

Managing Consumptive and Nonconsumptive Use in the United States Largest Wilderness

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Abstract—With more than 13 million acres (5,260,913 ha) of land and in excess of 9 million acres (3,642,171 ha) of designated Wilderness, Alaska's Wrangell-St. Elias National Park and Preserve is the largest national park in the United States and includes the country's largest single-name wilderness area. Park managers face a variety of challenges in managing consumptive and nonconsumptive uses of the park and its resources while at the same time protecting wilderness values. When it was created, efforts were made to protect the fragile resources of its varied ecosystems while at the same time honoring well-established traditions of human use within the park. Under the provisions of the park's enabling legislation, subsistence hunting and fishing by local rural residents—Native and non-Native—are allowed on park lands, recognizing the important role that the harvest of wild resources has played in the lives of area residents. In addition, sports hunters and fishers as well as tourists come to Wrangell-St. Elias in search of their desired experiences and with their own sets of expectations. This paper explores the challenges of managing consumptive and nonconsumptive uses of park resources while at the same time protecting wilderness values.

Introduction

Wrangell-St. Elias National Park and Preserve was established in 1980 when the United States (U.S.) Congress passed the Alaska National Interest Lands Conservation Act, commonly referred to by the acronym ANILCA. Consisting of more than 13 million acres (5 million ha) of land and more than 9 million acres (3.5 million ha) of designated wilderness, the park is the largest unit managed by the U.S. National Park Service and encompasses the largest single-name wilderness area in the United States.

Wrangell-St. Elias, along with the other ANILCA parks, is different from most national parks in other parts of the United States. When it was created, efforts were made to protect the fragile resources of its varied ecosystems while at the same time honoring well-established traditions of human use within the park. The park territory includes

the homelands and hunting and fishing grounds for at least three Alaska Native groups (Ahtna, Upper Tanana, and Tlingit), and non-Native use and occupation of the region dates back to the early 20th century. Under the provisions of ANILCA, subsistence hunting and fishing by local rural residents—Native and non-Native—are allowed on park lands, recognizing the important role that the harvest of wild resources has played in the lives of area residents. In addition, sport hunters and fishers as well as tourists come to Wrangell-St. Elias in search of their desired experiences and with their own set of expectations. Nonconsumptive users may see Wrangell-St. Elias as a vast mountain wilderness with few roads or trails; local residents may see it as home, crisscrossed by trade routes; and sport hunters may focus on world-class Dall sheep trophies.

This paper explores the challenges of managing consumptive and nonconsumptive uses of park resources in the largest designated wilderness area in the United States, while at the same time protecting wilderness values. After a brief background section, the main uses and users of park resources are described, along with interactions that occur among them. The paper concludes with a discussion of the implication of these varied uses and users for protected area management. It is based on a variety of sources including surveys of visitors, analysis of wildlife harvest data, and the authors' interactions with a variety of park visitors, neighbors, and residents.

Background

Wrangell-St. Elias National Park and Preserve is located 200 miles (322 km) northeast of Anchorage, Alaska (see fig. 1). The park contains superlative scenery, abundant wildlife, and fascinating human history. Wrangell-St. Elias together with the adjacent Glacier Bay National Park and Preserve and two parks across the border in Canada—Kluane National Park and Tatshenshini-Alsek Provincial Park—form one of the largest terrestrial protected areas on earth. The United Nations Educational, Scientific, and Cultural Organization (UNESCO) designated Wrangell-St. Elias National Monument and Kluane National Park as a World Heritage Site on October 26, 1979. Glacier Bay was added in 1992 and Tatshenshini-Alsek in 1994.

The landscape within Wrangell-St. Elias National Park and Preserve ranges from tidewater at Icy Bay to forests and tundra to the rock and ice of high mountains. Four major mountain ranges converge here with nine peaks more than 14,000 ft (4,267 m) tall, including Mt. St. Elias, the second highest peak in the United States. Several rivers, including

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In: Watson, Alan; Sproull, Janet; Dean, Liese, comps. 2007. Science and stewardship to protect and sustain wilderness values: eighth World Wilderness Congress symposium: September 30–October 6, 2005; Anchorage, AK. Proceedings RMRS-P-49. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station.

