National Parks, Highways, and Climate Change

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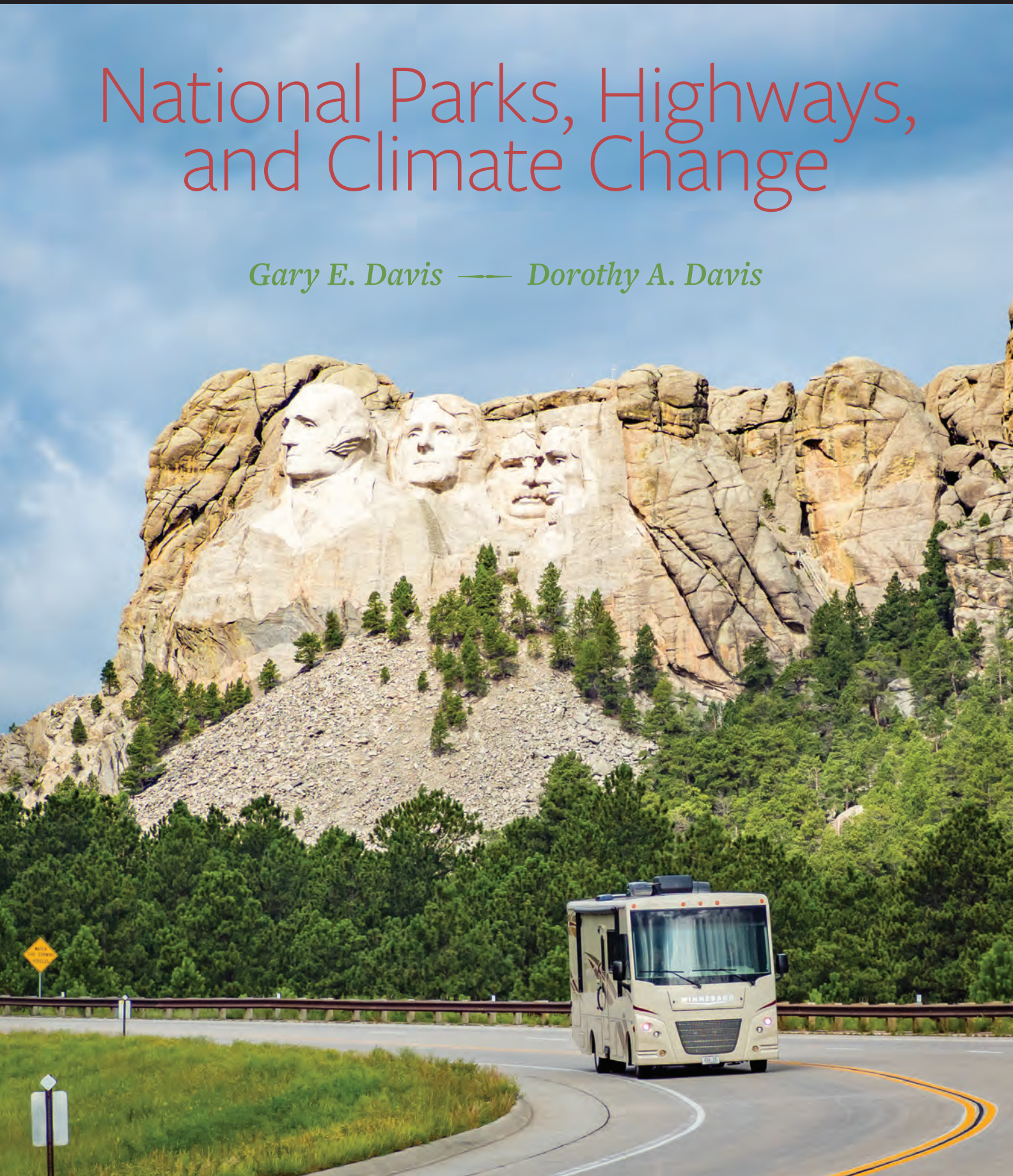

Yellowstone's remote Grand Canyon initially exceeded Americans' imaginations.

PARKS NEEDED ROADS

A century ago, America's national park system came of age as gasoline-powered automobiles became affordable. The first parks ring the western mountains like a circle of native dancers. This necklace of early parks—Yellowstone, Glacier, Mount Rainier, Crater Lake, Lassen Volcanic, Sequoia-Kings Canyon, Yosemite, Zion, Grand Canyon, Mesa Verde, Rocky Mountain, and Wind Cave—encircle the American West far beyond the imagination and reach of most Americans of the time. The parks offered joy and inspiration to Euro-Americans in the East, but at the time, no national road system existed to access these iconic landscapes and cultural monuments.

OVERLEAF Americans' love affair with road trips made a marriage of scenic landscapes and automobiles nearly inevitable.

Wind Cave's landscape was inaccessible without drivable roads.

