Scott Valley GSP data resources and data gaps

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April 24, 2019

UCDAVIS
UNIVERSITY OF CALIFORNIA

Agenda

1. Overview of Groundwater Sustainability Plan (GSP) structure

2. Discuss selected GSP chapters

3. Data resources and data gaps
   - Wells
   - Water levels

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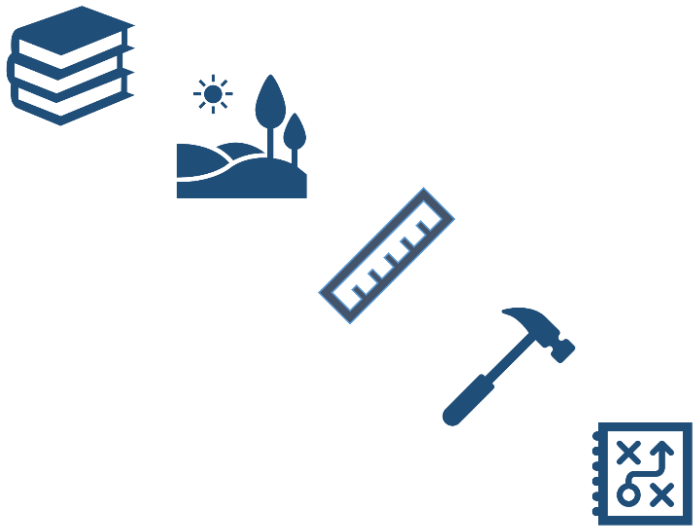
Overview of GSP Structure

A GSP has five chapters:

1. Introduction
2. Plan Area and Basin Setting
   (April/May Board Meetings)
3. Sustainable Management Criteria
4. Projects and Management Actions
5. Plan Implementation



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Selected GSP Chapters

Today I will focus on three sections of Ch. 2:

2. Plan Area and Basin Setting
   - 2.2.1. Hydrogeologic Conceptual Model
   - 2.2.2 Groundwater Conditions (current and historical)
   - 2.2.3 Water Budget (historical and projected)

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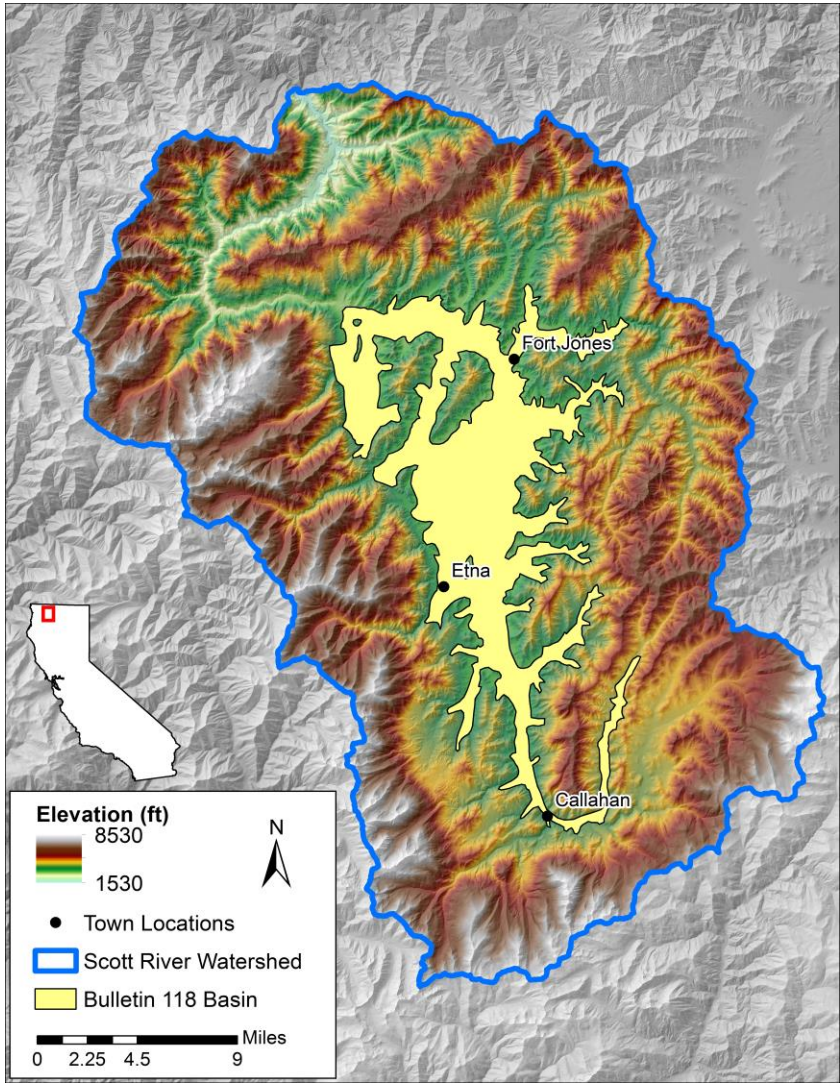
Hydrogeologic conceptual model (HCM)

- Many maps
- Cross-sections
- Narrative descriptions

HCM

- Boundaries
  - Groundwater basin
  - Watershed
- Towns
- Topography



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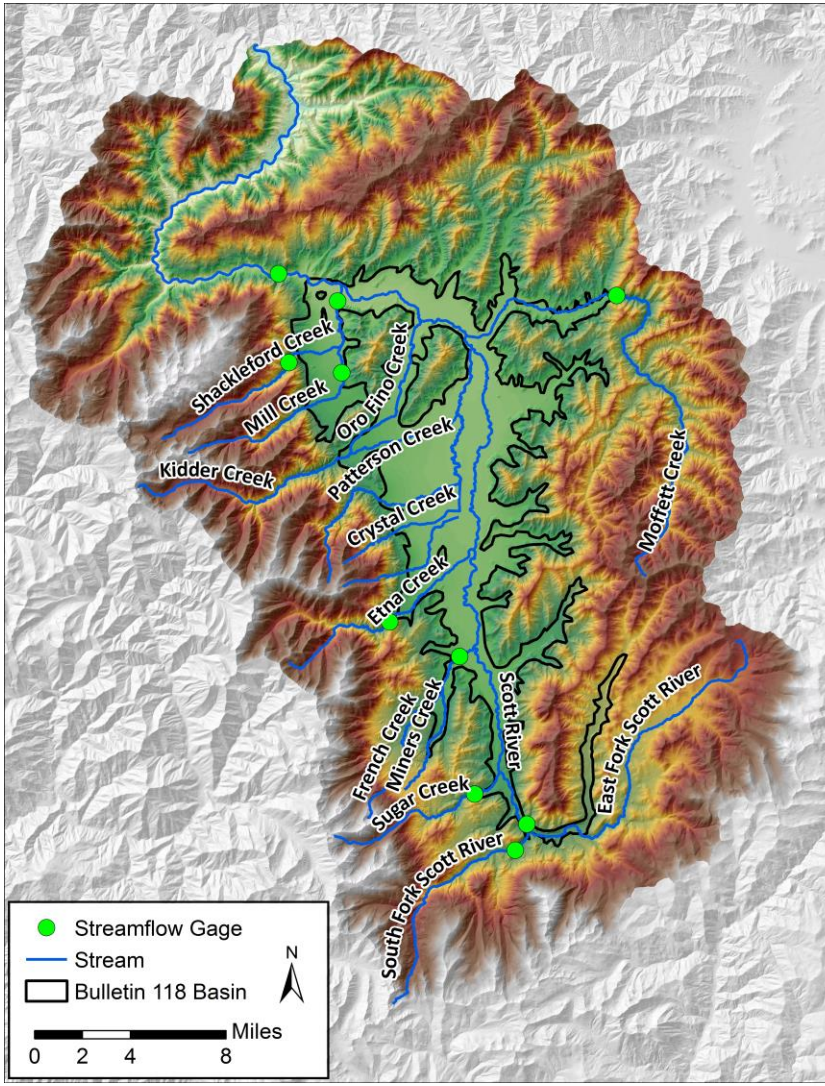
HCM

