

EDITED BY

AARON J. POE

AND

RANDY GIMBLETT

SUSTAINING WILDLANDS

Integrating Science and Community in Prince William Sound



We dedicate this book to the residents of the six key communities of Prince William Sound: Anchorage, Chenega Bay, Cordova, Tatitlek, Whittier, and Valdez. Your dependence on the region ranges from direct sustenance and economic gain to recreation, renewal, personal inspiration, and cultural vitality. You are an inextricable part of the Sound and have repeatedly demonstrated that to us through our work to understand human use of this landscape. It's our hope that in return, this volume helps show pathways by which managers and stakeholders can work together to develop the more rigorous and adaptive planning approaches needed to ensure a sustainable future for the Sound.



Additional content related to this book can be found at www.sustainingwildlands.com.

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cycling and habitat productivity, and for these natural processes to sustain us, we need to manage them on a scale that takes human activity into account for the entire system.

At my own job, as executive director of the Copper River Watershed Project (CRWP), another question I hear often about the Copper River is, "What are the main threats to the Copper River?"

If I have to sum it up in one phrase, my answer is "fragmented resource management."

The Copper River is described by those who raft it as world-class wilderness. And it is! The high bluffs through the Copper River Basin are the rim of ancient Lake Atha, and you can see bison grazing along their shoulders. Farther down, the river cuts a canyon through the Chugach Mountains and all the water from the Copper River's dozens of tributaries and the Chitina River is forced through Woods and Baird Canyons. You almost always see bear tracks at campsites along the river. They're after the same fish that subsistence fish wheel users, dip netters, and commercial fishermen are trying to catch.

But is this watershed pristine, public, and protected, as so many seem to think? It seems more like Swiss cheese to me.

Throughout the 26,500 square miles of the drainage, there are two regional native corporation land owners, six tribal councils, five federal land and resource managers, and three state agencies involved in resource management.

As an example of how the layers interact, when the CRWP works on marshaling resources to replace a culvert to restore fish passage, we talk to the Alaska Department of Transportation & Public Facilities and the landowner first. Depending on the site conditions, we may also need to consult with neighbors—a tribal council and/or private landowners, and possibly a utility cooperative. Then we consult with the permit agencies: Alaska Department of Fish and Game, U.S. Fish and Wildlife Service, and the Army Corps of Engineers.

And that's the crux of the issue. Fish and wildlife are managed by state and federal agencies, land and some water bodies by other state agencies, roads and the culverts and bridges that cross those water bodies by another entity. How do you integrate all those decision-making factors? By thinking, and planning, on a watershed scale.

My job is to push decision makers throughout the region to take fish habitat into account, to consider the cumulative impacts of development on the fish productivity of the entire watershed. We know that diversity is critical in biological systems, and that nicks in the region's habitat integrity here and there add up to losses system wide over time.

Managing on a watershed scale helps to take into account events that are as cataclysmic as the Exxon Valdez oil spill as well as small-scale habitat degradation, like adding fill for a building pad in the mouth of a salmon spawning stream. By ignoring the bigger picture—the watershed scale—in resource management, I fear that we risk becoming disconnected from how rivers and streams feed us, buffer flooding, provide recreation, and supply clean water. Salmon are so connected to their home watershed that they return to the stream where they were born. What's happening in your home watershed?

CONCLUSION

WHAT WE'VE LEARNED FROM THE SOUND

A Broader Perspective on Sustainable Human Use of Wildlands

AARON J. POE, RANDY GIMBLETT, AND DALE J. BLAHNA

THE GOAL OF THIS BOOK is to provide insights for planning and managing large, natural landscapes for sustainable human uses. The challenge of applying science to manage for sustainable human uses is that it also depends upon the integration of perspectives of stakeholders who may operate from different bases of knowledge. In particular, we wanted to present a case that managing human uses in a sustainable way is possible even while human uses increase. But this won't happen if conservation planners only focus on the negative effects of human activities. This approach leads managers to focus on limiting the number of visitors in order to "protect" wildland settings.

