Advancing Monitoring Networks in the Scott Valley Watershed: a collaborative successful effort

Laura Foglia, Ph.D, Katrina Arredondo, Ph.D., P.G.

(UC Davis, Larry Walker Associates)

Scott Watershed Information Forum (SWIF)

Fort Jones, CA, 02/20/2025

UC DAVIS
UNIVERSITY OF CALIFORNIA

LWA LARRY WALKER ASSOCIATES
science | policy | solutions

SCOTT RIVER
WATERSHED COUNCIL

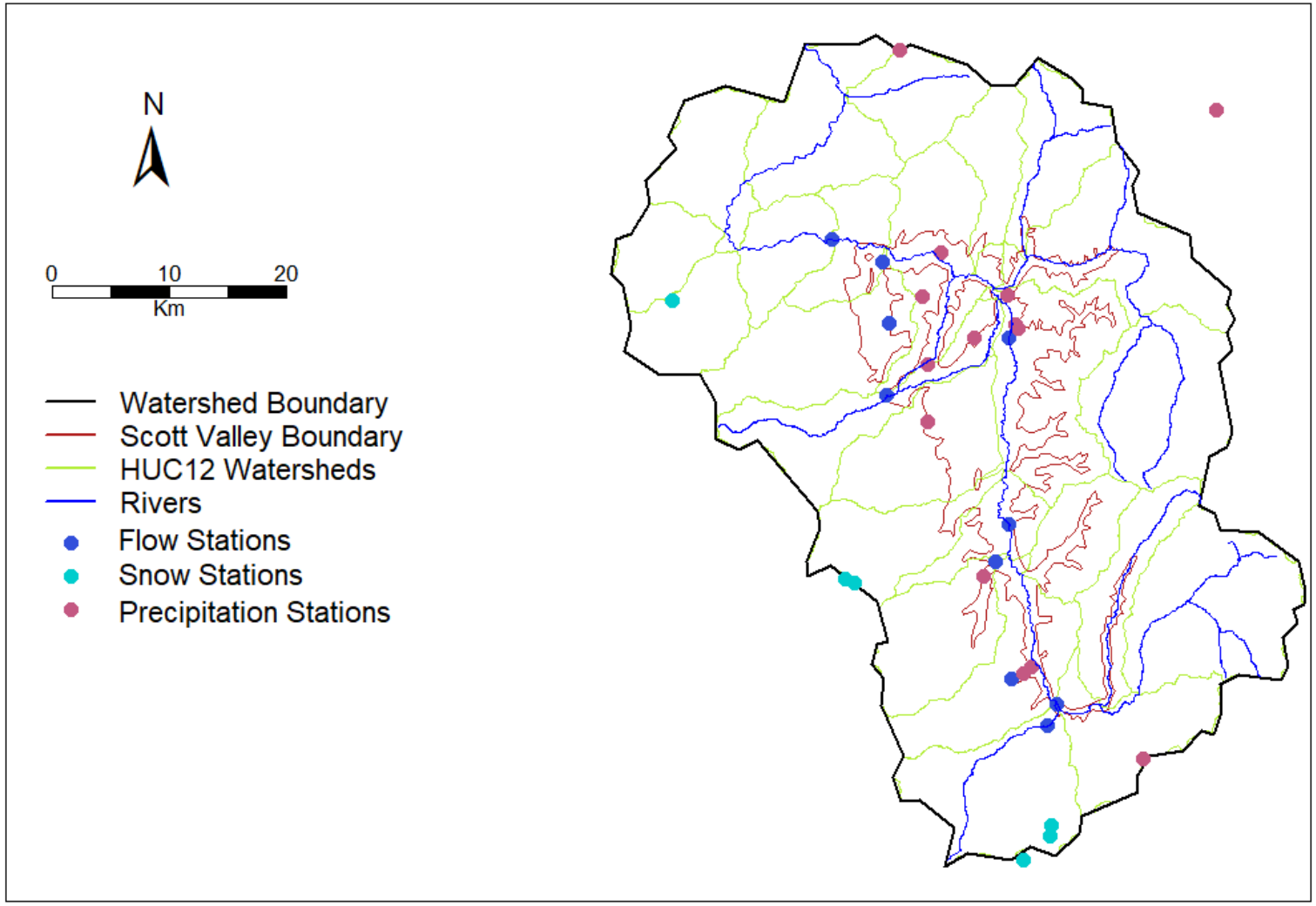
Agenda

1. Background
2. Monitoring Networks
    1. Precipitation
    2. Streamflow
    3. Groundwater
    4. Recharge
    5. Geochemistry
    6. Water Quality
3. Proposed Stations

