

SCIENTIFIC WILDLIFE MANAGEMENT WORKS, THANKS TO THE BOONE AND CROCKETT CLUB!

SCIENCE BLASTS



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North America's wildlife species were in deep trouble just over a century ago. The thundering herds of bison on the Great Plains were gone. The enormous flocks of passenger pigeons had likewise disappeared. And a whole spectrum of other species were on their way out. Unregulated market hunting threatened to eradicate waterfowl and songbirds, while unrestricted hunting across the landscape made many big game species increasingly scarce.

Into this increasingly grim picture, members of the Boone and Crockett Club stepped up to take decisive action. We all know about the bold actions taken by our Club's founder, President Theodore Roosevelt and his contemporaries—how they established the first national wildlife refuge, passed legislation to curb unsustainable

trade in wild species, and set up the National Forest System. In this essay, I want to highlight another set of actions by Club members, including William Temple Hornaday, Aldo Leopold, and Jay "Ding" Darling. Through their efforts, a system of science-based wildlife management was created in the United States. This system is directly responsible for one of the greatest conservation success stories of all time: the almost complete reversal of the severe population declines, which were evident in many of our most iconic wildlife species just a short century ago.

William Hornaday is probably best known today for helping to establish the National Zoo in Washington, D.C., and the Bronx Zoo in New York City. But he also had a long and distinguished career in wildlife conservation,

dating back to his early days as a taxidermist for the Smithsonian Institution in the 1880s. As the Institution's chief taxidermist, Hornaday collected specimens of American bison for the museum's collection. To find the bison, he sent letters in 1882 to a broad range of individuals—ranchers, hunters, army officers, and zookeepers—across the species' historic range, inquiring about its current status. What he learned was alarming. Bison populations had essentially been extirpated in just 15 years, during the short window between 1867 and 1882. Hornaday was sent west in 1886 with instructions to collect some of the last remaining bison to prepare a set of mounted taxidermied specimens that would enable future generations to see what the species looked like after its anticipated extinction.

Hornaday found his bison in the wild country of Montana between the Yellowstone and Missouri Rivers and collected specimens that remained on display at the National Museum of Natural History until the 1950s. But he did not stop there. He brought live bison back to the Smithsonian to serve as breeding stock and initiated a broad public campaign to generate support for conservation of the species. Thanks to his efforts and those of his friends and contemporaries, American bison remain on the landscape to this day.

This experience with the American bison was



Hornaday with a bison in October 1907.

BELOW: Hornaday, far right, assisting with care of the bison herd at the Bronx Zoo. He led the acquisition efforts of bison from private herds later used to reintroduce the animals back into the wild. In 1905, the American Bison Society was formed during a meeting at the New York Zoological Society. Hornaday served as the president, and Theodore Roosevelt served as honorary president. Two years later, the first-ever animal reintroduction in North America commenced when 15 bison were shipped to Oklahoma from the Bronx Zoo. In 1910, the nucleus herd was shipped to the National Bison Range in Montana.



“A continent without wildlife is like a forest with no leaves on the trees.” - William T. Hornaday, Regular Member, Boone and Crockett Club

excellent preparation for the next phase of Hornaday's conservation career. In his new position as the founder and first director of the New York Zoological Park, Hornaday increasingly became aware that other wildlife species in North America were in serious trouble. In 1912, he initiated the first-ever comprehensive survey of wildlife populations in North America. This was, of course, in the days before helicopters, radio tracking collars, GPS units, and computer databases. Hornaday used the best tools and networks that he had available—including Boone and Crockett Club members—to conduct what we would now call a “qualitative assessment.” Early in 1912, Hornaday sent questionnaires to reliable individuals—people with direct knowledge of particular game species and their habitats—to ask about the status of wildlife populations in the geographic areas they knew best. Most of his correspondents were hunters and sportsmen, and many were also Boone and Crockett Club members. Hornaday knew that sportsmen and women are some of the keenest observers of the natural world and have valuable information about species and habitats, which contribute to wildlife conservation and management.

Hornaday received an overwhelming response to his inquiries. Over 250 responses poured in from all corners of the continent. The overall picture from these correspondents was quite dire.

Whitetail deer, mule deer, and moose had each been extirpated or largely extirpated from six states. Whitetail deer had essentially vanished from a broad swath of the

central Midwest, including Illinois, Indiana, Kansas, and Ohio. Mule deer had disappeared from the upper Great Plains, including Kansas, Minnesota, Nebraska, North Dakota, and South Dakota. And moose had vanished from Massachusetts, New Hampshire, New York, Pennsylvania, Vermont, and Wisconsin.

Black bear had disappeared from 10 states, mostly in the Northeast, while beaver had been essentially extirpated from 15 states. The most significant declines, however, were in elk (30 states extirpated, or essentially so) and bison (31 states completely extirpated).

And the declines were not limited to big game species. Wild turkeys were extirpated or nearly so from 13 states, while beaver had essentially disappeared from 15 states. And two species—the Carolina parakeet and the passenger pigeon—were extinct in the wild. By the time of Hornaday's survey, Martha, the very last passenger pigeon, was living a solitary life in the Cincinnati Zoo, where she died on September 1, 1914.

The magnitude of game and non-game species losses revealed by this initial survey was staggering. Hornaday wasted no time in getting his findings into print in a book called *Our Vanishing Wildlife*. The book details the impacts of unregulated slaughter on a vast diversity of wildlife species, from songbirds to squirrels, sea lions to swans, manatees to moose, and elephant seals to elk. The book called out the exceptional work being done by state fish and wildlife agencies, such as the pioneering efforts of Vermont to restore the

state's vanished herds of whitetail deer beginning in the 1870s. His book heavily criticized those who were responsible for the uncontrolled harvest.

