

A landscape photograph of a vernal pool. The foreground is filled with numerous small, bright yellow flowers. A body of water, the vernal pool, occupies the middle ground, reflecting the clear blue sky. The background shows a flat, green landscape under a vast, clear blue sky. In the distance, some utility poles and structures are visible on the horizon.

Assessment and Planning Support for
**Conservation of Key Remaining Vernal Pool
Landscapes in California's Great Valley and
Modoc Plateau Regions**

Presented by John Vollmar | Vollmar Natural Lands Consulting | November 19, 2020

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Introduction

Project team, project purpose, previous studies

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Project Progress

Status of current project



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Preliminary Results

Predictive maps for vernal pool fairy shrimp, vernal pool tadpole shrimp, succulent owl's clover. Habitat block selection.

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Discussion & Next Steps

Project Team

East Merced Resource Conservation District in partnership with Vollmar Natural Lands Consulting

- 20-year history of collaboration on vernal pool education and conservation projects
- Achieved 60K+ acres of habitat conservation, good relationships with ranch partners, numerous publications
- Highlights the value of public-private partnership

Project Funders

Total Budget: \$380K

Primary Funding:

USEPA WPDG: \$240K

Match Funding:

California State Wildlife Conservation Board (WCB): \$140K

Additional Funding

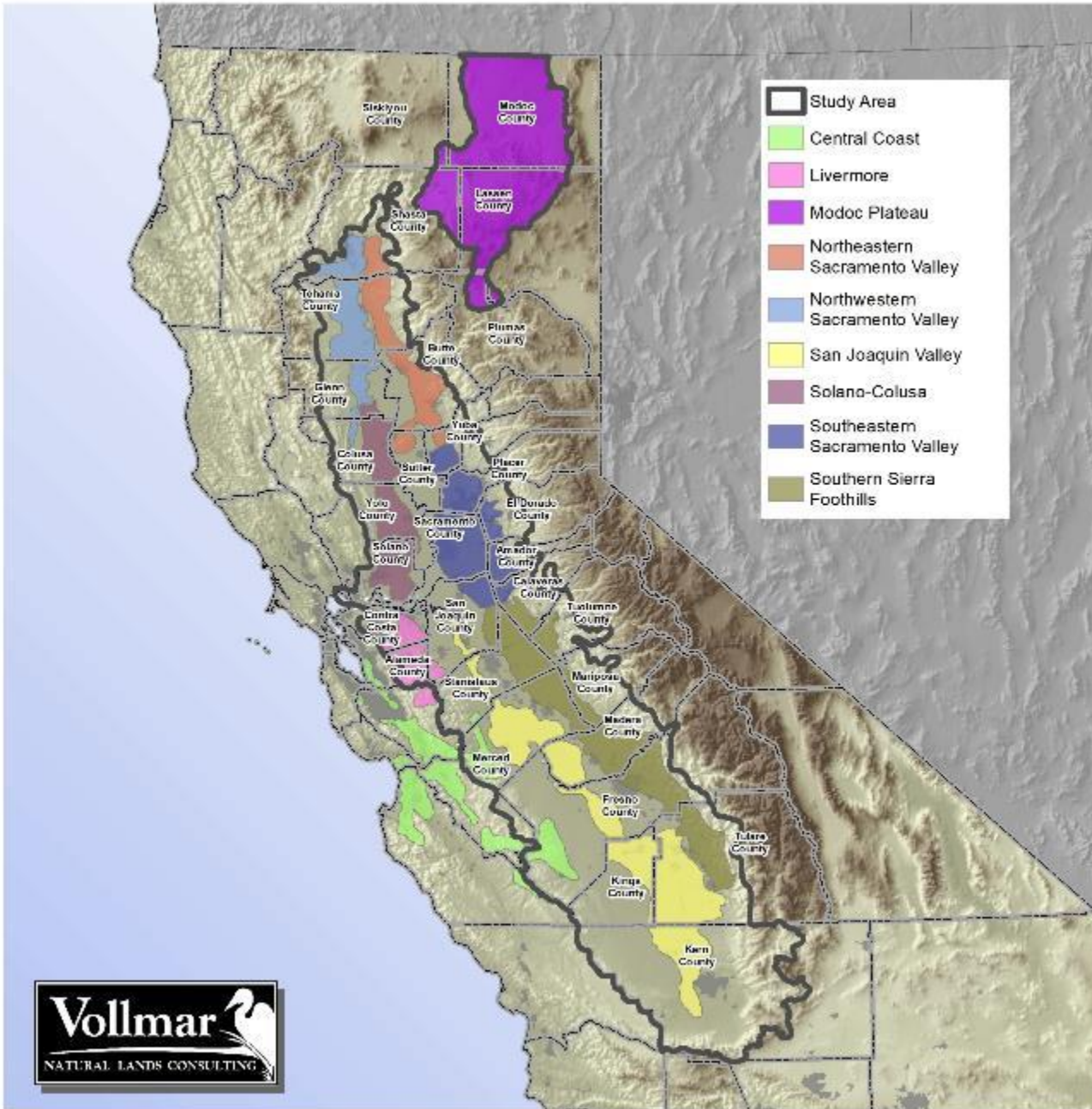
In-kind Contributions from Project Technical Advisors