Background

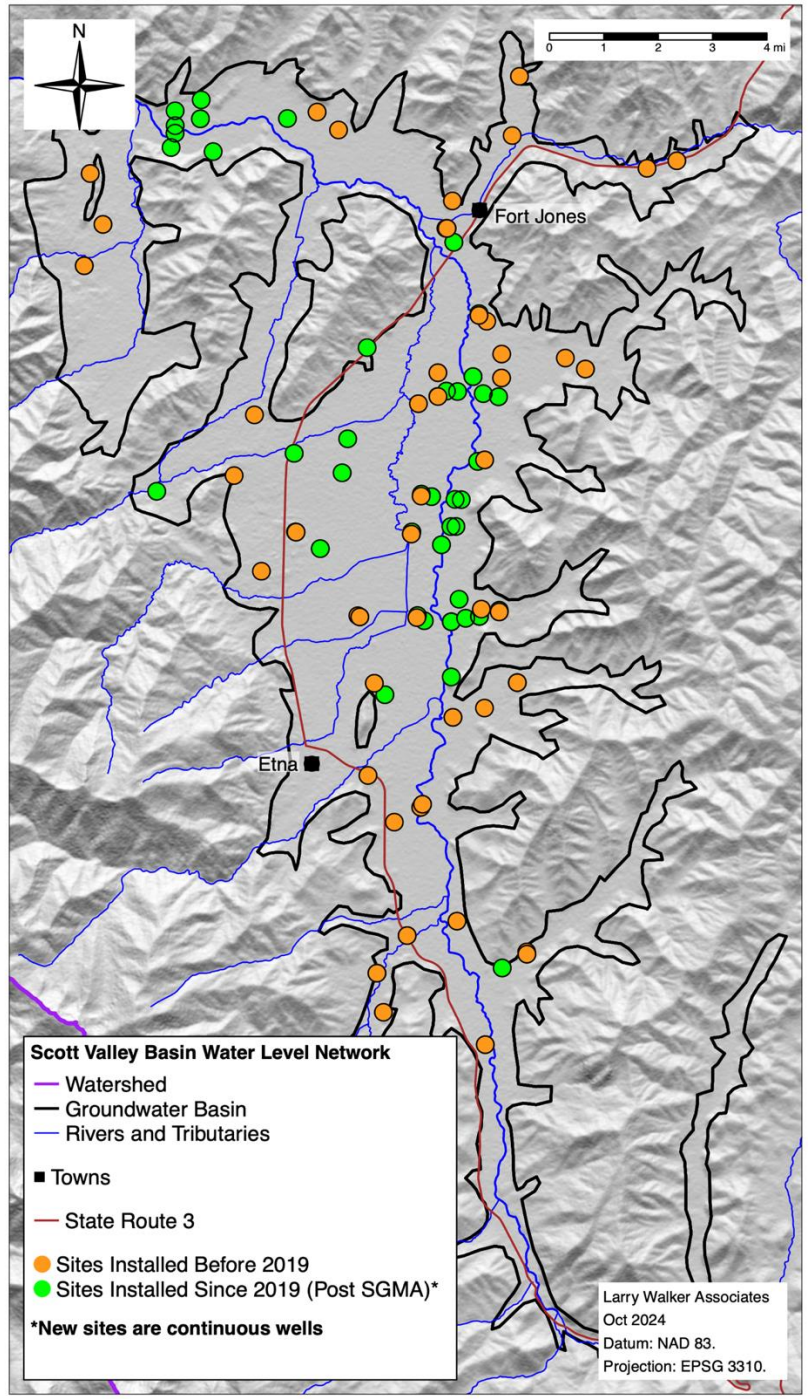
- Numerous agencies maintain monitoring networks within the Scott Valley Watershed including:
  - U.S. Geological Survey
  - CA Department of Water Resources
  - U.S. National Oceanic and Atmospheric Administration
  - Siskiyou County
  - Siskiyou Resource Conservation District
  - Scott River Watershed Council
  - Quartz Valley Indian Reservation
  - Municipal Agencies
  - Community Groundwater Measuring Program (stakeholders)

