

Wilderness Stewardship in America Today and What We Can Do to Improve It

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The authors of this article are recently retired wilderness professionals from universities or federal agencies. We were asked to share our observations about how wilderness stewardship is being managed in America today. We based our observations on our many years of combined professional wilderness career experience as managers, trainers, scientists, educators, and other careers. Combined, the authors have worked 308 years generally in natural resources and 236 years in wilderness specifically. All of us have had challenging management or research duties related to wilderness stewardship.

For this article, wilderness refers specifically to the National Wilderness Preservation System (NWPS). We as coauthors were invited to share our thoughts about wilderness management today because it was thought that our group would have some unique insights. With the years of experience in various positions in the federal agencies and affiliated universities, we hope that our combined experience lends credibility to our assessing the status of the NWPS. In the process of conceptualizing this article, a number of wilderness stewardship challenges were identified. Some examples of these challenges are briefly listed below. Of those identified by the coauthors, we selected five that we thought are the most significant overarching challenges. These five are subsequently described and our expert opinions on potential ways to address them are offered.

Examples of Challenges to Wilderness Stewardship

Management of wilderness (especially preserving wilderness character) and those charged with that management face a number of significant issues or challenges, some of which they can address, others of which they cannot much influence. Examples of these include how to (1) identify and add federal lands qualified for designation as areas in the NWPS, (2) control invasions by nonnative plant and animal species, (3) coordinate between different federal and state land management agencies, (4) best manage growing and more diverse visitor use, (5) decide how or whether to intervene

when wilderness character is changing due to human activities (including defining the minimum type of activities and tools allowed in attempting interventions), (6) accommodate commercial uses that can be inconsistent with retention of wilderness character, (7) limit use of modern digital technologies that can become intrusive in wilderness settings, (8) best decide between natural fire versus fire suppression, (9) best monitor wilderness character and integrate the latest monitoring research, (10) better inform visitors of what the NWPS is, and (11) maintain air and water quality (for more detail on these issues, see the supplemental data).⁵ In addition to the challenges listed above, some additional issues were identified by wilderness managers through their responses to the 2014 national Wilderness Manager Survey (Dawson et al. 2015). Examples of the challenges and threats identified by survey respondents included threats from adjacent land uses, legislated area-specific provisions that compromise wilderness character, fire suppression on lands around wilderness, motorized and mechanical trespass, fragmentation and isolation of wilderness areas, and aircraft or other motor noise.

The Five Primary, Overarching Challenges

In the opinion of the authors of this article, five issues stand out as overarching challenges to effective management of the National Wilderness Preservation System as a single federal land management system.

Need for up-to-date, clear, and consistent policy. Twenty years ago, the four federal agencies charged with managing the NWPS (Bureau of Land Management [BLM], US Fish and Wildlife Service (FWS), US Department of Agriculture [USDA] Forest Service, and the National Park Service [NPS]) created an interagency Wilderness Policy Council made up of personnel holding the highest wilderness management position in each respective agency. The Council was set up to formulate consistent wilderness policy and management approaches across the four agencies as guided by the 1964 Wilderness Act. The Wilderness Act legislatively set up a single wilderness system with the intention to manage all designated areas as uniformly as possible, regardless of which agency had the management responsibility.

Unfortunately, the Council's efforts have not been completely successful. For the most part, each agency still follows internally prescribed policies and pursues management approaches without involvement of the other three agencies. For the NPS, wilderness policy was updated in 2013, for the BLM policy it was 2012, for the FWS the last policy revision was in 2008, but the USDA Forest

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⁵ Supplementary data are available with this article at <http://dx.doi.org/10.5849/jof.15-067>.

Service wilderness management policy has not been substantially updated since 1990.

A lack of clear or relevant policy written to match current conditions can result in inconsistent interpretations of how to administer the language of the law, both within and among agencies. An example is policy guidance to the field for determining the type and extent of allowable commercial services. Examples of commercial service providers who have or are seeking operating permits include backcountry outfitters and commercial filming interests. Without clear policy to guide commercial use decisions, results sometimes may not be in the best interest of the wilderness resource and will be inconsistent between agencies resulting in confusion for the public and potential permittees.

