

COOPERATIVE WILDLIFE RESEARCH HELPS CONSERVE AND MANAGE WILDLIFE ON AMERICA'S PUBLIC LANDS

America's public lands are an extraordinary resource for the hunting and fishing public and everyone who enjoys the great outdoors. Across the United States, some 840 million acres are owned and managed for public benefit by a broad spectrum of federal, state, tribal, and local government agencies. These lands support a spectacular array of fish and wildlife habitats and a remarkable diversity of animal and plant species. Just one federal agency, the Bureau of Land Management, reports that its 245 million acres are home to some 3,000 animal species, including critical big game species such as mule deer, elk, pronghorn, black bear, mountain lion, moose, and more than 300 species that are rare, threatened, endangered or otherwise in need of additional conservation measures and careful management.

The members of the Boone and Crockett Club have been closely involved in the conservation and management of public lands in the United States since the very beginning of the Club. Our co-founder, Theodore Roosevelt, was instrumental in establishing several of the nation's premier networks of public lands, including the precursors of the National Wildlife Refuge System and the National Forest System. By any accounting, Roosevelt's accomplishments in public land conservation are impressive. According to the U. S. Fish and Wildlife Service,

in his years as president of the United States, Roosevelt set aside some 230 million acres of public land, including 150 national forests, the first 55 "federal bird reservations and game preserves," 5 national parks, and the first 18 national monuments. Roosevelt used the Antiquities Act of 1906 in a novel way to conserve unusual natural landscapes and features (including the Grand Canyon), many of which were later integrated into the National Park System and other federal land management programs.

Roosevelt strongly believed in science-based conservation, and his public land conservation activities were firmly grounded in that perspective. He coordinated closely with the pioneers of scientific forestry (particularly his good friend and Boone and Crockett Club Regular Member Gifford Pinchot) in establishing the National Forest System. He justified the conservation of major landscape features such as the Grand Canyon because they were "objects of unusual scientific interest," as specified under the terms of the Antiquities Act. He relied on scientific expertise from Club members (including Regular Member Frank M. Chapman from the American Ornithologist's Union, who later became Curator of Birds at the American Museum of Natural History) and others in establishing the nation's first National Wildlife Refuge on Pelican Island in Florida. Another Roosevelt legacy, the National Bison Range, was established in close collaboration with the world's leading scientific experts on American bison, particularly Boone and Crockett Club Regular Mem-

ber William T. Hornaday.

The value of science in managing America's wildlife was officially recognized by President Franklin D. Roosevelt in 1935, with legislation formally establishing what is now known as the Cooperative Fish and Wildlife Research Unit Program. Currently housed at the U.S. Geological Survey, the Unit program brings together world-class scientists housed at major research universities to address the most important scientific needs of state and federal wildlife managers. At this writing, the Unit program has 43 Units in 41 states, working closely with the full range of state and federal wildlife and public land management agencies. The most recent summary of Unit program activities, published in 2020, reveals a program that assists public land managers in all 50 states, many territories and tribes, and all of the major federal land management agencies, including the U. S. Army Corps of Engineers, Bureau of Land Management, Bureau of Reclamation, Department of Defense, U.S. Fish and Wildlife Service, U.S. Forest Service, and National Park Service, among others.

Science from the Cooperative Research Units and many other universities and programs continues to be critically important to



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managing fish and wildlife resources on our public lands. In Theodore Roosevelt's day, scientists collected data on public lands in the old-fashioned way: working on foot or horseback while taking notes by hand in paper field notebooks. Those notes would later be laboriously copied and compiled into charts, reports, and maps. At the end of his career, Boone and Crockett Regular Member Aldo Leopold looked wistfully back on the days when he made notebook jottings in the field to the accompaniment of deerfly bites, locust thorns, and chattering squirrels. Today's scientists at Coop Units and major universities have access to a wide array of tools that would have been unthinkable in Leopold's day—devices such as handheld digital data loggers and computers, Global Positioning System (GPS) trackers, drones, and other aerial survey technologies, real-time satellite imagery, and genetics and genomics technologies, all of which give us unprecedented insights into the history, distribution, size, condition, and structure of

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Read more about the National Forest Service and Gifford Pinchot on page 38.

wildlife populations.

One of the most spectacular applications of these new technologies is the Western Migration Corridors Initiative, based at the USGS Wyoming Cooperative Fish and Wildlife Research Unit at the University of Wyoming. This multi-state, west-wide effort combines data from GPS tracking collars on elk, mule deer, and pronghorn, applying innovative statistical data analysis methods and state-of-the-art Geographic Information Systems (GIS) mapping. The resulting analyses produce highly accurate maps of the movements of key big game species across broader landscapes in the West, including vast swaths of public lands. Initiated in the state of Wyoming by USGS scientist Dr. Matthew Kauffman, this mapping effort now spans all 11 western U. S. states. Dr. Kauffman and his team are working in close collaboration with all of the relevant state and federal fish and wildlife agencies, public and private land managers, tribal agencies, and citizen groups to produce these mapping products.

The value of these new maps for managing large ungulates on public lands is immense. For the first time, we have accurate maps of the movement and activity patterns of these critically important wildlife species. Managers also gain data on the precise location of key landscape areas and features used by these species, such as overwintering sites, calving areas, and seasonal movement pathways. Conservationists and managers can now identify specific sites where habitat improvements and other conservation

measures can be implemented to provide maximum benefits to the species. More recently, the initiative has begun studying possible movement pathways for chronic wasting disease (CWD) and other critically important wildlife diseases in the western United States, using data compiled through the mapping efforts. Wildlife managers hope to understand better how wildlife diseases such as CWD move across the landscape and what management interventions might slow the spread of these diseases.

Science and scientific information will only become more critical to wildlife management on public lands as demand for access and competition from multiple uses continues to grow. New scientific approaches offer managers a much clearer understanding of the status and needs of wildlife on public lands, whether those needs be water resources, calving areas, foraging sites, or movement corridors. Science also offers options for deciding among multiple management options and modeling the potential effects of management choices on wildlife species and their habitats. Programs such as the USGS Cooperative Fish and Wildlife Research Unit Program stand ready to assist public lands managers in ensuring that our public lands continue to support diverse and healthy populations of our nation's most cherished wildlife species. ■



RESOURCES

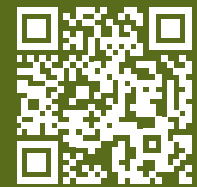
USGS Cooperative Fish and Wildlife Research Unit Program



USGS Cooperative Fish and Wildlife Research Unit - Project Abstracts



Wyoming Migration Initiative



BELOW: This multi-state, west-wide effort combines data from GPS tracking collars on elk, mule deer, and pronghorn, applying innovative statistical data analysis methods and state-of-the-art GIS mapping. The resulting analyses produce highly accurate maps of the movements of key big game species across broader landscapes in the West, including vast swaths of public lands.