- Surface water
- Stream gauge



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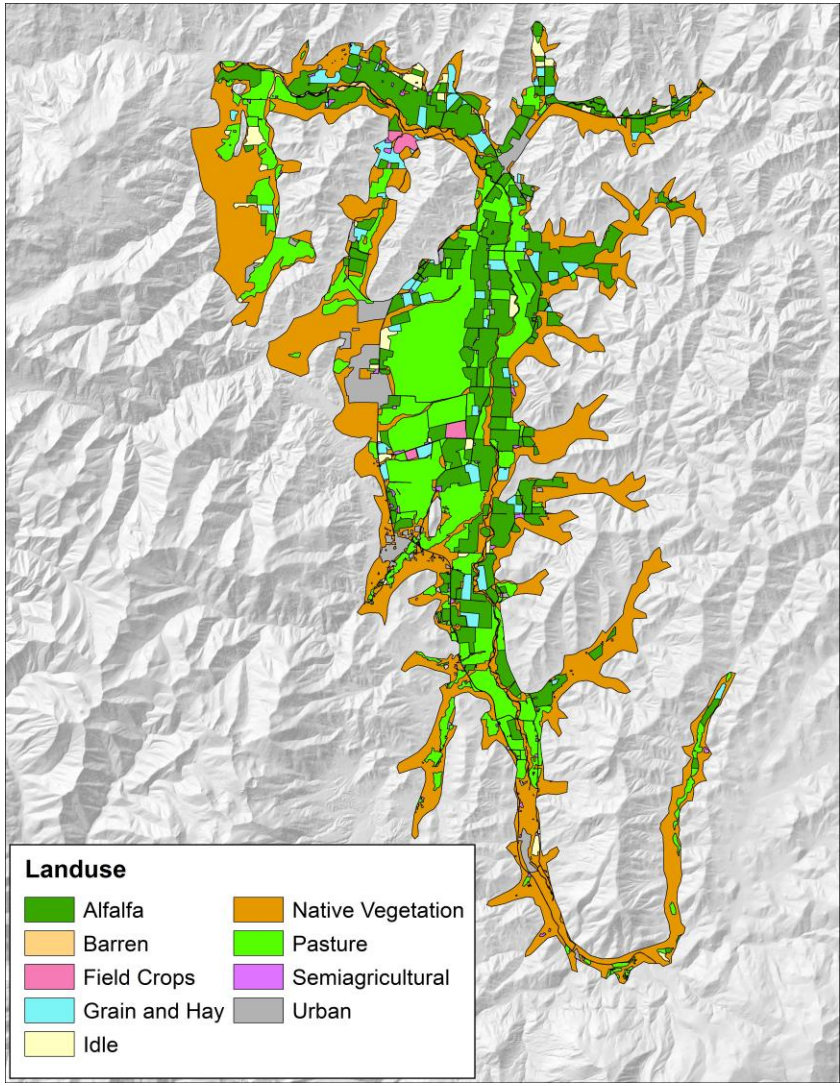
HCM

- Land use



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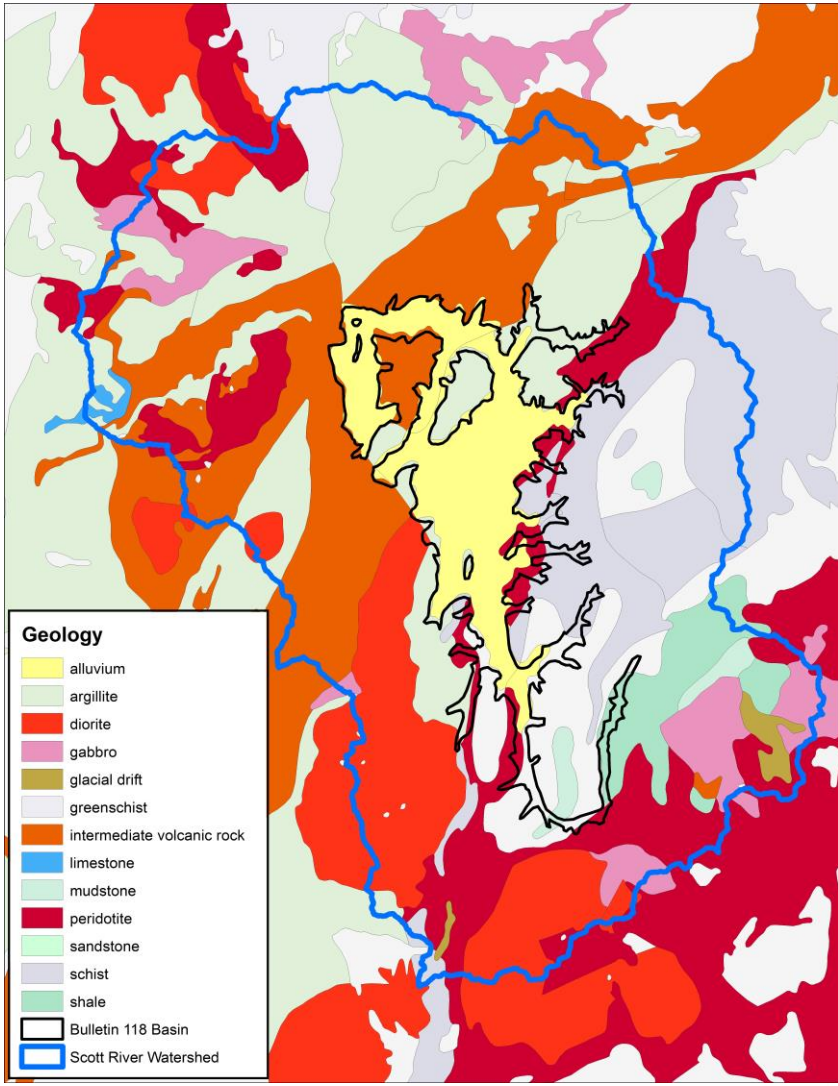
HCM

