, and tribal organizations. However, to the extent that we deal here with notions of "traditional" subsistence in a regulatory context, we refer specifically to federal law as it applies to national parks, monuments, and preserves in Alaska.

The first time the term "traditional" is used in ANILCA is in Title II, which describes the purposes for national parks, monuments, and preserves created or expanded for administration by the National Park Service. The precise language for each land unit differs slightly, but Title II generally provides for "subsistence uses by local residents . . . *where such uses are traditional*" (emphasis added), in accordance with Title VIII, which outlines subsistence management on federal lands in detail. Title II omits subsistence provisions entirely for three units: Katmai National Park, Glacier Bay National Park, and Kenai Fjords National Park. However, local rural residents are authorized to engage in subsistence activities on all national preserves, including Katmai National Preserve. ANILCA Section 811(b) says that the secretary of the interior "shall permit on the public lands appropriate use for subsistence purposes of snowmobiles, motorboats, and other means of surface transportation *traditionally employed* for such purposes" (emphasis added). Today, "other means of surface transportation" most often refers to ORVs. Because ANILCA does not define "traditional," federal land management agencies, like NPS, are left to interpret the legislative intent of ANILCA's ORV provisions.

The concept of "traditional" subsistence access outlined in ANILCA impacts subsistence communities across the state of Alaska. Much of the state, including vast swaths of Alaska Native homelands and subsistence areas, was designated as federal public land by ANILCA in 1980. However, Section 811(b) of ANILCA has been implemented somewhat differently across the state. This is true across ANILCA-designated conservation systems units, including those managed by the U.S. Fish and Wildlife Service and U.S. Forest Service. While this discussion focuses primarily on Katmai National Preserve, it is important to note that subsistence communities must navigate a patchwork of land ownership and designations along with corresponding regulations—including those that regulate the use of ORVs—that vary widely. We therefore present the work described here as a critical examination of NPS's management of subsistence access, couched in broader discussions of federal subsistence management in Alaska and the concept of "traditional" subsistence practice and technology.

Wrangell St.-Elias National Park and Preserve has served as something of an experiment, intended to observe the impacts of ORV use in parks, monuments, and preserves. Other national park units (e.g., Denali and Glacier Bay National Park and Preserve) more recently implemented ORV use authorizations for subsistence after detailed assessments of historical use patterns and potential environmental impacts.[2] Thus, ANILCA's "traditionally employed" clause is effectively dealt with on a case-by-case basis, typically initiated when subsistence communities request ORV access to their respective NPS-managed units.

But what is traditional access? The changing modes of transportation among subsistence communities over time are adopted to improve access to hunting areas in the context of climate change and colonial efforts of forced assimilation. These modes are not necessarily symbolic or "traditional." Rather, they are responses to climate change and socioenvironmental pressures. ORVs allow locals in the study area to more easily return to their homelands, now within the boundaries of Katmai and other federal conservation units. Change itself, in this context, may be the constant and thus, the tradition.

However, there has long been debate surrounding what constitutes "traditional" subsistence technology, and at what point the adoption of new technology changes from adaptation to exploitation (see Aporta and Higgs 2005; Fauchald et al. 2017; Tomsen 2002). When many North American caribou populations began to decline in the mid-twentieth century, some researchers suggested that the introduction of high-powered repeating firearms enabled Indigenous hunters to overharvest caribou (Kelsall 1968). Bergerud (1974) suggested that the hypothesis posited by biologists that large caribou herds overgrazed their forage, resulting in population decline, was perhaps inaccurate and relied too heavily on observations of domestic reindeer overgrazing. Bergerud (1974:767) further highlighted the "generally accepted explanation" that caribou were overhunted "when effective firearms came into general use." Iceton (2009) explains that the discussion surrounding the adoption of new hunting technologies among Alaska Natives and Canadian First Nations is couched in larger debates regarding the presence, or lack of, conservation ethics in Indigenous cultures (see Alvard 1993, 1998; Buege 1996; Hames 2007; Redford 1991; Rodrigue-Allouche 2015; Rowland 2004).

Here, we suggest that regulatory insistence upon outdated means of transportation, which no longer meets the needs of a population or enables access to cultural sites and foods in a climate-changed environment, runs counter to the history of environmental-technological responses of these communities. We critically examine notions of static tradition implicit in current regulations as they pertain to the prohibition of ORV use in Katmai by residents of

Kokhanok and Igiugig. We seek to offer a more holistic understanding of tradition that will provide federal agencies with understandings with which to interpret law and ensure the "continuation of subsistence uses by local rural residents" in Alaska, as mandated by ANILCA.

In the winter of 2023, Igiugig Village Council submitted a renewed "traditional use determination" request for ORV access to Katmai National Preserve for subsistence purposes under ANILCA Section 811(b). Here, we describe a collaborative project designed to provide the NPS with the information necessary to make an informed decision; this includes a summary of historical ORV use in the area, spatial data on access routes, impacts of climate change and regulatory restrictions on subsistence lifeways, and more holistic understandings of "traditional" cultural practice.

Our goals for this project are to (1) provide practical information about the physical conditions of access routes to hunters in Kokhanok and Igiugig; and (2) inform legislative interpretations such that they more accurately reflect the "traditional" characteristic of subsistence communities as highly adaptive to change. In doing so, we hope to work toward rebuilding relationships between the NPS and local subsistence communities. The history of Katmai, like many national park units, is colored by colonial land grabs and regulations that functionally criminalize Indigenous lifeways. During the recent Biden Administration, the U.S. White House and Department of Interior shifted their policies toward co-stewardship of conservation lands, informed by Indigenous Knowledge (e.g., Joint Secretarial Order 3403 2021). We hope that this critical examination of ORVs in Katmai, coupled with applied research targeting regulatory adaptability, will bridge the gap between high-level federal policy and meaningful localized change.

METHODS

The ethnographic research described here uses an applied approach to resolve a regulatory issue identified by Kokhanok and Igiugig Village Councils:[3] Existing prohibitions on ORV access in Katmai National Preserve effectively criminalize contemporary subsistence practices and do not accurately represent the "traditional" adaptive strategies of local subsistence communities. Kokhanok and Igiugig residents rely heavily on subsistence resources, especially caribou, in Katmai to support the communities' food sovereignty/security initiatives and continued practice of a subsistence lifestyle. These communities, along with others in the region, have maintained long-standing relationships with Katmai's caribou population. However, the prohibition on ORV access in Katmai dramatically limits subsistence hunters' ability to provide their families with wild foods.

Here, we draw on applied approaches in anthropology (e.g., Fals Borda 2006; Hale 2006; Rappaport 2008), using ethnographic data to support Kokhanok and Igiugig's community-led initiatives to navigate the regulatory process required to attain ORV access in Katmai National Preserve. We worked closely with residents of Kokhanok and Igiugig and other hunters in the surrounding communities throughout the research process to co-produce data and develop strategies to apply findings in regulatory contexts. Prior to initial data collection, we worked with Kokhanok and Igiugig Village Councils to identify local subsistence experts. These community partners were regularly consulted in the development of a semistructured interview protocol that we used to guide interviews with local subsistence experts. Elders generated many of the topics and questions included in the interview protocol, driving the direction of the research. This allowed for the co-production of research methods, data, and applied regulatory strategies.