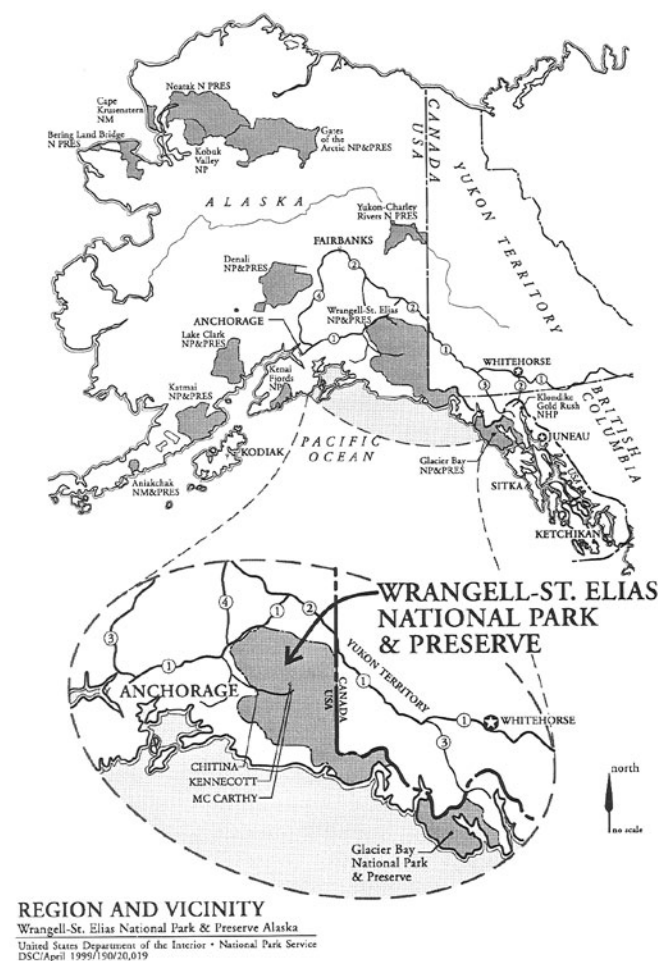


Figure 1—Map showing location of Wrangell-St. Elias National Park and Preserve in relation to Anchorage and the rest of Alaska.

the Copper and the Tanana, have their headwaters in the park. This varied landscape is home to a variety of wildlife, large and small, predator and prey.

The park is bordered by and visible from two of Alaska's major highways—the Richardson and the Glenn highways. Two gravel roads enter the park. The Nabesna Road, 42 miles (68 km) long, begins at Slana. The 60-mile (97-km) McCarthy Road begins at Chitina and ends at the Kennecott River on the doorstep of the historic communities of McCarthy and Kennecott. Visitors also access the park on small planes, which depart from communities such as Tok, Gulkana, Chitina, and McCarthy and land on numerous airstrips in the park. Under the provisions of ANILCA, Wrangell-St. Elias does not charge entrance fees, and accordingly, the park has no entrance stations on these roads or elsewhere. Park offices and the main park visitor center are in Copper Center, while additional visitor contact facilities are located in Slana, Kennecott, Chitina, and Yakutat.

Legislative Background

Wrangell-St. Elias was first established as a national monument in 1978 by then President Jimmy Carter under

the authority granted to him by the 1906 Antiquities Act. It remained as such until Congress passed ANILCA in 1980. The latter act created or expanded 13 National Park Service units, including Wrangell-St. Elias. Wrangell-St. Elias National Park and Preserve was established to, among other purposes:

...maintain unimpaired the scenic beauty and quality of high mountain peaks, foothills, glacial systems, lakes, and streams, valleys, and coastal landscapes in their natural state; to protect habitat for, and populations of, fish and wildlife including but not limited to caribou, brown/grizzly bears, Dall sheep, moose, wolves, trumpeter swans and other waterfowl, and marine mammals; and to provide continued opportunities, including reasonable access for mountain climbing, mountaineering, and other wilderness recreational activities. Subsistence uses by local residents shall be permitted in the park, where such uses are traditional, in accordance with the provisions of title VIII (ANILCA, section 201(9)).

In addition to creating new conservation units, ANILCA designated portions of those units as wilderness. Recognizing the special conditions present in Alaska, it modified some of the provisions of the Wilderness Act of 1964. In particular, some activities prohibited in wilderness areas in other U.S. states are permitted in Alaskan wilderness areas, including the use of airplanes and the construction and maintenance of cabins (see table 1).

Figure 2 illustrates the relationship between park and preserve and how both are overlain with the wilderness designation. The national preserve is largely managed like the national park, with the main difference being that sport hunting under state regulations is allowed in the preserve but not in the park. Approximately 1 million (404,686 ha) of the 13.2 million acres (5.3 million ha) within the park and preserve boundary is in non-Federal ownership, with Native corporations established under the Alaska Native Claims Settlement Act being the largest inholders.

