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**House Subcommittee on National Parks, Forests & Public Lands**  
**Committee on Natural Resources**  
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**“The Role of National Parks in Combating Climate Change”**

Chairman Grijalva and members of the Subcommittee, thank you for inviting me to testify on the role of national parks in combating climate change. I am Bob Keiter and I am the Wallace Stegner Professor of Law, a Distinguished University Professor, and Director of the Wallace Stegner Center for Land, Resources and the Environment at the University of Utah’s S.J. Quinney College of Law. In addition, I serve on the boards for several organizations: the Sonoran Institute, the Rocky Mountain Mineral Law Foundation, the University of Utah’s Institute for Clean and Secure Energy, the University of Wyoming’s Ruckelshaus Institute of Environment and Natural Resources, and the University of Montana’s Public Land and Resources Law Review. My appearance here today, however, is not on behalf of any organization, but rather to present my ideas on the role that the national parks can play in addressing our nation’s climate change challenge and how Congress might best ensure the parks can play that role. My testimony is based upon 25 years of research and teaching on public land law and policy, which includes four books and numerous book chapters and journal articles on these topics, several of which address national parks, climate change-related concerns, and regional or ecosystem-based management.

**Climate Change and the National Parks**

The American national park system consists of over 390 units covering nearly 80 million acres, with units in 49 of the 50 states and several territories. Our large and diverse national park system features an incredible array of distinct ecosystems, many of which are already being impacted by climate change. As others have chronicled, these impacts include: the rapid loss of iconic glaciers at Glacier National Park; the gradual disappearance of the namesake Joshua trees from Joshua Tree National Park; the unprecedented spread of insect-caused diseases that are devastating forests in the Great Smoky Mountains, Yellowstone, and elsewhere; and the loss of coral reefs in Biscayne and Virgin Islands national parks. Very few doubt that these warming impacts will affect other national parks and irreparably alter the park flora and fauna as well as vital ecosystem processes with repercussions that will extend well beyond the boundary lines.

Our national parks can potentially play several important roles in understanding climate change and responding to it. First, as legally protected and relatively intact natural areas, the national parks can provide a baseline for understanding and studying how climate change is impacting the natural world, particularly the various species and ecosystems

that can be found in the parks. Second, given their protected status, the national parks can offer a refuge for species that are—or might be—displaced from their native habitat by a changing climate. Third, as part of larger federal public lands complexes, the national parks may play a key role in promoting resilience across the landscape and sustaining vital ecosystems and ecological processes that transcend conventional boundary lines. Fourth, as relatively undisturbed sanctuaries with extensive forest and grass cover, many national parks can serve as a carbon storage repository and thus help reduce the amount of CO<sub>2</sub> escaping into the atmosphere. The national parks, simply put, give us the ability to better understand, mitigate, and adapt to a changing climate.

However, to play these roles effectively in our warming world, the national parks must be fully and adequately protected. Without adequate legal protection, the national parks are at risk: park species can be lost or displaced; wildlife habitat can be destroyed or altered; critical cross-boundary migration corridors that can be blocked or fragmented; water quality can be degraded, while vital water supplies can be diminished; air quality can suffer deterioration; park forests and grasslands can be put at increased risk from invasive species, diseases, and wildfires; historic buildings and other cultural sites can be lost or damaged; and the list goes on. Any or all of these impacts can also adversely affect park visitor experiences and visitation levels, which will inevitably affect surrounding communities that so often rely on national parks as anchors for their economic welfare. The unambiguous realities of these risks present powerful reasons not only to protect existing parks and resources, but also to expand national parks in order to ensure we can adapt to climate change and mitigate its effects. In short, we must regard and manage our national parks as parts of the larger landscape that sustains the biodiversity and ecosystem services that are vital to our society.

