**McCormack-Williamson Tract Vegetation Survey**

# Introduction:

McCormick/Williamson Tract (MCWT) is a delta island located downstream of the confluence of the Cosumnes and Mokelumne Rivers. The inside of the island is currently farmed. The levees around the island support a remnant string of riparian species. The vegetation on the levees does not correspond with any currently described California Native Plant Society vegetation series identified in "A Manual of California Vegetation". The riparian species found on the levees are identified in different series but the species composition does not reflect any specific series. The creation of a new series was not conducted with the baseline survey because of the existence of invasive shrubs and trees and the highly modified environment (rip rap, levees, etc.). The baseline survey of vegetation does indicate a need for additional research, potential restoration sites, and a list of species to be used in future restoration of the island.

# Methods:

In the summer of 2001 a baseline vegetation survey was conducted on the levee vegetation. The vegetation was surveyed every 200 meters around the island. At each sample site a GPS point was recorded, and cover classes were assigned to each species in a 1 meter band from the top of the levee to the river and again from the top of the levee to the floor of the island. TWINSPAN was used on the vegetation data to identify potential vegetation communities. The four communities identified by TWINSPAN were mapped as point locations using ArcView3.2. The species identified as dominate are listed in Table 1. Other species were identified in the survey but were not considered dominate species.

# Results:

Four vegetation communities were identified using TWINSPAN. The southeast side of the island (Figure 1) is a mix of the four vegetation types with two of them occurring most frequently. Community 1 is a shrub dominated community with Rosa californica and Vitis californica occurring most often and dominating the cover. The tree layer contained several species with Franxinus latifolia, Robina pseudoacacia, and Salix lasiolepis dominating. Community 2 was also shrub dominated with Rosa californica, Vitis californica and Cyperaceae spp..The tree layer was dominated by alnus rhombifolia and Salix spp.. The west side of the island has very different vegetation and the communities are dominated by Rubus discolor. Community 3 shrub layer is dominated by Rubus discolor and Vitis californica. The tree layer is dominated by Quercus lobata and Salix lasiolepis. Community 4 is similar in the shrub layer being dominated by Rubus discolor but Rosa californica also is frequently found. The tree layer is composed mostly of Alnus rhombifolia, Quercus lobata, and Salix laevigata.

## Discussion:

The baseline surveys of vegetation on the MCWT indicate a need for further riparian vegetation surveys in the Central Valley that can be used for CNPS vegetation series. The dominate species on much of the levees is Rubus. Blackberry is associated with a few of the CNPS series but is not a dominant shrub and most of those series are coastal vegetation types. The dominance of blackberry in these communities and the prevalence of it in the rest of the CRP riparian habitat suggests that blackberry is associated with Central Valley Riparian vegetation. Further research needs to be conducted on the role of blackberry (native and non-native) in riparian habitats.

The area with the highest density of invasive trees was also identified from the survey data. The section is dominated by Black locus and Chinese tree of heaven. The patch is small enough at this time that it is still possible to control the spread and remove the trees. Is the loss of cover is a concern during the restoration then the removal could be spread over several years. In addition it can also be used as an adaptive management site for the control of invasive trees and the restoration of native species. Several removal methods could be tested along with testing the establishment of a variety of native species under the different restoration scenarios.

In addition to the research needs and the invasive species control the baseline surveys will provide a species list for the restoration managers. It is most likely that trees and shrubs currently found on the levees will have a high potential of survival in restoration sites and may provide a seed source for natural regeneration. In addition the species lists provide managers with a list of invasive species that will potentially be found in the restoration sites. The levee vegetation may not provide CNPS with a new series definition and should not be used as the reference site for restoration but it can help guide plant selection in the restoration of the island.

# TABLES:

| Community 1 | Scientific Name | Common Name |
|---|---|---|
| | Rosa californica | Wild Rose |
| | Vitis californica | wild grape |
| | Fraxinus latifolia | Oregon Ash |
| | Robinia pseudoacacia | Black locus |
| | Salix lasiolepis | Arroyo willow |
| Community 2 | | |
| | Cyperaceae spp | |
| | Rosa californica | Wild Rose |
| | Vitis californica | wild grape |
| | Poeaceae spp | Grasses |
| | Alnus rhobifolia | White Alder |
| | Salix lasiolepis | Arroyo willow |
| Community 3 | | |
| | Rubus discolor | Blackberry |
| | Vitis californica | wild grape |
| | Quercus lobata | Valley Oak |
| | Salix lasiolepis | Arroyo willow |
| Community 4 | | |
| | Rubus discolor | Blackberry |
| | Rosa californica | Wild Rose |
| | Alnus rhobifolia | White Alder |
| | Quercus lobata | Valley Oak |
| | Salix laevigata | Red Willow |

