



Pacific Southwest Area

Leonard Gaydos

Senior Science Advisor to the Regional Executive

Geographic Area Organization



Science Management Structure

- **Regional Executive** **Michael Shulters**
- **Deputy Reg. Exec.** **Jeff Keay**
- **Sr. Science Advisor** **Len Gaydos**
- **Program Officers** **Derrick Hirsch**
 Dave Busch

PSWA Science Centers

- **Biology**

- **Pacific Islands Ecosystem Research Center—
Honolulu, Hawaii**
- **Southwest Biological Science Center—
Flagstaff, Arizona**
- **Western Ecological Research Center—Sacramento,
California**

PSWA Science Centers—continued

- **Water Science Centers—1 in each State**

- **Honolulu, Hawaii**

- **Tucson, Arizona**

- **Sacramento, California**

- **Carson City, Nevada**

- **West Valley City, Utah**

PSWA Science Centers—continued

■ Geology

- **Geology and Geophysics Science Center—Menlo Park, California**
- **Earthquake Science Center—Menlo Park, California**
- **Volcano Science Center—Menlo Park, California**
- **Pacific Coastal and Marine Science Center—Santa Cruz, California**
- **Western Mineral and Environmental Resources Science Center—Tucson, Arizona**
- **Astrogeology Science Center—Flagstaff, Arizona**

PSWA Science Centers—continued

- **Geography**

- **Western Geographic Science Center—Menlo Park,
California**

USGS Science Strategy: 2007-2017

- **Understanding Ecosystems and Predicting Ecosystem Change**
- **Climate Variability and Change**
- **Energy and Minerals for America's Future**
- **A National Hazards, Risk, and Resilience Assessment Program**
- **The Role of Environment and Wildlife in Human Health**
- **A Water Census of the United States**

PSWA REX Office Flex Funds

■ 2009: Climate Change

- Circulation-based high resolution downscaling for Hawaii
- Quantify relation between climatic water deficit determined in model run and tree death
- Qualitative map of spatial and temporal trends in tree mortality
- Soil moisture map

■ 2010: Energy

- Assessment of impacts of energy-related dirt road networks
- A pilot alternative energy development gap analysis for the Southwest United States



Geology and water shape desert plant communities:

Applications of new geologic mapping in RVDE

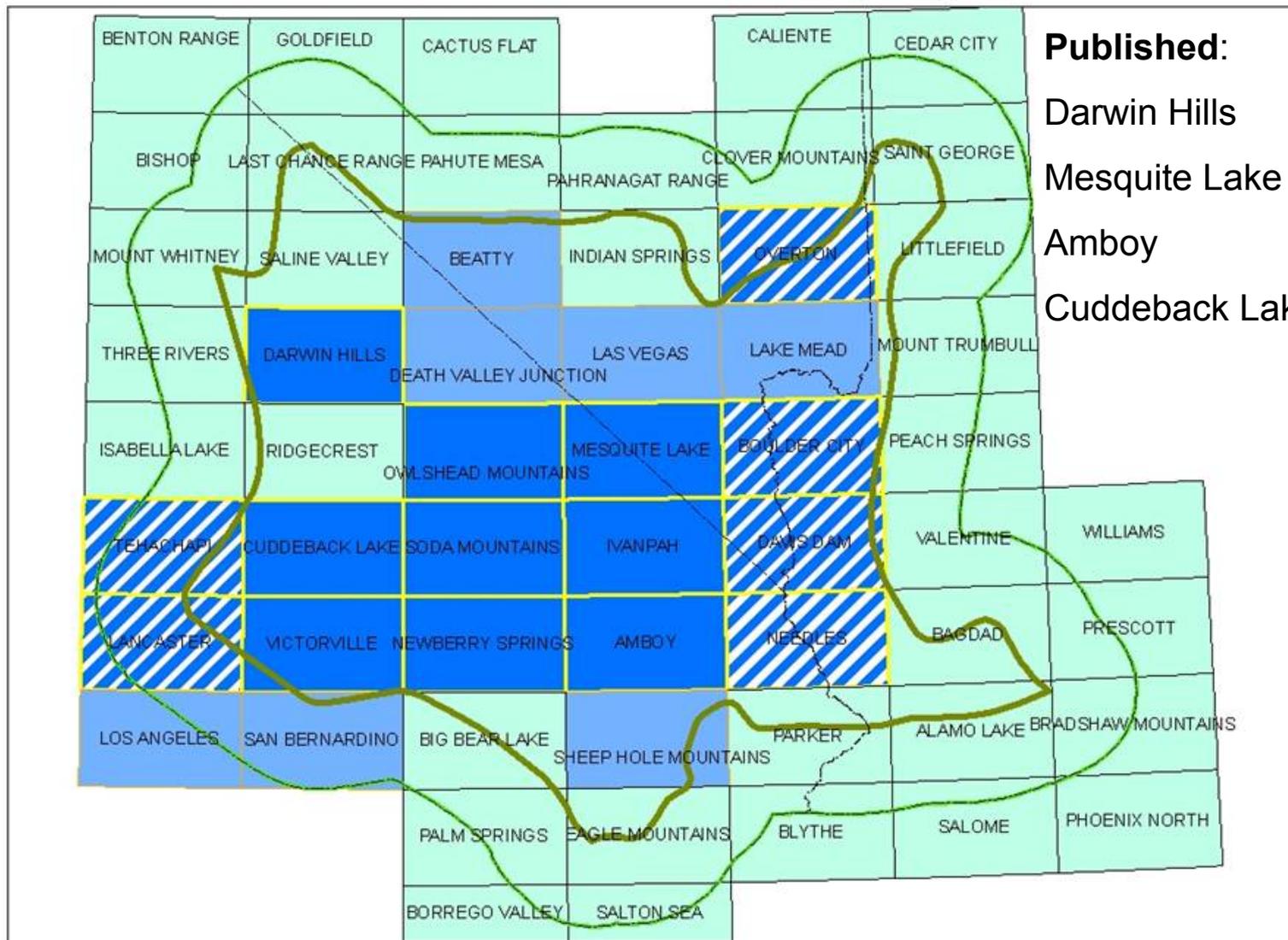
By Dave Miller dmiller@usgs.gov and many colleagues

Outline of topics:

- Desert areas covered by new mapping
- Geologic map content
- Uses of map information



Status of RVDE and other surficial geology



Published:
 Darwin Hills
 Mesquite Lake
 Amboy
 Cuddeback Lake

Applications

Soil erosion

Geologic map information describes soil properties, which when coupled with surface slope provides means to estimate erosion capacity. Further information that can be readily gathered (cover by plants and degree of disturbance) allow susceptibility to erosion to be estimated.



Applications (cont.)

Dust emission

Geologic map information describes soil properties, which provides estimates of soil particles subject to wind erosion. Again, knowledge of cover by plants and degree of disturbance allows susceptibility to dust emission to be estimated.



Applications (cont.)

Soil moisture

Geologic map information describes key soil properties for understanding the capacity of soil to infiltrate water and retain it. This information is key to understanding ecosystem response to disturbance and climate change.



USGS–San Diego Projects Office

- **Christina Stamos-Pfeiffer**

 - A Demonstration of the USGS Mojave Water Resources Interactive Web Site**

- **Tracy Nishikawa**

 - Groundwater Monitoring Plan Insights**