We reviewed approximately 35 hours of oral history interview transcripts with local Elders, inductively coding for historical information on subsistence activity in Katmai National Preserve, including means of access and the adaptation of transportation technology. These recordings and corresponding transcripts are housed on the University of Alaska's Project Jukebox webpage on Katmai (https://jukebox.uaf.edu/katmai). We then conducted approximately 22 hours of semistructured interviews with 12 local subsistence experts who were identified by members and employees of Kokhanok and Igiugig Village Councils. These were transcribed and coded for themes surrounding the creation of Katmai National Preserve, caribou population decline, climate change, and the prohibition of ORV access as well as the impacts these factors have on contemporary subsistence activity (taped interviews in possession of the authors). We also employed participant observation in these communities and review of the regulatory systems in which they negotiate their subsistence rights.

To use these ethnographic data in an applied framework, we worked closely with the NPS to better understand the agency's needs as it works toward making a final determination in response to Kokhanok and Igiugig's "traditional use determination" requests. We

learned that NPS needed to (1) thoroughly work through the legal framework for "traditionally employed" ORV use under ANILCA, and (2) collect and summarize all the available information on the history of ORV use in Kokhanok and Igiugig.

To address the first need, we examined NPS precedent for interpreting ANILCA's "traditionally employed" clause. Katmai being the fourth national park/preserve in Alaska to address ORV access for federally qualified subsistence users, there was both implicit and explicit information available on NPS's past interpretation of "traditional" means of access. Of the three other parks/preserves—Denali, Glacier Bay, and Wrangell-St. Elias—Denali's ORV case is the most like Katmai's. In the early 2000s, the NPS authorized residents of Cantwell to operate ORVs in certain areas of Denali. At that time, the NPS wrestled with the meaning of ANILCA's undefined language. In the *Cantwell Subsistence Traditionally Employed ORV Determination* (Denali National Park and Preserve 2005), the NPS determined that "other means of surface transportation traditionally employed" refers to the use of ORVs by "successive generations" for subsistence purposes by a particular community, in a particular area, prior to 1978.

The precedent set in Denali provided a standard by which to measure the "traditional" nature of ORV use in Katmai. To determine that ORVs were "traditionally employed" by residents of Kokhanok and Igiugig to access subsistence resources like caribou, NPS required evidence that multiple generations of Kokhanok and Igiugig hunters used ORVs in the Katmai Preserve prior to 1978. This project therefore combined traditional ethnographic methods, such as key respondent interviews and participant observation, with analysis of existing information, including the Project Jukebox oral history interviews as well as published and unpublished NPS reports on the topic (Callaway 1999a, 1999b, 1999c; Denali National Park and Preserve 2005; Deur and Callaway 2008).

RESULTS

Our analysis of oral historical data sheds light on the arrival of motorized vehicles in the Katmai area as well as the subsequent transition from nonmotorized vehicles, like dog- and reindeer sleds, to ORVs. The first ORVs in many rural regions of Alaska started to appear around the 1940s to 1950s and were primarily modified Jeeps and military surplus vehicles. However, their arrival to villages varies widely from region to region (Deur and Callaway 2008). Most rural Alaska communities had only had access to ORVs for a few decades when ANILCA was passed in 1980.

Our examination of NPS reports, compared with key respondent interview data, revealed a discrepancy in the way the NPS and local subsistence hunters interpret the phrase "traditionally employed." In practice, the NPS has historically interpreted "traditionally employed" to mean multigenerational use of ORVs in a certain area, by a certain community, prior to the passage of ANILCA (Denali National Park and Preserve 2005). However, Alaska Native understandings of traditional practice are more dynamic, focusing on the immense capacity to adapt to environmental and sociocultural change that is characteristic of many Indigenous peoples across the Circumpolar North. Gary Nielsen, a Kokhanok Elder regarded for his knowledge of Kokhanok history, said:

> [It is traditional to use] whichever [transportation method] is the easiest and most efficient. The customary and traditional way is to make use of that technology regardless of what it is. Used to be kayaks and dog teams. Now, it's snowmachines, four-wheelers, motorcycles, and airplanes. It's customary to be adaptable, totally adaptable. That's how we lived in this country. And it's not gonna stop. (Nielsen 2022)

AlexAnna Salmon's (2014) work details a long history of subsistence use in the area now within Katmai, predating the arrival of Euro-American settlers and land ownership ideologies. As reindeer herding on the Alaska Peninsula ended in the mid-twentieth century, local Alaska Native communities continued subsistence activities in the area surrounding *Qukaqliq* (Kukaklek Lake) into the latter half of the century, even as land claims legislation was written. Lifelong residents of the region Richard Wilson and Randy Alvarez recalled trapping animals for fur and hunting caribou near *Qukaqliq* throughout the 1970s and 1980s. They often coordinated hunting and trapping trips out of Igiugig Elder Mary Olympic's cabin on *Qukaqliq*. Igiugig residents Dan Salmon and Randy Alvarez described the Katmai Preserve, particularly the *Qukaqliq* area, as a preferred caribou hunting location, even in times of caribou abundance when caribou were available closer to the village. In a 2002 oral history interview, Dan Salmon noted, "the majority of our use of that area [*Qukaqliq*] is to get subsistence activities, feed the households in the community. And of course, with the

Elders in the village, it's their traditional food" (Salmon and Alvarez 2002).

Aside from a few short gravel roads in the villages, the area surrounding the Katmai Preserve is largely roadless. Highway vehicles, like cars and pickup trucks, are not practical means of subsistence transportation. Many of the Elders we interviewed explained that before the introduction of motorized transportation, hunters relied on dogsled teams and travelled on foot to access hunting locations. In the late 1990s, NPS anthropologist Don Callaway conducted oral history interviews regarding the use of ORVs in the Katmai Preserve by residents of Kokhanok and Igiugig.[4] In unpublished reports, Callaway spoke favorably to the idea that ORVs were "traditionally employed" to access Katmai for subsistence using existing dogsled and foot trails.

Callaway's findings were later corroborated when the NPS contracted an outside anthropologist, Doug Deur, to publish a report using the data Callaway collected (Deur and Callaway 2008). Callaway's initial reports took an advocacy approach on behalf of Kokhanok and Igiugig residents; Callaway explained that his initial reports were not received well by the NPS leadership at the time (Don Callaway, pers. comm. 25 January 2023). The reports document the presence of four-wheel-drive Jeeps and trucks in the area by the 1940s, followed shortly by the arrival of dirt bikes and three-wheelers in the 1960s and 1970s, respectively. Oral history data further demonstrate widespread use of ORVs in both Kokhanok and Igiugig well before ANILCA was signed into law (Callaway 1999b, 1999c; Deur and Callaway 2008).

In the interviews we conducted and the oral history interviews on Project Jukebox, many Kokhanok and Igiugig Elders recalled established patterns of ORV use long before 1980. One Elder reflected on the immediate integration of Jeeps and dirt bikes when the machines first became available to Kokhanok residents in the 1950s. However, Elders emphasized that the precise mode of transportation has very little to do with the traditional nature of subsistence lifestyles. Rather, the complex relationship between humans and animals is what constitutes tradition in Alaska Native cultures (Alvarez 2022; Nielsen 2022).

During a meeting about this project, Gary Nielsen shared a story to emphasize just how "traditional" their trail to what is now Katmai has been. He recalled asking a now-deceased Elder, who was highly respected for his knowledge of Kokhanok history and mastery of the Yup'ik language, the name of a particular mountain. The mountain sits on the northern Katmai border; the trail running over its saddle is still clearly visible from the air (Fig. 2).

He asked the Elder, "what's the name of that mountain."

The Elder replied "Trail Mountain."

"But what's the Yup'ik name?"

The Elder replied in English, "TRAIL MOUNTAIN" (Nielsen 2022).

