



200 SCIENTISTS SUPPORT THE PROPOSED RANGE OF LIGHT NATIONAL MONUMENT IN THE WORLD-CLASS SIERRA NEVADA REGION OF CALIFORNIA – JUNE 2019

As scientists with backgrounds in geophysics, earth systems, climate, and natural resources management, we support the effort to create the Range of Light National Monument out of the federal land between Yosemite and Kings Canyon National Parks in California's Sierra Nevada. The proposed monument lies in the center of the longest interconnected wilderness in the lower 48 and between two National Parks. For more than 150 miles, no road crosses over the range; thus, the proposed monument provides a unique opportunity to create an interconnected landscape in the Sierra Nevada, a biological hotspot and WWF global 200 ecoregion¹.

This proposal and others like it are essential for safeguarding the natural world on which we depend. As was recently reported by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, extinction rates are accelerating at a pace unprecedented in human history². Up to one million species are at risk globally, with grave impacts to people around the world likely. One approach to reversing this alarming trend is to preserve, protect, and restore vital landscapes, as we are proposing here.

Because of the importance of this bioregion, we, the undersigned, are calling on decision makers to support policy changes and legislation that protect the irreplaceable ecological, scientific, and cultural values as outlined below.

BIODIVERSITY & CONNECTIVITY: California is the most biologically diverse state in the nation³, and the Sierra Nevada supports half of California's native plant species; more than 400 of them are found nowhere else on earth, and many are rare, threatened, or endangered⁴. Maintaining and establishing connectivity is essential to support the survival, migration, and adaptation of natural communities, particularly in light of climate change⁵.

As such, we recommend creating an interconnected landscape joining the adjacent parks and wilderness areas. This entails protecting both intact, unlogged forests and also degraded areas, so that those areas can recover after the cessation of logging and extractive uses.

FOREST & CLIMATE CHANGE: The Sierra Nevada is home to one of the most diverse coniferous forests in the world, with 26 different species of conifers⁴. These conifers, particularly old growth trees, store and absorb vast amounts of carbon, support a rich array of wildlife, and act as a significant protective barrier against the loss of life on the planet due to global warming.

The Sierra Nevada has been degraded by a century of clear-cutting and selective logging and numerous other land uses. While estimates vary, less than 12% of late-successional, old-growth forest remains⁶. As such, we recommend halting commercial logging and extractive activities detrimental to forest integrity.

SOIL CONSERVATION: Interactions among the climate, topography, and biota in the Sierra Nevada have created some of the most productive soils for plant species in the world.⁷ These soils store substantial amounts of carbon and harbor an unseen world of microorganisms and nutrients, which provide the foundation for hundreds of plant species endemic to the region.

Roads, including temporary ones, increase chronic soil erosion, sediment loading and runoff to streams, trigger widespread water quality issues, and alter hydrological functions. As such, we recommend closing select roads, prioritizing decommissioning roads that are not maintained for public use and safety.

WATERSHEDS: Sierra Nevada rivers, alpine lakes, and meadows naturally filter drinking water for millions of Californians, support a robust agricultural community, sustain a vast array of invertebrates, birds, mammals, and fish species, and provide recreational enjoyment for people. The proposed monument includes the San Joaquin, the South Fork of the Merced, and the Kings Rivers and their tributaries, which are an integral part of the Sierra Nevada watershed. The San Joaquin River is also a primary tributary to the largest estuary on the West Coast and the only inland delta in the world.

The watershed is also one of the most impaired and altered aquatic systems in the region⁸. Its decline is due to many factors, including dams, mining, diversions, grazing, roads, and logging. As such, we recommend protecting and restoring the watershed to prevent further damage and adding Wild and Scenic designations where appropriate.

WILDFIRE: A natural fire regime is essential to the Sierra Nevada's ecology. It is also vital to the long-term resilience of wild species and the safety of people. Scientists recently examined the severity of 1,500 forest fires affecting over 23 million acres during the past three decades in 11 western states. Forests with the highest levels of protection (wilderness, parks, and roadless areas) had fire cycles operating within historic bounds, while those with the most logging had the highest amounts of uncharacteristically severe fire. In addition, the snag-forest habitat created by mixed-intensity wildland fires is exceptionally biodiverse in the Sierra Nevada and is currently vulnerable to destructive post-fire, salvage logging⁹.

As such, we recommend managing wildland fires for ecosystem benefits whenever possible, while protecting the area from industrial and extractive uses.

TRIBAL TRADITIONS: For centuries, Native Americans of the Sierra Nevada have hunted, fished, gathered, and made their homes throughout the region, migrating with the seasons¹⁰. In particular, the South Fork of the Merced, the Kings, and the San Joaquin Rivers are places of longstanding importance to tribes, and many sites along those rivers are considered sacred. Preserving sacred sites and culturally important sites is vital to maintaining cultural identity and enabling the renewal of tribal traditions, such as basket weaving and acorn gathering. Native Americans also managed with fire, using it to create wildlife habitat, maintain meadows, and enhance production of basketry and cordage materials.

As such, we recommend protecting the ecological and cultural traditions of native peoples within the proposed area as they complement the protection of wildlife.

HUMAN HEALTH & THE RURAL ECONOMY: In a state with nearly 40 million people, the Sierra Nevada offers a rarity: the opportunity for quiet, undisturbed rest in the natural world. Studies indicate that time in nature makes people happier¹¹, healthier¹¹, and smarter¹². Further, protected public lands promote robust recreation economies. Rural counties in the western U.S. with the highest proportions of protected public lands have higher per capita income and lower levels of unemployment¹³.

As such, we recommend adding an interconnected non-motorized trail system, which expands compatible recreational opportunities, by converting selected roads to trails and restoring the natural landscape.

SUPPORTING NATIONAL PARKS & PUBLIC LAND: Our National Parks, the pinnacle of America's public land system, have become increasingly crowded and impacted, because of their popularity. For the fourth consecutive year, National Park visitation has exceeded 300 million recreation visits; 2018 was the third highest since record keeping began in 1904¹⁴. The proposed monument would help mitigate the impacts on our beleaguered National Parks by increasing recreational opportunities and expanding protected areas, so valued by the American people.

For all the reasons stated in this letter, we urge you to support effective legislation and to designate the Range of Light National Monument.

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