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An Interim Management Plan for Arroyo Hondo Preserve
A Project for the Land Trust for Santa Barbara County
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The 316-hectare (782-acre) Arroyo Hondo Preserve (Figure 1) is located along the Gaviota Coast, 48 kilometers (30 miles) west of Santa Barbara, California. Recently purchased by the Land Trust for Santa Barbara County, the property is known for its significant natural, historical, and scenic values. The acquisition offers a unique opportunity to protect an entire coastal watershed, as it provides a link between the coast and Los Padres National Forest in the upper portion of the watershed. Arroyo Hondo Creek and its associated riparian woodland and coastal lagoon provide habitat for two federally endangered species, southern steelhead trout (*Oncorhynchus mykiss irideus*) and tidewater goby (*Encyclogobius newberryi*), and the federally threatened California red-legged frog (*Rana aurora draytonii*). The Preserve has a rich human history, and contains the remnants of Native American, Spanish, Mexican, and early American occupation, including a buried Chumash village and an adobe built in 1842.

Purpose

To provide an initial framework for stewardship of the Preserve, the Land Trust for Santa Barbara County partnered with the Bren School project team to develop an Interim Management Plan. The purpose of this plan was to assemble existing information regarding the resources of the Preserve and provide the Land Trust with management and stewardship guidance for the first 3 to 5 years of operation. The goal of the management plan was to develop management strategies to protect the natural, cultural, and historical resources of the Preserve, while providing opportunities for compatible public use, including outdoor education, recreation, and scientific research.



Photo: W. Sears

Figure 1. Arroyo Hondo Preserve.

Significance

The Land Trust's primary tool for conservation is the purchase of easements as opposed to fee title acquisition. Arroyo Hondo Preserve represents the first property that the Land Trust will actively manage itself. This coupled with the multiple objectives of the Preserve make the development of a plan that addresses potential conflicts and identifies management priorities essential for the Land Trust.

Regional Setting

The Gaviota Coast region (Figure 2) is home to approximately 1,400 plant and animal species, including 140 endemics, 13 threatened and endangered species, and 54 species of concern^{2,3}. An important ecological transition zone, the region supports a diverse intermingling of northern and southern plant and animal species^{4,5}.

Arroyo Hondo Preserve Quick Facts

- ❖ 316-hectare (782-acre) natural preserve, located along the Gaviota Coast, 48.2 kilometers (30 miles) west of Santa Barbara, California.
- ❖ Three federally listed species within the Preserve boundary: southern steelhead trout, tidewater goby, and California red-legged frog. Important habitats include a relatively intact riparian corridor and coastal lagoon.
- ❖ Historical and cultural resources include a buried Chumash village and the Ortega adobe, built in 1842.
- ❖ 5.2 kilometers (3.2 miles) of existing trails; opportunities for educational, recreational, and research use.
- ❖ 15 acres of avocado and citrus orchard.
- ❖ For additional information, call the Arroyo Hondo Preserve Information Line: (805) 567-1115.



Physical Setting

The Preserve occupies roughly 30 percent of the Arroyo Hondo watershed (Figure 3) and provides an important corridor between Los Padres National Forest to the north and the Pacific Ocean to the south, benefiting both wildlife and the recreating public. The underlying bedrock of the Preserve is mostly sedimentary rock, with clays and sandy loams on the surface.

Approach

The first step in developing appropriate management strategies for the Preserve involved identifying the goals and objectives of the Land Trust. Existing data was collected to characterize and assess the current status of resources on the property; data collection was complemented with site visits by the Bren project team. Information was then synthesized and a geographic information system database was created. Existing information on the biological resources at the Preserve is sparse; the lack of baseline data for the Preserve is a potential limiting factor in its effective management.

A threats-based approach was used to ensure that management of the Preserve minimizes existing and potential stressors. Conceptual models (Figure 4) were developed to illustrate the effects of primary stressors at the Preserve help formulate management actions and monitoring schemes to address them.

The project team divided the management strategies into eight sections, representing the primary areas of concern for managing the Preserve:

1. Species and Habitat Conservation
2. Restoration and Enhancement
3. Exotic Species Management
4. Fire and Vegetation Management
5. Historical and Cultural Resource Management
6. Public Use: Education, Recreation & Research
7. Agricultural Management
8. Maintenance, Administration, and Planning



Figure 2. The Arroyo Hondo watershed and Gaviota Coast region.

