

US EPA ARCHIVE DOCUMENT



# Upper Santa Cruz River Riparian Vegetation Map Santa Cruz County

Riparian vegetation represents a small percentage of the land cover in Santa Cruz County but provides important services, functions, and benefits to the region. This first riparian vegetation map of the main stem of the Santa Cruz River provides information about the distribution, extent, and species composition of the riparian community and establishes a foundation from which to develop a comprehensive riparian conservation and floodplain protection program.



## Services Provided by Riparian Systems:

- Filter contaminants from effluent-dominated water before infiltrating into ground water drinking supplies;
- Slow flood waters;
- Reduce erosion potential along stream banks;
- Increase groundwater recharge;
- Provide habitat for resident and migratory wildlife species;
- Offer recreational opportunities to the local community (i.e. hiking, birding, picnicking);
- Increase property values of adjacent properties;
- Attract tourist dollars to the area.

## 5-Step Methodology to Create Riparian Vegetation Map

**Step 1:** Purchase high-resolution Quickbird satellite imagery of the Upper Santa Cruz River extending from the U.S./Mexico border to the Santa Cruz County/Pima County line.



**Step 2:** Combine satellite imagery with high-resolution aerial imagery. Identify major vegetation formations on the imagery (i.e. forest, woodland, etc.).



**Step 3:** Verify major formations on-the-ground. Record the three most dominant tree and shrub species in each formation. Note the presence of non-native vegetation species and health of vegetation.



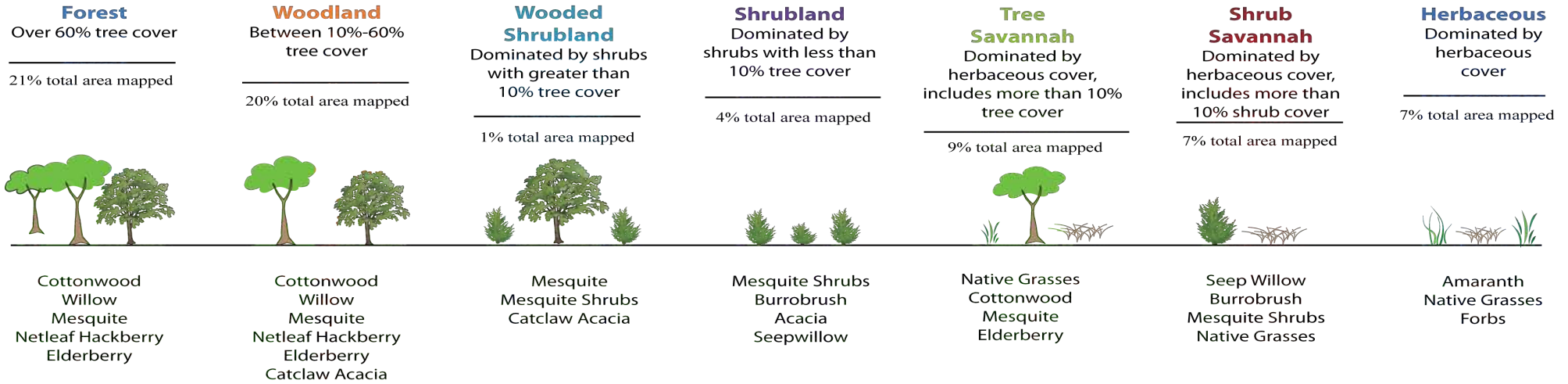
**Step 4:** Enter all field information into a Geographic Information Systems (GIS) database. Imagery, floodplain maps, and groundwater basins are also included in database.



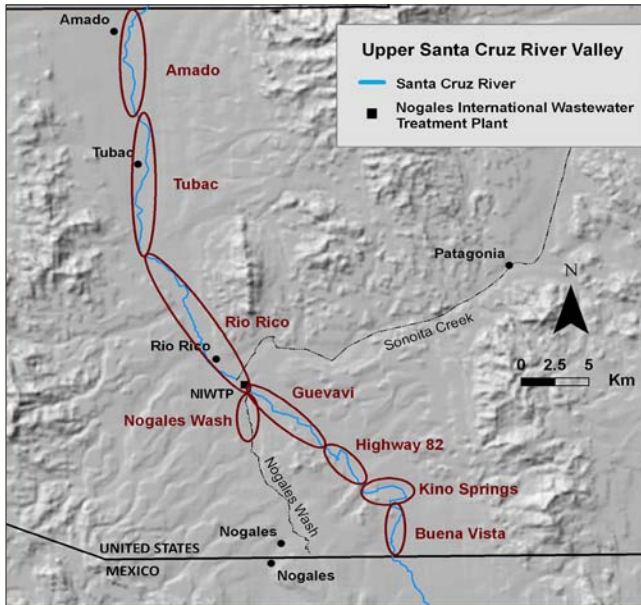
**Step 5:** Analyze vegetation patterns in comparison to groundwater basins and the floodplain. Give priority to areas of mature, complex, and diverse vegetation.

