

ground sites available for weeds, or alternatively, turned into a garden plot (see VZ12) and/or nursery (see VZ7D). Furthermore, a healthy orchard would increase habitat for bees, butterflies and other insects (food for birds).



Negative Impacts

The orchard area has been extensively disturbed over a long period of time and is devoid of native vegetation. The proposed action would further disturb the soil surface. Dust and noise would be short-term impacts associated with planting activities. It is possible that rabbit herbivory would have to be controlled either by constructing exclosures around the plantings, protecting individual plants, and/or reducing the rabbit population to levels found outside the monument. These measures would be required until the plantings become well established and for some of the fruit trees protection may need to be permanent.

- 7B Action: Ground surface beneath orchard is prone to invasion of exotics making it difficult to maintain. The lack of ground cover may be causing a concentration of salt in the soil. Plant a cover crop in the orchard.**

Lucerne (alfalfa) was commonly present in 19th C orchards, used for forage, improvement of the soil, and as a potential cash crop. Accounts from the Woolley occupation period suggest that alfalfa was grown down-slope from the ponds,

perhaps in the area of the existing large, “west” or “south” corral (Shapins Associates 2006, 14). Planting with an annual cover such as perennial ryegrass to serve as a temporary nurse crop would assist in the establishment of alfalfa. Occasional renovation of alfalfa will be necessary as its vitality deteriorates after a number of years, requiring rotation with wheat or ryegrass for a two year period prior to replanting.

Positive Impacts

A cover crop would stabilize exposed dirt surface, reducing dust. Once established, it would out-compete invasive weeds. An alfalfa cover crop would add nitrogen to the soil. It would also reduce soil temperatures, potentially resulting in increased water retention. (This point is debatable, as noted under negative impacts).

Negative Impacts

The orchard area has been extensively disturbed over a long period of time and is devoid of native vegetation. The proposed action would further disturb the soil surface temporarily. Dust and noise would be short-term impacts associated with planting activities. It is also likely that rabbit herbivory would have to be controlled either by constructing exclosure around the entire orchard area, and/or reducing the rabbit population to levels found outside the monument. These measures would be required until the cover became well established. A cover crop of alfalfa could compete with the trees for available water since it is a deep-rooted species. Periodic revitalization (approximately ten year cycles) will require some investment of time and energy.

7C Action: Reconstruct surface flow system utilizing gravity flow from pond for historical interpretation, retaining the existing pressurized system as back-up in the event of low spring outflow.

Positive Impacts

The use of spring water from pond run-off in a gravity flow is historically accurate, and offers a valuable interpretive opportunity. It also addresses PISP goals to maximize use of available spring water and minimize use of piped culinary water.

Negative Impacts

The orchard area has been extensively disturbed over a long period of time and is devoid of native vegetation. The proposed action would further disturb the soil surface temporarily. Dust and noise would be short-term impacts associated with demolition and construction of a new irrigation system. Uncertainty of long-term water availability from springs creates a degree of risk. Surface irrigation is more labor intensive, requiring staff time.