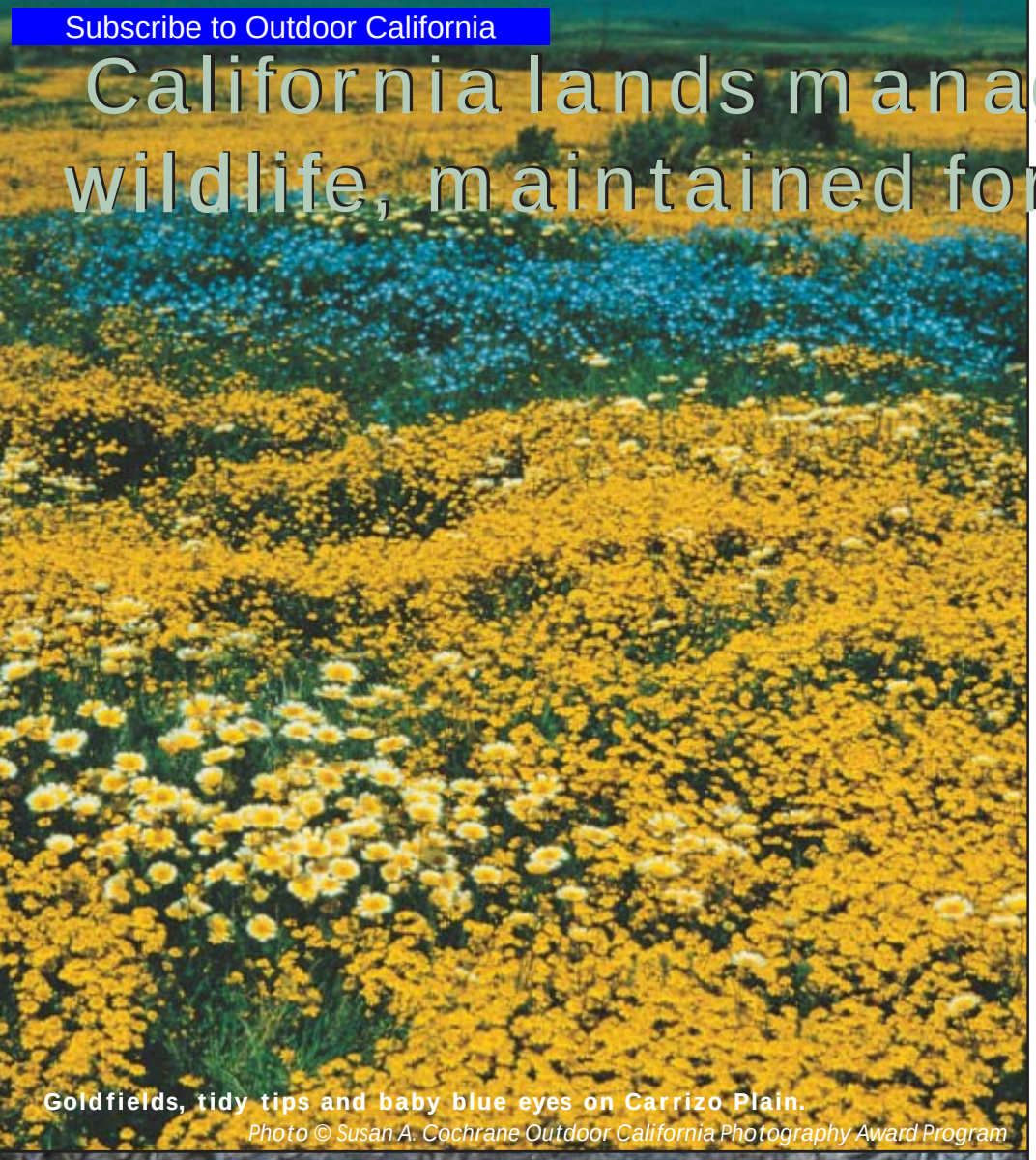
California lands managed for the wildlife, maintained for the future



Goldfields, tidy tips and baby blue eyes on Carrizo Plain.
Photo © Susan A. Cochrane Outdoor California Photography Award Program

Goshawk with prey.
Photo © Gary Kramer

What does it mean to protect plants and animals? Animals need places to eat, drink, rest, reproduce, and grow. Plants need soil, water and sunlight. Increasingly, the growth of the human population affects the resources available to plants and animals,

By Kari Lewis

especially those that are rare. To ensure rare plants and animals have enough of what they need to survive, agencies like the Department of Fish and Game (DFG) acquire lands to protect habitat. One might think that acquisition of a reserve for rare species and habitats accomplishes this protection. Actually, it is just the beginning.