**Table1: The dominant species in the four vegetation communities identified on the outside of the levees on the McCormick/Williamson Tract.**

## Figures:

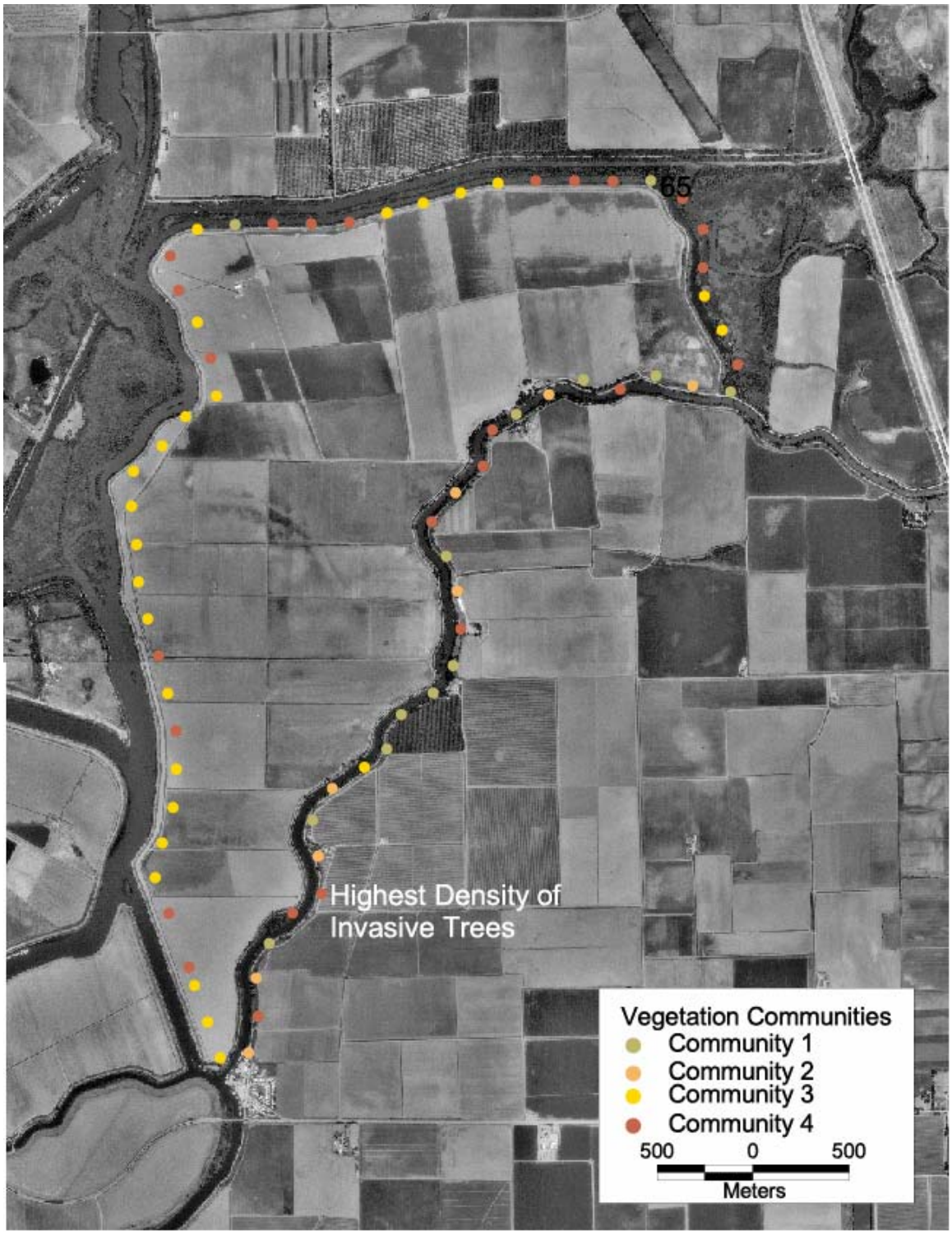


**Figure1: Vegetation communities on the McCormick/Williamson Tract levees.**