

# From Levelled Agricultural Field to Restored Vernal Pool Landscape: A Before-and-After Comparison of Physical Characteristics

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## Abstract:

The conversion of natural landscapes into economically profitable levelled agricultural fields has resulted in loss of many habitat types, including vernal pool complexes. Since restoration to an exact pre-disturbance condition is usually not feasible for many levelled agricultural sites due to the drastic changes to the landscape and underlying hydrological processes, mitigation efforts in these areas typically focus on landscape-level restoration to achieve an optimal mix of uplands and wetlands. In the summer of 2006, vernal pool habitat was restored by recreating supporting landscape systems on 80 hectares of levelled irrigated pasture that had been stripped of all native vernal pool morphology. Situated in southeastern Sacramento County, the site was chosen based on its potentially favorable soil conditions and the presence of surrounding natural and created vernal pool landscapes. Final habitat design was based upon shallow subsurface soil investigations of water restricting horizons (claypan and duripan) and analysis of existing vernal pools shapes and sizes. Construction of 327 vernal pools and connecting vernal swales was completed in the fall of 2006. This poster provides results from several landscape and geomorphic analyses that demonstrate how the restoration objectives were achieved and the resulting alteration of the landscape.

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