- Geology



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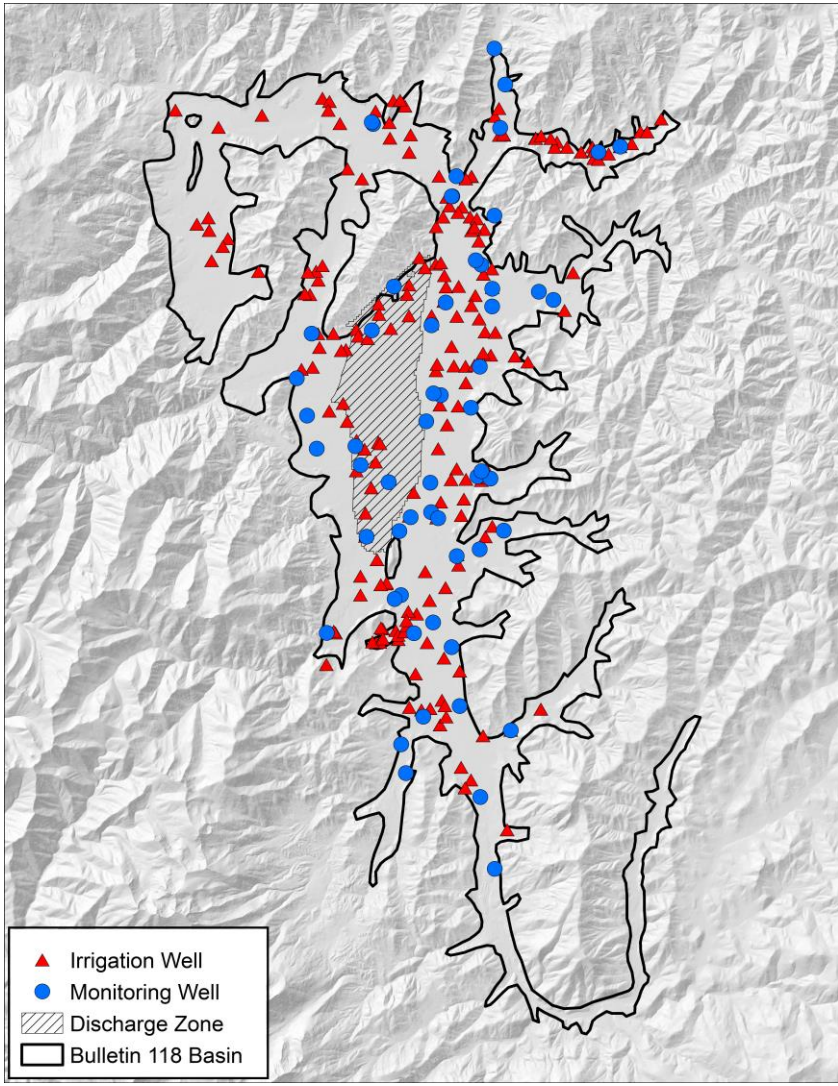
HCM

- Wells



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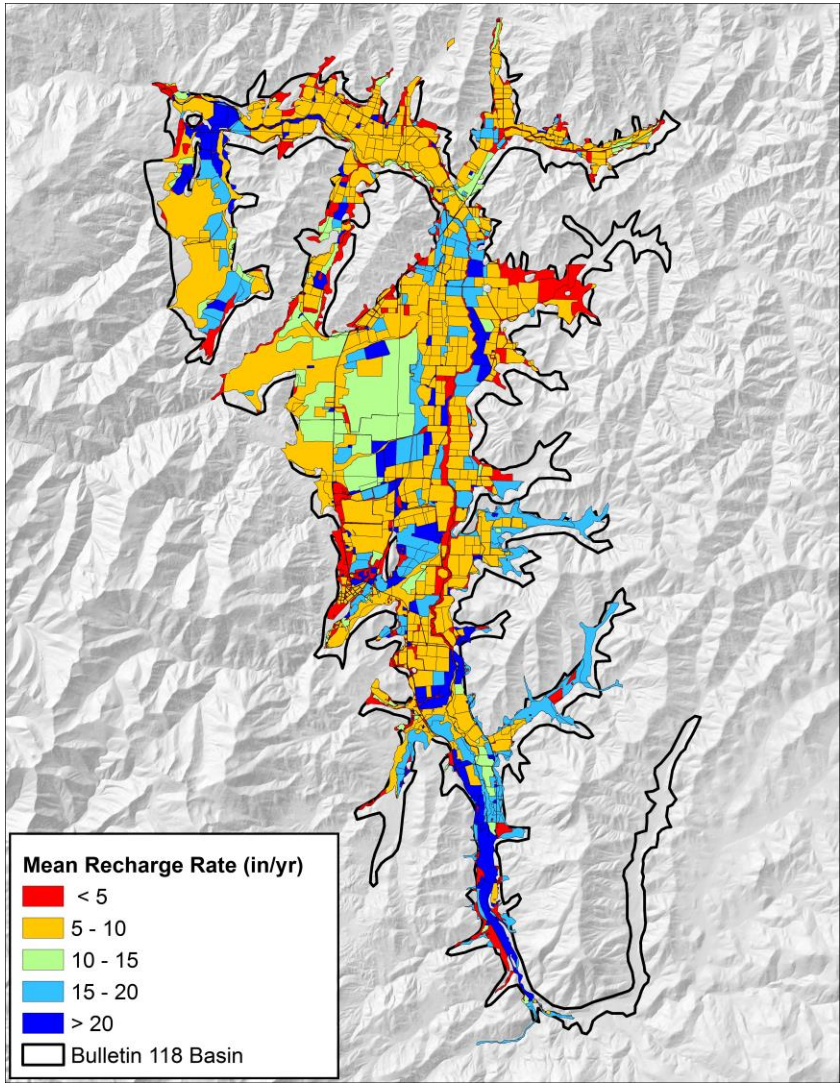
HCM

- Recharge areas



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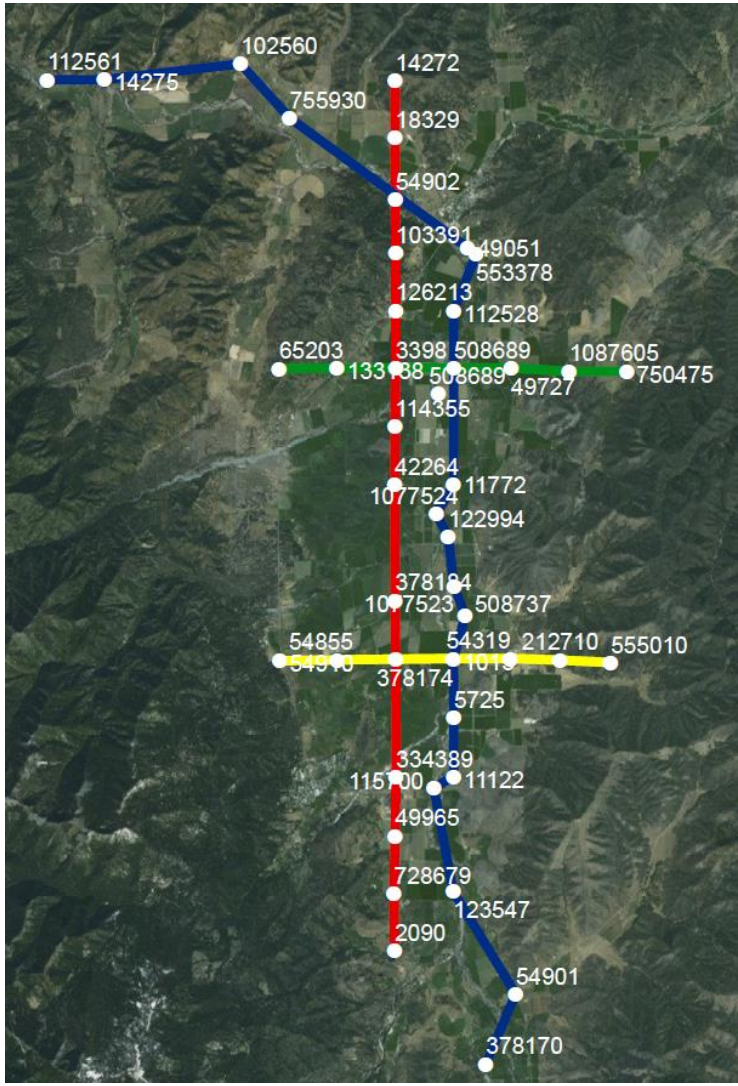
HCM: cross-sections