The Elder's emphasis on the English name conveyed a clear message. Nielsen explained that for as long as anyone can remember Trail Mountain has always been "Trail Mountain." Although no one interviewed for this project provided a Yup'ik name for the mountain, the English name is reminiscent of Yup'ik place names, which are often literal, encompassing useful information for those who travel in the area. In the context of our meeting, Nielsen used the story of trying to learn Trail Mountain's Yup'ik name as a reminder that residents of Kokhanok have been using the trail that now crosses into Katmai for as long as anyone can remember—certainly long before 1980.

As climate change alters the environment in which caribou hunting occurs, technologies considered "traditional" within the existing regulatory framework increasingly become obsolete. One of the primary solutions subsistence hunters employ to mitigate climate change impacts is adaptation of technology. However, many of the subsistence hunters and Elders we interviewed emphasized that this type of technological adaptation is not new. Rather, adaptation is a hallmark characteristic of Indigenous cultures across the Circumpolar North. Mark Nuttall, for example, demonstrates that "adaptation to one's surroundings and engagement with a more-than-human world" is imperative to the anticipation that Greenlandic hunters experience as part of the recognition that hunting conditions are changing and uncertain (Nuttall 2022:168). Kenneth Pratt similarly provides examples of "the resiliency and adaptability of the [Yukon Delta] region's Indigenous population" as Yup'ik communities shift village sites and modify their surrounding landscape in response to natural disasters (Pratt 2022:195). The adoption of ORVs can thus be viewed as a natural product of the Alaska Native ability to adapt to rugged and changing environments coupled with the introduction of new technologies. One hunter in Igiugig reflected on the origin of their trails into Katmai,

> Snowmachines came first before ATVs and this [was], I think, in the late '60s. Before that, people had dog teams, you know. At least that's where snowmachine trails came from. They were just dog team trails. Then people started driving their

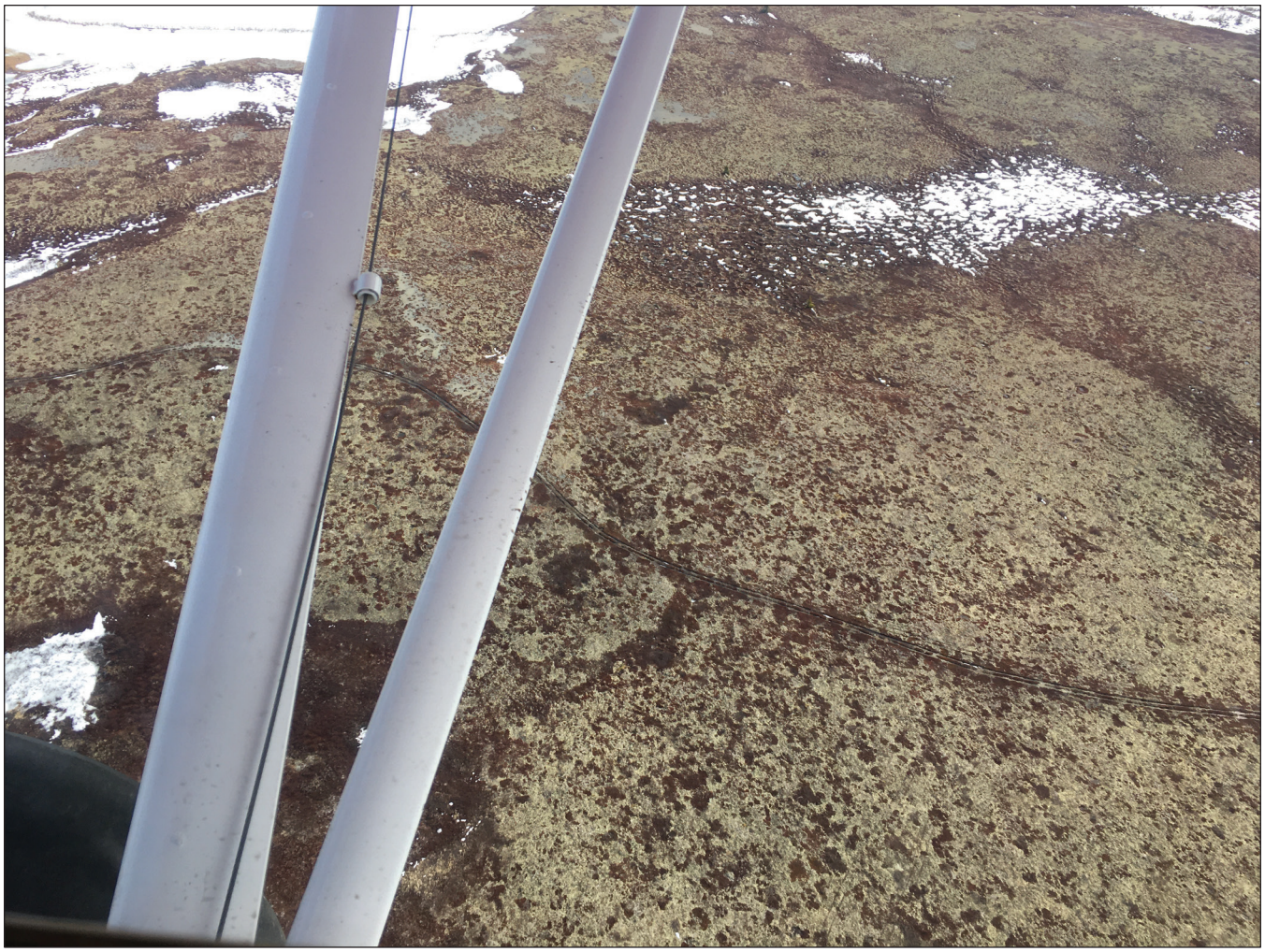

Figure 2. The trail that crosses Trail Mountain is visible from the air just north of Katmai National Preserve. Regulations established in 1980 now prohibit the use of ORVs on the portion of this route that leads to important hunting areas south of the preserve's boundary. Photographed by Dillon Patterson, 2021.

> snowmachines on 'em [the trails]. Then around '70 is when those ATVs came in. (anonymous Igiugig resident 2022)

Narrowly defined regulatory interpretations of "traditionally employed" technology ignore the cultural adaptations that define Alaska Native lifeways. Alaska's climate is harsh; it has been since humans first crossed the Bering Sea and reached North America. Though anthropogenic climate change poses many novel challenges, Alaska Native peoples have lived through thousands of years of transition out of the last ice age and into the Holocene epoch. Alaska's Indigenous peoples can live in harsh and ever-changing environments in large part *because of their ability to adapt to change*.

Anthropogenic climate change is no doubt reshaping Subarctic landscapes and wildlife populations at an unprecedented rate. However, receding glaciers, warming winters, and caribou boom and bust population fluctuations are not entirely new to contemporary Alaska Native peoples. In fact, these dramatic environmental and biological shifts are the norm through time. Alaska's landscape has been in a constant state of flux, coming out of the last ice age when Alaska Native ancestors first arrived. It is thus far more accurate to speak of Alaska Native hunting traditions not by referring to a particular means of transportation or hunting technologies, but as the dynamic ability to adapt to and thrive in a harsh and ever-changing environment. Regulations that effectively prohibit technological adaptation in subsistence economies also, ironically, prohibit the continuation of this *traditional* adaptation.