Climate and Streamflow Monitoring



Groundwater Monitoring and Monitoring Improvements Under SGMA

- Installed **41** new wells with continuous groundwater elevation and temperature data
- Installed **2** flow stations on Scott River
- Installed **7** flow stations in irrigation ditches
- Installed **18** rain stations
- Geochemical sample collection (isotopes, radon) at **14+** sites



Scott River Watershed Council

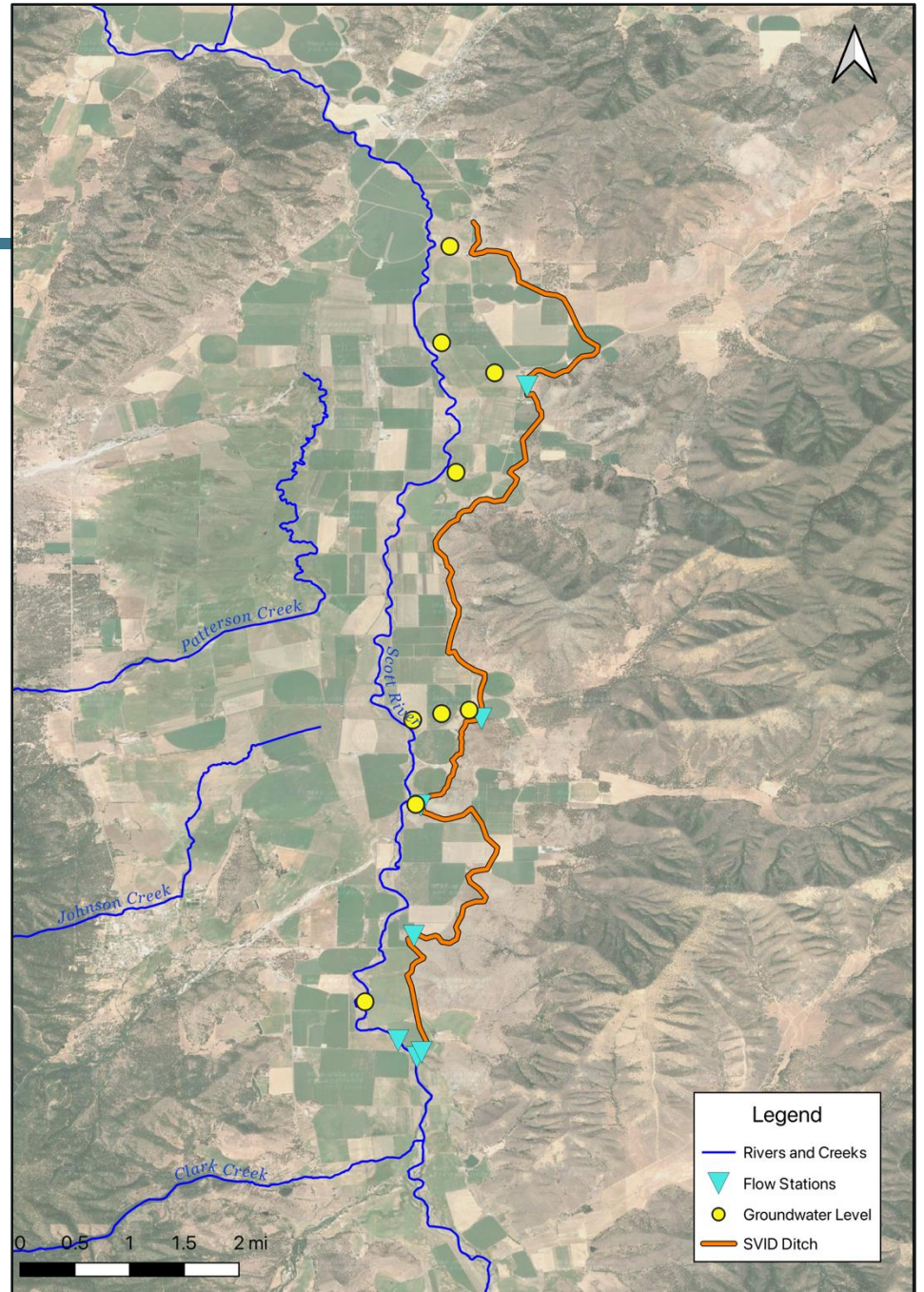
Streamflow

Groundwater

Recharge Monitoring (2024)