- Draft versions



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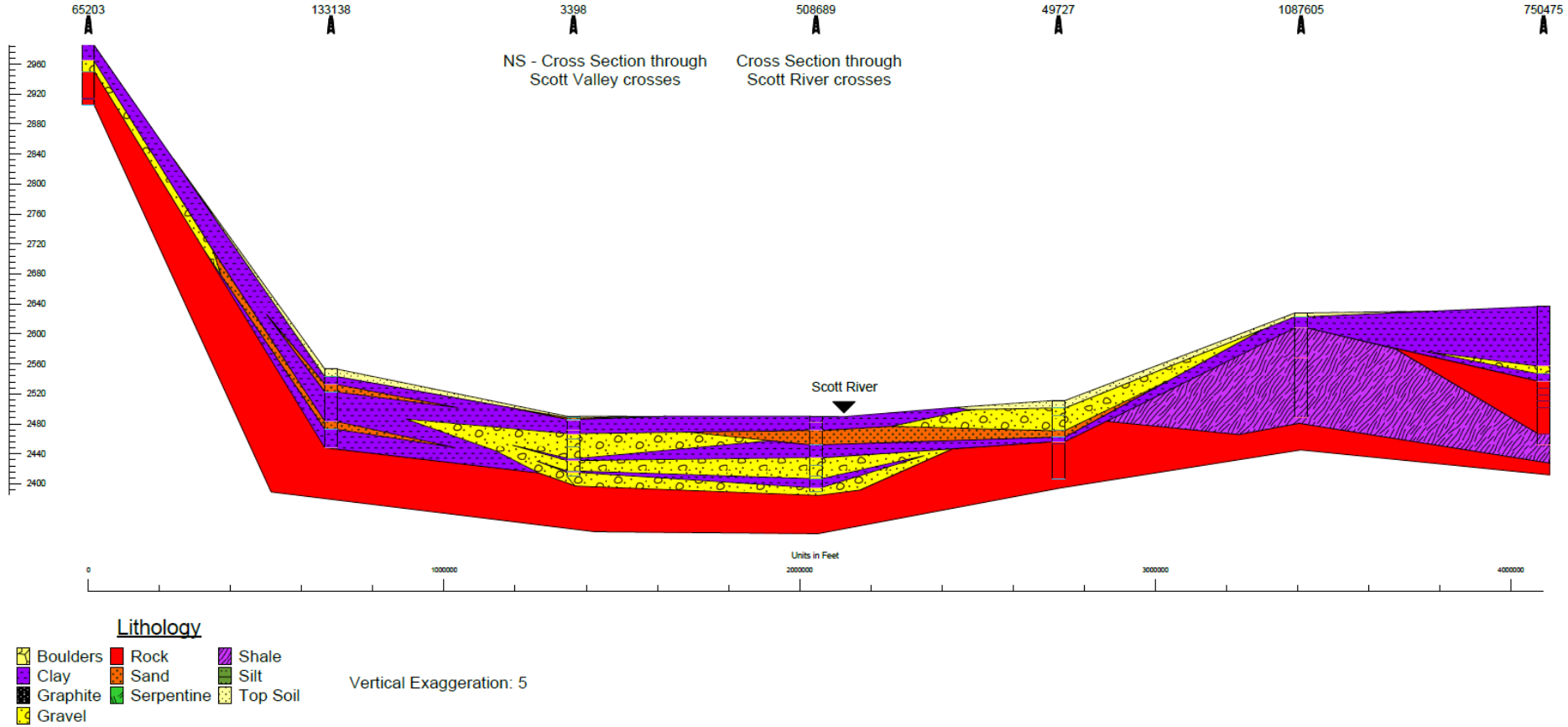
EW - Cross Section I through Scott Valley



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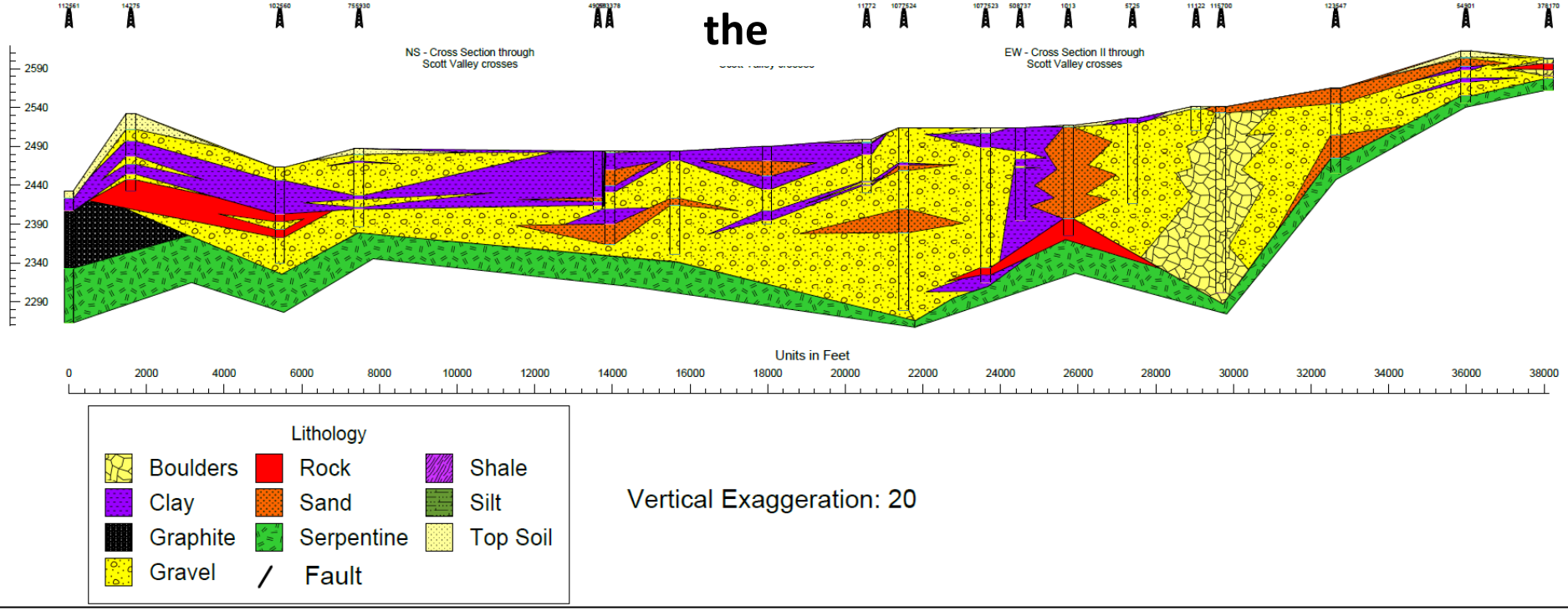
Cross Section along the Scott River



Vertical Exaggeration: 20

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   - **2.2.2 Groundwater Conditions (current and historical)**
   - 2.2.3 Water Budget (historical and projected)

Groundwater conditions


Groundwater elevation


Groundwater in storage


Seawater intrusion


Groundwater quality


Land subsidence


Interconnected surface water

&

Groundwater-dependent ecosystems

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Groundwater conditions

Category
~~**Not a problem**~~
Characterize to show acceptable
Characterize for management


