

OCTOBER ADVISORY COMMITTEE MEETINGS

Scott Valley Groundwater Advisory Committee Meeting



LARRY WALKER
ASSOCIATES
science | policy | solutions



Topics

- Groundwater Levels- Ongoing Data Collection
- PRMS Model Update
- SVIHM Update
- Sustainable Groundwater Management (SGM) Grant Program's SGMA Implementation Round 2 Funding- Review of Final Funding
- Data Gap Work Group- outcomes from initial meeting

Precipitation

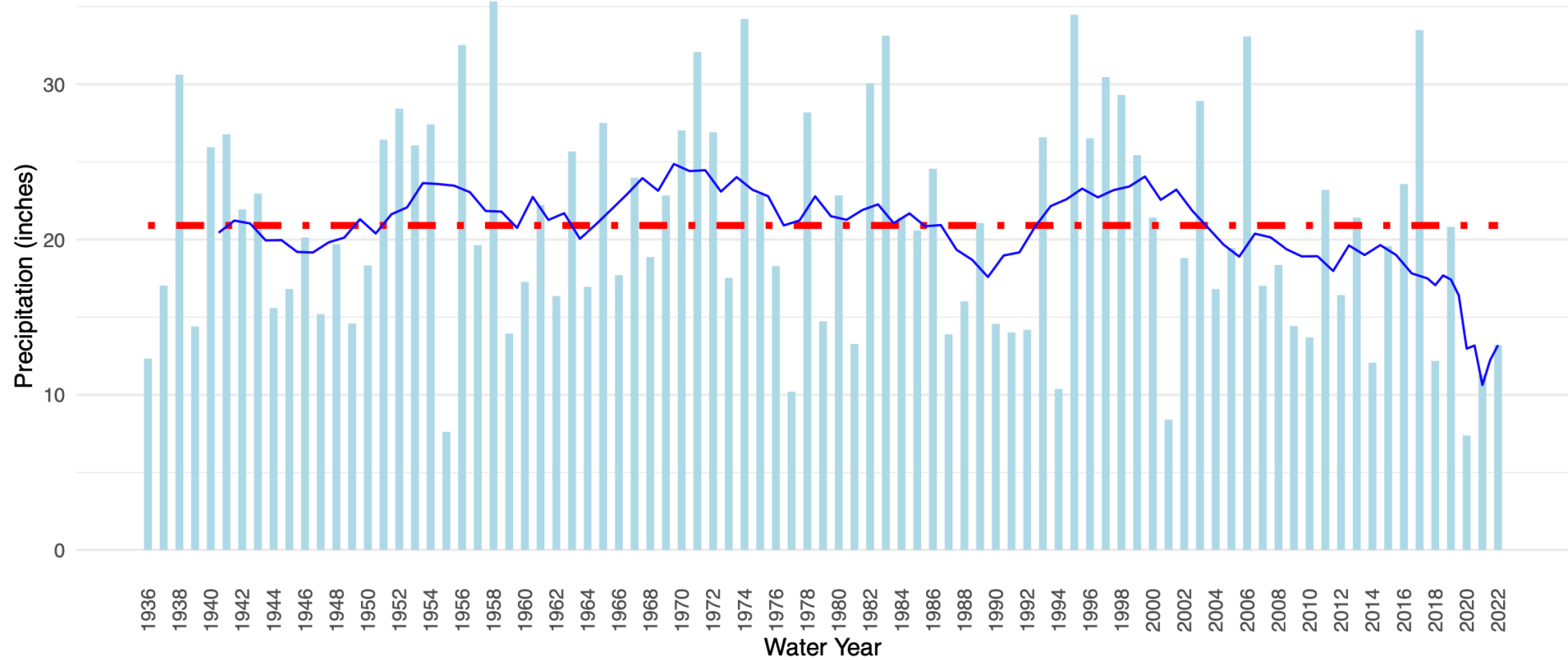
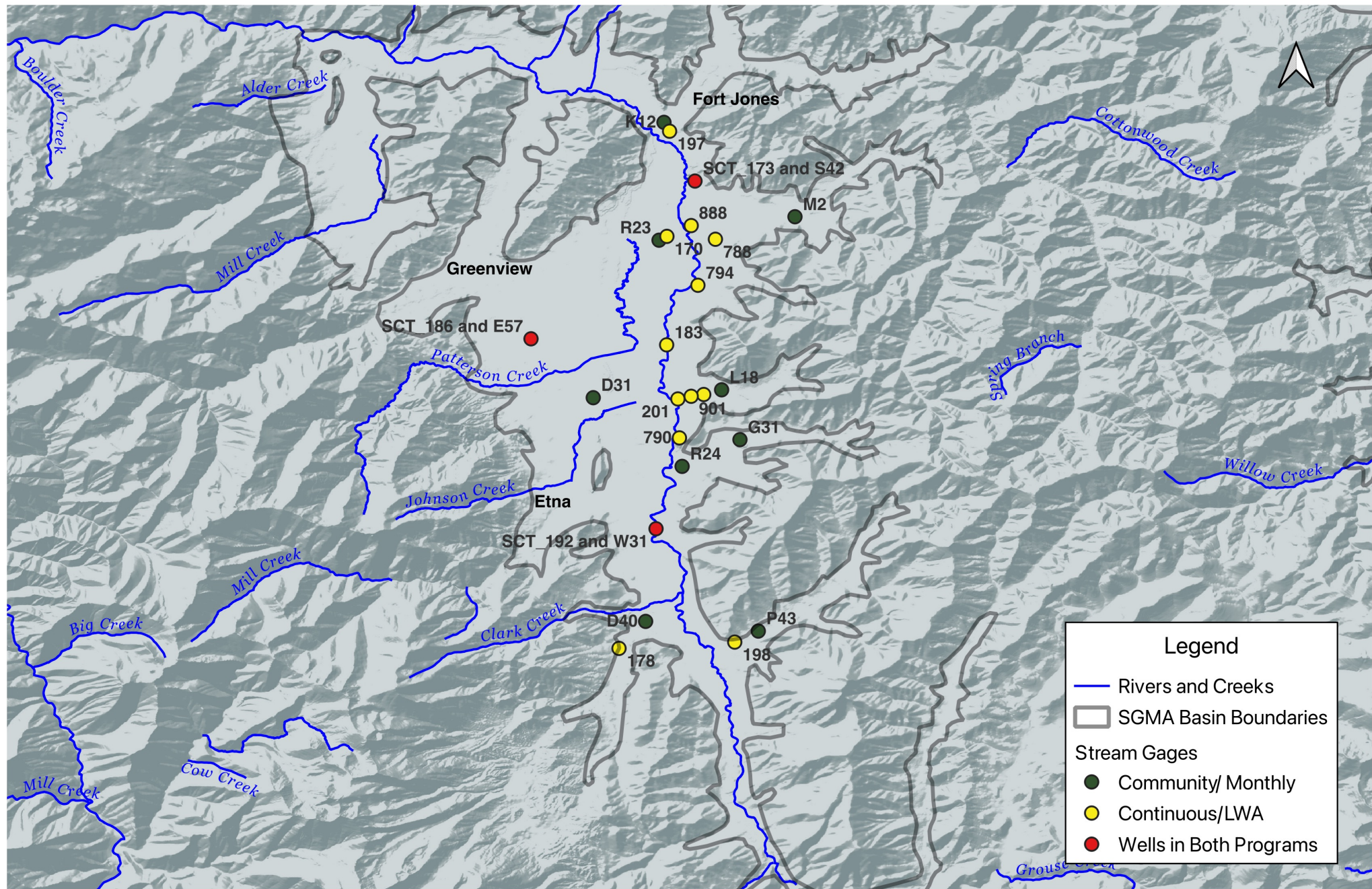