Combined Federal/State Funding Partners Ensure Broad Awareness and Use of Project Outputs

Project Description & Purpose

Identify, characterize, and develop a conservation strategy for 4-5 large, remaining vernal pool habitat blocks in the eight defined Vernal Pool Ecoregions in California's Great Valley and Modoc Plateau regions

Study Area & vernal pool ecoregions



Study Background/Genesis

- Vernal pools are unique ephemeral wetlands with a high diversity of rare species – restricted to areas with Mediterranean climates, appropriate soils
- California arguably supports the most extensive and diverse vernal pool habitats in the world
- >90% of California's original vernal pool habitats have been lost since European arrival
- Remaining habitat is highly fragmented though some large, contiguous habitat blocks remain

Mapped Vernal Pool Habitats in the Great Valley



Study Background/Genesis

Previous USEPA WPDG-funded Study:



Study Background/Genesis

Key Findings of Previous Study:

VP habitat conservation has been achieved by:

- A focused awareness of specific conservation needs (species, locations)
- A dedicated core of individuals working over decades to achieve specific conservation goals

Most conservation has occurred outside of a formal government conservation plans (HCP/NCCP)

Study Background/Genesis

Current Study Builds on Key Findings of Past Study

- Focus on remaining large, contiguous blocks to preserve full suite of ecosystem functions
- Select a set of blocks for each VP Ecoregion that together conserves the suite of geomorphic and rare/native species characteristics unique to the ecoregion
- Habitats blocks profiled by study intended to become focal points for on-going conservation efforts through 'organic process' identified in previous study
- Results will be used by government resource agencies, non-profit conservation groups, private mitigation companies, etc. to conserve lands within identified blocks over the next 30 years

Study Tasks

Task 1 Convene and Communicate with Technical Advisors

Task 2 Identify Habitat Blocks by Vernal Pool Ecoregion

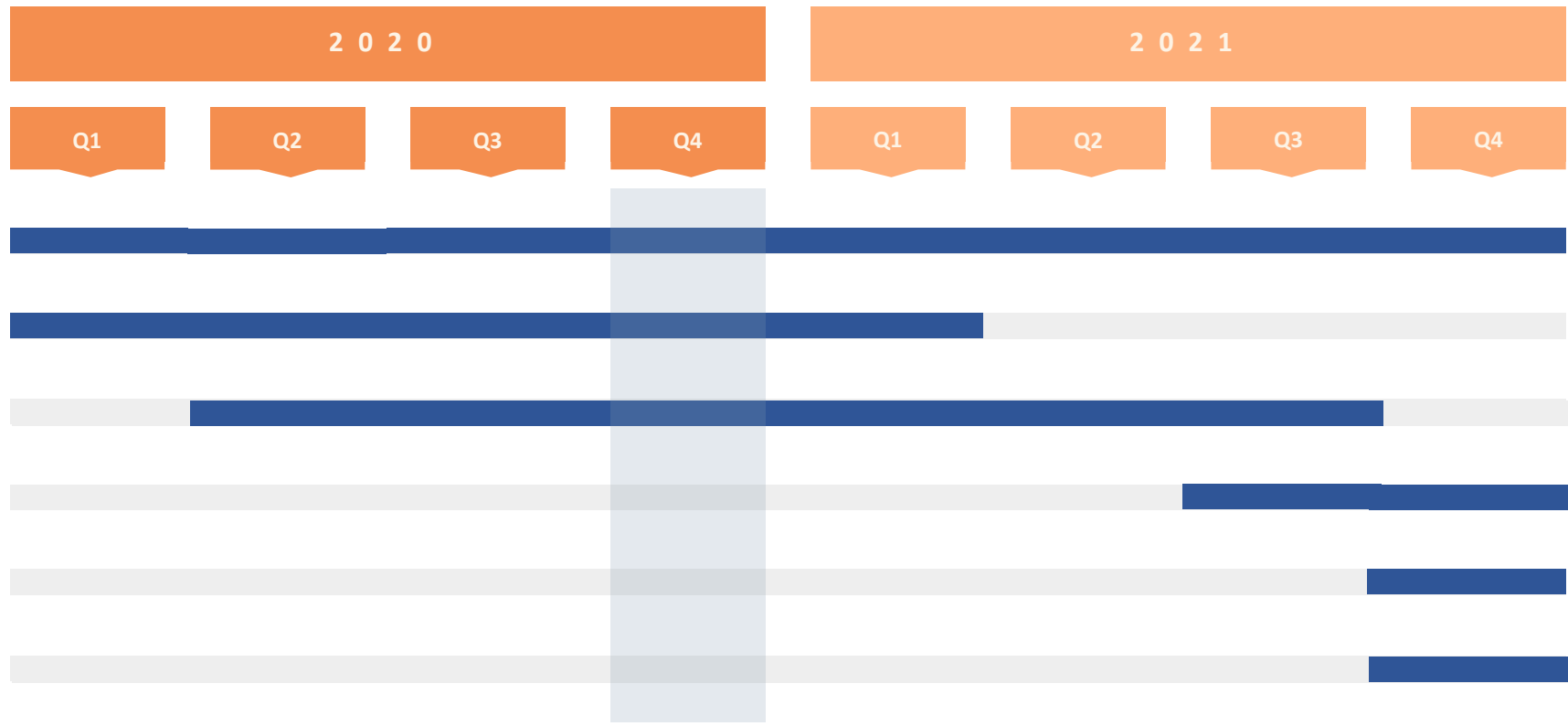
Task 3 Develop Profiles/Conservation Strategy Frameworks for Habitat Blocks

