

PRACTICAL TECHNIQUES FOR VALLEY ELDERBERRY LONGHORN BEETLE MITIGATION¹

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The valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) is a live-wood pith-boring beetle of the family Cerambycidae. Elderberry (*Sambucus* spp.) shrubs are the beetle's exclusive host plant. The valley elderberry longhorn beetle (VELB) is classified as a threatened species by the U.S. Fish and Wildlife Service. The VELB is sporadically distributed in the Sacramento and San Joaquin Valleys from Red Bluff to Fresno, California.

This poster presentation describes mitigation measures for VELB habitat loss that has resulted from public and private development at sites along the Sacramento and American Rivers.

Mitigation Techniques and Project Examples

When designing a mitigation program for VELB, it is essential to consider the ecological characteristics of both the VELB and the elderberry host plants, site conditions at both the impact site and the mitigation site if offsite mitigation is used, and the importance of proper timing when dealing with natural systems.

The best way to mitigate project impacts is to build protection of existing elderberry habitat into the project. This is difficult in urban settings where public use and activities reduce the potential for long-term survival and regeneration of elderberry shrubs.

Transplanting Mature Shrubs

Where preservation of habitat in place is not possible, mitigation programs can include habitat enhancement offsite. Transplanting mature elderberries occupied by VELB to a new site is one way to mitigate by offsite habitat enhancement. Unlike offsite mitigation using elderberry seedlings or rooted cuttings, the transplanting of mature plants, if successful, can also translocate VELB larvae within stems to the new site. Successful transplanting of mature elderberry plants when the plants are dormant (approximately November through the first two weeks of February)

Foliage and stems should be pruned to reduce the shoot:root ratio and thus reduce transpirational load until the root system reestablishes. In addition, transplanted shrubs should be irrigated on a schedule that will gradually wean them from artificial moisture supplies. The large-diameter plant material pruned from mature elderberries also should be moved to the transplant site because larvae inhabiting the prunings may emerge as VELB adults during the spring emergence period and lay eggs on the transplanted elderberries.

As mitigation for a large land development project, mature elderberry plants were moved by Jones & Stokes Associates to a parcel deeded to the county as an addition to the American River Parkway. Approximately 80% of the transplanted plants were surviving after the first growing season.

Revegetating with Seedlings or Rooted Cuttings

Elderberry seedlings or rooted cuttings also can be used for offsite habitat enhancement or compensation. An ideal offsite mitigation plan would use young plants in combination with transplanted mature plants.

The easiest way to grow young plants for revegetation is from seed. If seed is not available, cuttings can be taken either in the dormant season as hardwood cuttings or in the spring as softwood cuttings.

Rooted cuttings planted by the California Department of Water Resources in the American River Parkway as mitigation for a floodway vegetation removal program are in their second growing season after planting. The plants were irrigated regularly through the first growing season (every 10 days to 3 weeks). The watering was reduced in the second season, and no watering will occur in following years. The plants had a high survival rate of about 90% after the first growing season, and at the end of the second year well over 50% are still thriving.

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Figure 1- Adult VELB emergence hole in an elderberry stem.

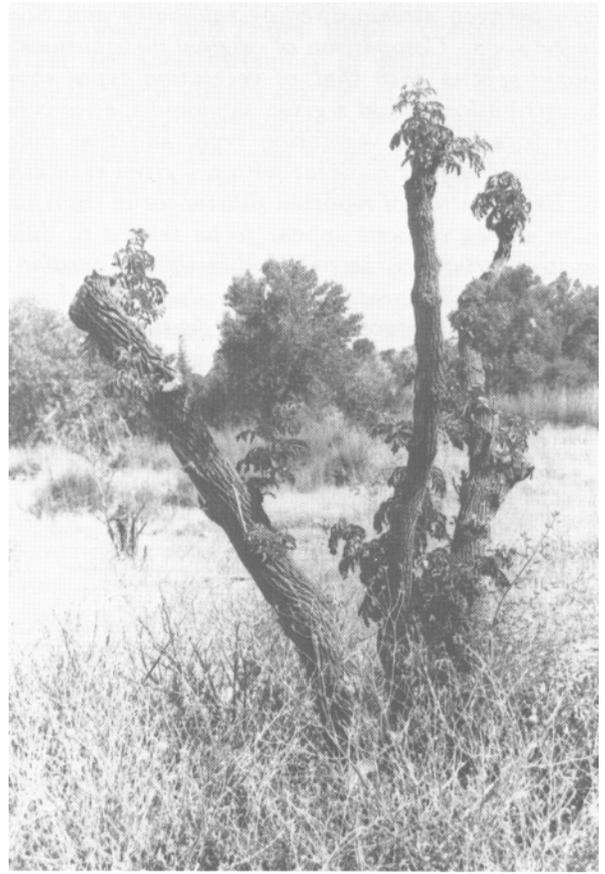


Figure 2- A mature elderberry plant heavily pruned for transplanting with many new sprouts after planting.

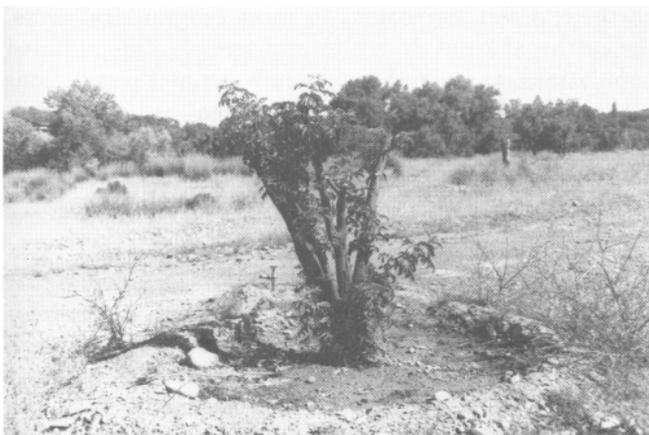


Figure 3- A transplanted elderberry shrub with vigorous new growth. Notice the large watering basin.



Figure 4- Routed elderberry cuttings ready to be planted.