Our Vanishing Wildlife had an immense impact on the future of wildlife conservation and wildlife science. The book was read by a young forester named Aldo Leopold while he was recuperating from a serious illness and inspired him to pursue research in wildlife management. Leopold's first major research study, investigating a massive die-off of mule deer in the Black Mesa area of Arizona, was funded directly by the Boone and Crockett Club. This research project was the first scientific wildlife management study of its kind in North America and paved the way for further research by Leopold and others on scientific studies specifically designed to inform and guide wildlife management.

Leopold is best known among the general public for his beautifully written essays about nature, life, and

hunting, many of which are included in the posthumously published *A Sand County Almanac*. But in the field of wildlife conservation and wildlife conservation science, Leopold is equally well known for his pioneering textbook *Game Management*, published exactly 90 years ago in 1933. *Game Management* can truly be said to have launched the entire field of scientific wildlife management in North America. In this book, Leopold stressed the importance of studying wildlife species and understanding their habitats to manage both the species and its habitats more effectively. The principles outlined in Leopold's book were incorporated into the newly-formed Cooperative Research Unit Program, established first at Iowa State University with support from Jay “Ding” Darling and then expanded nationwide under legislation signed by President Franklin Delano Roosevelt in 1935. The first scientist hired by the Coop Unit Program, Dr. Paul Errington, earned his Ph.D.



Aldo Leopold stands next to virgin timber on the Upper Peninsula of Michigan. Circa 1938.

under Aldo Leopold's direction at the University of Wisconsin in 1932.

In the following decades, the field of wildlife science blossomed and continued to grow and expand, incorporating the most relevant findings from new and emerging disciplines such as statistics, genetics, population modeling, biogeography, biochemistry, and ultimately DNA analysis, and genomics. Scientists in programs such as the Cooperative Research Units learned how to work hand-in-hand with wildlife managers, designing scientific research studies to address the most pressing management questions in a timely manner. And wildlife managers increasingly relied on the findings of scientific research projects when developing management prescriptions and setting harvest regulations. More recently, a series of Boone and Crockett Endowed Chairs located at major universities across the country has provided additional capacity in certain critical areas of wildlife research and science.

The results of this close collaboration between wildlife scientists and wildlife managers have been nothing short of spectacular.

Today, 90 years after Aldo Leopold's pioneering textbook and the establishment of the nation's first formal programs for research and training in applied wildlife management, it is worth taking a closer look at the status of the wildlife species whose plight was so eloquently articulated by William Hornaday in *Our Vanishing Wildlife*.


With the exception of the passenger pigeon and the Carolina parakeet, all species mentioned above are now thriving under scientific wildlife management in North America. Deer, elk, moose, black bear, wild turkey, and beaver have all recovered to the point where these species can support sustainable harvest programs in most (if not all) of their current range states. And the six states where Hornaday's correspondents reported zero whitetail deer in 1912 today support robust herds totaling some 2.8 million animals across all six states.

Critical to this success has been the availability of funding provided to the state fish and wildlife agencies through license fees and excise taxes paid on hunting equipment—funding provided by hunters to support the scientific management of the

very wildlife species at acute risk of extinction over a century ago. Thanks to hunters, we can continue to enjoy landscapes teeming with wildlife across North America.

At a time when wildlife populations have generally declined across many areas of the globe, the successful track record of wildlife management and recovery in North America is all the more striking. As practiced in North America, scientific management of wildlife populations and their habitats clearly works—as demonstrated by the significant rebounds in populations of many of our key wildlife species that we have experienced during the twentieth century. Science has been key to the success of these efforts,

a fact which has been clearly understood and articulated by successive generations of leaders in the Boone and Crockett Club. As stated so eloquently by Sir Isaac Newton, we all stand on the shoulders of giants. On behalf of the entire wildlife science community, I humbly thank the leadership and membership of the Club for your generosity and your leadership in supporting the scientific research and programs that help us to manage wildlife in the past, present, and future. My scientific colleagues and I look forward to many more years of productive research, collaboration, and engagement with you! ■



Hornaday (left) at Max Seiber's cabin (far right) near Hell Creek in Northeast Montana in October 1901. Also pictured is photographer Larry A. Huffman (center).



Hornaday was a prolific author and publisher. Here's a list of his wildlife and conservation-related books.

- Two Years in the Jungle* (1885)
- Extirpation of the American Bison* (1887)
- Taxidermy and Zoological Collecting* (1895)
- The Man Who Became a Savage* (1895)
- The American Natural History* (1904)
- Camp-Fires in the Canadian Rockies* (1906)
- Camp-Fires on Desert and Lava* (1908)
- Our Vanishing Wild Life* (1913)
- Wildlife Conservation in Theory and Practice* (1914)
- The Statement of the Permanent Wild Life Protection Fund* (1915)
- The Statement of the Permanent Wild Life Protection Fund Volume II* (1917)
- The Minds and Manners of Wild Animals* (1922)
- Tales from Nature's Wonderlands* (1924)
- A Wild Animal Round-Up* (1925)
- Wild Animal Interviews* (1928)
- Thirty Years War for Wildlife* (1931)

B&C CLASSICS

The Club has released two of Hornaday's books as part of our B&C Classics Series. Each book in the series was authored by a member of B&C in the late 1800s or early 1900s and was hand selected by a committee of vintage hunting literature experts. SEE PAGE 43 FOR DETAILS.