Consumptive and Nonconsumptive Users of Park Resources

Activities in the park include hunting, fishing, trapping, mountaineering, wildlife viewing, snowmobiling (snow machining in local terminology), flight-seeing, rafting, touring the historic Kennecott mill town, and, of course, exploring the great American Wilderness. These are all popular activities that draw people to Wrangell-St. Elias National Park and Preserve, even if some of them may be only minimally aware that they are in a national park.

As the nation's largest park and largest designated wilderness area, Wrangell-St. Elias National Park and Preserve encompasses a wide array of resources and associated human values and uses. Along with centuries of use and occupation by the indigenous Ahtna, Tlingit and Upper Tanana peoples, the area has more recently become a popular place for recreational hunting and also for nonconsumptive recreational activities. In contrast to what might be called "traditional" values associated with park and wilderness settings in the rest of the United States, the park's founding legislation specifically recognizes the values associated with preserving opportunities for subsistence and recreational hunting and fishing.

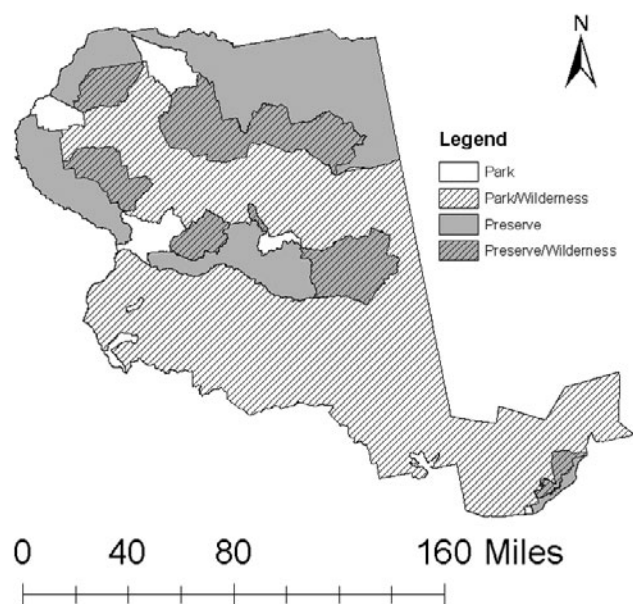
Table 1—Comparison of the 1964 Wilderness Act as originally passed with the provisions of ANILCA wilderness.

Wilderness Act of 1964	ANILCA revisions
Prohibition on the use of motorized/mechanized vehicles	Allowed use of motorized vehicles for subsistence activities, access to inholdings, and for traditional means of access. Solicitor's opinion allows use of bicycles for access (determined to be traditional).
Prohibition of cabins and other types of new structures and facilities	Existing cabins may be maintained or replaced. New cabins allowed for health and human safety. New and replacement navigation aids permitted.

Sometimes one user group never knows that another exists—tourists whose visit consists of a brief stop at the visitor center for a nature walk and to watch the park movie, for example. Other times, different types of park users meet, with varying results. Tourists from other states and countries may be fascinated to learn about local subsistence traditions, while backpackers may find it disconcerting to encounter armed men on “four-wheelers” (a type of off-highway vehicle or OHV) who are hunting the wildlife they are excited to catch a glimpse of. The result is a highly complex and potentially contentious arrangement of park uses and users.

Local Subsistence Users

When the U.S. Congress established Wrangell-St. Elias and several other protected areas in Alaska, it recognized the important role that the harvest of wild resources has played in the lives of rural Alaskans over many generations.

**Figure 2**—Map of Wrangell-St. Elias National Park and Preserve showing designation of lands as national park, national preserve, and wilderness.

Specifically, ANILCA provides for the continued opportunity for subsistence uses of fish, wildlife, and plant resources in both the park and the preserve by local rural residents (ANILCA Section 203 and Title VIII). Important subsistence activities in Wrangell-St. Elias include hunting, trapping, fishing, berry picking, collecting firewood, and harvesting green logs for house construction. The most important fishery in the area—for salmon on the Copper River—largely occurs outside of the park and preserve boundary, although some of the famous Copper River salmon spawn in the park.