This volume should make it clear this traditional management focus is far too simplistic and can actually be counterproductive. In the short term, it may disperse people further across the landscape, reducing the diversity of recreational opportunities and actually *increasing* the cumulative social and physical impacts as people are redistributed from higher to lower use areas. In the long term, it can have even worse consequences by restricting the numbers of people who can come to experience and appreciate wildlands and thus broaden the disconnect between society and the value of such places.

In this volume, we suggest a very different approach to planning and managing sustainable human use of a wildland. We recognized the environmental effects of recreation but also considered the broader array of human uses and values of the landscape, including social, community, and stakeholder impacts, both positive and

negative. Recreation activities, experiences, attitudes, and sense of place considerations were also integrated with biophysical considerations at different scales of analysis.

The previous chapters in this book build on over three decades of work studying human-landscape interactions and associated conflicts, as well as policy related to protection of special places, wildland values, and human experiences. We believe that the approach recommended to the Forest Service in chapter 19 has merits beyond the region of Prince William Sound. Finally, through the course of putting this volume together, three interconnected themes emerged that are vital when managing for the sustainable use of wildlands.

SUSTAINABLE USE MANAGEMENT DEPENDS ON RIGOROUS SOCIAL SCIENCE

The Forest Service and many other land managers have attempted to use ecosystem management principles to guide management planning since the mid-1990s. However, the science driving these plans has been heavily focused on understanding ecological and biological components of landscapes. When considered at all, human components of ecosystems tend to be evaluated as separate from ecological components and as *impacts* on naturally functioning systems (Alberti et al. 2003). There is a large body of literature that identifies the need for integrated approaches to planning, but the use of social science still lags far behind the use of physical and ecological data (Bender-Wada et al. 1998).

Land management agencies often confuse public engagement with social science in an attempt to meet this need, but it is important to recognize that public engagement is not a proxy for the substantive, empirical science that brings data on user or stakeholder perspectives into the conservation planning processes (Bender-Wada et al. 1998). Human uses are part of all ecosystems, and landscape planning efforts, even for natural reserves, are pursued primarily to meet human goals. For this reason, human use sustainability is not just a "recreation" planning question. It must be part of all landscape conservation efforts.

When the Chugach National Forest initiated their Prince William Sound Framework effort in 2006 (chapter 19), the overarching objective was to create a recreation management strategy that protects resources and enhances user experiences in the Sound. This could only succeed if the strategy was based on a rigorous understanding of the distribution and dynamics of human use, and this would only come from specific investments in social science.

Subsequent analyses of those efforts, captured in this volume, illustrate that there are keystone experiences sought by recreationists in the Sound and that the system is not yet in "crisis" mode in terms of conflict, crowding, or impacts to wildlife and other

resources. This reality and the depth of information provided by their investments in social science research and analysis provided the Forest Service with an opportunity to pursue a stepwise approach to adapting their management. The issue-based planning approach brought together social science data on use patterns and recreation experience opportunities with potential resource concerns to recommend management strategies and follow up monitoring.

The resulting specificity in these recommendations was only possible with the investments made in social science data that is both spatially and temporally explicit. In this case, GIS layers mapping the seasonality of use, by user type (chapters 6, 7, and 9), were integrated with research on the motivations and expectations of stakeholders (chapters 7 and 8). This allows for recommendations tailored specifically to address well-defined issues at the appropriate scale—be it Sound wide, for a bay or island complex, or for an individual sensitive site. The identified issues and related management strategies that came from this process provide guidance for managers to systematically assess, manage, and engage stakeholders to provide a diversity of sustainable recreation opportunities across the Sound.

SUSTAINABLE USE REQUIRES BROADENING THE CONVERSATION BETWEEN MANAGERS AND STAKEHOLDERS

Sustainable recreation planning calls for attempts to address increasing human use by investing in greater efforts to involve stakeholders in management issues and concerns. Rapid changes in human uses in the Sound have not been accompanied by proportionate efforts to connect with users and the public at large about the Sound, its communities and the role of managers in providing for many uses in the region. Some of the earliest human use assessments in the Sound (chapter 12) recognized that management efforts needed support from stakeholders to more effectively promote best practices and direct or deflect use (i.e., campsite hardening or outreach efforts aiming to concentrate use). Since private users comprise the majority of all users (chapter 7), effective communication efforts with this group of recreation users will contribute the most when aiming to protect recreation opportunities and sensitive resources in the region.

