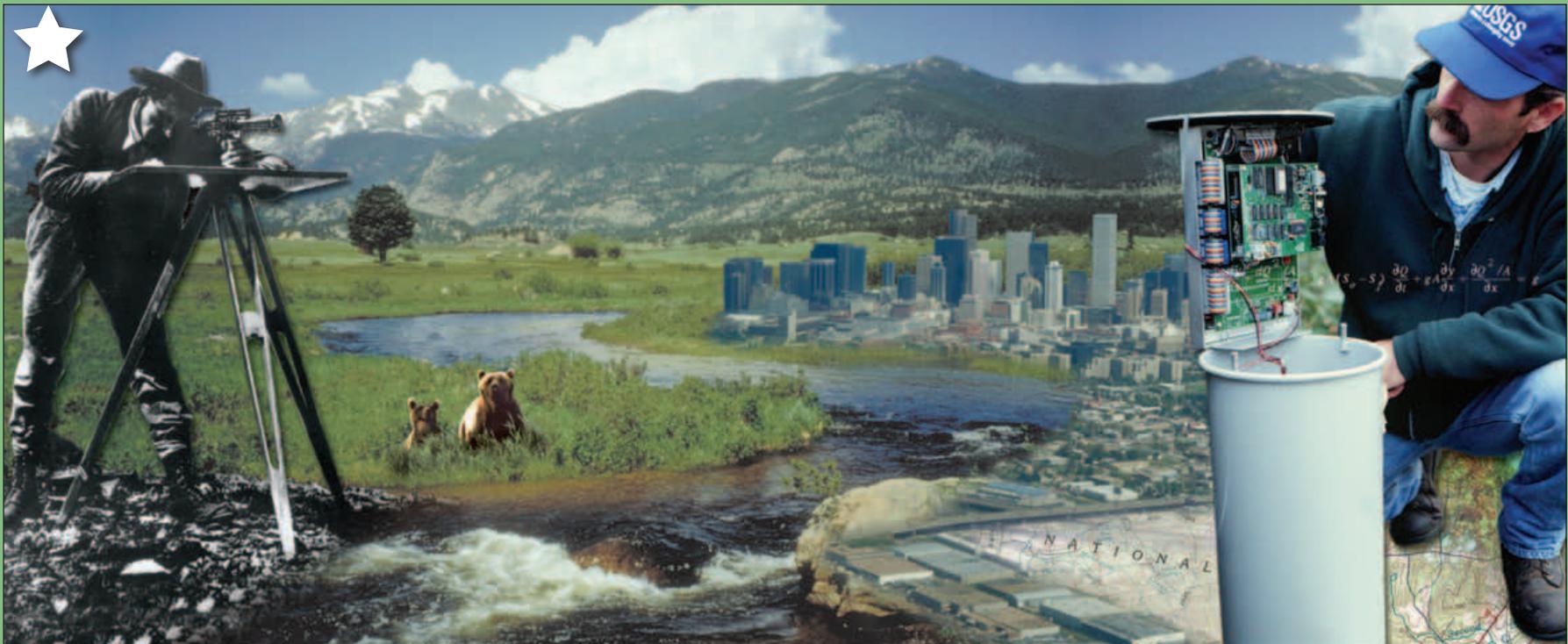


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★ **Celebrating 125 Years of the U.S. Geological Survey**



Circular 1274

Celebrating 125 Years of the U.S. Geological Survey

Compiled by Kathleen K. Gohn

Circular 1274

U.S. Department of the Interior
U.S. Geological Survey

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Gale A. Norton, Secretary

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Lucille Stickel

In 1946, when Lucille Stickel published her first contaminant paper, a study of the new pesticide DDT, virtually nothing was known about the harmful effects of pesticides on wildlife. The impact of her pioneering research would be significant and far reaching, as Rachel Carson used Stickel's research as the basis for much of her book, *Silent Spring*. The book created a public understanding of the importance of preserving the Earth's resources and ushered in a new age of environmental awareness.



Stickel began her career as a Junior Biologist in 1943 at the Patuxent Wildlife Center. She became one of the early pioneers in the fledgling field of wildlife toxicology and is responsible for many historic findings and techniques. From 1973 to 1981, she served as Director of the Center, making her the first woman to head a major Fish and Wildlife Service laboratory.

In 1989, the Chemistry Building at the Patuxent Center was renamed Stickel Laboratory in appreciation of the decades of dedicated service by Stickel and her husband Bill, her lifelong research partner and collaborator.

Stickel's commitment to the preservation of wildlife and natural resources was recognized in 1998 when the Society of Environmental Toxicology and Chemistry honored her with its prestigious Rachel Carson Award. She also received the DOI's Distinguished Service Award and the Aldo Leopold Award of the Wildlife Society.

new theory, which explains the causes and distribution of earthquake and volcanic zones around the world. For the past 25 years, USGS scientists have been leading the research effort to understand the causes and effects of earthquakes and to apply that knowledge to reduce earthquake risk across the Nation. USGS national seismic hazard maps form the foundation for national building codes and are making billions of dollars of new construction safer from earthquakes each year.