# Primary Vegetation Formations Represented on Map

## Includes description of formations and dominant species within each formation

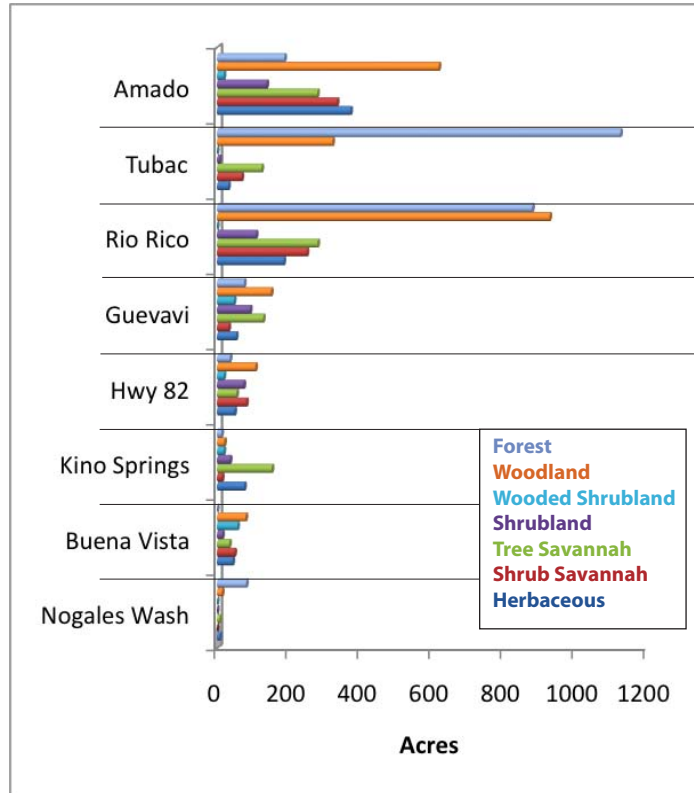


### Upper Santa Cruz River Groundwater Basins

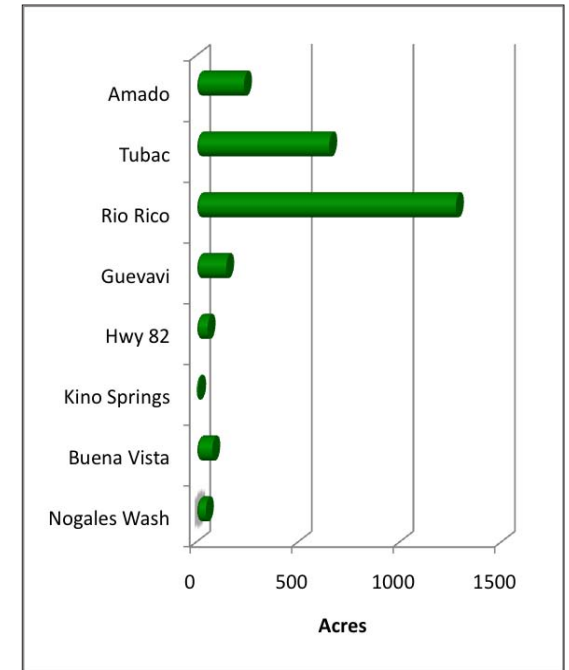


Groundwater recharges the stream from a series of small water tables immediately underlying the stream channel. Riparian vegetation patterns reflect the diverse hydrologic conditions of the river basin, and in particular are a visual indication of the depth to groundwater in underlying water tables.

### Distribution of Vegetation Formations Within Groundwater Basins



### Conservation Priorities Within Groundwater Basins



A total of 2,513.6 acres, or 22%, of the total area mapped was determined to be "complex, diverse, and mature" vegetation, and therefore a high conservation priority.