- **9 groundwater wells** instrumented to measure groundwater level and temperature
- **2 flow stations on Scott River** (above and below point of diversion)
- **5 flow stations along the ditch**

- New shallow well transects were added in September 2024 and monitoring data will be used in 2025 evaluations and reporting

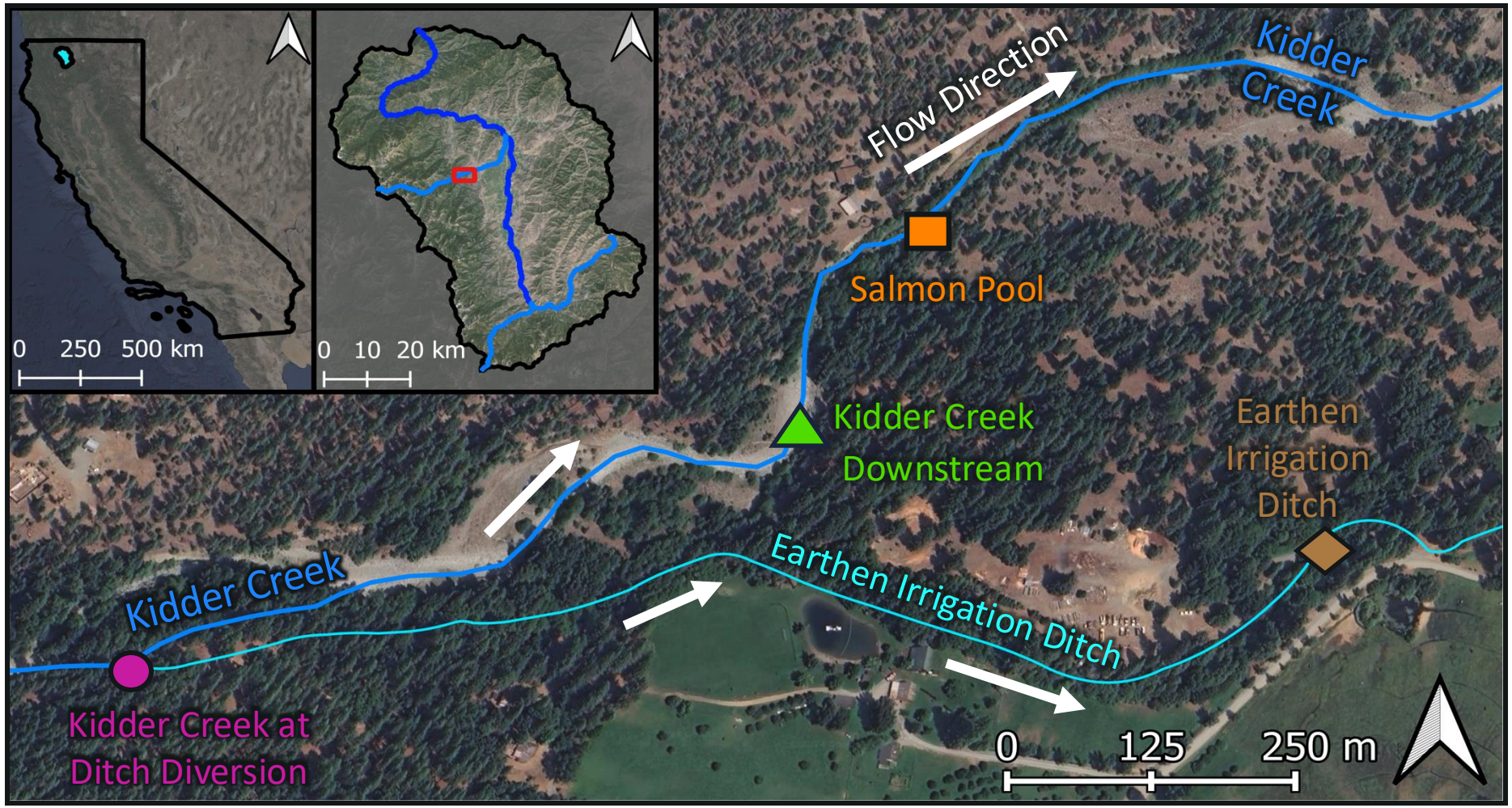


Geochemistry Monitoring - 2024

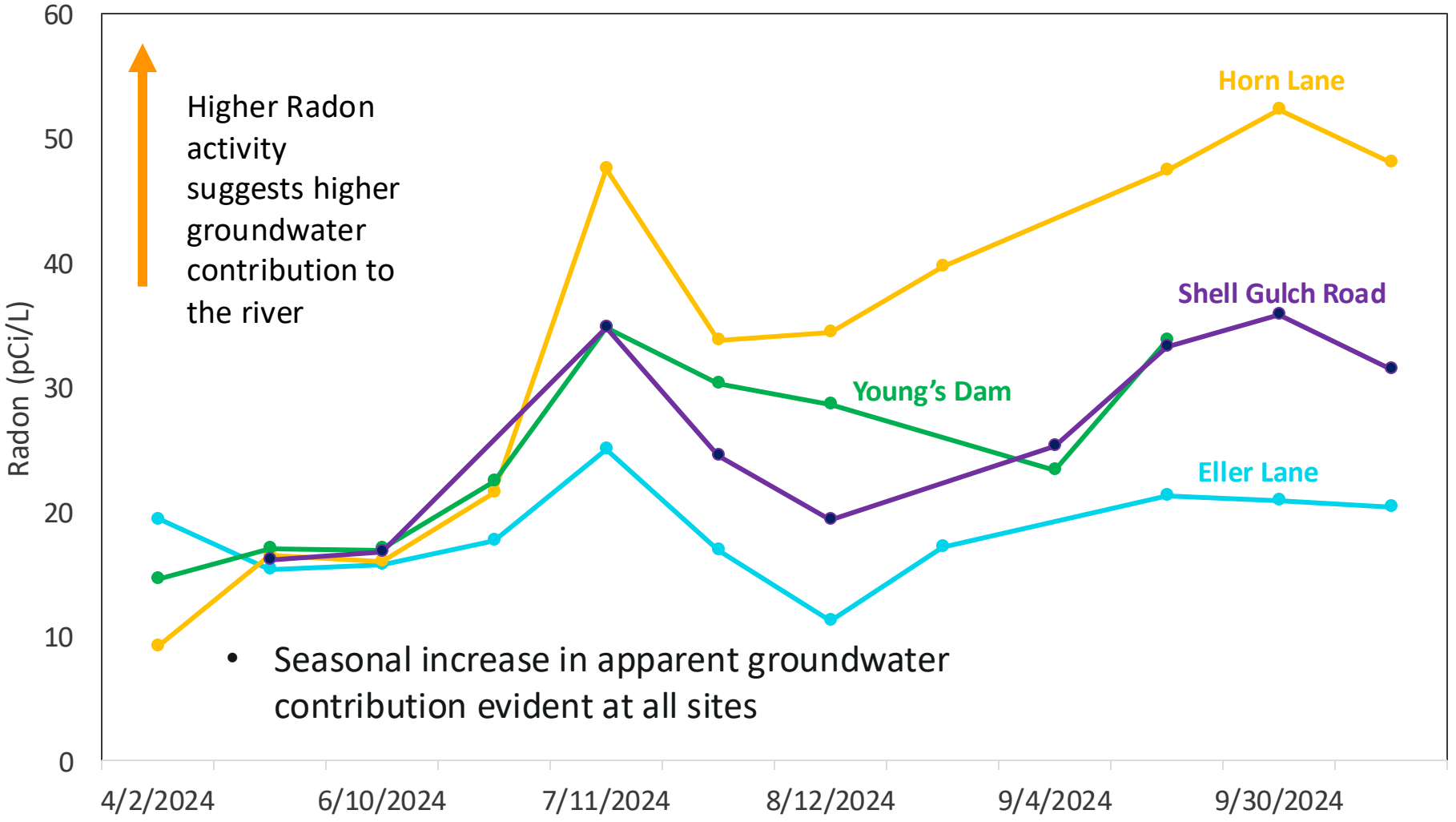
- Naturally occurring stable and radioactive isotopic tracers help to:
  - Distinguish water sources
  - Identify mixing of different water sources
  - Identify gaining stream reaches