The United States has more than 50 historically active volcanoes within its borders, more than any other country except for Indonesia and Japan. The Aleutian volcanic arc in Alaska produces an average of 1 to 2 eruptions per year. Hawaii's most active volcano, Kilauea, has been erupting almost continuously since January 1983, making the current eruption its longest in more than 600

years. The Cascade Range in the Pacific Northwest produces fewer eruptions, an average of 1 to 2 per century, but threatens more residents than the volcanoes of Alaska and Hawaii combined. The devastating landslide and eruption of Mount St. Helens, Wash., on May 18, 1980, was the impetus for creation of the David A. Johnston Cascades Volcano Observatory, which bears the name of the USGS geologist who died in the eruption at a forward observation post on what is now called Johnston Ridge. The Mount St. Helens eruption was a turning point for modern volcanology that led to numerous discoveries and improved eruption prediction techniques.



Protecting Biodiversity—Research on Endangered Species

By the late 1800s, the wide-scale clearing of land for agriculture and intensive hunting of wildlife for commercial markets had taken their toll on many native species. Of the millions of bison that had roamed the North American plains, fewer than 1,000 remained. Passenger pigeons, whose immense flocks had once darkened the skies, were nearing extinction. Populations of snowy egret and other colonial-nesting wading birds had been reduced to a small fraction of their historical size. Alarmed by the rapid loss of our natural heritage, President Theodore Roosevelt created the first Federal Bird Reservation on Pelican Island, Fla., in 1903. Congress passed several laws in the early part of the 20th century to protect

1910

The Bureau of Mines is founded. The USGS Technologic Branch is transferred to the Bureau of Mines, and structural materials testing is transferred first to the Bureau of Mines, then to the Bureau of Standards. Joseph A. Holmes, head of the USGS's Technologic Branch, is the first Director of the Bureau.

1912

The Hawaiian Volcano Observatory is established. Under the directorship of Massachusetts Institute of Technology professor Thomas A. Jaggar (1912-1940), HVO scientists conduct pioneering studies of volcanic processes.



USFWS

wildlife populations, the most notable being the Migratory Bird Treaty Act (1918), which established Federal jurisdiction in the hunting of migratory birds.

The Patuxent Wildlife Research Center (then part of the U.S. Department of Agriculture), in Patuxent, Md., began research on migratory waterfowl in the mid-1930s. The whooping crane was one of the first species studied, and the effort to conserve this majestic bird later came to epitomize the endangered species movement. World War II interrupted the research, but after the war scientific efforts at Patuxent began anew, focusing on trumpeter swans and later on rapidly declining bald eagle populations.

By the time the Endangered Species Act was passed in 1973, a considerable amount of research associated with protecting imperiled species was



already underway, including work on black-footed ferrets, wolves, Puerto Rican parrots, California condors, and several Hawaiian birds. The approach was two-pronged: (1) to study species in their native habitat to identify factors affecting distribution and abundance and (2) to conduct research on species in captivity to develop captive breeding techniques for releasing individuals to the wild to bolster wild populations. Of the nine captive populations studied at Patuxent, two (the Aleutian Canada goose and the bald eagle) have been removed from the endangered species list, and five more (the whooping crane, timber wolf, masked bobwhite,

California condor, and Mississippi sandhill crane) are on the road to recovery. Research on species such as the gray wolf and American alligator has enabled their populations to recover or stabilize.

Over the past 30 years, research on endangered species has expanded to include a wide range of investigations at nearly every USGS Science Center and Cooperative Research Unit across the United States. USGS scientists are examining endangered species' life history characteristics, habitat requirements, population dynamics, migration patterns, and genetic relationships. They are evaluating the success of conservation actions, advising recovery teams, and working side by side with natural resource managers in the Fish and Wildlife Service, National Park Service, Bureau of Land Management, and other DOI bureaus.

Patuxent Wildlife Research Center

The establishment and evolution of the Patuxent Wildlife Research Center mark important events not only in the history of the USGS but in the changing attitudes and policies of the Nation. They signify a broadening of concern from wildlife's impact on people to an equal emphasis on people's impact on wildlife.

In the early part of the century, most wildlife research focused on the negative effects of wildlife on agriculture. The Dust Bowl era in the 1930s created a public desire to help restore wildlife populations, and the Patuxent Research Refuge was established in 1936 as the Nation's first wildlife experiment station.



The successes of the Center have been numerous. The captive propagation program attained international prominence by helping to increase the wild populations of bald eagles, whooping cranes, and other species throughout North America; urban wildlife research established development-planning techniques used throughout the country; and advice on backyard bird feeding is used by millions of homeowners every year. Perhaps the Center's best known success came in 1969, when researchers linked eggshell thinning with DDT. This discovery and testimony of Patuxent researchers before Congress resulted in the nationwide banning of DDT and other organochlorine pesticides in 1972.

Today, research at Patuxent continues to address national wildlife concerns and to maintain partnerships with State and municipal governments concerning local wildlife research issues. The continuation of this long relationship with our partners, including FWS and the National Park Service, will help ensure that USGS science informs decisionmakers charged with protecting and managing our Nation's living resources.

1916

The USGS reorients its work to aid the search for both metals and fuels, extending the search to Central and South America and the West Indies.

1917

The United States enters World War I in April, and the USGS forms a Division of Military Surveys. The strategic minerals concept is born. During these years, the USGS is the main source of information on mineral production.

1917

The fourth USGS National Center is established in the Interior Building on 18th & E Sts., NW.

1922

The USGS becomes involved in energy policy. A Coal Commission is established, and USGS resource data provide a basis for the Commission's report.