In fact, localized memories of technological adaptations are maintained through rich oral histories. Richard

Wilson, a lifelong resident of the area, explained the history of transportation in the area surrounding Katmai:

> Well, if you go back far enough [in time], what did you have? You were on foot, you had dogs, pack dogs, and I know that in my family's history coming out of Levelock and then utilizing the Alagnak River and up in the Nonvianuk [Lake] and Kukaklek [Lake], it just, it was by dog in the winter, because that was their trapping area. And so, from that I'm sure there was some early aircraft-related hunting going on there. And I mean, I've been in there [the area now within Katmai National Preserve] with snowmachine. I've been in there with airplane. I've been in there with four-wheelers. I've been in there with three-wheelers before the four-wheeler came out. (Wilson 2022)

He went on to describe four-wheelers as the ideal vehicle for traveling across spring snow crust:

> Working out of Kokhanok and coming up and through the mountains and up and over the top [of the Kukaklek Bench] is pretty challenging. In the spring when the sun comes out and it hardens up the surface of the snow, all that remnant snow, you can go anywhere. That's how people get around in the spring there. It's done with four-wheelers. [They] run up into Kukaklek on four wheelers up into those mountains. (Wilson 2022)

Reflecting on the concept of "traditional" use in relation to transportation technology and caribou hunting, Wilson elaborated,

> The big challenge now is that you can't hunt the herd and people have been in there and over time the equipment they're using is getting more modern. Just like everywhere else in the world, and they're making use of it, but traditionally they've been in there [the preserve] no matter what form of transportation you use to get in there to utilize that herd. It's just the way life is (Wilson 2022).

This description highlights two important points that were made by many of the hunters and Elders interviewed. First, technological development and adaptation is an inherent feature of all cultures. Alaska Native cultures are not unique in their creation and adoption of new technologies over time. Second, regulatory interpretations of "traditional" in contrast to "modern" effectively require Alaska Native peoples to remain stagnant or otherwise forfeit their subsistence rights (Fauchald et al. 2017). If the term "modern" is used here to refer to the latest iteration of a technology (i.e., snowmachines are more modern than dogsleds), then such regulatory interpretations of "traditional" seem to refer to old, outdated technologies that are scarcely used in the present day. In effect, these interpretations, based on etic understandings of Alaska Native tradition, seek to prohibit the type of technological adaptation that, in part, defines the human species (see Aporta and Higgs 2005; Iceton 2009).

Residents of these communities are not only familiar with the general trajectory of technological adaptation but maintain nuanced understandings of machine models and development, as well as the respective impacts various machines have on the landscape and the ability of locals to travel around. One young hunter from Igiugig described the adoption of various machines over time, beginning with the arrival of snowmachines in the 1960s, decades before he was born:

> The oldest snowmachine I've seen was at Old Creek in the grass. There is an old rubber [belt]…what they used was a rubber belt for conveyor systems. And they screwed an angle iron onto it, so the track itself was just angle iron under the belt. Then up in further there is an engine. And let's see, I never got to see how it shifted to the actual drive. I feel like it was a chain. I was thinking it had to have been a chain, but that setup was missing. But anyways, that would've been the oldest machine, and I don't have a date for that. I would imagine.…I don't know '60s. Somewhere around there. But then in the '70s, they had machines, whenever Ski-Doo came out with their Elans,[5] because that was a popular one. Grandma had one [an Elan]. Three wheelers would've been '80s just based off the models that Honda made. That's why everybody calls them Hondas. Because everybody out here had Honda three wheelers. So, they were all just Hondas. That would've been in the '80s. By the time the '90s came around, everybody was getting the Honda four-wheelers that came out. They had the Honda 300 FourTraxs. Then everybody had Honda four-wheelers and the snow machines were getting larger. They were bigger than the Elans. The [Ski-Doo] Tundras that they ran around in by then they had 440[cc] engines. The [Arctic Cat] Panther 440 was also really popular. And then, by the mid-'90s Polaris with their—see, they had a 440 model and then they came out with the 500—anyways, those were real popular models. They might have done a 550[cc] right after that. And those are still roughly the same size. And then it was very recently where four-wheelers started getting quite a bit larger…in the 2000s, like a 2005 [Honda] Foreman. Those started

> going around with 500[cc] engines. And then I feel like when I was in high school—would've been 2005, 2006—that was the first time I saw somebody with a four-wheeler that was too big for the trails. It was an independent suspension and he put bigger wheels on it. So, now his four-wheeler was wider than the tundra trail. We had to drive slower because his tires were off the trail. That, of course, is making the trail wider because as soon as everybody starts driving larger four wheelers [the trails] caught up [see Fig. 3]. Now we're at the stage where everyone has about the same size, larger four-wheelers. I have the Foreman, the new Foreman, and all the trails accommodate it. (anonymous Igiugig resident 2022)

This type of historical and technical knowledge is not uncommon in the region nor is it rare across rural

Figure 3. Many of the trails used for subsistence in rural Alaska existed long before the adoption of off-road vehicles. However, as subsistence communities adapt to socioeconomic and environmental change, trails are reshaped to facilitate new vehicle types. This trail near Igiugig, for example, has been adapted to accommodate the larger four-wheelers common throughout the region today. Photographed by Dillon Patterson, 2022.

Alaska more broadly. Many rural Alaskans depend on four-wheelers and snowmachines as their primary means of transportation. However, in many areas, federal regulations prohibit motorized transportation in Alaska Native homelands now encompassed by conservation units, like national parks, monuments, and preserves.

Kokhanok and Igiugig residents further emphasized the impacts of climate change on the adaptation of transportation technology. One Kokhanok Elder discussed various areas in Katmai where he and his family hunt. Pointing to a location in the preserve on a map, he described a spring "break-up" when snow and ice melt as winter turns to spring. Before the large Mulchatna Caribou Herd declined, he flew over the area with his father, a pilot. He recalled seeing so many caribou, particularly calves, that he could not count them. We asked him if he and his family hunt the area in the fall or winter season. He said, "[We hunt in the] fall time. I'm always down here [in the village] in the winter.... If we have winter.... We haven't had much winter lately" (anonymous Kokhanok resident 2022). We asked if there was still enough snow to access the area on snowmachine. He replied:

> Not in the past few years. But I used to trap down in this area [pointing on the map], not quite to Kukaklek [Lake], and there was always so much snow. You couldn't even see brush in some of the hills... you couldn't even see. There was so much snow. But now there isn't. (anonymous Kokhanok resident 2022)

This notable reduction of fall time snow cover in the region severely limits hunters' ability to get around on snowmachines as they used to (Fig. 4). Warmer winters coupled with hotter and drier summers create a greater reliance on ORVs. Deur and Callaway (2008) noted this trend as early as the late 1990s and early 2000s. Michael Andrew, Jr. (2002) of Igiugig observed dramatic changes in winter conditions and the respective impacts to transportation:

Figure 4. One of the authors, Jon Salmon, surveyed the route from Igiugig to Katmai National Preserve in the winter of 2024. Here, Jon's snowmachine sits on the tundra near Kukaklek Lake without enough snow to keep going. Although snow conditions have always varied from year to year in the Iliamna Lake region, snow cover is far less reliable in today's climate-changed landscape. Jon's difficulty finding enough snow to continue past Kukaklek Lake highlights the challenges presented by regulations that prohibit four-wheelers, which are increasingly better suited to travel in the warming subarctic environment. Photographed by Jonathan Salmon, 2024.

> And it would be cold, colder winters when I was a kid growing up. From October all the way until April, it was cold winters. Now…you're really hardly getting winters now. You're lucky to get two weeks of 20 below, and the rest of the time it's pretty mild. The changes I remember being a kid, going to school in two to three feet of snow all the time. And if you look at it now, if you have a snowmachine, if you're looking for the right conditions, you're lucky to put any miles on it. (Andrew 2002)

For the Kokhanok and Igiugig residents we interviewed, the trails connecting their villages to hunting areas inside the Katmai Preserve represent routes across their homelands that have existed since time immemorial. The mode of transportation has changed over time, but their traditions are not reflected in the technology itself. Rather, their traditions are reflected in the way they use various modes of transportation to navigate these long-standing subsistence routes to maintain profound connections to the land and the wildlife around them. Moreover, the hunters we interviewed emphasized that this change in subsistence technology is firmly grounded in longstanding stewardship ethics held within local Alaska Native cultures. One young hunter, for example, reflected on a recent visit to Katmai to observe caribou with Elder Randy Alvarez. He remembered Randy "instilling in [him] through stories" the importance of "keeping an eye" on the caribou in Katmai over the course of one's life as a steward of the land and nonhuman "relatives" (anonymous Igiugig resident 2022).

