

PARK OPERATIONS

Economic impacts of search-and-rescue operations on wilderness management in the national parks

By Whitney Ward, Logan Park, and Evan Coulson

WILDERNESS PROVIDES NATURAL, UNDEVELOPED, UN-trammelled, unconfined recreation opportunities in conjunction with a sense of primitiveness and solitude. Effective wilderness management ensures that these qualities endure over time. However, wilderness management, as noted by Nash (1982), is a paradox, meaning that there is human influence in areas where such influence is meant to be absent. Search and rescue (SAR) is just one sphere where the National Park Service (NPS) faces a wilderness management conundrum. Managers are faced with preserving life while preserving wilderness qualities, and often these management objectives are mutually exclusive. Wilderness SAR operations in the national parks can have significant and lasting ecological, social, and economic impacts. This article focuses on economic impacts of search and rescue and proposes feasible approaches to search and rescue and to reduce wilderness impacts.

Economic costs

On 18 June 1998, Denali National Park (Alaska) initiated a rescue of a team of British mountaineers from Mount McKinley. Eight climbers were rescued by helicopter over the course of five days, and two of them required short-haul air rescue from above 19,000 feet (5,975 m) (Denali National Park and Preserve 1998). This rescue cost the National Park Service more than \$220,000 and was the most expensive rescue in its history (Huss 2010). This is just one of the approximately 4,500 (SAR) incidents that take place in the national parks annually (NPS n.d.).

Search-and-rescue operations vary dramatically across wildernesses: heli-rescue on Mount McKinley (fig. 1) differs from a cave rescue at Wind Cave National Park (South Dakota) (fig. 2 [next page]). However, one factor is ever present: SAR costs are significant in terms of money and staff time. Each year the Park Service expends 50,000 to 100,000 personnel-hours responding to SAR incidents (NPS n.d.), which cost \$4.8 million in 2008 (Repanshek 2010). Search-and-rescue procedures resulting in over \$500 in unbudgeted costs are charged to a national SAR account (NPS n.d.). However, even with this account, some SAR operations

Figure 1. The “Denali lama” performs a high-altitude short-haul rescue on Mount McKinley in the Denali Wilderness, Denali National Park, Alaska.

Abstract

Search and rescue has become an integral part of wilderness management for the National Park Service. The NPS conducts thousands of search-and-rescue operations annually, each with impacts and management implications. Economic costs are just one of the many types of impacts that stem from these operations. As wilderness managers conduct search-and-rescue operations, they are faced with significant economic costs. Management options to alleviate some of the associated search-and-rescue costs include using applications of the minimum tool rule and cost sharing with wilderness users.

Key words

management, minimum tool rule, search and rescue, wilderness



COURTESY OF WHITNEY WARD

impact financial and personnel resources at individual parks. For example, even before performing a record number of SAR operations in 2011 (Associated Press 2011), Grand Teton National Park (Wyoming) climbing rangers noted that SAR costs can result in the elimination of other NPS services and programs (Grand Teton National Park 2007).

Minimum tool rule

The National Park Service administers more than 40% of the 100 million-plus acres (41 million ha) of wilderness (Wilderness.net n.d.) and is consistently confronted with SAR decisions. The 1964 Wilderness Act prohibits motorized and mechanical vehicles even in rescue operations. However, section 4c of the Wilderness Act “provides an exception for the use of ‘normally prohibited’ uses such as aircraft, motorized equipment, and mechanical transport when it is determined to be the minimum necessary” (Wilderness.net n.d.).

Human life and safety are paramount in NPS SAR policy, but in any case in which a mechanized solution can effectively and safely be minimized or eliminated, the minimum tool rule is satisfied. In some instances the minimum tool rule may also provide a more cost-effective approach. For example, research is in process to determine if full-sized aircraft can be replaced with smaller, less intrusive unmanned aerial vehicles (UAVs) during wilderness searches (Goodrich et al. 2008). If found effective, UAVs would more fully adhere to the minimum tool rule and lower the financial cost of the search phase.

A best-case scenario to adhere to the minimum tool rule would be to eliminate the need for search and rescue. Although it may not be feasible to do this in national parks, it may be possible to reduce the number of SAR incidents. The Park Service already has an outstanding education and information collection system that may minimize SAR incidents. For example, Grand Canyon National Park (Arizona) has tried to educate recreationists about the potential dangers of wilderness by stating, “for those lacking the required skill and judgment this hike offers about a million ways to get into serious trouble in a remote part of the Grand Canyon” (Grand Canyon National Park 2008). Likewise, before granting backcountry permits, other national parks that manage wilderness, like Denali and Apostle Islands (Wisconsin), require recreationists to attend an educational safety orientation. Permits have proven invaluable in SAR operations as a cost-effective means to narrow searches by providing valuable information as to when and where a search should be conducted (Eldorado National Forest 2010).



NPS PHOTO

Figure 2. Search-and-rescue training at Wind Cave National Park, South Dakota.

Who pays?

Considering the cost involved with search and rescue, controversy has arisen over who must cover expenses. Exceptionally expensive operations often serve as triggers, renewing the debate. When the National Park Service did not seek reimbursement from the eight climbers rescued on Mount McKinley, an Alaska senator lobbied for a review of SAR costs in Denali (Huss 2010). In spite of the cost and controversy, the Park Service does not charge visitors for SAR services (NPS 2006). Likewise, most agencies and organizations oppose charging or seeking reimbursement for search and rescue, believing individuals may delay calling for help for fear of being charged. Delays in search and rescue could lead to more dire circumstances for both rescuers and recreationists. Furthermore, the National Park Service may then face obligated rescue, an express duty to provide SAR services to individuals who paid, which could result in litigation and hold the agency liable for unsuccessful search-and-rescue operations (Heggie and Amundson 2009; Huss 2010). Obligated rescue may also limit an agency’s ability to determine how and when to best conduct SAR missions, if at all.