Task 4 Prepare Project Report and Geodatabase

Task 5 Disseminate Project Information and Data

Task 6 Track Ongoing Habitat Conservation/Restoration in Study Area

Progress



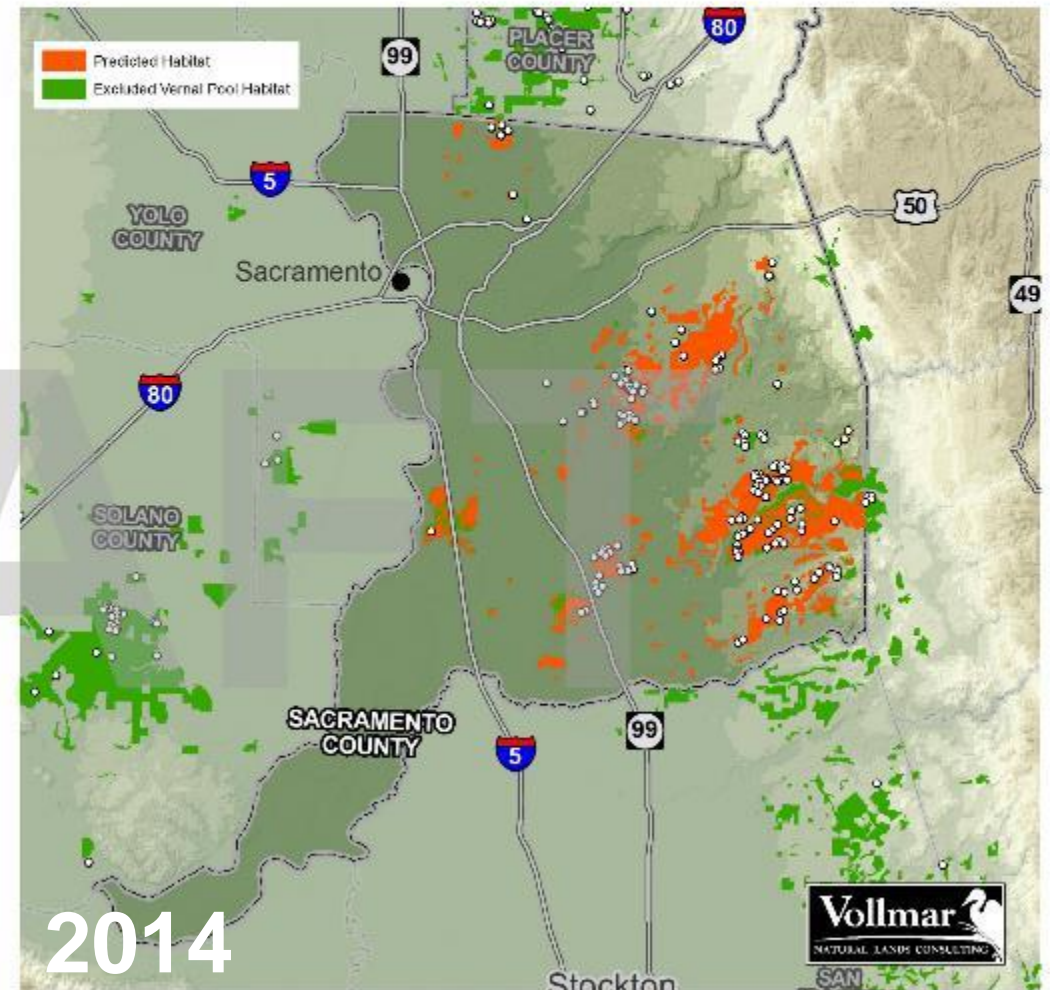
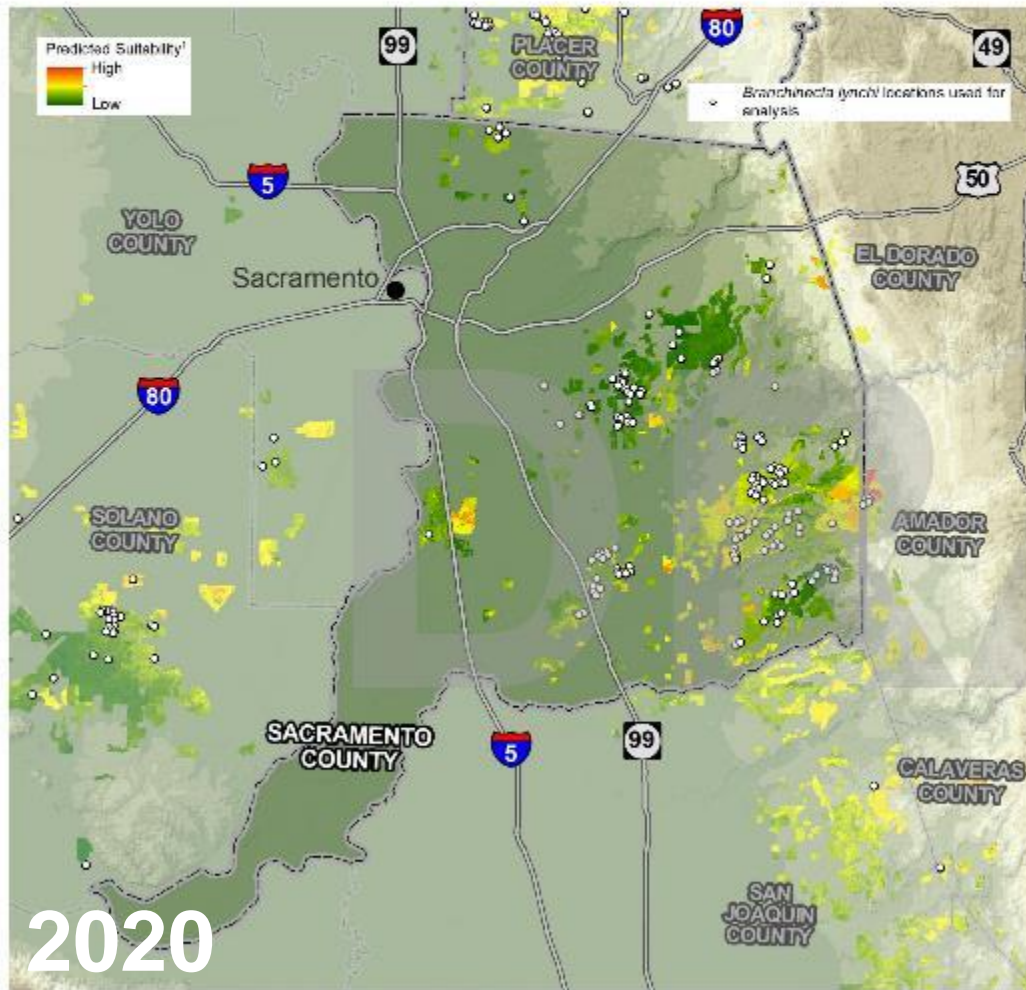

WE ARE HERE

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Rare Species Predictive Habitat Mapping