There is a disconnect between this local understanding of "tradition" and the NPS interpretation. NPS historically assesses whether a mode of transportation meets ANILCA's provisions for "traditional" subsistence access rigidly in terms of multigenerational use prior to 1978. However, we found throughout this project that NPS is evolving in its interpretation of ANILCA's "traditional" subsistence use language. Drawing on local understandings of "traditional" subsistence, a highly adaptive land-based lifestyle, as well as recognition of the climate change-related challenges subsistence communities now face, NPS continues to wrestle with its interpretation of specific terms within ANILCA. In this case, the data we collected clearly demonstrated ORV use by "successive generations" prior to 1978. Presented with these findings, NPS issued a memorandum on May 14, 2024, to document the agency's initial determination "that there is sufficient evidence that ORVs were traditionally employed as a means of subsistence access to Katmai National Preserve by residents of Kokhanok and Igiugig" (Sturm 2024). Moving forward, the agency plans to complete the determination process and develop respective ORV-use management regulations through an environmental impact analysis required under the National Environmental Policy Act (U.S. 91st Congress 1969). Figure 5 summa-

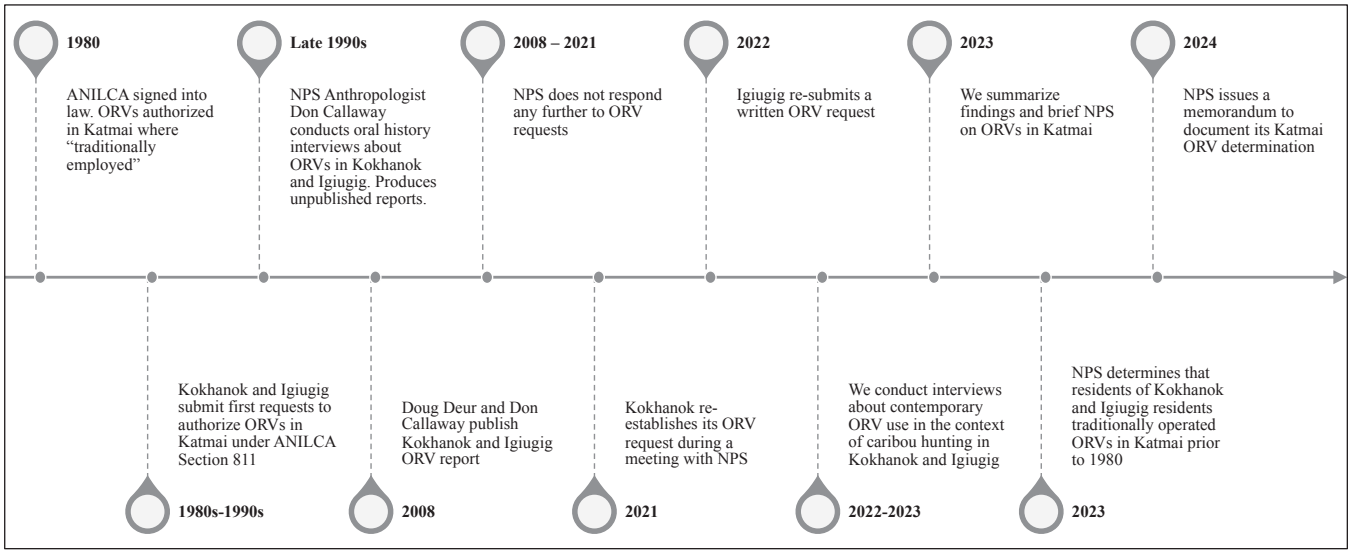

Figure 5. This timeline highlights major events in the history of ORV regulation in Katmai National Preserve. The timeline begins with the passage of ANILCA, which expanded Katmai, designated the preserve, and provided for ORV use "where traditionally employed." The timeline concludes with NPS's 2024 determination regarding Kokhanok and Igiugig's traditional use determination requests. Timeline produced by Dillon Patterson, Eleanor Shoreman-Ouimet, and Jonathan Salmon, 2024.

rizes the major events surrounding ORV regulation in Katmai National Preserve leading up to this point.

DISCUSSION

Regulatory interpretations of "traditional" cultural practices as stagnant, unchanging, or not modern are inherently problematic in that they tend to criminalize cultural adaptation and require Indigenous peoples to prove they have been traditional, as imagined by a colonial government in 1980. Ironically, the legal conceptualization of "traditional" subsistence fails to consider the impact of colonialism itself on subsistence practices, including changes to technologies employed by subsistence hunters. It also ignores the impact of rapidly changing Arctic and Subarctic environments stemming from global climate change.

Climate change is shaping Arctic and Subarctic regions far faster than other regions, contributing to "a substantial negative impact on northern community resource use activities as thinning ice conditions, shifting animal migration routes, and generally changing weather patterns place significant limitations on hunters and fishers" (Nuttall 2017:220). Climate change acts as a "stress multiplier"—the rapidly warming climate exacerbates the sociopolitical and economic burdens placed on subsistence communities in Alaska by top-down regulatory systems (Baer and Singer 2014; Marino 2015).

Fall hunting seasons typically occur in the months of August and September. Historically, these months were cool enough to provide hunters with the ability to properly care for large quantities of meat in the field, as meat spoils faster in warmer weather. However, warming temperatures make early season harvest—harvest prior to ungulate rutting—more difficult. In the past, there was enough snow cover in September to operate snowmachines in the Katmai area. However, snow cover in the Bristol Bay region is more erratic now, and over the past few decades early season snow cover has decreased dramatically, making access to hunting areas via snowmachine far more difficult during fall hunting seasons.

Snowmachines offer an efficient means of crossing otherwise difficult terrain (e.g., wetlands, creeks, tussocks) with large quantities of game meat, which can be hauled in sleds behind snowmachines. ANILCA and NPS regulations allow for the use of snowmachines for subsistence access when there is sufficient snow cover (i.e., greater than six inches). Under this provision, snowmachines are not categorized as ORVs. Compared to other land-based transportation, like four-wheelers and side-by-sides,[6] snowmachines generally have far less impact on alpine tundra landscapes like those within the Katmai Preserve. However, Katmai's modern climate-changed landscape rarely receives sufficient snowfall for snowmachine use during the fall hunting season. For Igiugig hunters in particular, lowland creeks and wetlands surrounding the village pose extremely challenging hurdles when trying to access Katmai on four-wheelers before winter freeze-up.

Additionally, the regulatory prohibition on ORV access effectively criminalizes the only feasible means of access in a warming environment. Although hunting season dates tend to remain the same, fall season snow cover begins later and later, making the only legal means of land-based motorized access (snowmachines) increasingly less viable. Thus, the impacts of anthropogenic climate change multiply the stress of regulatory constraints, reducing subsistence opportunities and the availability of high-quality subsistence foods.