I will therefore focus my testimony on two key concerns that should be addressed if we are to effectively mitigate and adapt to the climate change threat: 1) how to better protect the national parks; and 2) how to expand the national park system. In doing so, I do not mean to overlook or diminish the importance of recent proposals designed to address climate change, such as those found in the Dingell-Boucher discussion draft, which was circulated in the 110<sup>th</sup> Congress. The natural resource provisions in that draft legislation—including new natural resource adaptation plans, a natural resource adaptation climate change fund, and other innovative provisions—would provide comprehensive guidance and assistance to the federal and state agencies charged with sustaining our public lands and resources, and they merit serious consideration on those grounds. My recommendations, though, are more specific to the national parks and supplement several provisions found in these earlier proposals. In that spirit, what follows are proposed changes or additions to existing law designed to enhance the role of national parks as key climate change laboratories and sanctuaries, and thus ensure that these benefits extend across the landscape.

### **Protecting the National Parks**

During the past three decades, numerous studies have documented that the national parks face serious environmental challenges that can be traced to developments or activities

occurring on adjacent federal, state, and private lands. See, e.g., U.S. Gen. Accounting Office, *Activities Outside Park Borders Have Caused Damage to Resources and Will Likely Cause More* (1994); National Park System Advisory Board, *Rethinking the National Parks for the 21<sup>st</sup> Century* 5-6 (2001). These threatening activities include oil and gas development on nearby federal and state lands, too many roads and too much unregulated off road vehicle activity in sensitive locations, and ill-planned subdivisions intruding on critical wildlife habitat, migration corridors, and other sensitive areas. In the face of a warming climate, which is already stressing national park resources, these external developments or activities—either individually or cumulatively—can destabilize vital park ecosystems, rendering them less resilient and undermining their utility as baseline study areas, biodiversity refuges, or carbon storage sites. The important lesson—and one that climate change has reinforced—is clear: We must begin to plan and manage at a landscape or ecosystem scale if we are to conserve and restore our ecologically critical federal lands and resources. At this scale, the national parks serve as the critical core of larger ecosystems that contain interconnected watersheds, air sheds, and wildlife habitats.

The initial question is whether the existing law is adequate to meet the challenge of landscape level planning and management sensitive to the national parks. At a superficial level, several legal provisions seem to offer important protection to the national parks; but upon closer inspection, these laws do not fully protect park lands and resources, and they are decidedly not designed to address the additional challenges associated with climate change. The amended National Parks Organic Act instructs the National Park Service to conserve its scenic and wildlife resources in an “unimpaired [condition] for the enjoyment of future generations” and to protect “the high public value and integrity of the National Park System.” 16 U.S.C. §§ 1, 1a-1. The National Environmental Policy Act (NEPA) requires all federal agencies to prepare an environmental analysis before taking any action that will significantly affect the human environment, but these requirements are merely procedural and do not require the agency to make environmentally protective decisions. 42 U.S.C. § 4332(2)(C). The Endangered Species Act does protect federally listed species and their critical habitat, but it only applies when listed species are present, and it has not always been rigorously enforced. 16 U.S.C. § 1531 et seq. While these laws compel the Park Service to protectively manage its own lands, they do not compel the same level of protective management on adjacent federal lands, at least not unless listed endangered species are present.

A very real problem, then, is how management priorities are set and implemented on adjacent federal lands, most often neighboring national forest or BLM lands. The Forest Service and the BLM manage their lands under a multiple-use standard, which frequently means mining, logging, grazing, and industrial level recreation. 16 U.S.C. § 528; 43 U.S.C. § 1732. On these lands, the National Forest Management Act (NFMA) and the Federal Land Policy and Management Act (FLPMA) contain provisions requiring the Forest Service and the BLM to coordinate their resource planning and project-level decisions with other federal agencies, which would include adjoining national parks. 16 U.S.C. § 1604(a); 43 U.S.C. § 1712(c)(9). But these coordination provisions have not proven enforceable, and they are frequently overlooked to achieve other multiple-use

priorities. Recent reports indicate that the BLM completely disregarded an earlier interagency consultation agreement with the Park Service in order to expedite the sale of extensive oil and gas leases near Arches, Canyonlands, and Dinosaur national park units in Utah. Similar problems are evident at Grand Canyon National Park, where the Forest Service is moving ahead to permit uranium mining on national forest lands adjacent to the park, despite the Park Service's persistent objection. Moreover, the federal laws cited above have little or no application on adjacent state or private lands, which can be equally important to maintaining ecological integrity and resilience on the broader landscape.