While some parks welcome search-and-rescue donations (Grand Teton National Park 2007), the state of Colorado has developed an approach to managing these costs that may prove useful to NPS managers. The state takes a proactive stance on search and rescue and applies a fee on all hunting, fishing, boat, all-terrain vehicle, and snowmobile licenses. The state also offers a Colorado Outdoor Recreation Search and Rescue Card (CORSAR) for other recreationists for a nominal fee (Colorado Department of Local Affairs n.d.), which avoids mandating reimbursement *and* obligating rescue. The card is not insurance but represents

a voluntary donation that helps offset costs of search and rescue or SAR training. Proceeds supplement statewide SAR funds established in 1987 (Colorado Department of Local Affairs n.d.). By contrast, the military absorbs search and rescue into training budgets because SAR missions are valuable training opportunities (Huss 2010; Repanshek 2008).

Conclusion

Prior to passage of the Wilderness Act, Bob Marshall (one of the visionaries of the National Wilderness Preservation System) confronted the delicate balance between freedom and regulation. If too many rules are imposed, then one of the great values of wilderness—freedom—is lost. But if no rules are imposed and users get into trouble, the managing agency may be accused of negligence or, at best, find itself constantly preoccupied with search-and-rescue operations (Marshall as cited in Glover 1986, p. 251).

Marshall understood the paradox associated with wilderness management, especially regarding search and rescue. Search and rescue will continue to be an integral part of wilderness management for the National Park Service and comes with significant costs. Incorporating search-and-rescue operations into training budgets, adding a surcharge to backcountry permits, and establishing a search-and-rescue card are all approaches that can help managers control or defray these costs. Economic impacts specific to wilderness search and rescue can be reduced as managers continue to apply the minimum tool rule, thus leading to the balance of preserving human life while preserving wilderness qualities.

References

- Associated Press. 2011. Grand Teton National Park sets search-and-rescue record. 27 August. *Deseret News* (Salt Lake City, Utah). Accessed 27 August 2011 from <http://www.deseretnews.com/article/700174301/Grand-Teton-National-Park-sets-record-for-searches-and-rescues.html>.
- Colorado Department of Local Affairs. n.d. Purchase a Colorado Outdoor Recreation Search and Rescue (CORSAR) Card. Accessed 16 April 2011 from http://dola.colorado.gov/dlg/fa/sar/sar_purchase.html.
- Denali National Park and Preserve. 1998. 1998 annual mountaineering summary. Accessed 15 August 2011 from http://www.nps.gov/dena/planyourvisit/upload/1998_Mtnrg_Summary.pdf.
- Eldorado National Forest. April 2010. Desolation wilderness. Accessed 17 August 2011 from http://www.fs.fed.us/r5/eldorado/documents/rogs/rog_wild_deso_regs.pdf.
- Glover, J. 1986. A wilderness original: The life of Bob Marshall. The Mountaineers, Seattle, Washington, USA.
- Goodrich, M., B. Morse, D. Gerhardt, J. Cooper, M. Quigley, J. Adams, and C. Humphrey. 2008. Supporting wilderness search and rescue using a camera-equipped mini UAV: Research articles. *Journal of Field Robotics* 25(1–2):89–110.
- Grand Canyon National Park. February 2008. Royal Arch Loop. Accessed 17 August 2011 from http://www.nps.gov/grca/planyourvisit/upload/Royal_Arch_Loop.pdf.
- Grand Teton National Park. August 2007. Mountaineering. Accessed 22 August 2011 from http://www.nps.gov/grte/planyourvisit/upload/mountaineering_07-c.pdf.
- Heggie, T. W., and M. E. Amundson. 2009. Dead men walking: Search and rescue in U.S. national parks. *Wilderness and Environmental Medicine* 20:244–249.
- Huss, S. 2010. Liability in search and rescues: Should individuals who necessitate their own rescues have to pay? *Journal of Homeland Security and Emergency Management* 7(1): Article 2. Accessed 16 April 2011 from <http://www.bepress.com/jhsem/vol7/iss1/2>. doi:10.2202/1547-7355,1603.
- Nash, R. 1982. *Wilderness and the American mind*. Yale University Press, New Haven, Connecticut, USA.
- National Park Service. 2006. Management policies 2006. Accessed 16 April 2011 from <http://www.nps.gov/policy/MP2006.pdf>.
- . n.d. Search and rescue. Accessed 16 April 2011 from <http://www.nps.gov/policy/SAR.pdf>.
- Repanshek, K. 12 May 2008. National park search and rescue: Should the rescued help pay the bills? *National parks traveler: Commentary, news, and life in America's parks*. Accessed 16 April 2011 from <http://www.nationalparkstraveler.com/2008/04/national-park-search-and-rescue-should-rescued-help-pay-bills>.
- . 31 August 2010. Search and rescue ops cost the National Park Service \$4.8 million in 2008. *National parks traveler: Commentary, news, and life in America's parks*. Accessed 16 April 2011 from <http://www.nationalparkstraveler.com/2010/08/search-and-rescue-ops-cost-national-park-service-48-million-20086495>.
- Wilderness.net. n.d. Wilderness data search results. Accessed 16 April 2011 from <http://wilderness.net/index.cfm?fuse=NWPS>.

About the authors

Whitney Ward and **Evan Coulson** are with the Department of Health Education and Recreation, Southern Illinois University, Carbondale. **Logan Park** is with the Department of Forestry, also at Southern Illinois University. Correspondence: Whitney Ward (wward@siu.edu), Department of Health Education and Recreation, SIUC, Carbondale, IL 62901.