Stewardship, or the practice of caring for the land, is critical to ensuring the protection of rare species and habitats on California's ecological reserve system. Ranging throughout the state, from extremely remote to urbanized areas, DFG ecological reserves pose interesting challenges to those who manage them. The 119 properties of the ecological reserve system support a diversity of habitats: grasslands, wetlands, shrublands, woodlands and forests. DFG land managers employ their expertise and a variety of management techniques in the stewardship of this diverse array of reserves.

Ecological reserve managers plan and document the actions needed for best management of the reserve. Plans address biological resources, cultural resources, administrative needs, public use needs, and partnerships with other agencies, organizations, or private parties. These management plans serve as a blueprint for future management activities and provide continuity for management of reserves over time.

The primary need at most ecological reserves is a current inventory. An inventory enumerates the biological and cultural resources on a reserve which serves as a foundation for future management and research activities. This information may also be used to measure changes on a reserve.

Research is often conducted on

ecological reserves to systematically answer specific questions. The answers to these questions assist managers in identifying the most appropriate management approach for a reserve, or portion of a reserve. Examples of research projects conducted on ecological reserves include estimates of population sizes over time for a species occurring on a reserve, studies of hydrological effects of proposed management scenarios, studies of the effects of disturbances such as fire and flood on vegetation, and studies of habitat use by species over time. Research results are used to optimally manage ecological reserves for the species and habitats they protect.

Ecological reserve managers use habitat management and habitat restoration to improve the conditions for plants and animals which live or could live on the ecological reserves. Habitat management and restoration projects include burning or mowing vegetation to reduce competition from exotic plants and to improve survival of native plant and animal species, restoring soil topography to provide refuge for animals and habitat for a diversity of native plants to grow, adding structures to creeks to give fish places to hide and reproduce, and dredging coastal lagoons to maintain river flows.

Monitoring measures the changes in habitats or species characteristics prior to and following a management action or other environmental change. Monitoring informs managers of the degree and nature of change, whether positive or negative. Based on the results of monitoring, ecological reserve managers determine whether management actions are successful or need to be refined for the benefit of rare species or habitats.

Public use management on ecological reserves involves development and enforcement of rules and regulations, installation of fences, gates and signs, construction of facilities such as restrooms, visitors centers and research facilities, and development of educational materials and programs. Only public uses which are compatible with the protection of rare species and habitats are permitted.

The degree to which an ecological reserve requires these management actions depends on the nature of the reserve. Some reserves with sensitive, but stable populations or habitats, require little more than an inventory, management plan, periodic monitoring, and installation of fences and signs. Minimal outside interference is needed to protect the sensitive species and communities in a healthy state. This minimal sort of management is often referred to as "custodial" management. Ecological reserves such as Apricum Hill and Loch Lomond Vernal Pool are managed using the custodial approach. Other reserves require more active management for the benefit of the species or habitats to be protected, or to sustain higher levels of public use and education, such as Santa Rosa Plateau and Upper Newport Bay. Although management of California's ecological reserves is primarily the responsibility of DFG, the Department frequently partners with other agencies, universities, non-profit organizations, and the public to achieve management goals of mutual interest. Volunteers are also indispensable in the collection of research data, conducting habitat improvements, maintaining and improving facilities, and providing educational and recreational opportunities for the public.

Sound stewardship of California's ecological reserves ensures these lands will continue to make a significant contribution to conservation of California's biological diversity and to the enjoyment of California residents for generations to come.

Kari Lewis is a Senior Wildlife Biologist with Lands and Facilities Branch and coordinator of the ecological reserve system.

DFG plant ecologist inventories vernal pool plants. *DFG photo by Kari Lewis*

Lightfooted clapper rail, Upper Newport Bay. *DFG photo by Ray Williams*

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