Figure 4: Fort Jones annual precipitation from 1935 to 2022, according to CDEC data. The long term mean is shown as a red dashed line, and the ten year rolling mean is the blue trendline.

Ongoing Data Collection – GSA

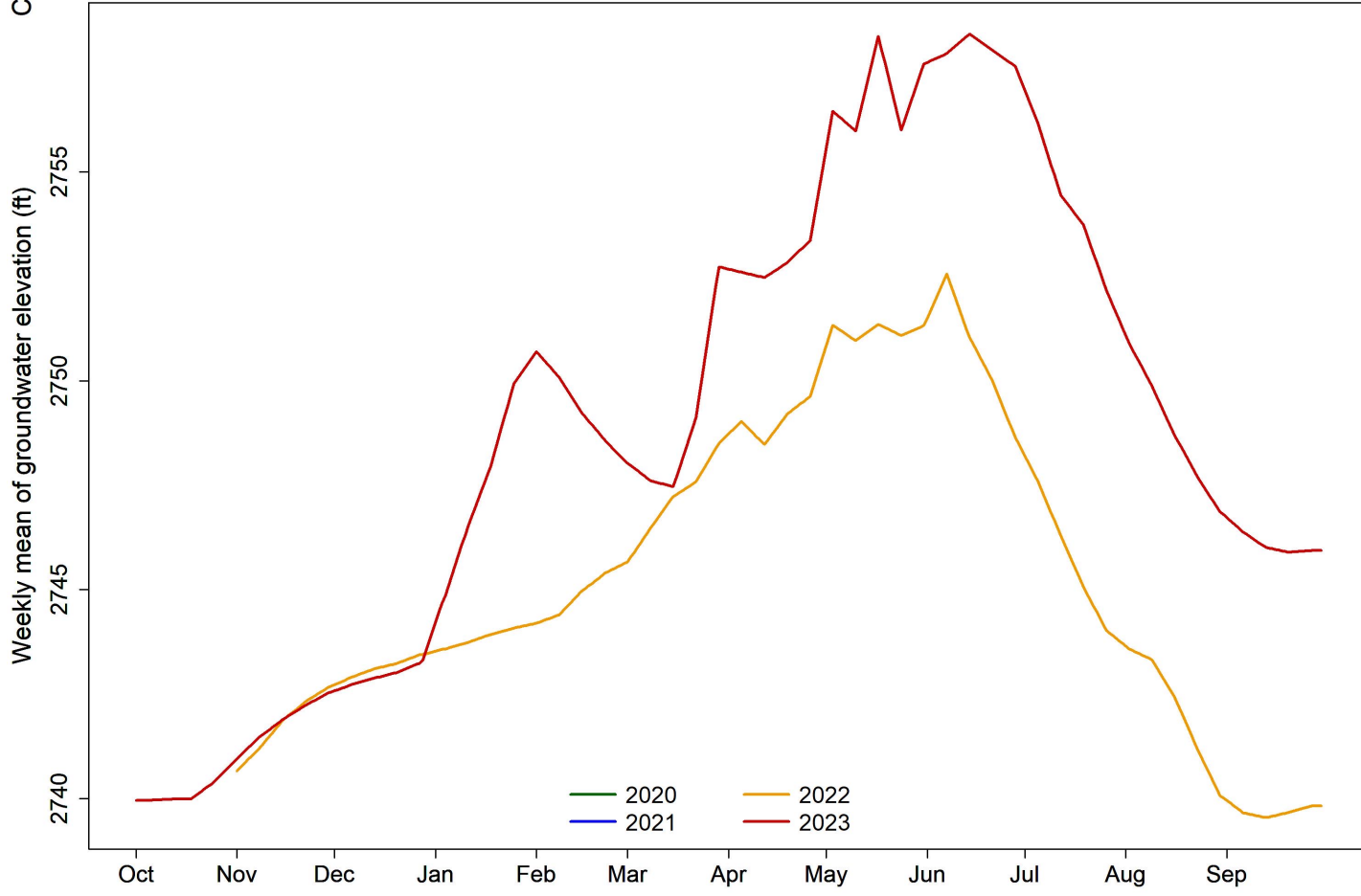