Groundwater elevation


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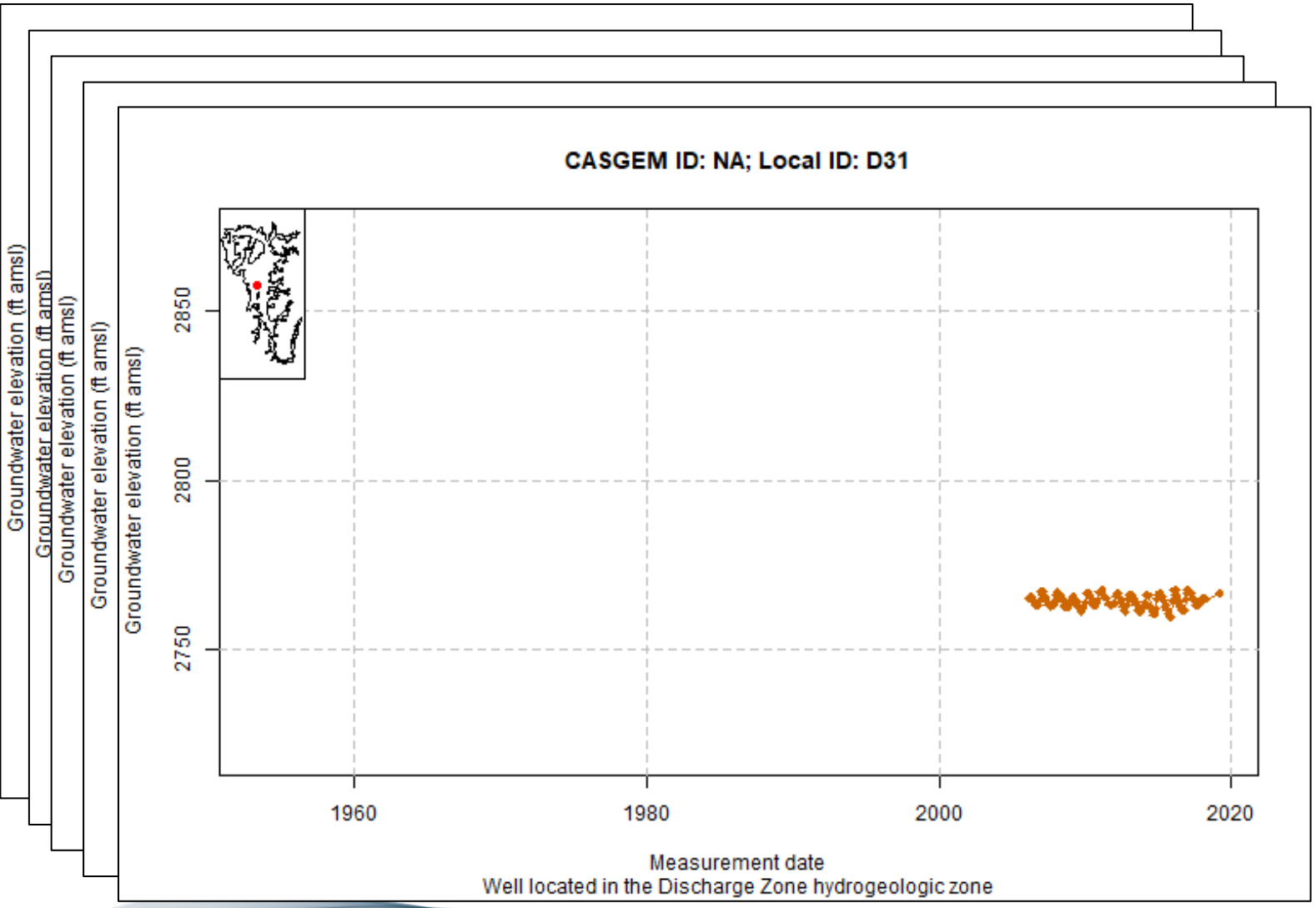

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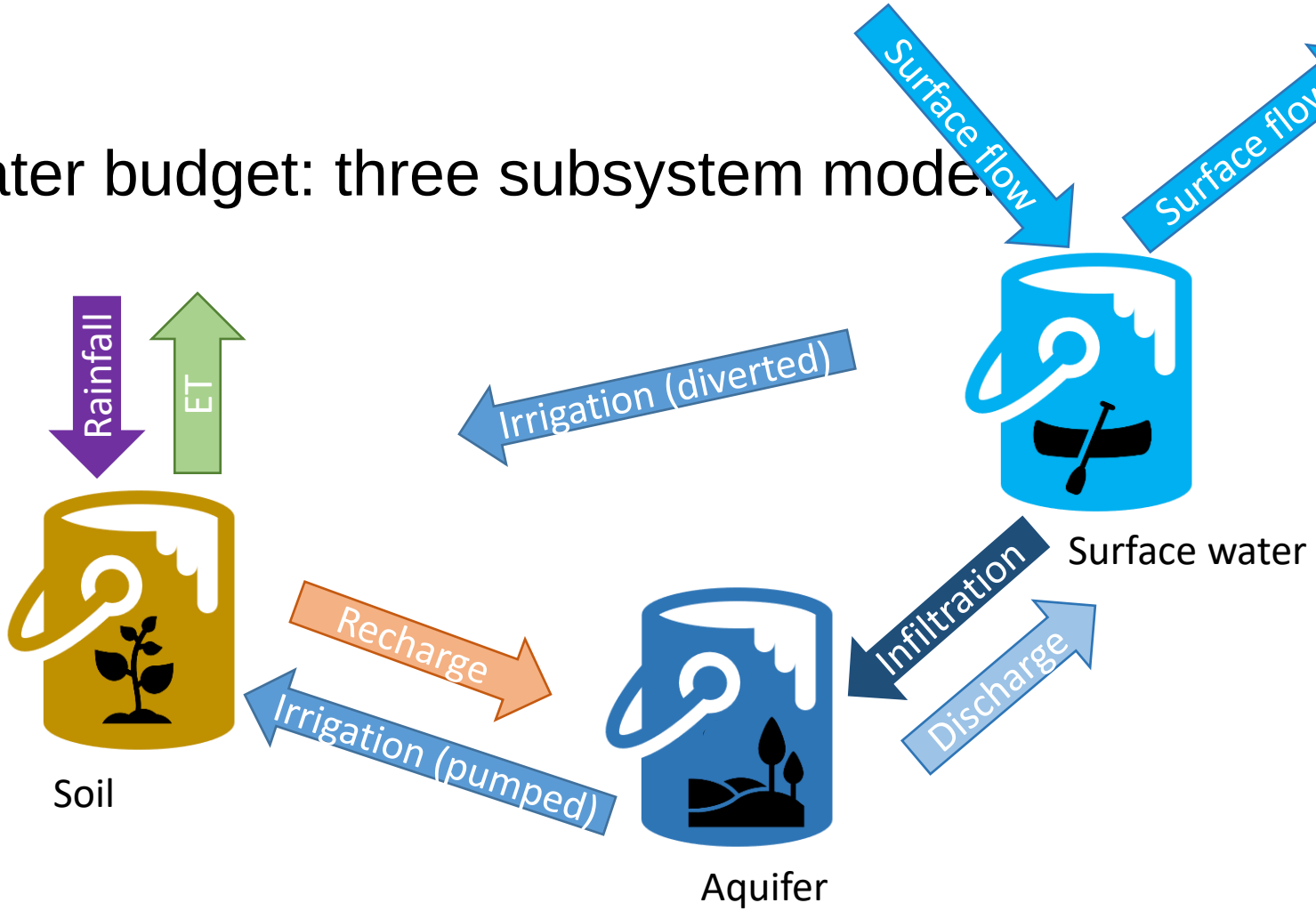
Water budget: three subsystem model



Water budget

- Water budget presentation planned for September
- Discussion will include data sources that could be used to refine first draft

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3. **Data resources and data gaps**
   - **Wells**
   - Water levels

Well inventory

- Well information sources:

- State agency data (available online)
  - Well permits (Well Completion Reports)
  - CASGEM
  - DWR Water Data Library

- Scott Valley voluntary monitoring program (VMP)

Well inventory

- Well identifiers
  - State well number
  - CASGEM ID
  - Local ID
  - Well Completion Report number

