

CARNEROS CREEK WATERSHED MANAGEMENT PLAN

Napa County Resource Conservation District · 1303 Jefferson Street, Suite 500B · Napa, CA 94559 · (707) 252-4188 · www.naparcd.org

HISTORY OF WATERSHED DEVELOPMENT AND MANAGEMENT

An understanding of how human use of the land has changed through time and how those uses have transformed physical processes within the watershed is an important part of developing a watershed management plan for Carneros Creek. Documenting land use change helps us to assess how creek and landscape function and quality have changed in relation to human influences. In addition, an understanding of historic land use and watershed conditions helps ensure that management and restoration recommendations are based on local landscape characteristics, rather than regional assessments. Figure 3 and the following summary of development in the watershed demonstrate the primary management activities that have occurred and their relative intensity over time. Further information regarding the history of the Carneros Creek watershed can be found in the Reference Document that accompanies this management plan and in the Historical Ecology technical report that was completed as part of the watershed assessment.

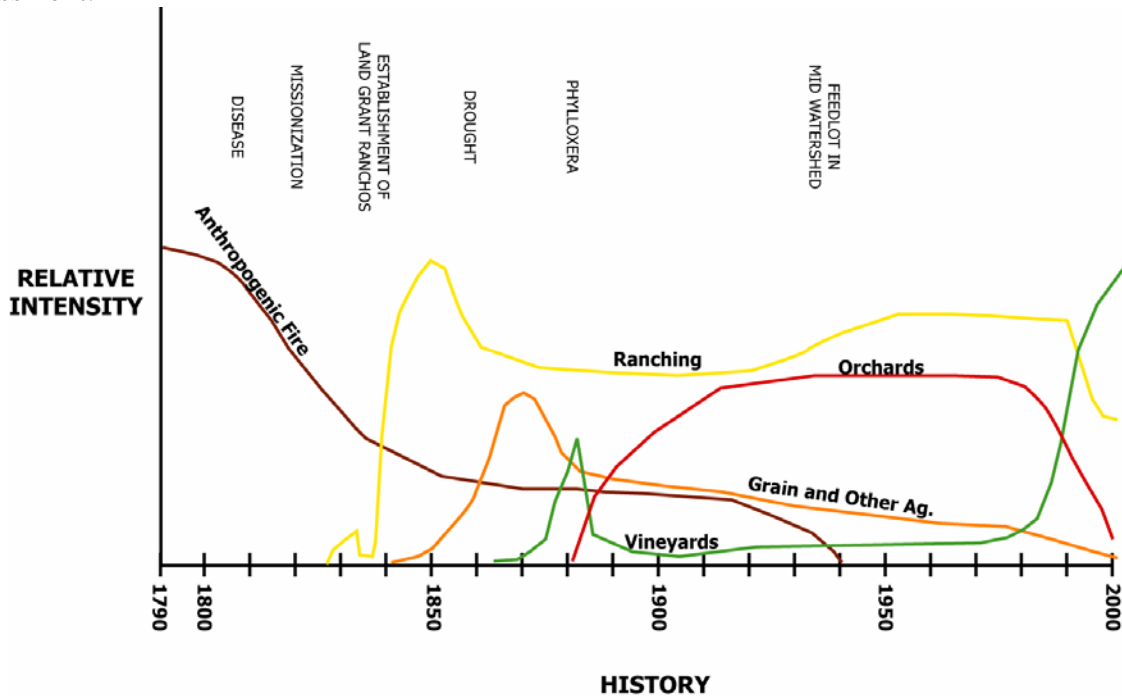


Figure 3: Qualitative summary showing the relative timing and intensity of major land management activities in the Carneros Creek watershed over the past two centuries. Intensities are not necessarily comparable across categories.

Source: San Francisco Estuary Institute, 2002

The Carneros Creek watershed has been shaped by a unique and intense land use history spanning more than 200 years. For many centuries prior to European contact, native peoples inhabited the Carneros region and managed the landscape in particular ways to meet their needs. In fact, some of the earliest recorded accounts of Carneros Creek describe the native peoples' use of controlled burns to manage vegetation patterns and improve hunting conditions.

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By the time the Sonoma Mission was founded in 1823, signifying permanent establishment of the Euro-American culture in the North Bay, the original Native American villages were largely depopulated as a result of disease and recruitment to Mission Dolores in San Francisco.

Operation of the Sonoma Mission during these first few decades of the 19th century marked a significant change in land management where management practices shifted from the traditional subsistence-based techniques used by the Native Americans to practices oriented around open range ranching. These first Euro-American settlers, who rapidly established sheep ranches throughout the valleys of the North Bay, quickly impacted the Carneros Creek watershed.