There are numerous other examples of challenges to wilderness management where policy consistency is highly important. Some of these include the effects of agency and visitor use of advanced technologies, such as unmanned aerial systems (drones) and delineating minimum tool and disturbance requirements for working in wilderness. A particularly pressing challenge is addressing the effects of climate change and the balance needed between management activities to restore natural conditions versus adhering to the mandate of the Act to leave wilderness untrammelled (on its own). Without clear and consistent within-agency and interagency direction, local managers are left to decide whether or not to initiate short-term restoration activities. Without consistent management guidelines and definitions within those guidelines, implementation of the Wilderness Act across the country and across organizational boundaries can result in less than optimum decisions and management actions. The NWPS was established to be managed as one system of wild lands through an Act of Congress, but the lack of clear and effective policy creates challenges for agency wilderness managers.

Need for adequate funding. Agency wilderness managers, trainers, educators, and scientists must have adequate budget support for effectively working toward their mission. Historically, wilderness funding has not been adequate. This often leads to some critical stewardship activities going unattended. Examples include protection of critical habitat for a number of rare or threatened species and maintaining trails and camping opportunities to facilitate wilderness experiences.

To highlight the level of funding devoted to wilderness management, we attempted to obtain current total wilderness management expenditure levels for each of the four agencies using the most recently available data. Generally, wilderness management agencies were unable to provide up-to-date budget data summarizing agency spending specifically for wilderness management.

Using the most current spending data that were available (2009), it was shown that although the NWPS system has grown from 9 to 110 million acres since 1964, the budget each agency currently allocates to wilderness (Table 1) does not reflect the increased number of acres and the resulting growth of management complexity. With tight budgets, some of the agencies have increased emphasis on using volunteers to support stewardship activities. Although this is important support, volunteer organizations themselves would be the first to say there is a need for direct involvement, guidance, and expertise from agency staff. Often, agency staff has been stretched too thin to enable adequate involvement with volunteers.

Each of the four agencies has a unique and complicated budget system through which wilderness management is funded. National wilderness program leaders are often buried within their organizational structures and have little influence on agency budgeting. To date, there has been no consistent unified approach among the four

agencies to secure adequate funding for management of the NWPS. Underfunding the wilderness program usually results in little to no agency presence on the ground. This can and often does lead to inattention to addressing problems early on while they are still manageable. For example, the impacts of exotic species infestations and overly heavy visitor use can be more effectively managed and even eliminated with early identification and monitoring. Without adequate monitoring, small issues often become large problems. If a management response to an issue requires an environmental assessment or environmental impact statement under the National Environmental Policy Act of 1969, significant delays usually occur because of lack of staffing and/or funding.

Not only is there inadequate funding but there is also competition for specialists' time from other projects. In the 2014 wilderness manager survey, 60% of respondents reported spending $\leq 20\%$ of their work time doing wilderness stewardship-related activities (see Dawson et al. 2015). That means that most of the personnel assigned wilderness responsibilities spend most of their time working on nonwilderness assignments. A serious consequence of collateral duties and low levels of funding for wilderness is that there often, and sometimes usually, are no agency personnel on site at wilderness areas. Wilderness budgeting is difficult to track, and, in a federal agency, any endeavor that is not clearly reflected in the agency budget is not in reality an agency priority.

An associated problem is that the wilderness funding can sometimes be directed for use elsewhere. For instance, the BLM has not yet funded completion of its baseline inventory of wilderness character. However, the agency has dedicated funding for development of informational signs at National Landscape Conservation System areas so that they all have an identical design. As an-

Table 1. Estimated expenditures, acres, and budgets of agencies assigned to manage wilderness.

Agency	Total wilderness expenditures (\$)	Acres of wilderness managed in 2009	Expenditure per acre (\$)	Authorized budget for FY 2009 (billion \$)	% of agency overall budget
NPS	17,874,000	43,536,647	0.41	3.70	0.49
USDA Forest Service	45,456,000	35,479,099	1.28	7.00	0.65
FWS	Unavailable	20,702,350	Unavailable	2.70	Unavailable
BLM	13,528,000	7,796,842	1.74	1.60	0.86

These data are misleading. For example, every dollar spent for any activity in BLM Wilderness is accounted for here, as well as all the funds spent on BLM's Wilderness Study Areas. This is not true of the other agencies. We provide this table because it was prepared for and used in the NPS Wilderness Business Plan (US Department of the Interior, National Park Service 2011). It is the only NWPS budget information available today, and we encourage the agencies to develop Wilderness budgets so they can make a sound case for underfunding of Wilderness for stewardship and protection.

other example, the Department of the Interior, citing budget concerns, limited the NPS to sending only 33 employees to the national conference in Albuquerque to commemorate the 50th anniversary of the Wilderness Act in 2014. At the same time, the NPS has requested an increase of almost half a billion dollars to celebrate the 100th anniversary of the National Park Service Organic Act in 2016.