- Monitoring occurred in 2024 at Kidder Creek and the Scott River near SVID

Kidder Creek Earthen Irrigation Ditch Study



Radon Time Series – Scott River near SVID



Water Quality

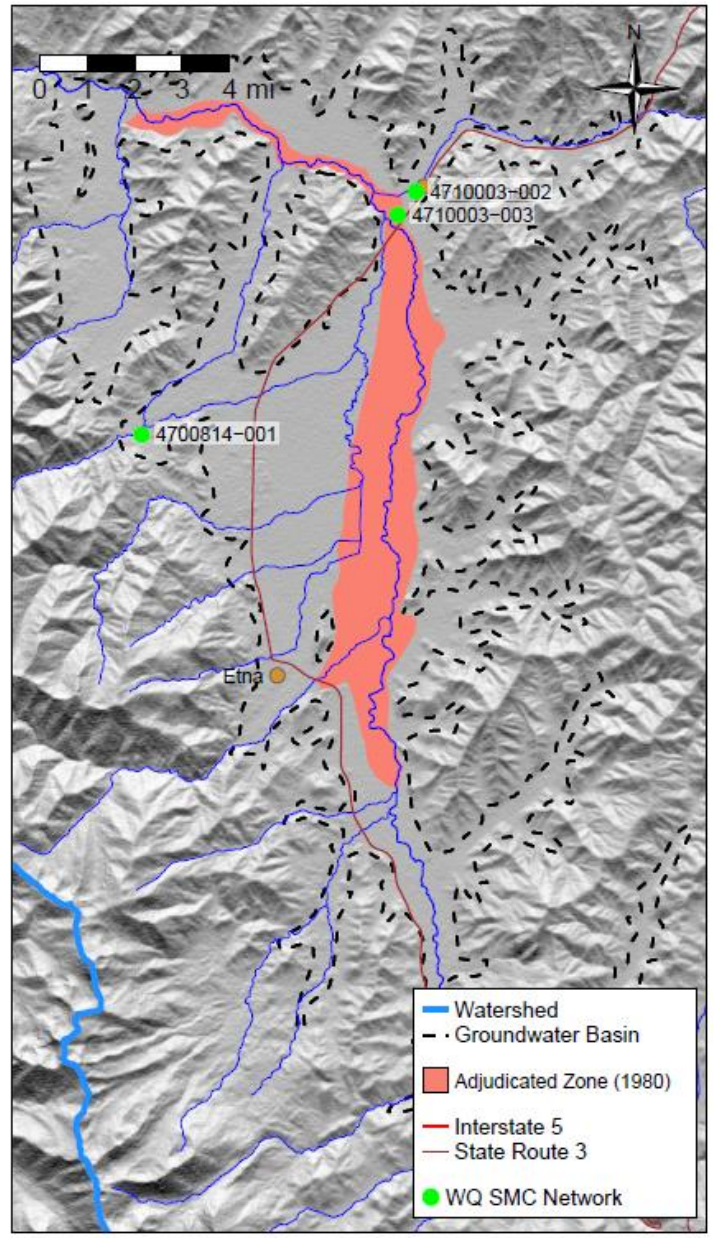
Monitoring networks include:

- GSA network
  - Municipal wells

Water quality data reported to DWR include:

- Municipal wells
- Domestic wells
- Cleanup sites

Quartz Valley Indian Reservation



Ongoing plan to measure evapotranspiration (ET) and tributary inflows to refine the water budget

ET AND SOIL MOISTURE in Scott

- Installation of 10-15 ET/Soil Moisture stations and one Eddy-covariance stations (by UCCE)
- Correlate soil moisture data/precipitation/irrigation timing
- Compare with satellite data
- Assess potential for efficiency improvements

TRIBUTARY INFLOWS in Scott Valley

- Joint effort of Scott River Watershed Council and Quartz Valley Indian Reservation
- Installation of streamgages on most of the tributaries entering the Scott River
- Measurements along the main stem

Refine water budget within the Scott Valley Integrated Hydrological Model

Thank You

Name, Title
Larry Walker Associates
Email