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Wetland Design and Monitoring

Tierra Rejada Vernal Pool, Ventura County, California

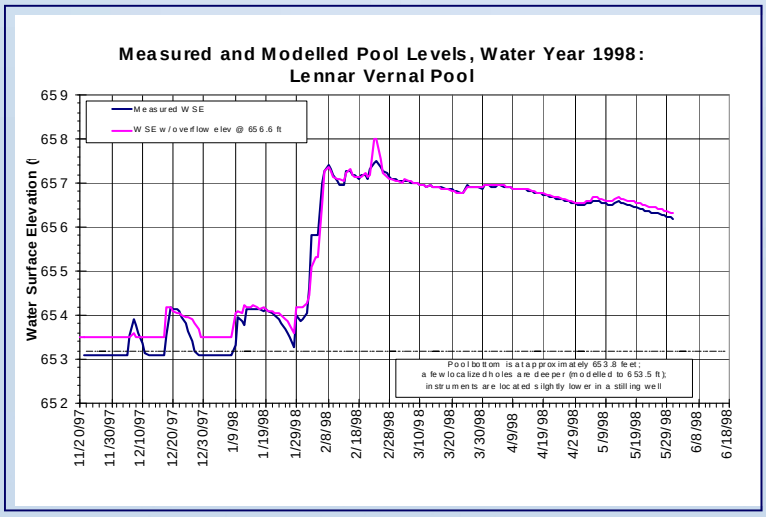
Vernal Pool from the top of its watershed

Background

This southern-California vernal pool only receives enough rainfall to become ponded one out of every 4 or 5 years. This vernal pool is home to endangered plant and animal species, and would soon be surrounded by suburban housing. Balance worked with the developer to design a runoff-routing system that protected water quality and maintained optimal watershed inflow to the pool.

Monitoring Components:

- Measured watershed parameters (such as infiltration rates and soil depth) and created a rainfall runoff model of the vernal pool and its watershed
- Monitored rainfall and water levels in the pool and piezometers to calibrate the model
- Monitored rainfall and water levels during and after housing construction to assess functioning of the pool with an altered watershed



Measured and modeled water level in the vernal pool

Vernal pool and homes in former watershed of pool

Project Team Accomplishments:

- Developing a robust model to evaluate hydrologic performance of the vernal pool
- Protecting the water quality of the vernal pool by excluding suburban runoff
- Maintaining optimal hydrologic inputs to mimic the pre-development pool ponding and response to rainfall