The primary plant communities on the Preserve include non-native annual grasslands, riparian and oak woodlands, chaparral, and coastal sage scrub. Most of the endangered and threatened species at the Preserve are found within Arroyo Hondo Creek’s riparian vegetation and the coastal lagoon at its mouth.

Management Issues

While there are many challenges to effective preserve stewardship, a few key management issues need to be addressed to ensure the protection of the biodiversity and resources found at the Preserve. The presence of exotic plant species has serious implications for the biological resources present, as they out-compete native plant communities and degrade habitat for native wildlife. Natural and human-induced erosion is another management concern, since it can affect sedimentation, loss of species and habitat, and public safety. Public use should be carefully monitored since overuse or misuse can lead to adverse impacts on the Preserve’s resources and hinder the Land Trust’s ability to effectively manage the property.



Given the goals of the Land Trust and the lack of baseline information in many cases, the project team used the precautionary principle in developing many of the management actions. This approach helps to ensure that resources are protected in the face of uncertainty. Principles of adaptive management are incorporated into the management strategies to assist in evaluating the impacts of management actions on resources over time, and provide for changes in management strategies.

will be essential in assessing the impacts of Preserve activities on special status species and habitats.

Restoration and Enhancement

Goal: To the extent feasible, restore and enhance native plant communities, degraded landforms, aquatic habitats, and physical processes to provide for diverse, self-sustaining ecosystems within the Preserve.

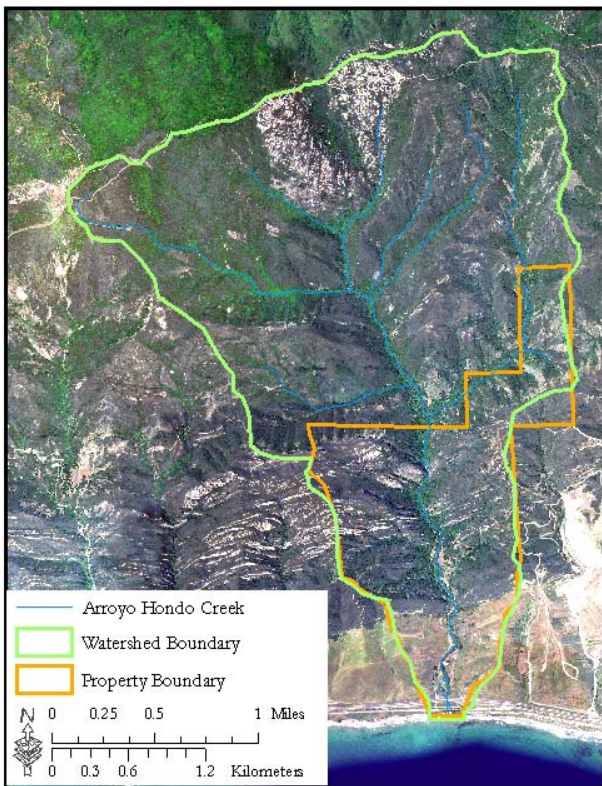


Figure 3. Arroyo Hondo Preserve and watershed.

Management Strategies

Species and Habitat Conservation

Goal: Protect and facilitate the recovery of endangered, threatened, and sensitive species within the Preserve (Figure 5).

Interim Actions: Short-term actions aim to minimize the impacts of public use and Preserve operations on sensitive species. Closing unnecessary stream crossings and discouraging off-trail travel are two primary protection measures.