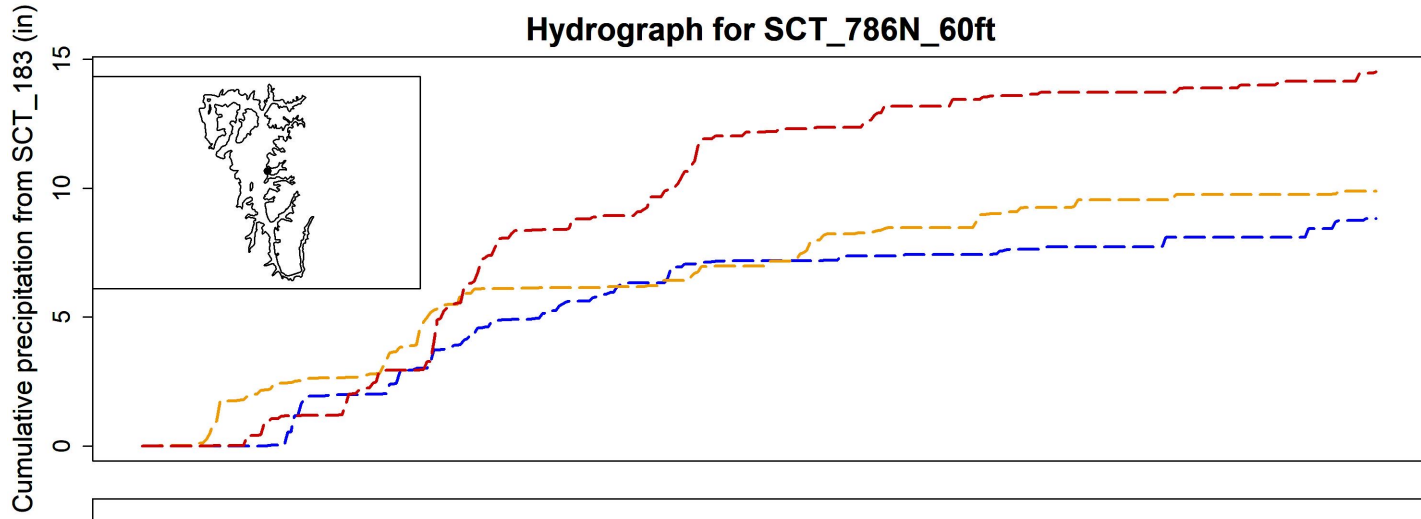
- 15 wells measured continuously
 - Pressure transducers, telemetered, 15 min interval
 - 2 sites have two measurements at different depths
- 11 wells measured manually (monthly)
- 3 wells in both monitoring programs (continuous and monthly)