2020/2014 Study Comparison

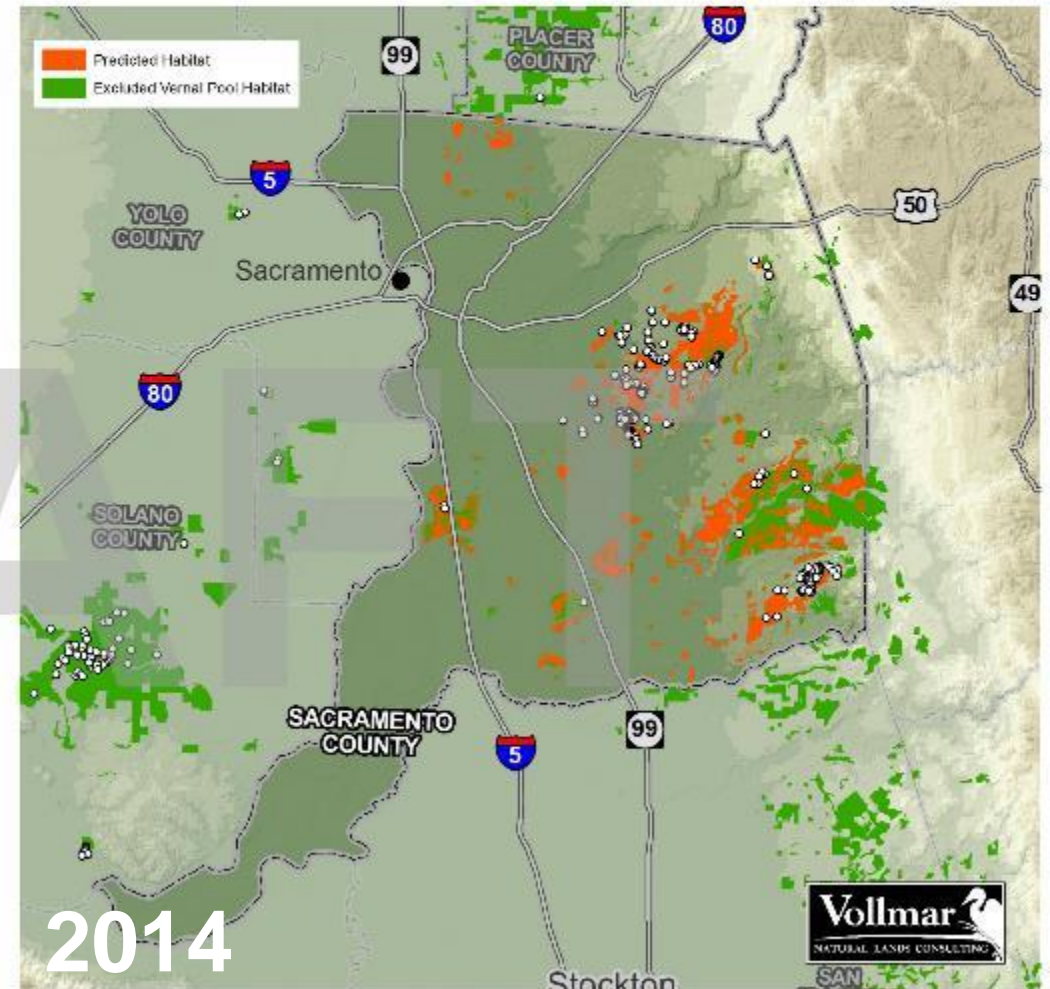