Long-term Recommendations: The establishment of a natural resource inventory and monitoring program

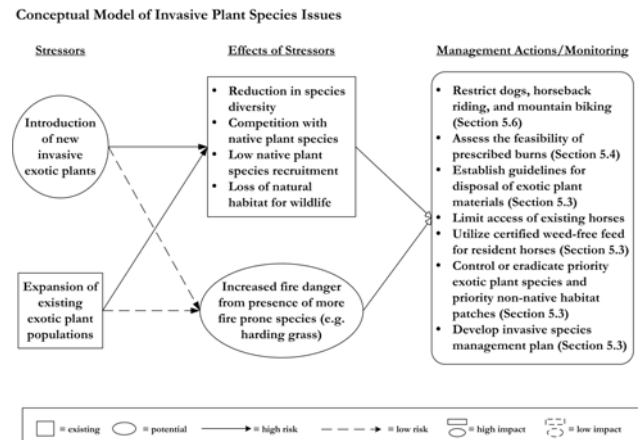


Figure 4. Example of conceptual model used to identify stressors and formulate management strategies.

Interim Actions: Short-term actions consist primarily of controlling or eradicating invasive exotic plant species, reducing barriers to upstream migration by southern steelhead, and assessing the impact of erosion on resources.

Long-term Recommendations: The scope and inter-related nature of restoration opportunities will require the development of an integrated Restoration and Enhancement Plan to provide coordination and planning support for restoration and enhancement activities.

Exotic Species Management

Goal: Protect the integrity of native plant communities through eradication and control of invasive non-native plants throughout the Preserve, in conjunction with Restoration and Enhancement goals and objectives. Prevent the establishment of additional invasive non-native plant and animal species on the Preserve.

Interim Actions: Short-term actions include initial efforts to control invasive exotic plant species and minimize the introduction of non-native plants by utilizing weed-free feed for resident horses.



Long-term Recommendations: A long-term control, eradication, and monitoring program should be developed and implemented as part of the Restoration and Enhancement Plan.

Fire and Vegetation Management

Goal: Manage fire risks to protect visitors, staff and infrastructure, and reduce the likelihood of catastrophic wildfire events. Where possible, fire and vegetation management techniques that maintain and enhance native plant communities and habitat diversity should be utilized.

Interim Actions: Short-term actions will reduce fire risk near structures and facilities by providing defensible space, reducing potential sources of ignition and establishing emergency procedures.

Long-term Recommendations: Prescribed fire can be a useful tool for managing vegetation, controlling exotic plant species, and enhancing habitats. The Land Trust should assess the feasibility of using prescribed fire at the Preserve, in coordination with the Vegetation Management Program administered by the California Department of Forestry and Fire Protection.

Historical and Cultural Resources Management

Goal: Preserve the historical and cultural features of the Preserve and enhance the public appreciation of these resources.

Interim Actions: Short-term actions will include seeking historical landmark status for the Ortega Adobe and cataloging photos and writings pertinent to the history of Arroyo Hondo.

Long-term Recommendations: The Land Trust should work towards the interpretation and representation of the history of Arroyo Hondo, including the Chumash, Spanish-Mexican, and early American eras.

Public Use

Goal: Provide a popular destination for outdoor education, passive recreation, and research along the Gaviota coast without jeopardizing the natural and cultural resources present on the Preserve.

Interim Actions: Short-term actions will focus on developing programs to support public use and ensure

public safety. Visitor guidelines will be developed to provide for sustainable use of the Preserve.

Long-term Recommendations: The Land Trust should develop a program to monitor the impacts of public use on the preserve and enforce guidelines intended to protect natural resources.

Agricultural Management

Goal: Maintain small-scale agriculture at Arroyo Hondo Preserve consistent with resource protection to provide opportunities for interpretation of regional agricultural history and organic orchard management techniques.

Manage orchards to provide financial support for Preserve operations.

Interim Actions: Short-term actions will focus on orchard maintenance and weed abatement measures.

Long-term Recommendations: The Land Trust will need to determine the extent of the eastside orchard to maintain in the future.



Photo: Dan Dugan

Figure 5. An adult southern steelhead trout in the lagoon at Arroyo Hondo.

Maintenance, Administration, and Planning

Goal: Provide the necessary infrastructure, maintenance, and planning to protect the Preserve's natural and cultural resources and support compatible public use of the Preserve.

Interim Actions: Short-term actions will establish the infrastructure necessary for public use.

Long-term Recommendations: In the future, the Land Trust may develop permanent facilities for public use, including restrooms and group camping facilities. The existing trail system may be expanded to include connections with other regional trail systems.

1. Faculty Advisors: John Melack Ph.D. and Sandy Andelman Ph.D.
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