# Technology Brings New Challenges to Wilderness Managers: An Example from the Bureau of Land Management-Managed Lost Coast of California

## Robert Wick

A spectacular meeting of land and sea is the dominant feature of King Range National Conservation Area (KRNCA). Mountains seem to thrust straight out of the surf, a precipitous rise rarely surpassed on the continental US coastline. King Peak, the highest point at 4,088 ft, is only 3 miles from the ocean. The KRNCA covers 68,000 acres and extends along 35 miles of coastline between the mouth of the Mattole River and Sinkyone Wilderness State Park. Here the landscape is too rugged for highway building, forcing State Highway 1 and US 101 inland. Yet new technologies are allowing the public to access this remote location in novel ways, creating new challenges for wilderness managers. This remote region is known as California's Lost Coast and is accessed by only a few back roads. The recreation opportunities here are as diverse as the landscape (Figure 1). The Douglas-fir (*Pseudotsuga menziesii*)-covered peaks attract hikers, hunters, campers, and mushroom collectors, whereas the coast beckons to surfers, anglers, beachcombers, and abalone divers (to name a few). On Oct. 17, 2006, Congress designated 42,585 acres of the KRNCA as wilderness under the Northern California Coastal Wild Heritage Wilderness Act.

Undoubtedly, the advent of new technologies has benefited outdoor recreation, but for the managers of the KRNCA and other wilderness areas, a host of new challenges, including satellite phones, personal locator beacons (PLBs), drones, motorized paragliders, and even social media are affecting them in ways not yet fully understood. The following examples show how these technologies are affecting wilderness management at the KRNCA and elsewhere across the country. Technology has helped many people spend time in wilderness while minimizing their impact on the land. For example, cameras, and now digital cameras, have allowed people to take home memories instead of stones, flowers, or other physical memorabilia. In addition, informational websites and mapping resources can help visitors be more prepared when they visit wilderness.

However, technology can also perpetuate a false sense of security. In a recent study of overnight backpackers to the KRNCA (Pope and Martin 2011), "pro-technology" respondents felt that technology increased safety in wilderness and would be more likely to use technology to request a rescue. Conversely, "anti-technology" respondents did not agree that technology reduced dangers and made them feel safer, were less likely to engage in risky behavior, and felt strongly that technology cannot substitute for skill, experience, and knowledge. Overall, by changing our expectations of wilderness, technology can lead to increases in rescues for those relying on technology or engaging in excessive risk-taking (Borrie 1998). For exam-

ple, one widely publicized incident involving this sort of technology occurred in the Grand Canyon National Park backcountry in 2009 (Kaufman 2010). A group of hikers called in rescue helicopters three times by pressing the emergency button on their satellite-driven locating device. The first time the hikers said they were out of water. The second time they explained that the water "tasted salty." The third time emergency personnel forced the hikers to evacuate, given that helicopter trips can cost as much as $3,400 an hour. The leader received a citation, and rangers reported that he told them that without the device, "we would have never attempted this hike."

A more recent study (Martin and Blackwell 2016) found that 9 to 54% (depending on the specific question asked) of interview subjects reported that carrying a PLB influenced either where they went, what they did, whether or not they traveled in certain environmental or terrain conditions, or whether they traveled alone.

Sometimes, the technically correct use of technology still leads to problems for the wilderness manager. Cheap, lightweight, and equipped with powerful cameras, inexpensive drones flown by private citizens have proliferated rapidly in recent years. As long as they keep them below 400 ft and away from populated areas, hobbyists can fly drones. Not surprisingly, drones are being increasingly used in National Forests, National Grasslands, Bureau of Land Management (BLM)-managed conservation areas, and wilderness areas and BLM-managed conservation areas (except in National Parks and designated wilderness, where they are prohibited). Drones can fly over wilderness but cannot be controlled or land within wilderness.

Another newer technology affecting California's Lost Coast Wilderness is the use of powered paragliding (Figure 2). Paramotoring is a form of ultralight aviation where the pilot wears a motor on his back, which provides enough thrust to take off using an adapted paraglider. It can be launched in still air and on level ground by the pilot alone; no assistance is required. Powered paragliders usually fly between 15 and 45 mph at altitudes up to 18,000 ft, although most flying is done under 500-ft altitude. Because paragliders are motorized, they are illegal to *land* in a wilderness trail corridor. However, BLM managers were recently alerted to social media videos of these craft skimming several feet above the ground on the beaches and coastal grasslands that make up the most popular wilderness trail corridor, and BLM managers had no legal recourse to prohibit what most would consider to be a very intrusive motorized use (since they were never observed landing).

For wilderness areas in America, social media has both advantages and disadvantages. People use social media to share their wilderness experience, which results in people learning about the beauty, adventure, and fun wilderness experiences as well as probably bringing more visitors into wilderness. Social media is also used to organize trips into wilderness by groups, sometimes spontaneously. However, social media has also led to a number of problems for wilderness managers. For instance, social media posting of "amateur" videos may blur the line between appropriate information sharing and commercial use that must be evaluated for its role as the "minimum necessary" to meet the pur-

**Affiliations:** *Robert Wick (rwick@blm.gov), US Bureau of Land Management, Sacramento, CA.*

**Figure 1.** Hikers in the spectacular KRNCA, a wilderness managed by BLM on California's Lost Coast. (Photo courtesy of Bob Wick, Bureau of Land Management.)



**Figure 2.** Motorized paragliders in action. (Photo courtesy of Bruce Brown of Ohio Powered Paragliders.)

poses of a wilderness. KRNCA managers have recently discovered social media video posts of trail adventures that include product placement of outdoor gear brands. The producers failed to request film permits, and the managers only learned about the videos after they are posted.

One of the biggest challenges the wilderness agencies face is ensuring that these resources continue to be relevant to our population or even enhance the relevance to the American public. This challenge will accelerate over time as the demographics of our population change rapidly and we become an increasingly urban people. Many new and emerging technologies can facilitate the relevance of wilderness to the American public and the rest of the world. Wilderness agencies, however, will be challenged to be nimble in their management and policy responses to these technologies as they work to preserve wilderness character.

## Literature Cited

BORRIE, W.T. 1998. The impacts of technology on the meaning of wilderness. P. 87–88 in *Proc. of Sixth world wilderness congress symposium on research, management, and allocation, vol. II, 1998 October 24–29, Bangalore, India,* Watson, A.W., G.H. Aplet, and J.C. Hendee (eds.). USDA For. Serv., Proc. RMRS-P-14, Rocky Mountain Research Station, Fort Collins, CO.

KAUFMAN, L. 2010. Technology leads more park visitors into trouble. *New York Times*, Aug. 21, 2010.

MARTIN, S., AND J. BLACKWELL. 2016. Influences of personal locator beacons on wilderness visitor behavior. *Int. J. Wildl.* In press.

POPE, K., AND S. MARTIN. 2011. Visitor perceptions of technology, risk, and rescue in wilderness. *Int. J. Wildl.* 17(2):19–26, 48.