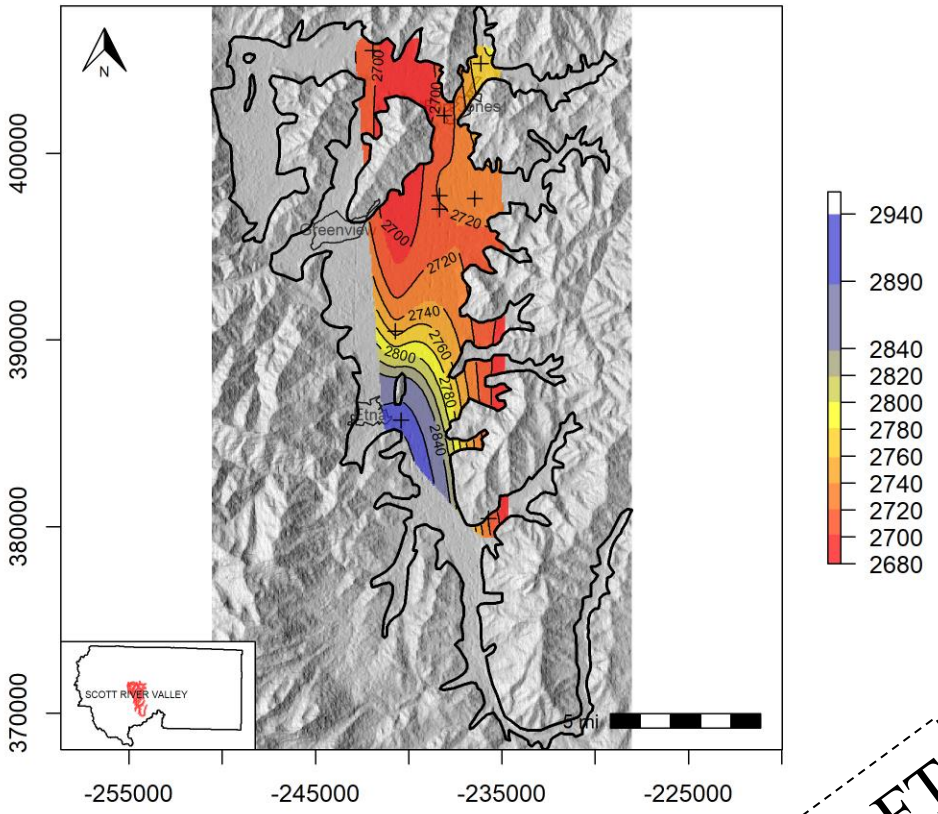
Outline

- GSP chapters
  - Hydrologeologic conceptual model
  - Groundwater conditions
  - Water budget
- Data resources and data gaps
  - Wells
  - **Water levels**

Contour maps

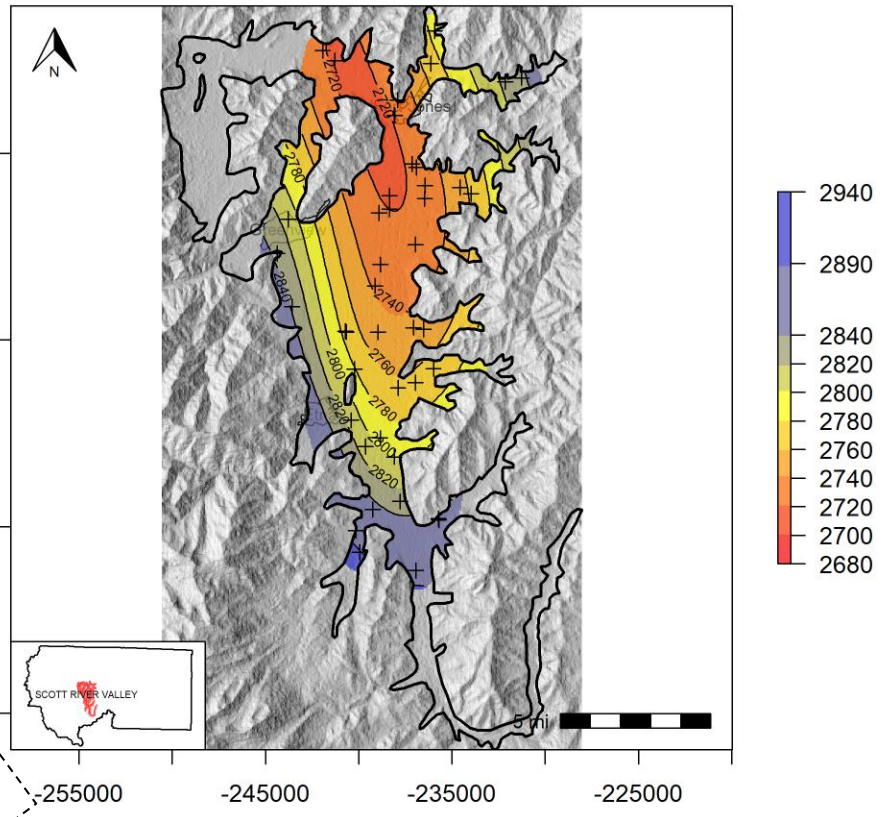
- Examples:
  - Public data only
  - Public data and VMP data