The creation of Katmai National Park and Preserve in many ways reflects the United States' ecocolonial assumption of Indigenous lands across North America, justified through narratives of ecological conservation. Ecocolonialism refers to a phenomenon in which neocolonial governments reproduce and repackage colonial ideologies in conservation narratives. This phenomenon often involves the theft of Indigenous lands to create large conservation units, like national parks, preserves, and wildlife refuges (Hernandez 2022). Critiques of ecocolonialism reveal inequitable power dynamics, inherently racist and ethnocentric ideology, and hegemonic dominion of white people over Indigenous lives (Hernandez 2022; Norman 2013). While these are not critiques of conservation itself, some scholars suggest that the concept of private property in capitalist contexts facilitates anthropogenic climate change (Babie 2010).

On the other hand, some Indigenous scholars argue that core values of Western conservation ideology are often reflected in Indigenous value systems (e.g., Hernandez 2022). For example, protecting the lands now within Katmai from mining, urban development, and overharvest of resources are goals shared by many locals who recognize competing interests in the region's resources as a threat to Indigenous sovereignty and the future of subsistence lifeways. Examining the way Katmai was created and is now managed through a critical lens illuminates a neocolonial power structure, defined by the regulation of Alaska Native lifeways by primarily non-Native bureaucracies.

The Alaska Native Claims Settlement Act (ANCSA; U.S. 91st Congress 1971) allotted 44 million acres to Alaska Native peoples, around 10% of Alaska's total land mass. ANCSA also included a nearly $1 billion settlement and created 12 regional for-profit Native corporations. These corporations still exist today, providing Alaska Native shareholders semiannual or quarterly dividend payments. In so doing, Congress effectively required Alaska Native peoples to use their newly allotted lands in ways that are profitable in capitalist market economies (i.e., for development and resource extraction). Ironically, much of the land retained by the federal government was used to create conservation units, while Native corporations were given little choice but to use their lands in profitable, often environmentally destructive ways. Moreover, while earlier versions of the bill included provisions for subsistence on federal public lands, the final version of ANCSA that passed in 1971 failed to do so (Norris 2002).

Like ANILCA, ANCSA paved the way for the creation of more national parks and other conservation lands in Alaska. Having settled Alaska Native land claims across the state, the federal government now laid claim to most of the remote Alaska "wilderness." Within a year of ANCSA's passage, NPS published a report that detailed areas of interest for the creation of parklands. The report included NPS's "first public utterance about subsistence activities in the proposed parks" (Norris 2002:53). However, very little data existed on specific subsistence activities and the history of subsistence in many of the areas identified by NPS. While the report generally recognized the importance and validity of Alaska Native subsistence in most of the desired parklands, it failed to acknowledge subsistence in some key areas. Katmai was among them. The report stated, "many of [the] animals [in the proposed unit, Katmai] have never been hunted by man and know little fear of him" (as quoted in Norris 2002:54).

The failure of legislators to fully understand local subsistence in the years leading up to the passage of ANCSA (1971) and ANILCA (1980) is evident in that ANILCA fails to acknowledge and authorize the continuation of subsistence in Katmai National Park. While lands in both Katmai National Park and Katmai National Preserve were long used for subsistence prior to the passage of ANILCA, the park is one of the few conservation units designated by the act that is closed to subsistence harvest. Moreover, the creation of federal conservation units led to an increase in top-down bureaucratic regulation of subsistence across federal lands in Alaska. The management of ORV access highlights the scrutiny now applied to subsistence activities in federal conservation units. To be authorized, ORV use must be determined "traditional" by bureaucratic agencies. However, there seems to be quite a bit of variability across agencies, and even parks, in the level of scrutiny applied. For example, while it has taken Kokhanok and Igiugig residents over 40 years to gain formal recognition of their "traditional" use of ORVs in Katmai, the adjacent Alaska Peninsula/Becharof National Wildlife Complex has long recognized and authorized the use of "traditionally employed" ORVs (see 50 CFR § 36.39).

ANILCA recognizes the significance of subsistence as the foundation of Alaska Native and rural lifeways across the state, prioritizing subsistence over all other consumptive uses. The act's *rural* subsistence priority becomes an issue when Alaska Native individuals move to nonrural areas to pursue educational or occupational opportunities. Hernandez (2022) argues that Indigenous peoples are coerced to move from their rural homelands to urban areas, creating a global phenomenon of Indigenous diasporas, "displacement beyond borders." Alaska Native communities experiencing this risk the loss of their legal right to practice subsistence in culturally meaningful ways. By failing to provide an Alaska Native priority instead of, or in addition to, the rural priority, ANILCA requires Alaska Natives to choose between legal participation in a subsistence lifestyle and the opportunities associated with urban migration. Ultimately, ANILCA defines Alaska Native culture according to Euro-American notions of "traditional" Indigenous lifeways. These notions effectively require Alaska Native people to remain rural and adhere to technologies no longer suited for provisioning in today's climate-changed environment or else lose legal recognition of their subsistence rights.

ANILCA's conception of "traditional" and implementation of associated regulations mirrors early Euroamerican discussions of tradition versus modernity. It reveals the cynicism that many theorists held regarding the perceived consequences that the influence of modernity would hold for the world. For example, Durkheim differentiated between "tradition" and "rationality," designating "traditionalism" as part of nonrational, mechanical solidarity (Shanklin 1981:72). Tradition was given its force by the old people who transmitted it; their prestige and authority made them "the unique intermediary between the present and the past" (Durkheim 1964:29). Thus, someone who remains in the environment in which they were reared would continue to revere the old ways, whereas someone

transplanted to a new environment would not have the same feelings of reverence and respect, and thus would no longer be part of the "traditional" (Durkheim 1964, in Shanklin 1981:73).

Early anthropological discussions and definitions of "traditional," like those in ANILCA, convey homogeneity, staticity, and irrationality of behaviors labeled "traditional." This is epitomized by Redfield's (1947:300) statement that "behavior in the folk society is traditional, spontaneous, and uncritical. In any real folk society . . . many things are done [not] as a result of decision as to that particular action, but as to that class of actions tradition is the sufficient authority." The specific danger and irrelevance of such conceptions are not only that they are denigrating, generalizing, and grossly disrespectful, but also inaccurate as to the relationship between practitioners of historical subsistence behaviors and specific environmental pressures. Redfield himself stated "what is done in the ideal folk society is done not because somebody or some people decided, at once, that it should be done, but because it seems 'necessarily' to flow from the very nature of things" (Redfield 1947:299). Thus, the practices labelled ambiguously by ANILCA in the realm of subsistence as "traditional" are decisions that flow from, with, and in concert with nature and are adapted to meet community needs in a changing natural landscape.

In this light, we borrow from Kuligowski's (2014:328) statement that "contemporary tradition is not a time machine to a different epoch, it's not a time capsule to preserve past values, behavior or standards. . . . It constitutes the living cultural condition that is constantly updated as the social, legal, technological, political, and economical factors change around it" to argue that "tradition" is in fact a living cultural condition constantly updated as the *environmental* factors change around it. In Katmai's climate-changed environment, adhering to historical subsistence behaviors would require a time machine to return to another time before the snow, ice, and terrain changes of today. Practicing traditional subsistence today is only plausible if the means of doing so can, in practice, "flow from nature" (Kuligowski 2014:328).

ETHICS APPROVALS AND CONSENT TO PUBLISH

This research was reviewed and approved by the University of Connecticut Institutional Review Board under research protocol #H22-0090. All participants provided written informed consent. During the consent process, participants opted whether to have their names associated with quotes in publications. Those who did not opt to have their identity published alongside quotes are anonymized in the text above. All quoted participants reviewed the manuscript and provided written consent to publish.

