

California's wildflowers are disappearing, new book by UCR ecologist cautions

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Richard Minnich says policies and measures are needed to preserve state's flower heritage

At least since the late 18th century, invasive plant species introduced by humans have devastated California's botanical heritage by destroying native flora, resulting in bad pastures and posing a fire hazard, a new book by a UC Riverside ecologist explains.

"We need to recognize that California was not at all grasslands in the past," said [Richard Minnich](#), the author of *California's Fading Wildflowers*, published this month by the University of California Press. "In the late eighteenth century, land all the way from San Francisco to San Diego was carpeted by wildflower pastures. Today these pastures have vanished, with brome grass taking their place."

Minnich's [book](#) gives a detailed account of how California's flora has changed since the arrival of Spanish explorers in the state in the 18th century. It explains in detail how the landscape of Hispanic California, the southern two-thirds of the state, was steadily transformed by humans.

"This book is an incredibly rich synthesis of history, plant geography, and landscape ecology, which its author uses to describe a place — coastal and interior California — that experienced in the past 200 years one of the most complete human-caused landscape transformations in the world," said Michael Barbour, a professor emeritus of plant sciences at UC Davis.

From entries about California's vegetation recorded by Franciscan missionaries and soldiers (1769-1776), Minnich determined that the landscape was covered with wildflower fields in the late 18th century, and that these pastures thrived especially well along the coast.

He reports in the book on how during the Gold Rush in the middle of the 19th century (1840 to 1880) non-Hispanic Europeans – American, French and British explorers –introduced European plants such as clovers, filerie, black mustard and wild oats that initiated the alteration of California's landscape.

"These non-native plants invaded the state's coastal areas," said Minnich, a professor of geography in the [Department of Earth Sciences](#). "But inland, the natives continued to thrive and wildflowers continued to grow."

But then, from 1880 until the present, bromes, a new suite of invaders, took hold and spread rapidly in California, Minnich argues. "Newspaper articles and books from this period report that the bromes exploded throughout the state," he said. "Unlike the plants the Franciscans introduced, these bromes spread into the interior of California and replaced the wildflowers there."

His research for the book helped him determine that the bromes replaced the wildflowers in Los Angeles in the 1940s; in Riverside, Calif., in 1965; in southern San Joaquin Valley in the mid-1960s; and throughout the deserts of California in the 1970s and 1980s.

"California was a flower pasture once but in the past fifty years the flowers made their final collapse right in front of our eyes," he said. "Today, the wildflower situation in the state is bad. You hardly see them, and, when you do, they appear in patches here and there, not as meadows that once characterized the state."

According to Minnich, California wildflowers are also a "lost legacy." He argues that wildflowers were appreciated by the generations of the late 19th century: they were the topic of books and were institutionalized in floral societies that sprung up in all the local towns and weekend flower parties.

"The New Year's Rose Parade in Pasadena was the institutional outcome of the combined forces of southern California's floral societies," he said. "Indeed, a parade requirement to this day is that the floats must be entirely covered with flowers. But even this heritage has withered as the Rose Parade has lost sight of its historical baseline. As Los Angeles grew to cosmopolitan status, people became detached from the neighboring landscape. The long-believed bunchgrass theory, and its conversion to exotic grassland through overgrazing, encouraged people to take for granted the rapidly fading wildflower heritage."

Minnich emphasizes the need for California's policymakers to keep a big picture of the state in mind. "We need to go back to the landscape scale to understand how this land behaves. Our wildflowers are disappearing over time, and it is critical that we do whatever we can – planned burnings at the broad scale, bringing in biological control to rid the land of bromes – to restore the landscape and preserve our flower heritage."

Source: University of California - Riverside

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