In the case of adjacent federal lands, it is frequently suggested that better coordination or more consultation between the national parks and other federal land managers should sufficiently protect the parks from possible harm. Indeed, several witnesses at the Subcommittee's March 3, 2009, hearing on climate change and the federal lands offered interagency coordination as a potential solution for the climate change problem. In my view, unless federal law is strengthened to put some real teeth into existing coordination provisions, there is little evidence or hope that we will see better or more consistent coordination among the federal land management agencies. In fact, voluntary, non-binding interagency coordination gains made during one administration are likely to fade during the next one, as we witnessed with the Bush administration's utter disregard of the Clinton administration's ecosystem management initiatives.

Moreover, coordination is inherently complex. To be effective, it must occur at two separate levels: the planning level where broad scale resource management plans are developed, and the project level where individual project proposals are assessed and ultimately approved. In the case of climate change, a coordinated landscape level planning process is crucial; it is at this level that the agencies have the opportunity to set resource management priorities and mitigation strategies to address sensitive resource issues. But the Supreme Court has ruled that resource management plans are not generally subject to judicial review and that these plans ordinarily do not impose legally binding obligations. See *Ohio Forestry Association v. Sierra Club*, 523 U.S. 726 (1998); *Norton v. Southern Utah Wilderness Alliance*, 542 U.S. 55 (2004). (These court decisions, I should note, suggest that the Dingell-Boucher federal natural resource adaptation plans may not be enforceable or judicially reviewable, unless Congress specifies otherwise.) An effective coordination strategy for climate change purposes must therefore ensure meaningful and accountable coordination at both the planning and project levels.

So, as an antidote to climate change, how might Congress go about imposing meaningful and enforceable interagency coordination or consultation obligations on the public land agencies? Several related options are available. (Though the following options are framed in general terms, the goal in each instance is to promote landscape scale management to meet the climate change challenge.)

Congress should adopt a new and more detailed interagency coordination mandate that would apply to all federal land management agencies, not only making interagency coordination efforts a mandatory part of agency decision records, but also making it

enforceable in court. This would require federal land management agencies, during their planning processes and whenever contemplating an action with significant climate change implications for nearby national parks, to consult with the National Park Service by preparing an interagency coordination statement documenting the collaboration effort, potential impacts and mitigation strategies, and responses to any expressed national park concerns. The idea is to require transparency through specific written documentation of the consultation as part of the planning or project decision process to ensure that climate change concerns are addressed and mitigation commitments are adopted. With judicial enforcement lurking in the background, the agencies would be accountable for their coordination efforts, which should ensure more meaningful and better interagency collaboration.

This interagency coordination statement could be readily incorporated into normal planning and NEPA processes, or it could be a separate stand-alone document. It might be implemented by Congress by including this requirement as part of each agency's climate change adaptation plan, or by amending NEPA to set forth this new requirement, or by instructing the Council of Environmental Quality (CEQ) to add a new interagency coordination statement requirement to its NEPA rules. Or Congress could amend the organic legislation governing the Forest Service, the BLM, and other agencies to incorporate these new interagency coordination statement requirements into the existing coordination provisions found in the National Forest Management Act, the Federal Land Policy and Management Act, and other legislation. Although such an interagency coordination statement would impose only a new procedural—rather than a substantive—requirement on the agencies, judicial enforcement of the NEPA EIS procedural requirements has had the salutary effect of ensuring that action agencies give full consideration to the environmental implications of their decisions. If the courts were instructed to similarly enforce an explicit interagency coordination process, then it should yield similar results.

Congress might put additional teeth into a new interagency coordination or cooperation mandate by requiring “consistency” between NPS climate change plans or management goals and those of adjacent federal agencies. The model for this type of provision is the Coastal Zone Management Act, which requires that federal agency actions affecting coastal zone lands or waters must be consistent with the state coastal zone plan. 16 U.S.C. § 1456(c). Under this standard, for example, the courts have found that industrial pipeline projects and off-shore energy lease decisions require a “consistency” review and the consideration of alternatives to the proposal. *Millennium Pipeline Co., L.P. v. Gutierrez*, 424 F.Supp.2d 168 (D.D.C. 2006); *California v. Norton*, 311 F.3d 1162 (9<sup>th</sup> Cir. 2002). The trigger for a “consistency” review might be the potential “impairment” of national park lands or resources, which would draw upon the protective standard already in the National Parks Organic Act. Moreover, state natural resource and wildlife agencies might be subjected to the same consistency standards as a condition to receiving federal grant funds to support their planning efforts and management programs.