ENDNOTES

1. For a full history of Alaska's dual management system, see Norris 2002 and Wheeler and Thornton 2005.
2. There have been a few cases in which some precedent has been set for interpreting ANILCA's "traditionally employed" clause. ORVs were authorized as a "customary and traditional" means of access in designated areas of Wrangell-St. Elias National Park and Preserve shortly after the unit was created in 1980. However, the National Parks Conservation Association, Alaska Center for the Environment, and the Wilderness Society sued the National Park Service in 2006 over environmental degradation caused by ORV trails in Wrangell-St. Elias, calling into question the sustainability of ORV access for subsistence. In other cases (i.e., Denali National Park and Glacier Bay National Preserve), ORVs were only authorized after years of contentious debate, petitions, and ethnohistorical documentation of historic use—in these cases the defining criteria for "traditional" seems to be multigenerational use prior to the passage of ANILCA. Still others, like Katmai, remain contentious and unresolved.
3. Village councils represent federally recognized tribal governments. Terminology referring to tribal governments varies across the state. Some tribes call their councils "village councils" while others call them "tribal councils" and still others "IRAs" or "IRA councils"—in reference to the Indian Reorganization Act.
4. The initial study on the history of ORV use in Katmai Preserve, conducted by Don Callaway and Doug Deur (Deur and Callaway 2008), focused solely on Kokhanok and Igiugig. The focus on these two communities was driven largely by "traditional use determination requests" submitted by the respective tribal entities, Kokhanok Village Council and Igiugig Village Council. Similarly, this project focuses on Kokhanok and Igiugig, largely because they are the only two communities to submit traditional use determination requests to date. However,

the focus on Kokhanok and Igiugig is in no way intended to suggest that they are the only two communities with ancestral and/or contemporary ties to what is now Katmai National Park and Preserve. Nor is it our intent to suggest that Kokhanok and Igiugig residents are the only people who may have relied on ORVs as a primary means of access to subsistence resources within Katmai. Many other communities in the region—such as Naknek, South Naknek, King Salmon, Egegik, Levelock, Nondalton, Illiamna, Newhalen, Pedro Bay, and Perryville—have similar connections and histories. Furthermore, familial ties across villages blur the lines between distinct "communities" confined by the boundaries of a "census designated place."

5. Ski-Doo introduced the first Elan in 1971.
6. Side-by-sides are a relatively new type of off-road vehicle that tend to be larger than four-wheelers and hold more passengers.

REFERENCES

Alvard, Michael S.
1993 Testing the "Ecologically Noble Savage" Hypothesis: Interspecific Prey Choice by Piro Hunters of Amazonian Peru. *Human Ecology* 21(4):355–87.
1998 Evolutionary Ecology and Resource Conservation. *Evolutionary Anthropology: Issues, News, and Reviews: Issues, News, and Reviews* 7(2):62–74.

Alvarez, Randolph (Randy)
2022 Taped interview, 8 August, Igiugig, AK. Dillon Patterson and Ash McLeod, interviewers. Tape in possession of authors.

Andrew, Michael Jr.
2002 Taped interview, 11 September, Igiugig, AK. Don Callaway and Bill Schneider, interviewers. Tape available at https://jukebox.uaf.edu/interviews/3070

anonymous Igiugig resident
2022 Taped interview, 9 August, Igiugig, AK. Dillon Patterson and Ash McLeod, interviewers. Tape in possession of authors.

anonymous Kokhanok resident
2022 Taped interview, 14 August, Kokhanok, AK. Dillon Patterson and Ash McLeod, interviewers. Tape in possession of authors.

Aporta, Claudio, and Eric Higgs
2005 Satellite Culture: Global Positioning Systems, Inuit Wayfinding, and the Need for a New Account of Technology. *Current Anthropology* 46(5):729–753.

Arndt, Katherine L.
2013 Misplaced History: A Confrontation Near Chignik Bay, Alaska, June–July 1782. *Alaska Journal of Anthropology* 11(1):9–16.

Babadzan, Alain
2000 Anthropology, Nationalism and "The Invention of Tradition." *Anthropological Forum* 10(2):131–155. Taylor & Francis Group, New York.

Babie, Paul
2010 Idea, Sovereignty, Eco-Colonialism and the Future: Four Reflections on Private Property and Climate Change. *Griffith Law Review* 19(3):527–566.

Baer, Hans A., and Merrill Singer
2014 *The Anthropology of Climate Change: An Integrated Critical Perspective*. Routledge, London.

Banks, Cyndi
2007 Ordering the Other: Reading Alaskan Native Culture Past and Present. In *Race, Gender, and Punishment: From Colonialism to the War on Terror*, edited by Mary Bosworth and Jeanne Flavin, pp. 32–48. Rutgers University Press, New Brunswick.

Barnhardt, Carol
2001 A History of Schooling for Alaska Native People. *Journal of American Indian Education* 1:1–30.

Bergerud, Arthur T.
1974 Decline of Caribou in North America Following Settlement. *Journal of Wildlife Management* 38(4):757–770.

Brockington, Dan, Rosaleen Duffy, and Jim Igoe
2012 *Nature Unbound: Conservation, Capitalism, and the Future of Protected Areas*. Routledge, London.

Buege, Douglas J.
1996 The Ecologically Noble Savage Revisited. *Environmental Ethics* 18(1):71–88.

Büscher, Bram, and Robert Fletcher
2019 Towards Convivial Conservation. *Conservation and Society* 17(3):283–296.

Callaway, Don
1999a *Katmai ATV Issue: Draft Literature Review*. Unpublished report in files of the National Park Service, Alaska Regional Office, Anchorage.
1999b *Draft Igiugig, ATV Access: "A Way of Life Out Here."* Unpublished report in files of the National Park Service, Alaska Regional Office, Anchorage.

1999c *Draft Kokhanok, ATV Access: "The Everything Machine."* Unpublished report in files of the National Park Service, Alaska Regional Office, Anchorage.

Chowdhry, Gheeta, and Mark Beeman
2007 Situating Colonialism, Race, and Punishment. In *Race, Gender, and Punishment: From Colonialism to the War on Terror*, edited by Mary Bosworth and Jeanne Flavin, pp. 13–31. Rutgers University Press, New Brunswick.

Dear, Chad E., and Olin Eugene Myers Jr.
2005 Conflicting Understandings of Wilderness and Subsistence in Alaskan National Parks. *Society and Natural Resources* 18(9):821–837.

Denali National Park and Preserve
2005 *Cantwell Subsistence Traditionally Employed ORV Determination: Final Determination*. National Park Service, Anchorage, AK.

Deur, Douglas, and Don Callaway
2008 *ATV Use by Residents of Igiugig and Kokhanok, Alaska, in Katmai National Park and Preserve*. National Park Service, Anchorage, AK.

Durkheim, Emile
1964 *The Division of Labor in Society*. Free Press, New York.

Fall, James A.
1990 The Division of Subsistence of the Alaska Department of Fish and Game: An Overview of its Research and Findings. *Arctic Anthropology* 27(2):68–92.

Fals Borda, Orlando
2006 Participatory (Action) Research in Social Theory: Origins and Challenges. In *Handbook of Action Research: Participative Inquiry and Practice*, edited by Peter Reason and Hilary Bradbury, pp. 27–37. Sage Publications, London, Thousand Oaks, and New Delhi.

Fauchald, Per, Vera Helene Hausner, Jennifer Irene Schmidt, and Douglas A. Clark
2017 Transitions of Social-Ecological Subsistence Systems in the Arctic. *International Journal of the Commons* 11(1):275–329.

Fletcher, Robert
2009 Against Wilderness. *Green Theory and Praxis: The Journal of Ecopedagogy* 5(1):169–179.