CASGEM data only



Scott River Valley 2015 spring

CASGEM and VMP data



Scott River Valley 2015 spring

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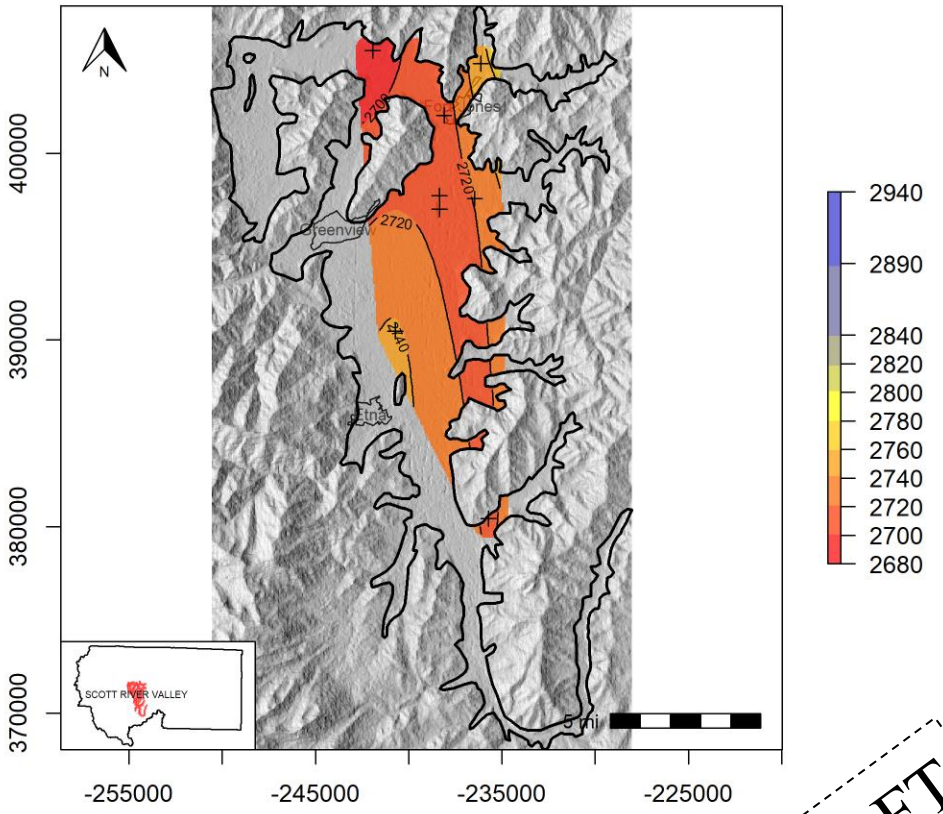
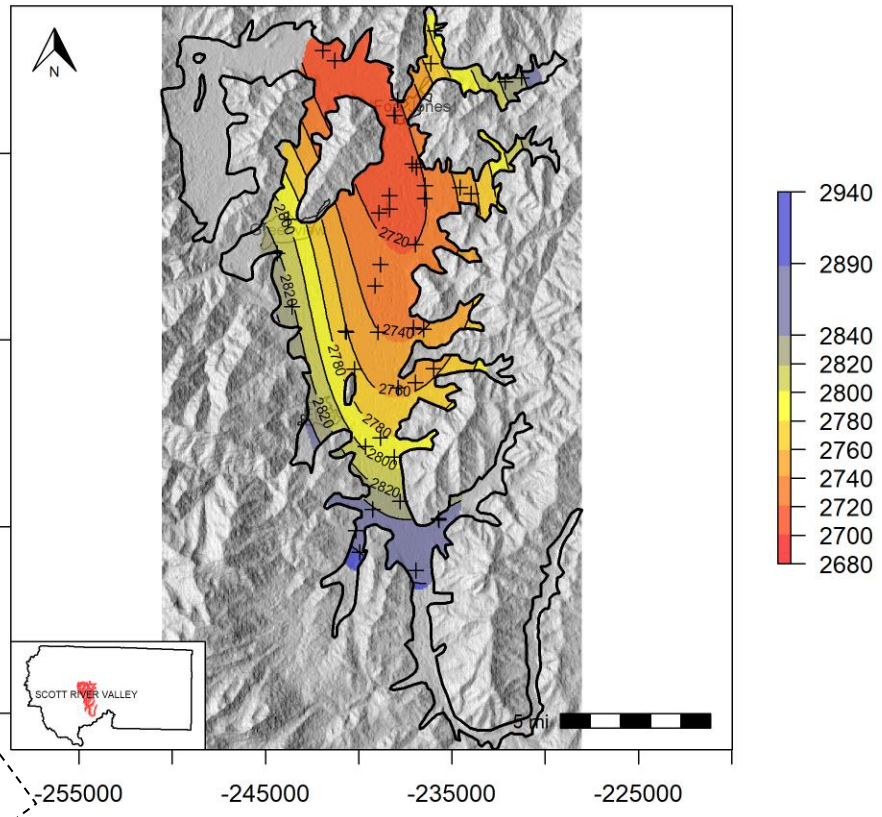


Scott River Valley 2015 fall

CASGEM and VMP data



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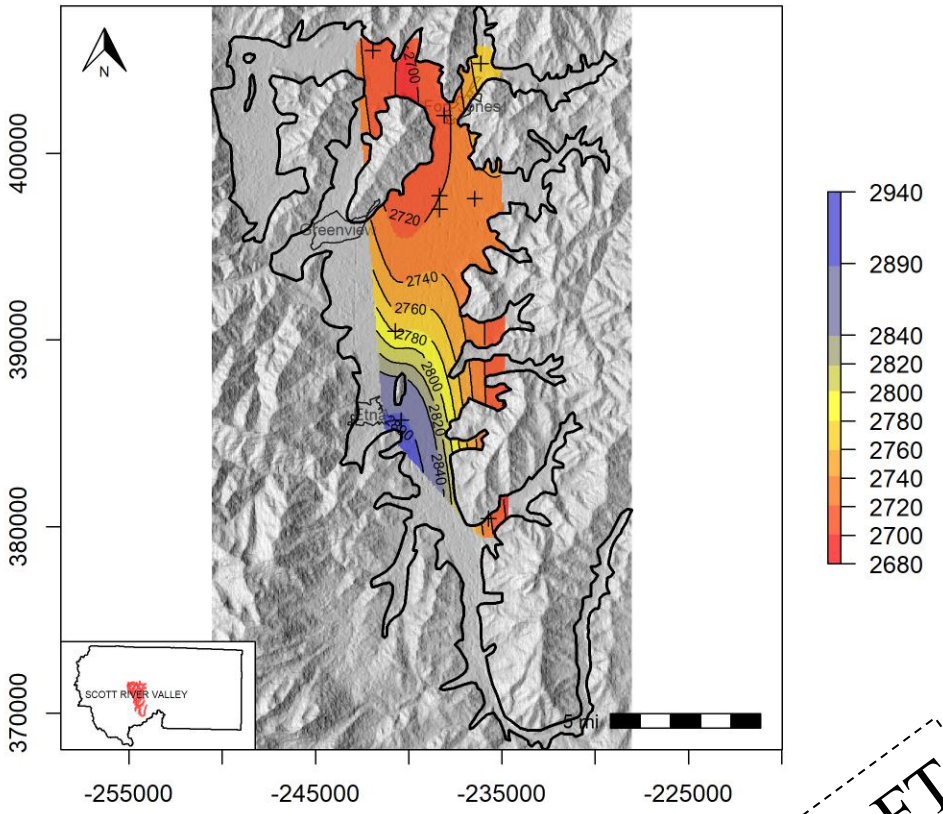

Scott River Valley 2016 spring

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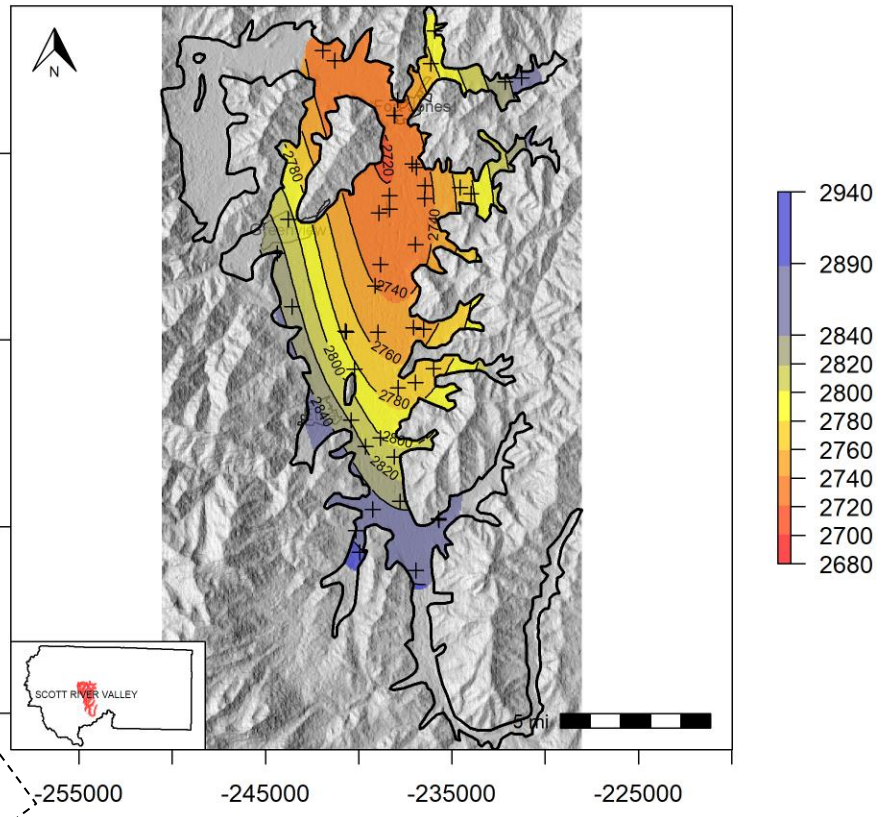