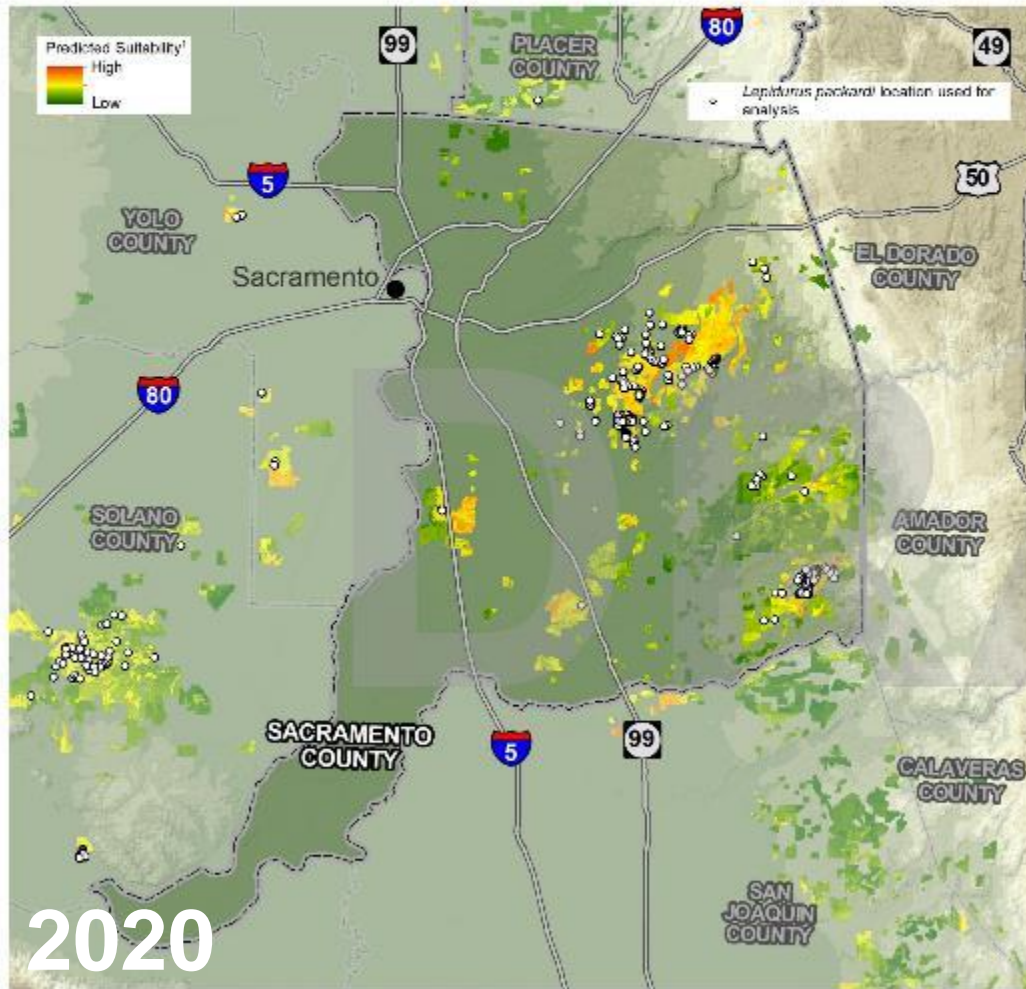
vernal pool fairy shrimp *Branchinecta lynchi*



