



On the Importance of Scientific Collections A Series by Natural Science Collections Alliance

Museum Collections Document a Century of Change

For more than a century, scientists at the Museum of Vertebrate Zoology (MVZ) at the University of California, Berkeley have been documenting the biodiversity of California. Joseph Grinnell, the first director of the MVZ, thought that the flora and fauna of the region were being threatened by California's booming population in the early 1900s. To test his hypothesis, the MVZ set out to document the mammal, reptile, amphibian, and bird populations of the state. During Grinnell's 31-year tenure, the MVZ amassed a collection of nearly 108,000 biological specimens, 9,070 photographs, and some 20,000 pages of field notes. Grinnell believed that the greatest value of the MVZ collection would be that "after the lapse of many years, possibly a century, the student of the future will have access to the original record of faunal conditions in California."

Joseph Grinnell's words were prophetic, as nearly a century after its founding, researchers at the MVZ conducted the Grinnell Resurvey Project, a project to assess the state of wildlife in California. Although they were not specifically looking for effects of climate change, survey teams working in Yosemite, Lassen Volcanic, and Sequoia and Kings Canyon National Parks found evidence that over half of the vertebrate species in each park had shifted their populations to higher elevations and cooler temperatures. Alpine chipmunks, for example, had relocated to nearly 2000 feet higher in elevation. This finding is consistent with a winter temperature increase of 3 degrees Celsius over pre-industrial levels in the Sierra Nevada region. This finding also supports hypotheses that propose species will move up in elevation to compensate for increasing temperatures.



Photos from 1915 and 2004 show the changes in the forest ecosystem in iconic Yosemite Valley, California. Spanning a century, the Grinnell Resurvey Project has shown the changes in alpine areas. Photo credit: Archives of the Museum of Vertebrate Zoology, University of California, Berkeley.

Prepared by Kevin Todd and Zachary Rosner.

www.nscalliance.org