Under the provisions of ANILCA, only local rural residents are eligible to engage in subsistence in Wrangell-St. Elias under federal regulations, and subsistence eligibility is largely determined on a community, rather than individual, basis. According to 2000 U.S. Census data compiled by the Alaska Department of Community and Economic Development, approximately 6,000 people lived in the 23 communities that are eligible to engage in subsistence activities within Wrangell-St. Elias National Park. These so-called resident zone communities range from Yakutat in Alaska's southeast through the Copper Basin to several communities along the Alaska Highway. Some local rural residents are Alaska Natives whose families have lived in the area for hundreds if not thousands of years; others are the descendents of early Euroamerican settlers to the area; and yet others have arrived more recently to work for the Alaska pipeline, various government agencies, or a variety of small businesses.

Most rural Alaskan families depend on subsistence hunting and fishing at some level. For some people, such as ourselves, wild fish, berries, and so on supplement what they—and we—purchase at the grocery store, while for others these subsistence foods are central to their customs and traditions, make up a large proportion of their diet due to lack of cash resources, or both. An estimated 55 percent of the rural households in southcentral Alaska, in which many of the park's resident zone communities are located, harvest game and 80 percent harvest fish (Wolfe 2000). The percentages of households using subsistence resources are even higher, when people who hunt or fish share with those who do not or cannot. Not everyone eligible hunts, and not every local hunter hunts in the park. That said, in 2004, 269 people obtained federal subsistence permits for registration hunts in the park and preserve, indicating a minimum number of hunters intending to hunt there. And this doesn't count the people hunting in the preserve under state sport regulations (see the next section) or people hunting animals for which the federal government does not require a permit.

Sport Hunters and Fishers

Sport hunting is authorized within Wrangell-St. Elias National Preserve (but not the national park) under section 1313 of ANILCA, and sport fishing is allowed in both the national park and the national preserve. According to Wolfe (2000: 1):

Sport fishing and sport hunting differ from subsistence in that, although food is one product, they are conducted primarily for recreational values, following principles of "fair chase." While subsistence is productive economic activity that is part of a normal routine of work in rural areas, sport fishing and sport hunting usually are scheduled as recreational breaks from a normal work routine.

One important caveat to this explanation is that there are undoubtedly urban residents hunting under sport regulations who are not eligible to hunt under federal subsistence regulations but who have food procurement as their primary goal.

The preserve's accessibility via the road system and chartered fly-in hunts makes the area especially popular for Alaskan sport hunters. The preserve has produced several world-class Dall sheep and so attracts sheep hunters from around the globe (Batin 1989; Heimer and Smith 1975, 1979; Murphy and Dean 1978; Nesbitt and Parker 1977). A major portion of sport hunter access is by aircraft, both private planes and air taxis.

Sport hunters can be separated into guided versus non-guided. Under State of Alaska regulations, non-state residents are generally required to have a guide for Dall sheep, brown bear, and mountain goat unless accompanied by a close relative, and non-U.S. residents must have a guide for all large game. Guided sport hunting has been occurring in the region for at least 85 years (Young 1985). The preserve portion of Wrangell-St. Elias is divided into 16 guide areas, and the park has 16 concession contracts with hunter guides to provide guiding services within these areas. Each guide has his or her own area, though there is some overlap between areas. For the most part, guided hunting clients are interested in harvesting Dall sheep. The trophy-sized rams found in the preserve are highly valued, and the guides charge accordingly. A 10-day hunt can cost \$7,000 to \$12,000.

Sightseers and Recreators

Nonconsumptive visitors can be subdivided into two groups; one is the sightseeing visitors and the other, the recreational visitors. The distinction between the two is that the sightseers' visit is focused primarily on the easily accessible road area of the park while the recreational users visit the park's backcountry areas through activities such as hiking and rafting. These are a more traditional national park visitor than the hunters and fishers discussed earlier.

Information gathered by a visitor survey in 1995 helps paint a picture of the sightseers and recreators who visit the park. Almost 40 percent went into the backcountry for two to three nights, and 50 percent day hiked. The most visited area of the park was McCarthy-Kennecott (58 percent), with its rich human history, colorful buildings of the historic mill town, glacier access, and several maintained hiking trails. As for the demographics of this group, 11 percent were international travelers (40 percent from Germany),

and within the U.S. visitors, 31 percent were from Alaska. Fifty-five percent were in family groups, 20 percent were in groups of friends, and 49 percent were in groups of two. Most visitors (56 percent) were aged 26 to 55 years. The most popular activities were viewing scenery or glaciers, watching wildlife, and walking around the historic mill town of Kennecott (Littlejohn 1996).