Hale, Charles R.
2006 Activist Research v. Cultural Critique: Indigenous Land Rights and the Contradictions of Politically Engaged Anthropology. *Cultural Anthropology* 21(1):96–120.

Hames, Raymond
2007 The Ecologically Noble Savage Debate. *Annual Review of Anthropology* 36(1):177–90.

Hernandez, Jessica
2022 *Fresh Banana Leaves: Healing Indigenous Landscapes Through Indigenous Science*. North Atlantic Books, Berkley.

Hussey, John A.
1971 *Embattled Katmai: A History of Katmai National Monument*. U.S. Office of History and Historic Architecture, Western Service Center, Eagle River, AK.

Iceton, Glenn
2009 *Profits, Prophets, and Profiteers: Local and Global Economies of Wildlife in the Northern Yukon, 1860–1910*. Master's thesis, Department of History, University of Calgary, Calgary.

Igoe, Jim, and Beth Croucher
2007 Conservation, Commerce, and Communities: The Story of Community-Based Wildlife Management Areas in Tanzania's Northern Tourist Circuit. *Conservation and Society* 5(4):534–561.

Jones, Ryan Tucker
2013 A. F. Kashevarov, the Russian-American Company, and Alaska Conservation. *Alaska Journal of Anthropology* 11(1):51–68.

Kelsall, John P.
1968 *The Migratory Barren-Ground Caribou of Canada*. Service Department of Indian Affairs and Northern Development, Ontario.

Kuligowski, Waldemar
2014 On New Meanings of Tradition. Globalization, Politics and Questions for Anthropology. *Český lid* 101(3):321–334.

Marino, Elizabeth
2015 *Fierce Climate, Sacred Ground: An Ethnography of Climate Change in Shishmaref, Alaska*. University of Alaska Press, Fairbanks.

Nadasdy, Paul
2003 *Hunters and Bureaucrats: Power, Knowledge, and Aboriginal-State Relations in the Southwest Yukon*. University of British Columbia Press, Ontario.

Nielsen, Garith (Gary)
2022 Taped interview, 13 August, Kokhanok, AK. Dillon Patterson and Ash McLeod, interviewers. Tape in possession of authors.

Norman, Emma S.
2013 Who's Counting? Spatial Politics, Ecocolonisation and the Politics of Calculation in Boundary Bay. *Area* 45(2):179–187.

Norris, Frank B.
1996 *Isolated Paradise: An Administrative History of the Katmai and Aniakchak National Park Units*. National Park Service, Alaska System Support Office, Anchorage.
2002 *Alaska Subsistence: A National Park Service Management History*. U.S. Department of the Interior, National Park Service, Alaska Support Office, Anchorage.

Nuttall, Mark
2017 Climate, Environment, and Society in Northwest Greenland. In *Routledge Handbook of Environmental Anthropology*, edited by Helen Kopnina and Eleanor Shoreman-Ouimet, pp. 219–229. Routledge, London.
2022 Places of Memory, Anticipation and Agitations in Northwest Greenland. In *Memory and Landscape: Indigenous Responses to a Changing North,* edited by Kenneth L. Pratt and Scott A. Heyes, pp. 156–177. Athabasca University Press, Edmonton.

Pratt, Kenneth
1994 "They Never Ask the People": Native Views of the Nunivak Wilderness. In *Key Issues in Hunter-Gatherer Research*, edited by Ernest S. Burch Jr. and Linda J. Ellanna, pp. 333–356. Berg Publishers, Oxford and Providence.
2022 "The Country Keeps Changing": Cultural and Historical Contexts of Ecosystem Changes in the Yukon Delta. In *Memory and Landscape: Indigenous Responses to a Changing North,* edited by Kenneth L. Pratt and Scott A. Heyes, pp. 179–214. Athabasca University Press, Edmonton.

Rappaport, Joanne
2008 Beyond Participant Observation: Collaborative Ethnography as Theoretical Innovation. *Collaborative Anthropologies* 1(1):1–-31.

Redfield, Robert
1947 The Folk Society. *American Journal of Sociology* 52(4):293–308.

Redford, Kent H.
1991 The Ecologically Noble Savage. *Cultural Survival Quarterly* 15(1):46–48.

Reo, Nicholas James, and Kyle Powys Whyte
2012 Hunting and Morality as Elements of Traditional Ecological Knowledge. *Human Ecology* 40(1):15–27.

Rodrigue-Allouche, Sarah
2015 *Conservation and Indigenous Peoples: The Adoption of the Ecological Noble Savage Discourse and Its Political Consequences*. Master's thesis, Department of Archaeology and Ancient History, Uppsala University, Uppsala, Sweden.

Rowland, Michael J.
2004 Return of the "Noble Savage": Misrepresenting the Past, Present and Future. *Australian Aboriginal Studies* 2(1):2–14.

Salmon, AlexAnna
2014 The Kukaklek Reindeer Station. *Alaska Journal of Anthropology* 12(2):46–51.

Salmon, Dan and Randy Alvarez
2002 Taped interview, 12 September, Igiugig, AK. Don Callaway and Bill Schneider, interviewers. Tape available at https://jukebox.uaf.edu/p/3060

Shanklin, Eugenia
1981 Two Meanings and Uses of Tradition. *Journal of Anthropological Research* 37(1):71–89.

Sturm, Mark
2024 *Traditional Use Determination for the Use of Off-Road Vehicles (ORV) as a Means of Subsistence Access to Katmai National Preserve by Residents of Kokhanok and Igiugig, Alaska*. Memorandum issued on 14 May. National Park Service, King Salmon, AK.

Tomsen, Jennifer L.
2002 Traditional Resource Uses and Activities: Articulating Values and Examining Conflicts in Alaska. *Alaska Law Review* 19(1):167–200.

United States 73rd Congress
1934 *Indian Reorganization Act*. 25 U.S.C 461 et seq., 18 June.

United States 88th Congress
1964 *The Wilderness Act.* 16 U.S.C. 1131 et seq., 3 September.

United States 91st Congress
1970 *National Environmental Policy Act of 1969*. 42 U.S.C. 4321 et seq., 1 January.
1971 *Alaska Native Claims Settlement Act*. 43 U.S.C. 1601 et seq., 18 December.

United States 96th Congress
1980 *Alaska National Interest Lands Conservation Act*. 16 U.S.C 3101 et seq., 2 December.

United States Code of Federal Regulations
2025 Title 50, Wildlife and Fisheries. Chapter 1, United States Fish and Wildlife Service, Department

of Interior. Part 36, Alaska National Wildlife Refuges. Subpart e, Refuge Specific Regulations. § 36.39 Public Use.

2025 Title 36, Parks, Forests, and Public Property. Chapter 1, National Park Service, Department of Interior. Part 13, National Park System Units in Alaska. Subpart A, Administrative Provisions. § 13.1 Definitions.

United States Secretaries of Interior and Agriculture

2021 SO 3403-Joint Secretarial Order on Fulfilling the Trust Responsibilities to Indian Tribes in the Stewardship of Federal Lands and Waters. 15 November, U.S. Department of Interior.

West, Paige, and James G. Carrier

2004 Ecotourism and Authenticity: Getting Away from It All? *Current Anthropology* 45(4):483–498.

West, Paige, James Igoe, and Dan Brockington

2006 Parks and Peoples: The Social Impact of Protected Areas. *Annual Review of Anthropology* 35(1):251–277.

Wheeler, Polly, and Tom Thornton

2005 Subsistence Research in Alaska: A Thirty Year Retrospective. *Alaska Journal of Anthropology* 3(1):69–103.

Wilson, Richard

2022 Taped interview, 8 April, Anchorage, AK. Dillon Patterson, interviewer. Tape in possession of authors.