

Mount Tamalpais: Biodiversity Paradise

by Ann Thomas

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Marin Municipal Water District and the California Academy of Sciences are jointly mapping Mount Tamalpais's botanical riches, in an effort to learn how plants adapt to the evolving climate, and to engage the public in the science that generates this information. The program, dubbed a "bioblitz," entails volunteer field work to compile data on district lands over a three-year period which began in 2012.

The MMWD Bioblitz will attempt to document all plant species currently present on Mount Tam as a benchmark against which to assess future distribution shifts. MMWD and Academy volunteers, non-professionals who are trained as citizen scientists, perform the field work during one-day sweeps in which they cover a defined portion of Mount Tam to observe, identify and either photograph or take a sample of every plant species on the site. The process is similar to an archaeological dig, and volunteers are accompanied and guided by botanists and educators from the water district and the Academy.



The varied terrain of MMWD lands sustains around 900 native and non-native plants. From the Pine Mountain Fire Road one has a distant view of White's Hill, a corner point of our watershed. Photo by Charles Kennard

On a typical bioblitz day the perimeter of the day's work is first marked out. The site is then surveyed by volunteers who mark plant specimens. These are then color coded by a leader to indicate whether they should be photographed only, or both photographed and collected. Only plants that are flowering or fruiting are collected, since the reproductive parts are important in identification. Other plants are just photographed.

The Mount Tamalpais Bioblitz project began when MMWD approached the Academy when looking for an organization that would house MMWD's collection of herbarium specimens. It was coincidence that the Academy was at that time embarking upon a year of citizen science projects and MMWD happened to fit the criteria of a terrestrial project for which the Academy was searching.

Academy literature describes the Mount Tamalpais watershed as a "biodiversity paradise." MMWD manages about

18,000 acres of the mountain and, along with providing drinking water to most of Marin County and overseeing recreational uses on their lands, the district is caretaker for one of the state's most important botanical preserves.

The Academy, located in Golden Gate Park in San Francisco, is the oldest museum in the West, and a leading research and educational institution with a collection of more than 26 million specimens dating from the late 1800s. The Mount Tamalpais Bioblitz is part of the Academy's Citizen Science Initiative, which is funded by S D Bechtel Jr. Foundation.

MMWD is also working with the California Native Plant Society to map rare plants on Mount Tam, and with UC Berkeley's Forest Pathology and Mycology Lab to detect the spread of Sudden Oak Death on watershed lands.

Four Bioblitz days were held in 2012 during which about 80 volunteers covered a third of the total area to be surveyed, recording about 650 observations of more than 350 of the 900 or so species known to occur on the watershed. The volunteers are evenly divided between MMWD's cadre of habitat volunteers and those from the Academy.

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