Further research has been conducted by the Aldo Leopold Wilderness Research Institute into the nature of the backcountry experience at Wrangell-St. Elias (Kneeshaw and others 2004). This research was accomplished by interviewing backcountry users about their trips. Overall, the quality of the wilderness experience was ranked very high. A number of qualities were mentioned that characterized what they experienced including vastness, remoteness, diversity of terrain, primitive conditions, unconfined access and challenge. In general, users of the backcountry and wilderness find a landscape that is without trails or bridges with the occasional cabin as the only facility. Access is by foot from one of the two roads or by air taxi. There are no requirements for a permit, whether you are hiking or mountaineering, and there is no guarantee of rescue should there be a problem. Recreators are on their own to navigate their route and are responsible for their own safety. Comments from one visitor group interviewed as part of the study provides an example of the kind of challenges found in the backcountry. They were surprised by how different their perception of a "creek" on a map was from their actual experience of it, saying, "well you get to the creek and it's you know forty feet wide and a class four river, you know there's no way you could cross that" (Kneeshaw and others 2004: 35).

Interactions Among User Groups

In the last few years, park staff have been hearing comments or anecdotes suggesting possible conflicts between the hiking and recreating public and the hunting public. Accordingly, park management partnered with the Aldo Leopold Wilderness Research Institute in 2000, as a way to gather information on park backcountry visitors in general and potential conflict between groups in particular. Anecdotal evidence suggested that hikers and backpackers had animosity for hunters, but the research conducted in 2000 did not seem to bear this out. For the most part, the two groups showed a healthy respect for each other, and backpackers/hikers expressed concerns about discharge of firearms in a safe manner. The following excerpt from an interview with a hiking visitor illustrates his safety concern about sharing the same area with hunters:

Interviewer: And if you did encounter hunters, how would you feel about it?

Hiker: Um, I don't have a problem per se, [and] I don't have a problem with hunting in a national park. The, um, I'm coming here more to see nobody, so if I saw hunters, if I saw a family of backpackers, I would probably react the same. I just don't, I would get a little nervous if I heard gunshots going off near me. Because, you know, ricochet and things like that. But that's it (Glaspell and Watson 2003: 69).

Some subsistence hunters, meanwhile, might prefer to not be questioned by the recreational or sightseeing visitor about what they are doing. For some Alaska Native hunters this is in part related to cultural beliefs about the relationships

between humans and animals as well as to customs about how strangers should interact.

Rather than conflicts between hunters and nonconsumptive park visitors, the crux of the competition is between sport and subsistence hunters. The issues between these two types of hunters involve competition for perceived limited resources and the perception that subsistence users have an unfair advantage. For example, subsistence users have a greater ability to use OHVs than do sport hunters. The differences can stretch to more than just the tools, as well. The following excerpts from interviews with sport hunters illustrate their concerns over subsistence hunters:

Sport Hunter: The Park is off limits for sheep hunting. At least for people like us [recreational hunters]. I believe there are subsistence rights in this park. So they basically have their own private hunting reserve. When you don't live out here in this environment it kind of grates on you because we used to be able to do it and now we can't but they can (Glaspell and Watson 2003: 75).

Another Sport Hunter: Subsistence hunting in the Park? I do have a big problem with it. Especially if they're hunting sheep, because I don't feel sheep is a subsistence animal. You don't get enough meat off a sheep to use it for subsistence. Why should they be able to hunt for trophy sheep for subsistence? (Glaspell and Watson 2003: 75)

Another issue that arose when differentiating between hunters and non-hunters and among the different types of hunters centered on values. Hunters as a whole perceived that non-hunters would view them as non-conservationists. And perceptions among hunters indicated that there was a segment of the hunting population that lacked morals and ethics, which could negatively impact outsider views of the entire population of hunters. The following is an excerpt from an interview with a non-hunter concerning his perceptions regarding hunting for subsistence purposes:

Interviewer: And if you were to encounter local residents engaged in subsistence hunting, how would that make you feel?

Sightseer: I think that would be interesting to see. You know, if it was a ... I wouldn't be interested in seeing a big group of hunters from Texas or something, that was being rowdy, [but] ... subsistence people I think would be interesting to see (Glaspell and Watson 2003: 78).