DO NOT DISTRIBUTE THESE MAPS without express written consent of VNLC. These are preliminary results from an incomplete study.

2020/2014 Study Comparison

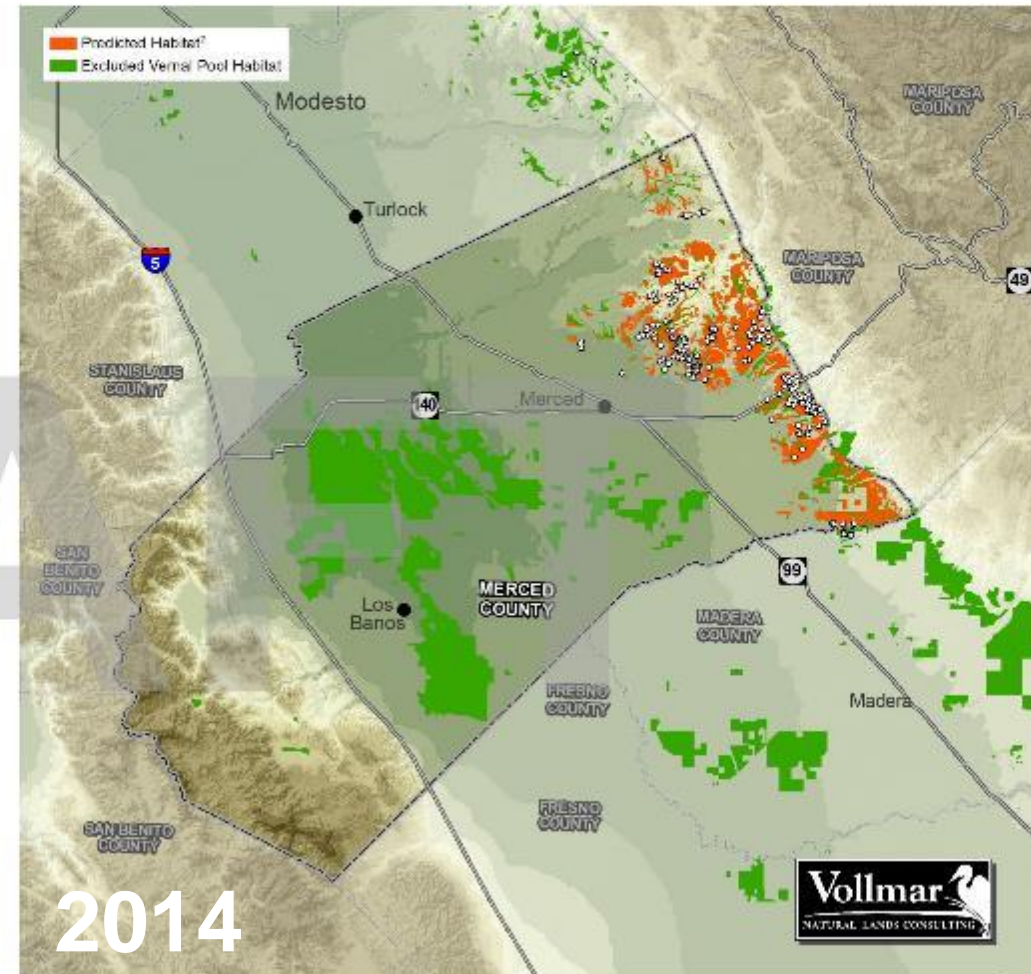
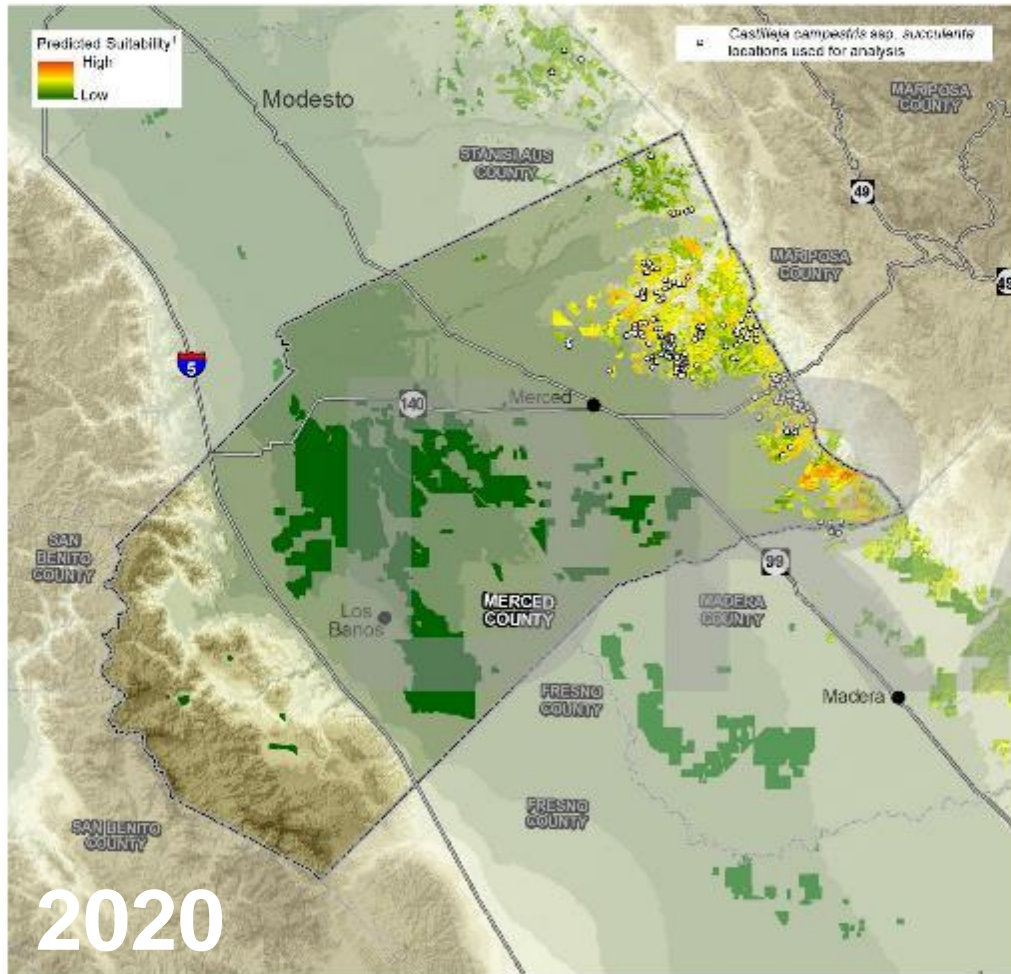
vernal pool tadpole shrimp *Lepidurus packardii*