Need for wilderness issue-specific science. Sound, timely, and responsive wilderness stewardship should be based on good science. As social and environmental conditions change, there is a need to update and advance that science and to advance the information and guidance that flows from it. Experience-based knowledge and information in many ways offer wisdom that science cannot match, but decisions founded on experience alone can lead to less than optimal short- and long-term stewardship outcomes. Wilderness stewardship requires that agency managers charged with its execution have a wide range of science-based knowledge and information. Included in that knowledge base should be an understanding of how ecosystems function, how humans behave (visitors, commercial users, and others), what constitutes healthy wildlife habitats, how water systems function, how different policies might affect management outcomes, and how many other aspects of the resource, its settings, and management options affect wilderness condition.

Although there have been important science advancements, there are many unmet and changing needs for research and applied science brought about by new and emerging and more complex issues that deserve study. Because areas in the NWPS are to the degree possible to be left untrammelled (left to progress and adapt on their own), often the “management” options for these areas are different from what they would be for most other natural lands. A good example is management to control fuel buildup in forests. Whereas methods for prescribed fire are highly recommended in forest management generally, prescribed fire in wilderness is an option that is considered a manipulation of the natural processes and can be used only to restore natural conditions that have been degraded by past human activities, such as fire suppression. In many regards, wilderness research has been too underfunded to keep pace with the

many science needs of the agencies and managers (see Fox and Hahn 2015).

In other articles in this special *Journal of Forestry* issue, a number of general science topics applicable to wilderness are addressed. These include changing societal connections (McCool et al. 2015), ecosystems represented by areas of the NWPS (Aycrigg et al. 2015), fire in wilderness (Miller and Aplet 2015), ecosystem restoration (Naficy et al. 2015), and sound (noise) (McKenna et al. 2015). The array of science-based knowledge described in these articles is impressive, but a careful comparison between wilderness management challenges and wilderness science advancements shows that much additional science is needed. For example, there is a need to better understand what makes wilderness valuable at individual, community, and national levels. Another example is a need to better understand the management implications of relationships between declines in some tree species due to changing climates and the health of aquatic biota. Yet another example is the need to better understand the relationship between highly valued wilderness landscapes and personal well-being. As with other aspects of wilderness stewardship, wilderness science has suffered from a lack of adequate financial support. There are many examples in addition to those listed above that go unaddressed simply because funding is not available for them.

Critical need for more in-depth wilderness management expertise. Agency managers and technicians, who are well informed, intellectually prepared, and committed to wilderness stewardship are necessary for success in carrying out sensitive management responsibilities and in ensuring perpetuation of the NWPS. At all levels of management within the federal agencies, there appear to be significant inadequacies of both assigned and assumed responsibility. With assigned responsibility to work full- or part-time in wilderness management there is also an assumption of responsibility for attaining and then retaining the skills necessary for the professional practice of wilderness stewardship. From our perspective, there is insufficient attention across the agencies in the selection of highly qualified personnel and for keeping wilderness management skills and knowledge up-to-date. For example, a compilation of essential knowledge, skills, and abilities has been developed by the inter-agency-based Arthur Carhart National Wil-

derness Training Center (referred to as the Wilderness Core Competencies), but the four management agencies have yet to adopt universal requirements or incentives for training personnel assigned to work in wilderness. Likewise, there is a critical need for wilderness stewards working in the BLM and USDA Forest Service to know how to better work with state fish and game agencies. The Carhart Center developed an online course on this relationship, but in its first year of availability, the course was taken by only 12 employees.

Insufficient emphasis on training can lead to inconsistent and sometimes inappropriate management approaches across different states and different federal administrative offices. Examples of the insufficient emphasis on wilderness management knowledge and skills include the following:

- Wilderness management duties are assigned as collateral duties, but without sufficient training or performance accountability. Qualifications for such collateral duties in wilderness management are often established by the local hiring office.
- The Office of Personnel Management does not have specific qualification requirements for wilderness management positions and does not consider “wilderness manager” to be a professional position. In addition, there typically are no personnel selection criteria nor annual performance standards. In contrast, to be qualified for professional positions in fire, wildlife, fish, cultural resources, timber (silviculture), soils, hydrology, and other resource-specific assignments, employees must meet specific education and experience requirements.
- Training availability and requirements for personnel with wilderness responsibilities vary across agencies. Training curricula typically lack performance-based elements, unlike required training and qualifications for resource specialists in other resource management areas (e.g., fire management, wildlife, silviculture, and lands).
- Personnel responsible for wilderness stewardship often are not aware of or are underutilizing existing resources, such as wilderness research publications, other resources found at Wilderness.net (e.g., toolboxes, online training, guides, and data sources), and Wilderness Connect (a managers’ exchange network). Inadequate use of these resources can easily lead to poor analysis and decisionmaking.
- Public relations staff often lack sufficient knowledge of the wilderness system

and of the requirements of law and policy. This leads to poor public information about critical wilderness management issues.

• *Need for more engaged and supportive agency and nongovernmental organization leaders.* Perhaps the greatest challenge to wilderness stewardship is the apparent lack of engaged and highly supportive agency and nongovernmental organization leaders. In some cases, federal leaders responsible for agency wilderness management seem to lack the experience, enthusiasm, commitment, expertise, and active engagement in stewardship needs and issues, and they are not held accountable to hard targets for wilderness management. Without appropriate experience and expertise, the result can be inadequate adherence to law, regulations, and policies. Sometimes this inadequacy can lead to bad decisions or legal challenges. Symptoms of poor, weak, or missing leadership in wilderness management can include unwillingness to push for up-to-date policies appropriate to address the current social, political, and environmental issues identified earlier. Unfortunately, ineffective or weak leadership persists in some agency leadership positions even though it has repeatedly been identified as a critical wilderness stewardship problem by agency staff and nongovernmental organizations. Perhaps the most egregious examples of poor leadership are instances in which wilderness staff are directed to permit illegal activities or are reprimanded or otherwise silenced when they call attention to such actions. Often water extractions, fish and wildlife management, or commercial activities are among these questionable activities.

Ineffective and disengaged agency leadership seems to be a natural result of hiring people for leadership positions using criteria other than demonstrated wilderness and natural resource management expertise. This is analogous to hiring someone to run airport security who has no expertise in security systems, airport management, and personnel management. Placing personnel who lack experience and expertise in wilderness leadership positions has seemed to be the case with some of the highest levels of agency wilderness management, in particular. Equally important is the fact that sometimes personnel assigned to wilderness leadership roles seem to lack professional passion or even interest in their wilderness assignment. The result is predictable: too often there is a reluctance to make the contentious

decisions that sometimes must be made for adherence to wilderness law and policy and to protect the resource adequately. The result can also be a lack of support shown for field management staff who are attempting to follow the law and implement agency policy.

Another concern is that leaders of some nongovernmental organizations seem only to be interested in advocating for designation of new areas and/or for building partnerships to use volunteers when there is a need to give greater attention to the 110 million acres of wilderness already in the NWPS. Although there are still many threatened wild areas that are worthy of designation, without additional funding to manage these newly designated areas, existing wilderness areas can bear the consequences of reduced funding. Nongovernmental organization leaders should advocate that stewardship of new designations is supported with dedicated funding and staffing, particularly if those new designations include special provisions that further complicate stewardship.

Finally, the history of development of wilderness strategies and plans by agency and nongovernmental organization leaders is commendable, but follow-up has been seriously lacking. Critical wilderness stewardship issues have been identified and strategies to address them developed. For example, the 1995 *Interagency Wilderness Strategic Plan* seemed to be a solid plan that covered the primary wilderness management issues of the time. However, for many of the objectives in that plan, little effort was put forth and little progress made (Pinchot Institute for Conservation 2001, p. 12). Now there is new planning underway, the first stage of which is the *2020 Vision: Interagency Stewardship Priorities for America's National Wilderness Preservation System* (BLM et al. 2014). Only time will tell whether agency and nongovernmental organization leaders will step up and keep their commitment to move the *2020 Vision* agenda forward.

The Way Forward

It is our opinion that all of the five main challenges mentioned can be addressed effectively if there is the will to do so and a commitment to change the way the agencies undertake wilderness management.