Meanwhile, some subsistence hunters have expressed concerns to the park staff about trails being damaged by sport hunters using large OHVs (not all subsistence users can afford OHVs) and about hunting etiquette or experience of sport hunters. At one meeting, for example, a subsistence hunter complained to park staff about a sport hunter who shot at a sheep that she had been stalking, that shot coming from behind them and scaring off the sheep. Her hunting etiquette holds that you do not shoot an animal that someone else is stalking. She felt that the other hunter was reckless in not knowing that there was someone else in the vicinity, thereby endangering her and her hunting companion. She had spoken to the other hunter after this incident and was concerned that it did not matter to him that they were there.

An important point to note is that the sport hunters interviewed for the study and quoted above were non-guided hunters who were accessing the national preserve primarily from the Nabesna Road by foot or OHV and not with an

air taxi. Consequently, this group would be more likely to compete with subsistence hunters than sport hunters who use an air taxi or a guide.

Guided sport hunting is generally supported by aircraft and occurs in remote, rugged portions of the preserve where trophy-size animals are most likely to be found. Subsistence hunting, in contrast, is more opportunistic in nature and occurs mostly around roads and other easily accessed areas. Thus, to a large extent, the areas used for guided sport hunting and the areas used for subsistence hunting are geographically distinct. Additionally, guided sport hunters pursue trophy-class animals that are, in almost all cases, older males. Subsistence hunters, on the other hand, may take females and younger animals when this is allowed by regulations. Consequently, a member of the Wrangell-St. Elias Subsistence Resource Commission—a group of local subsistence users that advises park management on subsistence matters—commented at one meeting that he views unguided sport hunters as competing with subsistence hunters and would like to see sport hunting move to guided hunting only.

Finally, there is also competition between the two kinds of sport hunting providers—the hunting guides and the air taxis. Most guides are pilots and view the air taxis as infringing on their guide areas by dropping off hunters at landing strips that they pioneered prior to the establishment of Wrangell-St. Elias. There is nothing below board from a legal standpoint or an ethical standpoint from the air taxis using these landing strips, and non-guided hunters have the right to the same opportunities as non-guided clients. In general, the conflict between the providers is not reflected in either's client's experience. The guides and the air taxis typically vent their frustrations to park management, and park management attempts to mediate the concerns.

Implications for Protected Area Stewardship

This paper has described Wrangell-St. Elias National Park and Preserve and its various users. How do we achieve a sustainable balance between preservation and park use and between the various park uses? This is a key question for park managers. The park covers a huge area, its staff is relatively small, and it is difficult to know everything about the park resources and visitors. This concluding section discusses some of the implications of this situation for protected-area stewardship.

Since the park's creation, its staff have been trying to determine approximate visitor numbers and information on where they go and the activities in which they are engaged. As mentioned earlier, the park has no formal entrance stations, and access is by air as well as by ground. This makes counting visitors difficult. The best source of information tends to be the annual reports that the commercial operators complete. Any type of guide—hunting, hiking, climbing, rafting, etc.—working within the park is required to have a permit and to report the number of clients they had per season, where they've taken them, and what they've done. Tracking and analyzing this information has proven challenging. Consequently, we have to make management decisions without highly accurate information about visitation.

Like park visitors, we also need good quality data on park resources and how they are impacted by various park uses. Because the Wrangell-St. Elias allows activities beyond those in a typical U.S. park, there are additional issues that need to be addressed—not just how many caribou there are and how they interact with natural predators such as wolves or bears, also questions about the impact of hunting or trapping on wildlife populations in the park and the impact of OHV use for hunting access.

While the park has spent a good deal of effort preparing visitors for the challenges and logistics of a backcountry or wilderness trip, there has not been a similar effort to prepare recreational visitors for potential encounters with consumptive users, such as hunters. Some recreational visitors are surprised that a national park allows hunting since most national parks in the United States do not. The concept of subsistence itself is a new one for most out-of-state visitors. They are surprised to learn that there are still places where people are still tied so closely to the land and need to use resources in such a direct manner. The park recently completed a Long-Range Interpretive Plan that identifies important themes and messages to all visitors to the park. Consumptive uses and subsistence are high priority educational goals that the park will be emphasizing over the coming years.

The park currently does not have a backcountry management or commercial services plan. Such a plan could serve as a tool for making decisions about facilities in the backcountry. It would also help to provide consistency in decision-making through changes in leadership at the park.

In sum, Wrangell-St. Elias faces some issues in managing the largest national park and the largest designated wilderness area in the United States. Yet, we are not facing any imminent crises. Although it may not be as fast as we would like, the park is relatively young and we are making progress towards having the data and plans that are needed to respond to our challenges or those crises that the future

might bring. And in the meantime, we are the stewards of an enormous wilderness area with all the values associated with it.

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