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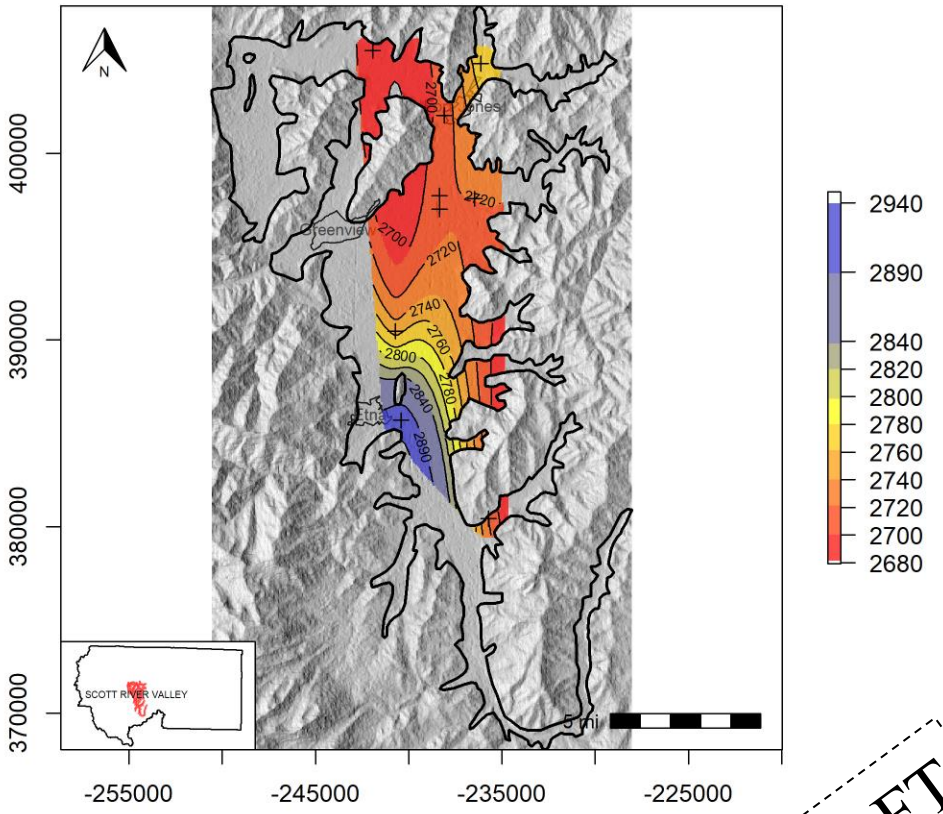

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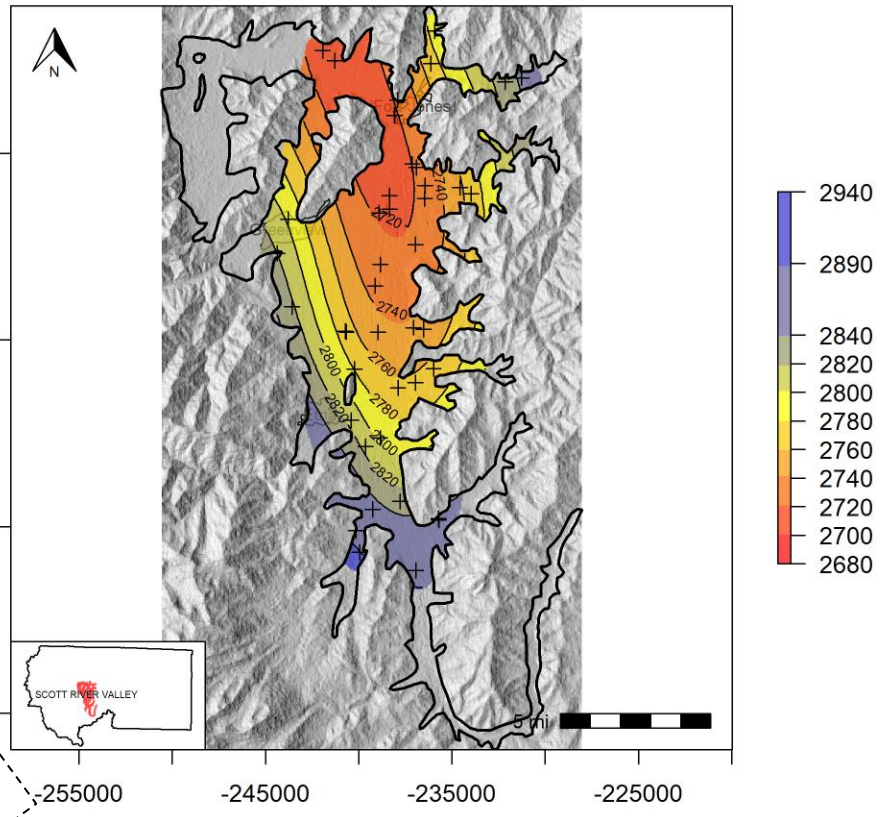

Scott River Valley 2016 fall

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Considerations for handling VMP data

- VMP data substantially improves contour maps
- DWR wants to be able to review the data for everything that goes on a map

Potential protocol for handling of VMP data

- Propose two systems: an Internal and Public Data Management System (DMS).
- A precise well location (within 30 ft) is needed for the model. This will be stored in the Internal DMS.
- Less precise model locations (proposed 100 ft accuracy) will be stored in a Public DMS. Public DMS data will be available to DWR and all stakeholders.

Potential protocol for handling of VMP data

- In maps and reports:
  - Wells will be referred to by local code or state well number or CASGEM ID (**not owner name**)
  - Hydrographs can be referenced to **region of the watershed**, rather than specific identifier
  - For continuous (transducer) data, **only seasonal high and low** water levels will be included in maps/public DMS

Public involvement

- Survey and contact information:

  https://bit.ly/2VvJclZ

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References

- DWR suggested GSP outline
  - https://water.ca.gov/LegacyFiles/groundwater/sgm/pdfs/GD_GSP_Outline_Final_2016-12-23.pdf
- DWR Emergency Regulations
  - https://water.ca.gov/LegacyFiles/groundwater/sgm/pdfs/GSP_Emergency_Regulations.pdf
- DWR GSP Submittal Checklist
  - https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Sustainable-Groundwater-Management/Best-Management-Practices-and-Guidance-Documents/Files/Preparation-Checklist-for-GSP-Submittal.pdf
- SGMA legislation text
  - http://opr.ca.gov/docs/2014_Sustainable_Groundwater_Management_Legislation_092914.pdf

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Today

2. Plan
   - 2.2.1
   - 2.2.2
   - 2.2.3

2.2.2 **Current and Historical Groundwater Conditions** ***(Reg. § 354.16)***

§ 354.16. Groundwater Conditions

Each Plan shall provide a description of current and historical groundwater conditions in the basin, including data from January 1, 2015, to current conditions, based on the best available information that includes the following:

(a) Groundwater elevation data demonstrating flow directions, lateral and vertical gradients, and regional pumping patterns, including:

(1) Groundwater elevation contour maps depicting the groundwater table or potentiometric surface associated with the current seasonal high and seasonal low for each principal aquifer within the basin.

(2) Hydrographs depicting long-term groundwater elevations, historical highs and lows, and hydraulic gradients between principal aquifers.

(b) A graph depicting estimates of the change in groundwater in storage, based on data, demonstrating the annual and cumulative change in the volume of groundwater in storage between seasonal high groundwater conditions, including the annual groundwater use and water year type.

(c) Seawater intrusion conditions in the basin, including maps and cross-sections of the seawater intrusion front for each principal aquifer.

n flow
nd

r budget
r use for

groundwater recharge or in-lieu use

Source
supplies

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