Need for up-to-date, clear, and consistent policy. Policies governing management of

the NWPS desperately need revision to clarify direction to field offices, address gaps in policy coverage, and eliminate unnecessary inconsistencies between and within agencies. The solution is to identify existing, persistent, and emerging challenges common to the four agencies, break down interagency cultural barriers, and formulate interagency policies that will benefit the entire system. Some of the most pressing issues will not be easily resolved. Examples include water quality and supply, the effects of climate change, and growing demand for commercial uses. Simply ignoring policy needs for issues such as these is a threat to the integrity of the entire NWPS and to appropriate implementation of the Wilderness Act. Inconsistencies, unless necessary for compliance with area-specific special legislative language, make it easier to make decisions that are the least controversial but perhaps not in the best long-term interest of the NWPS.

Currently, each agency's highest level wilderness position is the agency's representative on the interagency Wilderness Policy Council. The purpose of the Council is to develop coordinated interagency policies focused on what is best for the NWPS and what is best for implementing the Wilderness Act. The Council should promptly create a task force to identify policy gaps, inconsistencies, revision needs, recommendations, and consistent regulations at the departmental level. Development of the *Vision 2020* (BLM et al. 2014) strategy is a good start, but full implementation of recommended actions is critical for success.

Need for adequate funding. As with any public sector program, adequate funding is essential if wilderness stewardship is to be carried out as mandated by law. It must follow law, best science, and best management practices (BMP). Building partnerships and engaging volunteers are highly beneficial actions, but without sufficient funding and well-trained and fully engaged agency managers, stewardship will fall short. Leaders must acknowledge the importance of wilderness stewardship by designating *line-item funding* to specifically address management issues and to help wilderness managers compete for funding beyond the agencies' appropriated dollars.

Line-item funding is needed, in part, to hold lead wilderness managers accountable for their use of appropriated funds because they will be earmarked by Congress for

wilderness stewardship. Line-item funding would need to be based on the current real total cost of wilderness protection. This real-cost approach should include funding that is specifically targeted for management of any newly designated areas as they are added to the NWPS.

In addition to congressional appropriations, there is a need for changes in agency budget systems to allow opportunities for other revenue streams. For example, unlike other programs within the Forest Service recreation budget line item, wilderness does not have any revenue streams other than the appropriated budget. Funding sources, e.g., fees, capital investment, stewardship contracting, and watershed dollars are available for developed recreation, special uses, and trails, but wilderness projects typically do not meet the requirements necessary to compete for these dollars.

Unlike some other agency mandates, inattention to the wilderness resource can lead to loss of wilderness resource integrity, and this is irreversible. We only have one shot to get it right.

Need for wilderness issue-specific science. Science dedicated to wilderness stewardship is needed for sustained stewardship of the NWPS. In an article by Stephen McCool delivered at the 7th World Wilderness Congress, strategies for supporting and advancing wilderness science were offered (McCool 2003). There is a need to follow this or a similar framework for expanding a US national program of wilderness science.

First, develop a strategic plan with a clear mission: one that builds advocacy and assures that the research projects undertaken build on one another. Second, develop multidisciplinary teams to investigate specific wilderness research questions with follow-up to evaluate and apply results. Third, ensure the continuity of core financial support for research and application. One way of addressing this need for consistent funding over a span of years is through financial endowments invested so that interest can help fund research. Fourth, continue to support a research center, such as the Aldo Leopold Wilderness Research Institute. This research center should have a core of wilderness scientists and should function to stimulate focus, credibility, partnerships, and the leveraging of other funding and other scientists in agencies and universities.

Another much needed role for a national wilderness research center, in addition

to conducting science, is to participate in and sponsor science application. This role would involve identifying, evaluating, helping to interpret, and participating in the integration of this research into management and policy guidelines and practices. There is a need for greater effort in pulling in applicable “nonwilderness” science. There is also a need to broaden the scope of science disciplines being consulted. More wilderness science and also more consultation with scientists doing work that is not specific to wilderness can have major benefits in wilderness stewardship and in achieving the objectives of *Vision 2020* (BLM et al. 2014).

Critical need for more in-depth wilderness management expertise. One important approach to addressing the lack of adequate emphasis on wilderness stewardship expertise is to officially recognize wilderness stewardship as a professional management job series within the agencies and departments. This is not new thinking, but it is essential if wilderness stewardship is to be executed effectively. Position qualification models have been used by the agencies for other resource programs for decades (e.g., wildlife biology, cultural resources, forest silviculture, structural engineering, and fire). These models can be readily adapted for a wilderness management series. Wilderness stewardship (even as a collateral duty) must be emphasized in wilderness leader, decisionmaking, and management positions by acknowledging the need for expertise and performance accountability. Qualifications, position descriptions, selection criteria, and performance elements should be established and adhered to. This job series approach has been proposed for years, but it has been inconsistently implemented across the four agencies. There needs to be universal acceptance that wilderness management is a professional discipline on par with, for example, timber or wildlife management. In addition, appropriate and essential wilderness management training must be required for personnel at all levels and in all agencies. The training should include successful completion of decisionmaking exercises based on realistic scenarios representing challenging wilderness issues.