If even more teeth are needed, Congress might prohibit intensive development activities on public lands adjacent to national parks unless there is no feasible alternative to the

proposal and climate change concerns can be adequately mitigated. This proposal draws upon a similar provision found in Section 4(f) of the Transportation Act, which prohibits new transportation projects that require the use of public parks or other sensitive lands unless there is “no prudent or feasible alternative to using that land” and “all possible planning to minimize harm to the park” has been undertaken. 49 U.S.C. § 303(c). Under this provision, the Tenth Circuit Court of Appeals blocked construction of a new airport adjacent to Glen Canyon National Recreation Area in southern Utah, concluding that the responsible agencies had not adequately considered how airport noise would impact the park visitor experience. *National Parks and Conservation Ass’n v. Federal Aviation Administration*, 998 F.2d 1523 (10<sup>th</sup> Cir. 1993). A similar type of statutory provision that more broadly protected national parks from adjacent or nearby development projects with significant climate change impacts would help maintain the integrity of park ecosystems, wildlife, and other vital resources, which are key to mitigating climate change impacts.

Alternatively, Congress could promote consistency in the management of federal lands by prohibiting unsuitable or inappropriate development on sensitive lands adjacent to national parks. To do so, Congress could adopt new “unsuitability” legislation empowering the Secretary of the Interior, upon petition, to designate lands adjacent to national parks (or other protected areas) as “unsuitable” for mining, logging, road building, or other intensive activities that could exacerbate climate change problems. This approach could be modeled on the “unsuitability” provision in the Surface Mining Control and Reclamation Act. 30 U.S.C. § 1272; *Utah International v. Dept. of the Interior*, 553 F.Supp. 872 (D. Utah 1982). As such, it would be quite similar to the Secretary’s FLPMA-based withdrawal power; it could be made revocable, either by the Secretary or by Congress, and its exercise could be governed by precise standards to protect against possible abuse.

Whichever route is chosen, the ultimate goal is to promote meaningful and coordinated landscape scale management that is responsive to the climate change problem. This can only be done by ensuring that agency coordination efforts are documented and truly transparent, and that the agencies are fully accountable. To do so, clear standards and procedures must be set forth to govern interagency coordination and consultation, and these new coordination requirements must be enforceable in the courts through citizen suits.

Beyond improving interagency coordination, Congress should consider adopting new substantive standards designed to improve federal resource management at the landscape scale as a means to address climate change concerns. Because the loss of biodiversity is a key concern among climate scientists, Congress should legislatively clarify that biodiversity conservation at the landscape scale is a priority responsibility in agency planning and management decisions. Although some federal public land agencies already have statutory biodiversity conservation mandates (namely for the national forests and the national wildlife refuges), these mandates are not entirely clear (particularly in the case of the national forests), and they can present enforcement problems. The problem is most plainly illustrated by the Bush administration’s revisions to the national forest planning rules, which essentially deleted enforceable biodiversity conservation

requirements, giving the Forest Service near carte blanche discretion in this important area. A new explicit biodiversity conservation mandate, perhaps linked with maintaining and restoring sustainable ecosystems, would give this key aspect of climate change strategy the prominence that it merits on the federal climate agenda. This might be done by noting a connection with the Endangered Species Act, namely that an effective biodiversity conservation program should reduce the number of species that will require listing under the ESA and thus ultimately help preserve the land management agencies' decision making autonomy. It also might be done by establishing new federal ecosystem management requirements applicable across the public lands.