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2020/2014 Study Comparison

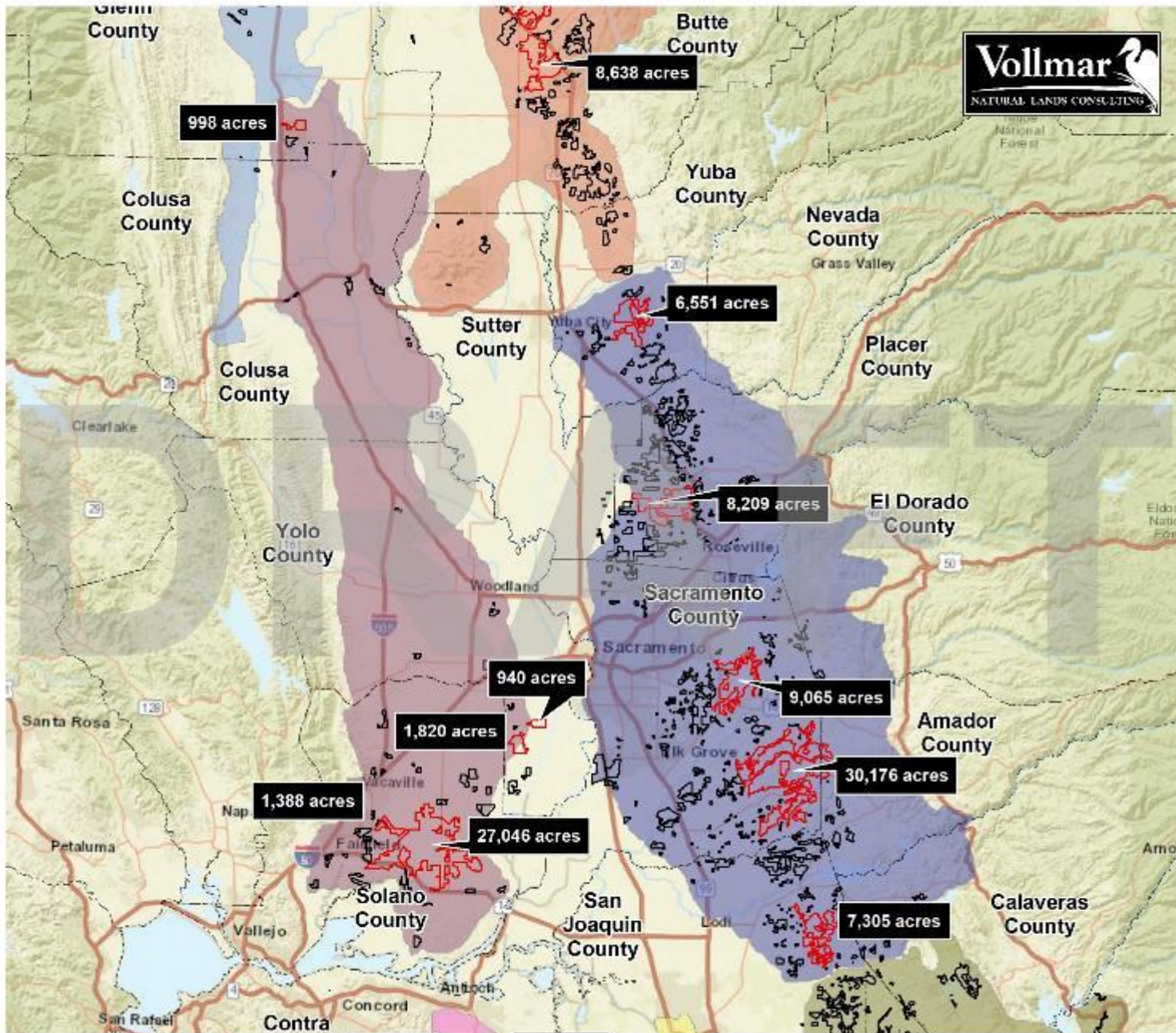
succulent owl's clover *Castilleja campestris* ssp. *succulenta*



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Habitat Block Selection



Preliminary Habitat Block Selection

- County Boundary
 - Vernal Pool Habitat Blocks
 - Top 5 Largest Habitat Blocks for Each Region
- Vernal Pool Eco-Region (Keeler-Wolf, 1996)**
- Central Coast
 - Livermore
 - Northeastern Sacramento Valley
 - Northwestern Sacramento Valley
 - San Joaquin Valley
 - Solano-Colusa
 - Southeastern Sacramento Valley
 - Southern Sierra Foothills

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Next Steps

- Technical Advisor Review of Preliminary Results - Species Predictive Habitat Mapping and Habitat Block Selection
- Compile/Develop Vernal Pool Habitat Mapping for Modoc Plateau Region
- Conduct Conservation Analysis of Potential Habitat Blocks (MARXAN)
- Plan and Conduct Field Surveys to fill in Data Gaps
- CRAM Surveys and SFEI Studies

Questions?

**Thank You
USEPA & WCB
for Project
Support and
Funding!**