Universities should play a significant role in preparing a new cadre of wilderness managers as existing agency staff retire or move into other positions. The historic role of higher education in educating and training wilderness managers through instruc-

tion and research is likely to continue, but perhaps at a reduced level. Trends in higher education predict increased enrollment of older adults, nontraditional students, and students of greater diversity. The emphasis on online education, alternative degree or certificate programs, and distance learning approaches in higher education needs to be increased. Greater collaboration and partnership between federal agencies, professional organizations, nongovernmental organizations and higher education institutions need to be explored. Alternative formats for education and training programs, in addition to in-agency mentoring of professionals who have been assigned wilderness management duties, seems highly desirable. This is particularly true for professionals who are not educated or trained in wilderness management or closely related natural resource fields. The absence of or lessened availability of university professional courses and degree programs seems to have contributed to diminishing personnel expertise in wilderness management.

Need for more engaged and supportive leaders. Leaders within the agencies who are assigned responsibilities for wilderness stewardship must be knowledgeable of NWPS challenges and needs, and they must be held accountable to hard targets. Accompanying this knowledge must be a commitment to identify options and execute actions to address these challenges and needs. Periodically, outside experts have been asked to assess NWPS conditions and needs. Leaders in the agencies can make great strides in addressing challenges and needs by reviewing these recommendations for policy, funding, science, and improved expertise and then setting a course to implement them. This is the role personnel assigned to leadership positions must assume. Strong leadership means directing personnel to identify and prioritize issues, identify and understand relevant science, acquire needed training, assume accountability, and support the decisionmaking necessary for professional wilderness stewardship.

Accountability for effective wilderness stewardship has to apply to top leaders as well as to midlevel leaders. These include the three agency directors in the Department of the Interior and the Chief of the Forest Service. Top to bottom there must be accountability for the protection of America’s wilderness. Each agency head must ensure that the NWPS lands managed by their agency are monitored, managed, and preserved as

prescribed by law, policy, regulation, and BMP. This assurance is no small task. Wilderness is for generations of now and of the future, in perpetuity. Each agency head must assume responsibility for securing adequate funding to manage every wilderness area under their charge. Recent efforts by the four agencies to establish wilderness character baselines is an example in which agency leaders have a shared responsibility. The four agency heads should convene at least every 5 years for in-depth discussions of the challenges, opportunities, and general strategies in wilderness protection.

Agency heads should also require relevant selection criteria for filling wilderness leadership positions within their agencies. The challenges of wilderness decisionmaking should be integrated into agency leadership training programs to better assure a culture that supports those who make difficult and sometimes controversial decisions that are in compliance with law and policy. Hard targets for wilderness management should be established and leadership personnel should be held accountable for hitting those targets through the annual performance appraisal process.

Agency leaders at all levels must recognize the actual and potential roles of nongovernmental organizations. One role is to help identify additional areas that qualify for designation. Some of these can help fill ecological gaps in the NWPS, but there must be a serious effort to understand that there can be consequences for the existing NWPS from the designation of additional areas with legislation that includes nonconforming special provisions. Agency leaders should

actively engage nongovernmental organization leaders in discussions about priorities so that there is a mutual understanding of critical objectives and actions aimed to better assure the future of the NWPS and, when necessary, to develop strategies for addressing the challenges of managing additional wilderness.

Conclusion

We have identified what we believe are the most significant current and emerging challenges for wilderness stewardship in policy, funding, science, expertise, and leadership. Considering these challenges, we propose generally a way forward that will rely on a solid commitment by the entire wilderness community, including managers, leaders, scientists, educators, nongovernmental/nonprofit organizations, and others. Positive change is possible if agency heads and the people in leadership positions under those heads embrace wilderness as an equal part of their agency's mission. It is a critical time and federal agencies need to explicitly recognize the challenges and respond to them by increasing the priority of addressing those challenges. With the *2020 Vision*, the heads of the four agencies have agreed to begin this process. Future generations of Americans, yet unborn and without their own voice, are depending on us.

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