In addition, given the important role of the national parks in addressing climate change, Congress should consider strengthening the National Park Service's authority under the Organic Act, particularly its ability to respond effectively to cross-boundary problems. As has been frequently documented, the Park Service has historically been reluctant to assert itself outside its boundary line, regularly questioning whether it has any responsibility or authority over external matters. Most commentators agree that the Park Service does have a responsibility to protect park lands and resources from threatening activities occurring outside the parks, a view captured in the National Parks Organic Act and the so-called Redwood amendments to that act. 16 U.S.C. §§ 1, 1a-1. The DOI Solicitor has read these statutory provisions to vest agency officials with this protective responsibility, concluding that the relevant law "infuses the Secretary's decisions with a concern for park values and purposes, and signals caution where [these] ... could be threatened." Options Regarding Applications for Hardrock Mineral Prospecting Permits on Acquired Lands Near a Unit of the National Park System, M #36993, at 23 (April 16, 1998). The Park Service's Management Policies likewise acknowledge that "activities proposed for adjacent lands may significantly affect park programs, resources, and values," and that park officials "will use all available tools to protect park resources and values from unacceptable impacts." National Park Service, Management Policies 1.6 (2006). Nonetheless, given the potential devastating implications of climate change and the important role that the national parks must play in addressing it, Congress should give the agency some explicit authority outside its boundaries, perhaps through a mandatory consultation process whenever adjacent activities or developments might impair park resources.

To effectively address climate change at the landscape scale, state and private lands located near or adjacent to national parks cannot be overlooked. Federal law, however, has little impact on these lands, and most state and private landowners will resist new federal regulatory mandates. The alternative, therefore, is to use Congress's conditional spending power to induce changes in state and private landowner behavior that will redound to the benefit of the national parks and encourage landscape scale planning with meaningful mitigation and adaptation strategies. This can be done by making federal funds available to the states and local communities contingent on them coordinating their land use and transportation plans or economic development efforts with the regional climate change planning efforts undertaken by the adjacent federal land management agencies. The important point is to promote consistency between state and local planning efforts and those occurring at the federal level, while developing coordinated landscape

scale mitigation and adaptation strategies keyed to regional climate change concerns. A similar incentive-based approach should be employed to bring tribal governments into these coordinated planning and mitigation efforts.

### **Expanding the National Park System**

To address the risks and uncertainties inherent in climate change, Congress should also consider expanding the national park system to ensure that sufficient space is available to make the adaptations and mitigations that will be required. By expanding the national park system, Congress can protect and restore vital landscapes that encompass critical wildlife migration corridors, sensitive watersheds, or other locations that are deemed essential to meeting the climate change challenge. Not only would strategic park boundary expansions or the addition of new units enhance the conservation and scientific value of the existing park system, but it would also enhance carbon storage opportunities.

Congress is, of course, quite familiar with the conventional legislative approaches that have been used to expand the national park system. These include the creation of new national parks, national monuments, national recreation areas, national heritage areas, and the like, as well as boundary adjustments to existing national park units. Over the years, Congress has shown a willingness to reconfigure park boundaries and to add new units on nearby federal lands with a view toward creating more ecologically manageable park units, as illustrated by the California Desert legislation. Congress can—and should—give serious consideration to using these conventional strategies to enable the national park system to effectively meet the climate change challenge. Indeed, with reconfigured boundary lines and a more ecologically sensitive management structure in place, the Park Service and other federal land management agencies should be better able to employ the adaptive management strategies necessary to address the attendant risks and uncertainties that climate change portends.

A new approach to expanding the national park system that Congress should consider is targeting currently damaged landscapes for inclusion into the system following a period of restoration. Most scientists, including several who testified at the Subcommittee's March 3, 2009, hearing on federal lands, have endorsed ecosystem restoration as an important strategy for mitigating climate change impacts. As a historical matter, several of the eastern national parks, including Great Smoky Mountains and Shenandoah, were created from previously logged, mined, and farmed landscapes, and today they represent important components of the national park system. The same is true of the eastern and midwestern national forests, many of which had been devastated by over logging before they were reacquired by the federal government during the early 20<sup>th</sup> century under the Weeks Act; today these forest lands are fully restored and provide an array of resources and benefits to a large segment of our populace, and their role will only become increasingly important as temperatures continue rising.