For purely logistical reasons, managers have a difficult time in projecting their messaging across an area as large as the Sound. Given the region's vast extent, opportunities for managers to engage users must be focused on ports of entry, where there are many potential partners to help with messaging. Outreach and education efforts communicated in the words of the local public have tremendous utility for furthering an agency's stewardship goals. When individual stories about local land ethics or sustainable use practices are contributed by residents (chapter 18 and many of the essays

in this volume), they have greater potential to resonate with fellow users and visitors than management agency messages that are often perceived, or ignored, as institutional and impersonal. Furthermore, when there is a history of negative interactions between agencies and the public, messages from a stakeholder group may prove to be more effective.

Engagement efforts with communities during the planning process and implementation of the Framework, as well as other chapters in this volume (e.g., chapters 8 and 18), allowed managers to begin to better understand the Sound communities as they see themselves. The experiences and relationships gained from the public engagement and collaborative work that produces something with shared value are a vital contribution to furthering sustainable recreation management in the Sound—and likely other wildland settings.

Sustainable recreation management in the Sound hinges on sincere and effective community engagement. True system-wide approaches require land and resource managers to shed some constraints of their organization cultures and look beyond the traditional missions and jurisdictions of their agencies (Thomas and Thorne 2003). This may take generational change among management professionals, or legislative action, both of which will likely be pushed for by stakeholders demanding common sense approaches to management—approaches free from artificial administrative constraints that don't make sense for the communities, users, or ecosystems of wildlands.

SUSTAINABLE USE: A WORKING WILDERNESS PROMOTES SOCIETAL RELEVANCE

The Sound, while being a remote, rugged, and pristine wild place, is a "working wilderness," where wilderness thrives not in the absence of human use or in spite of it, but as part of it. As stakeholders from chapter 18 describe it, the Sound is a thriving wildland setting sustained by the human communities that live, work, and play there. The Sound is recovering from a devastating oil spill, which had both social and ecological consequences. But the chapters in this book show that in contemporary terms, there is no lasting reduction in recreation use 23 years after the spill. Evidence of high user satisfaction (chapter 7), successful coping strategies from one of the most heavily used areas (chapter 16), and increased use since the spill all provide evidence that recreation user experience in the Sound is strong and viable.

In fact, some speculate that recreation may now be putting pressure on other system components—namely species and habitats expected to be vulnerable to human disturbance (e.g., chapter 15). This leads to an interesting point of further reflection. Could the sustainable future of species and habitats injured by the spill *actually depend*

upon growth of a healthy recreation and tourism stakeholder community to add numbers, depth, and diversity to those who would advocate for the Sound? In the same way that it hosts crucial activities like subsistence harvest and commercial fishing, the Sound is a wildland setting that provides people with an invaluable recreation experience in the outdoors. In turn, this visitation builds a constituency of people who have experienced for themselves the true value of this place and who may be called upon to champion its future as a *wild place*. Just as commercial fishing continues as it has for generations, carried on by individuals who work in the Sound to carve out a living, subsistence harvesters from communities in the Sound likewise depend on the working wilderness for the resources it provides. Year after year, the numbers of these two groups may remain steady (or could even decrease, see chapter 10) but are likely to become a less significant proportion of not only Alaska's population but also of the nation as a whole (Walls and Siikamäki 2010).

Sustainable recreation that allows people to appreciate the Sound can provide a supporting voice when it comes to future policy decisions affecting the region. It has been recognized nationally by the U.S. Forest Service in the new objectives around sustainable recreation aimed at getting people out to use public lands (USDA Forest Service 2010). Indeed, encouraging political support was one reason U.S. Forest Service leadership implemented several new initiatives to increase the use of national forests and "reconnect" Americans with the outdoors (Kimbrell et al. 2009). By facilitating increased and diverse recreation use, with a careful eye toward sustainability, managers can find ways to increase the numbers of those who can find common cause alongside commercial fishers and subsistence harvesters when it comes to protecting the Sound.