ROADS NEEDED PARKS

National highways struggled to find a raison d'être in 1916 because local roads served urban centers, and interstate commerce traditionally relied on river boats and sea-going vessels. Railway companies dominated the overland transport of bulk cargo. People needed more personalized options to explore America's continental-scale landscape and discover its potential. Scenic national parks captured the public's imagination and helped drive highway development.

America's wildly successful highway campaign eventually connected the whole country.

U.S. GOT ROADS
Automobile enthusiasts joined park advocates in developing national highways, which helped connect the parks to the populace, thus adding momentum to the incipient American car culture.

California's I-405 double-digit traffic lanes revealed consequences of success—gridlock.

DEAL WITH THE DEVIL

This marriage of petroleum-powered transportation with middle-class families also set a socioeconomic course for wilderness conservation and heritage preservation actions that contributed to unforeseen global environmental consequences.

Good roads made remote Rocky Mountain national parks accessible and crowded.

PARK POPULARITY EXPLODES

Park facilities buckled under increased visitation as people learned to enjoy parks for family fun, personal challenges, learning about nature, and discovering history.

Yosemite Valley vehicle parking spilled into the forest.

BAND-AID FIXES FAILED

Emergency responses and periodic park restoration efforts often failed to keep pace with public appetites for access. The parks' popular success threatened nature's health and human enjoyment.

Sequoia National Park's air quality often ranks unhealthy for humans.

SUCCESS CAUSES EMERGENCY

Today, the United States Interstate Highway System offers a ubiquitous spiderweb of national high-speed vehicle connections. The National Park System has grown to more than 425 sites, hosting 300,000,000 visits annually. Global atmospheric and oceanic temperatures are rapidly increasing, having already reached alarming values caused by carbon emissions from anthropogenic petroleum combustion.

Yosemite's Mariposa giant sequoia grove showed resilience to wildfire after decades of prescribed burning.

DAMAGE CONTROL NEEDED

The way forward looks grim. Entrenched powerful forces benefit from the status quo of emitting carbon. Recognizing the challenge exists is a beginning. Initiating and measuring changes in response to recovery efforts are essential but difficult to assess as the whole world changes. Well-protected national parks allow people personally to experience and evaluate actions to remediate climate change.

Restoration efforts in Florida's Everglades demonstrates how ecosystem management of water, wildlife, and vegetation could work.

PARKS SHOW & HELP REPAIR DAMAGE

National parks and other protected places share a unique intrinsic value as environmental benchmarks demonstrating how different areas are changing. National parks dramatically show the potential of ecosystem integrity to resist pollution and other systemic threats to nature's self-renewal and survival.

Yosemite Valley is a laboratory for learning to live with nature.

LEARN BY EXPERIENCE

Applying science to understand how nature works in national parks elucidates the roles of systemic forces, such as wildfire, predators, water levels, and invasive species, in sustaining nature's health by using parks as benchmarks of normal conditions.

Dynamic national parks such as Lassen Volcanic can reveal the future.

PARKS ARE NEEDED TO THRIVE

National Parks can also act as movies of the future beyond snapshot documentation of the past. They can serve as guideposts leading toward mitigation and recovery that offer hope to encourage persistence on the long and challenging journey ahead. With parks to show the way, humans may endure and even thrive.

The Interdisciplinary Journal of Place-based Conservation

Co-published by the Institute for Parks, People, and Biodiversity, University of California, Berkeley and the George Wright Society. ISSN 2688-187X

Citation for this article
Davis. Gary E., and Dorothy A. Davis. 2022. National parks, highways, and climate change. *Parks Stewardship Forum* 38(3): 556–567.

Parks Stewardship Forum explores innovative thinking and offers enduring perspectives on critical issues of place-based heritage management and stewardship. Interdisciplinary in nature, the journal gathers insights from all fields related to parks, protected/conserved areas, cultural sites, and other place-based forms of conservation. The scope of the journal is international. It is dedicated to the legacy of George Meléndez Wright, a graduate of UC Berkeley and pioneer in conservation of national parks.

Parks Stewardship Forum is published online at https://escholarship.org/uc/psf through eScholarship, an open-access publishing platform subsidized by the University of California and managed by the California Digital Library. Open-access publishing serves the missions of the IPPB and GWS to share, freely and broadly, research and knowledge produced by and for those who manage parks, protected areas, and cultural sites throughout the world. A version of *Parks Stewardship Forum* designed for online reading is also available at https://parks.berkeley.edu/psf. For information about publishing in PSF, write to psf@georgewright.org.

The journal continues *The George Wright Forum*, published 1981–2018 by the George Wright Society.

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On the cover of this issue
Climate change creates conditions conducive to larger, more frequent fires, particularly in the American West. As a result, historic structures and artifacts are at greater risk of fire damage. The Bent's Fort Fire started on the morning of April 12, 2022. Approximately 85% of the national historic site's 800 acres burned. Thanks to the efforts of fire crews, the reconstructed adobe fort was undamaged. | NATIONAL PARK SERVICE