Adding damaged but restorable lands to the national park system will require us to begin thinking about national parks from a longer term perspective, but climate change is forcing us to adopt that perspective. As an agency that takes prides in its environmental



management skills and one that his historical experience restoring damaged landscapes, the National Park Service should relish the challenge of bringing a damaged ecosystem back to life, not to mention the management efficiencies that would be realized when adjacent lands are added to an existing national park unit. One strategy for accomplishing this park expansion restoration idea would be to think of it as a two step approach; first setting aside the targeted lands for protection and restoration, perhaps as new national restoration areas, and then later seeking national park or another appropriate protective status once the landscape has been repaired. Whatever approach is taken, our grandchildren will thank us, just as we thank our forebears for their farsightedness in first establishing and then restoring our large eastern national parks and forests.

An alternative expansion approach that Congress should consider is the creation of a new landscape scale overlay designation designed to protect targeted landscapes for climate change mitigation purposes, perhaps as Natural Heritage Areas or Landscapes. The idea is to identify and knit together an array of contiguous federal lands that cover a particular sensitive or vital landscape, such as the Greater Yellowstone area, the Crown of the Continent ecosystem, or the Greater Grand Canyon region. For these special climate change mitigation landscapes, Congress would need to establish new, more protective management standards to protect the area's wildlife, watersheds, and other resources from warming pressures. The important point is to ensure that migratory corridors are protected, that jointly managed watersheds are safeguarded, and that the needs of other climate-sensitive resources are adequately addressed. In most instances, this should not entail significant changes in current management standards or priorities, and it may not require shifting management responsibility from one agency to another. As noted earlier, nearby state and private lands might be incorporated for management purposes into these special designations through a carefully designed federal funding program linked to integrated planning and development requirements.

A related concern that merits congressional attention is the need for new federal wildlife corridor legislation, or at least some congressional direction and support for the wildlife corridor concept. The scientific community agrees that a warming climate is altering national park and other protected area ecosystems, thus forcing park wildlife species to seek more suitable habitat outside park boundaries. But as already noted, many of the lands surrounding national parks (and other wildlife reserves) face significant development pressures that could make safe passage treacherous at best and lethal at worst. It is important, therefore, to safeguard essential corridors to enable climate-impacted wildlife to survive by changing their home ranges as global warming alters their surrounding habitats. A new system of designated wildlife corridors would facilitate that movement and serve as an important climate change adaptation strategy.

The concept of protected wildlife corridors has already been endorsed by the Western Governors' Association, largely in response to the growing impacts that energy activities and other developments are having on the public lands. Western Governors' Association, Protecting Wildlife Corridors and Crucial Wildlife Habitat in the West, Policy Resolution 07-01 (Feb. 27, 2007). Thus far, the WGA has created a Western Wildlife Habitat Council to identify potential wildlife corridors and designed a process for protecting thee

corridors. Western Governors' Association, Western Wildlife Habitat Council Established (June 29, 2008). New federal wildlife corridor legislation could be modeled on the 1968 National Trails System Act, which designated and funded several such trails and created a process for future trail designations. 16 U.S.C. §§ 1241-49. To create this system, Congress should direct federal land managers and state wildlife officials to collaboratively determine where corridors might be best located for maximum impact. On federal public lands, a new corridor designation could be simply overlaid, with some new management restraints and planning obligations to ensure adequate protection. On private lands, federal funds should be made available to provide landowners with an incentive to participate in the corridor program. Just as in the case of national trails, it should be possible to design a national wildlife corridor program that will help address climate change without significantly disrupting land ownership patterns.

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Clearly, the national parks are already being affected by climate change impacts, and the parks have a significant role to play in addressing the climate change challenge that we face. Because the national parks provide sanctuary for important wildlife species and other biodiversity resources, protective management of the parks and surrounding lands should be a critical part of any national climate change strategy. New legal standards designed to promote landscape scale planning and to better coordinate park management with adjacent federal, state, tribal, and private lands are essential to promote managerial consistency and the protection and restoration of regional ecosystems. The strategic and ecologically-based expansion of the national park system can also help effectively address looming climate change impacts. Funding for these initiatives might come from the new revenues generated by a national cap and trade carbon management program or by a new federal carbon tax. In sum, I urge the Subcommittee to give serious consideration to the various proposals outlined above as potential means to mitigate the impact of a warming climate on our national parks and to sustain the resilient capacities of our vital ecosystems.