This sentiment runs counter to the tradition of much wildland recreation management—limiting numbers of individuals using the landscape in order to reduce social or ecological impacts. This model of only considering human use as a negative impact has limited the thinking of managers in Prince William Sound and likely has in other wildland settings too. Management approaches, commonly used for evaluating and limiting numbers of individuals using a landscape, have been shown by Cole (2001) and others to favor certain users and certain types of experiences, leading to decisions that may be inherently biased against visitors seeking an alternative experience from the perceived "norm." This approach typically translates into a fixation by managers on minimizing encounters between groups of users and keeping group sizes small regardless of the recreation activity, desired experience, or specific setting (e.g., chapter 4).

This volume highlights some of the complexities missed by approaches of such singular focus. In the Sound, perceptions about encounters seem to have more to do with user expectations, behaviors exhibited by others during encounters, and the

specific opportunities sought by different groups of recreationists. This is likely the case in many other wildland settings and suggests that attempting to understand different experience objectives, behaviors, preferences, and tolerances to visitor densities should be central to every sustainable recreation planning effort.

More visitor-based research is required that focuses on employing techniques that move away from a single normative metric for defining recreation carrying capacity to one that explores the acceptability of a range of social and biophysical conditions related to visitor use. The Prince William Sound Framework described in chapter 19 is one such attempt to deal with a large wildland setting and address issues associated with human use. By looking for ways to provide for the diversity of types of user experiences, the Forest Service and its partners can help to protect this working wilderness for generations into the future.

CONCLUSIONS

The planning process launched by the Chugach National Forest in Prince William Sound is emblematic of the types of efforts pursued by managers attempting to address issues associated with human use management. It began with a narrow focus on understanding human use in terms of potential resource and social impacts that might be exacerbating the original effects of the oil spill. As researchers and managers began their work, they quickly realized they needed human use patterns to be more rigorously characterized in a spatially and seasonally explicit way. They also uncovered complexities that challenged previous assumptions about user conflict and resource impacts. In part by testing some of those assumptions, it seems the Sound, though changing in use patterns, was not necessarily in great jeopardy from human use. Furthermore, the community engagement efforts launched to find new ways to communicate about resource conservation helped the Forest Service gain new perspective on the various ways that people value the Sound and its resources. Research results combined with this newfound perspective and new personal connections with stakeholders, including several who contributed to this volume, allowed managers to develop specific recommendations for issues that will help the Sound be managed to support a diversity of uses for generations to come.

This connection to stakeholders also affords managers the opportunity to gain support in stewardship efforts from stakeholder groups who, when better understood, have been shown to have similar conservation values. This is certainly true in Prince William Sound, where a still somewhat recent tragic event like the *Exxon Valdez* oil spill wreaked havoc on species and habitats, which in turn devastated communities that depended on those resources. On the heels of such a terrible human-caused disaster, it should surprise no one that those who live and work in the Sound

are concerned about its sustainable use. By working alongside stakeholders, managers can gain an understanding of the importance of this landscape to all people who live, work, and play in the Sound.

The objective of managing for sustainable use is a tricky endeavor. Investments in rigorous social science provide managers with the tools to understand how humans use, experience, and value wildlands. Social science is also an essential component to exploring questions of potential resource or social impacts from human use in these settings. Too often, such efforts involve only biological or ecological science, and evaluation of social impacts or conflicts regularly only consist of expert opinion. This was the case in the Sound, and sadly, it is likely the case in many wildland settings. Social science combined with thoughtful community engagement can be a bridge to help managers understand science-based knowledge in the context of stakeholder perspective and to see how changes in management might best be approached. When done well, community engagement can help managers learn how to develop scientifically defensible plans that are inclusive of a diversity of users. This allows wildlands to have a better chance of maintaining societal relevance in a world where threats to these landscapes extend far beyond even those of a catastrophic oil spill.