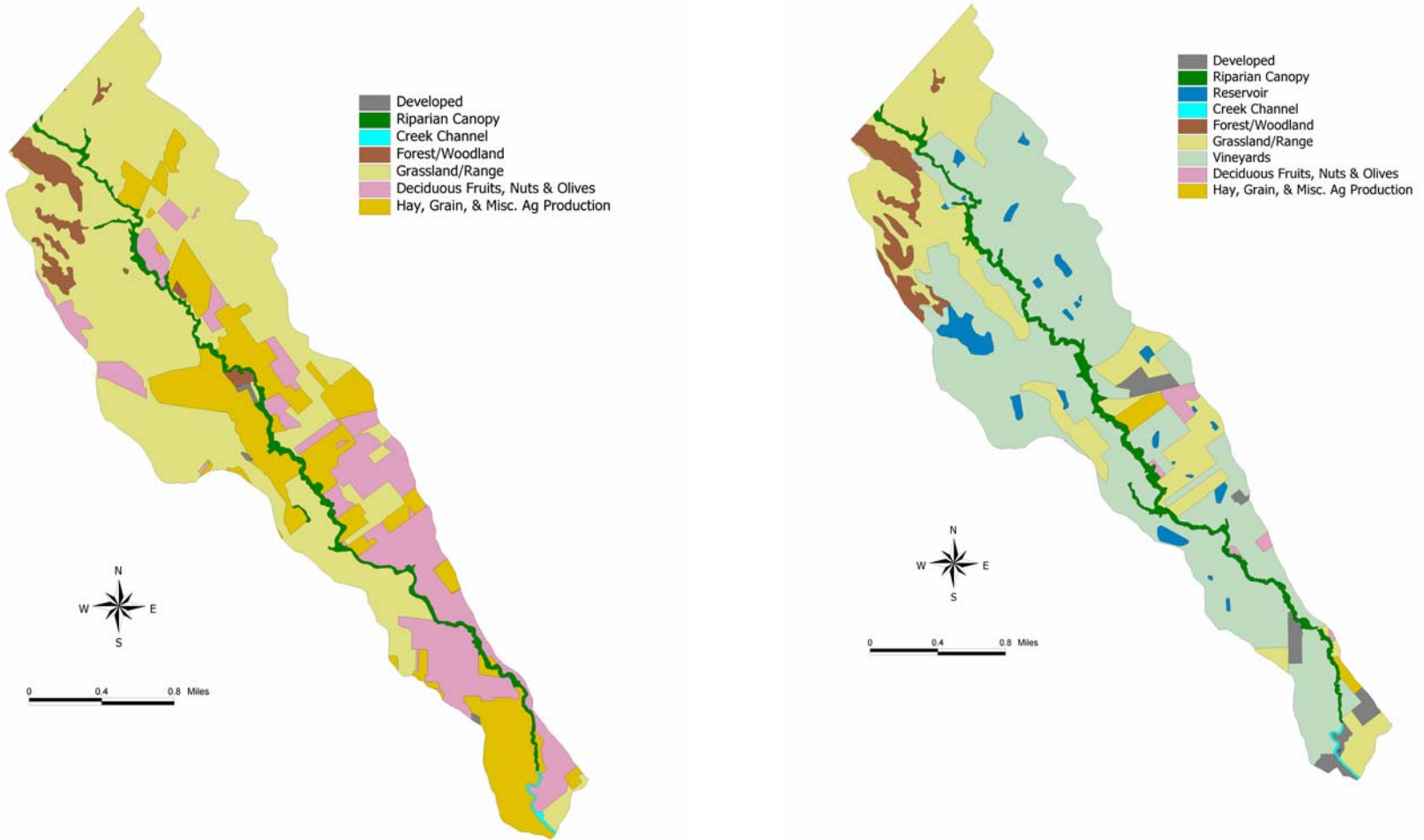
Operation of the missions ceased in 1834 and the Carneros Creek watershed became part of several land grant ranches and experienced more intensive grazing and some agriculture, primarily production of hay and grain. After the assumption of American control in 1848, agriculture expanded relatively rapidly, primarily consisting of hay, grain and grazing. Grain production and grazing land uses continued to be significant through the 19th and mid-20th centuries, particularly in comparison to other parts of Napa Valley.

As in other parts of the Valley, vineyards were developed in the 1870s and 1880s, only to be lost to the *phylloxera* crisis of the late 19th nineteenth century. The vineyards were replanted with orchard fruits, especially apricots, cherries, and pears. A major shift began in the 1970s, when vineyards returned to the area. Comparison of aerial photographs from the 1940s and the 1990s shows a major conversion in land use in the lower portion of the watershed from a mix of orchards, range, and other agriculture prior to World War II to a landscape primarily dedicated to vineyards (Figure 4). Also notable in Figure 4 is the increase in the numbers of reservoirs and ponds that has occurred over the past few decades as agricultural practices have shifted away from dry farming.

This complex and changing land use history has modified the watershed in many ways. Yet, compared to most other parts of the Bay Area, land use around Carneros Creek has caused fewer fundamental alterations to the stream channel and basic creek processes-- with relatively few road crossings, no railroad crossings, and no major dams or flood control projects. Several inherent geographic and physical characteristics of the watershed have also helped limit population expansion and maintain ecological resources. These factors include relatively limited groundwater, relatively low yielding and unstable soil (which is difficult to farm), a naturally narrow, single-thread channel stream connecting to the bay lands, and Carneros' unique geographic position slightly removed from the major fertile valleys of the North Bay and bordered by the vast Napa-Sonoma marshlands. Effective local preservation efforts have protected these attributes. As a result, the watershed has maintained a relatively high quality of ecological resources through history and displays significant potential for restoration and enhancement of stream, valley, and hillside habitats.

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*Figure 4: Land use and major vegetation types in the lower Carneros Creek watershed circa 1940 (left) and 1993 (right).
Source: San Francisco Estuary Institute, 2002*

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It is clear that the Carneros Creek watershed has been managed for human use for over two hundred years, from the controlled burning of vegetation by indigenous tribes to more recent rural residential and vineyard development. Given that the watershed will continue to support human land uses into the future, the question becomes how to better integrate human land uses with the function and needs of the watershed. The following section discusses the results of these land use impacts on the watershed by describing the current condition of significant ecological and landscape characteristics in the Carneros Creek watershed.