0 2.5 5 mi



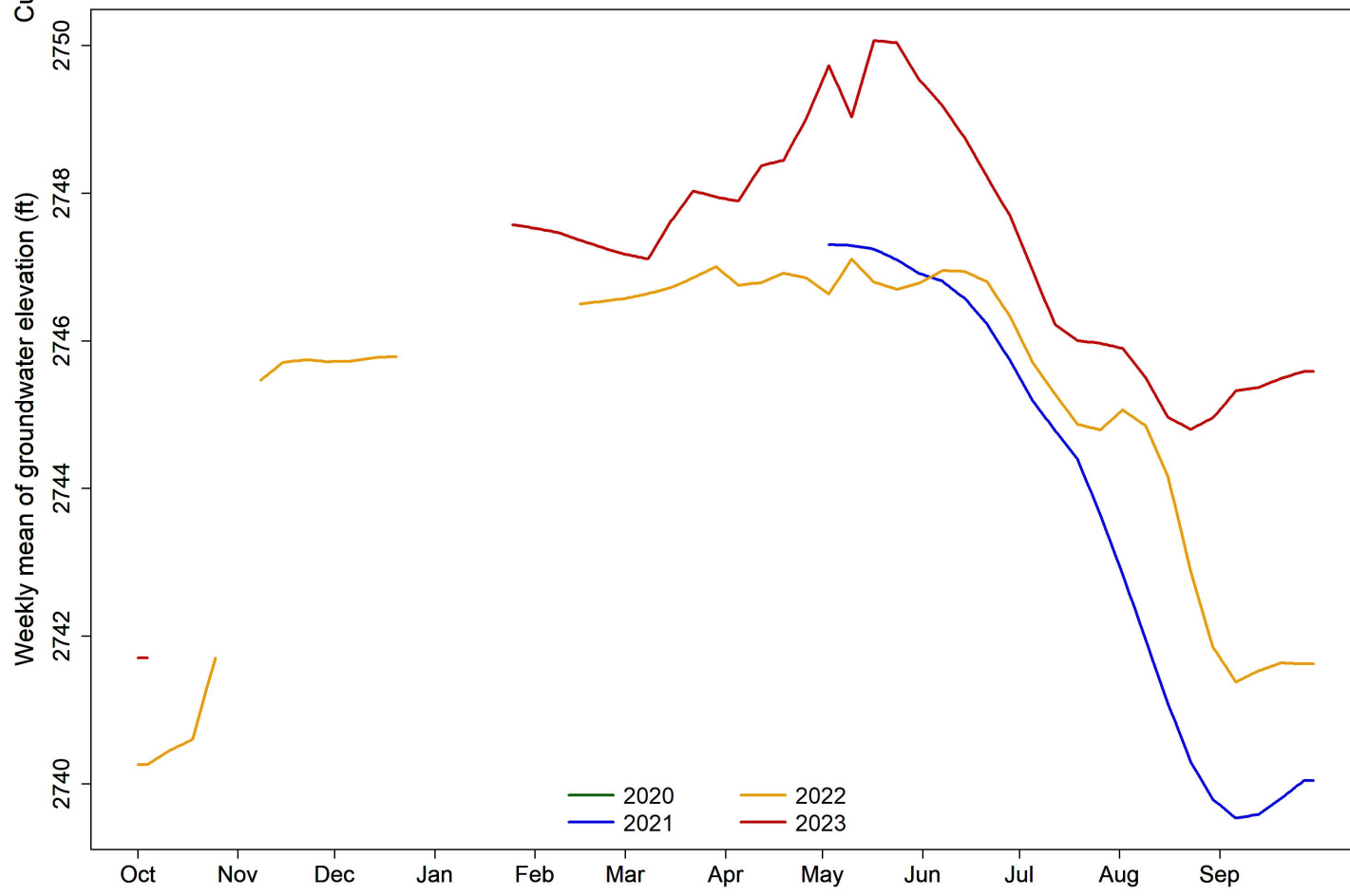
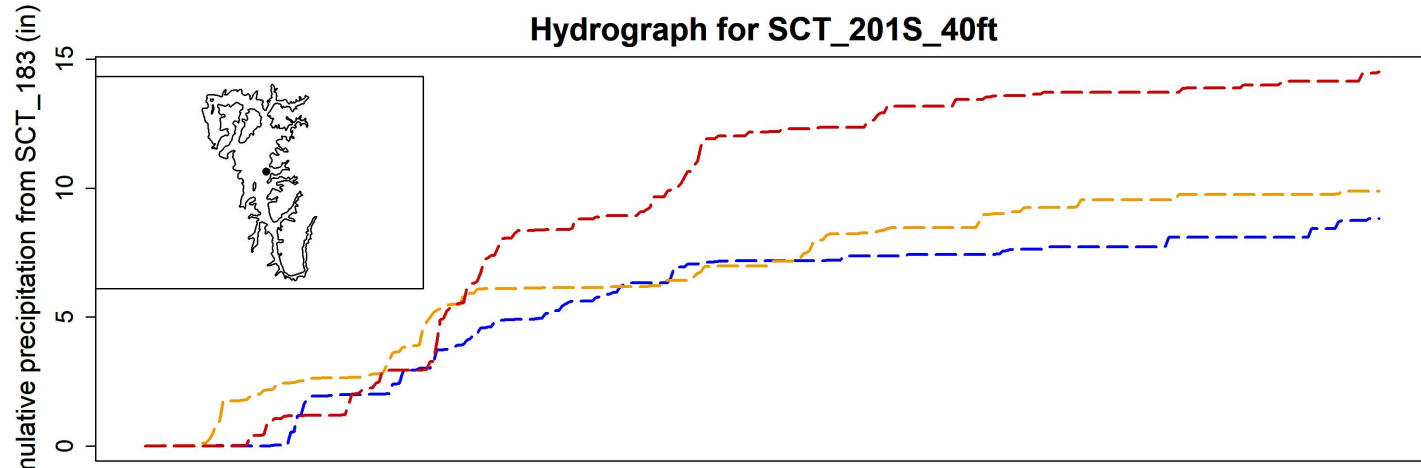
Hydrograph for SCT_786N_60ft



About 15 ft

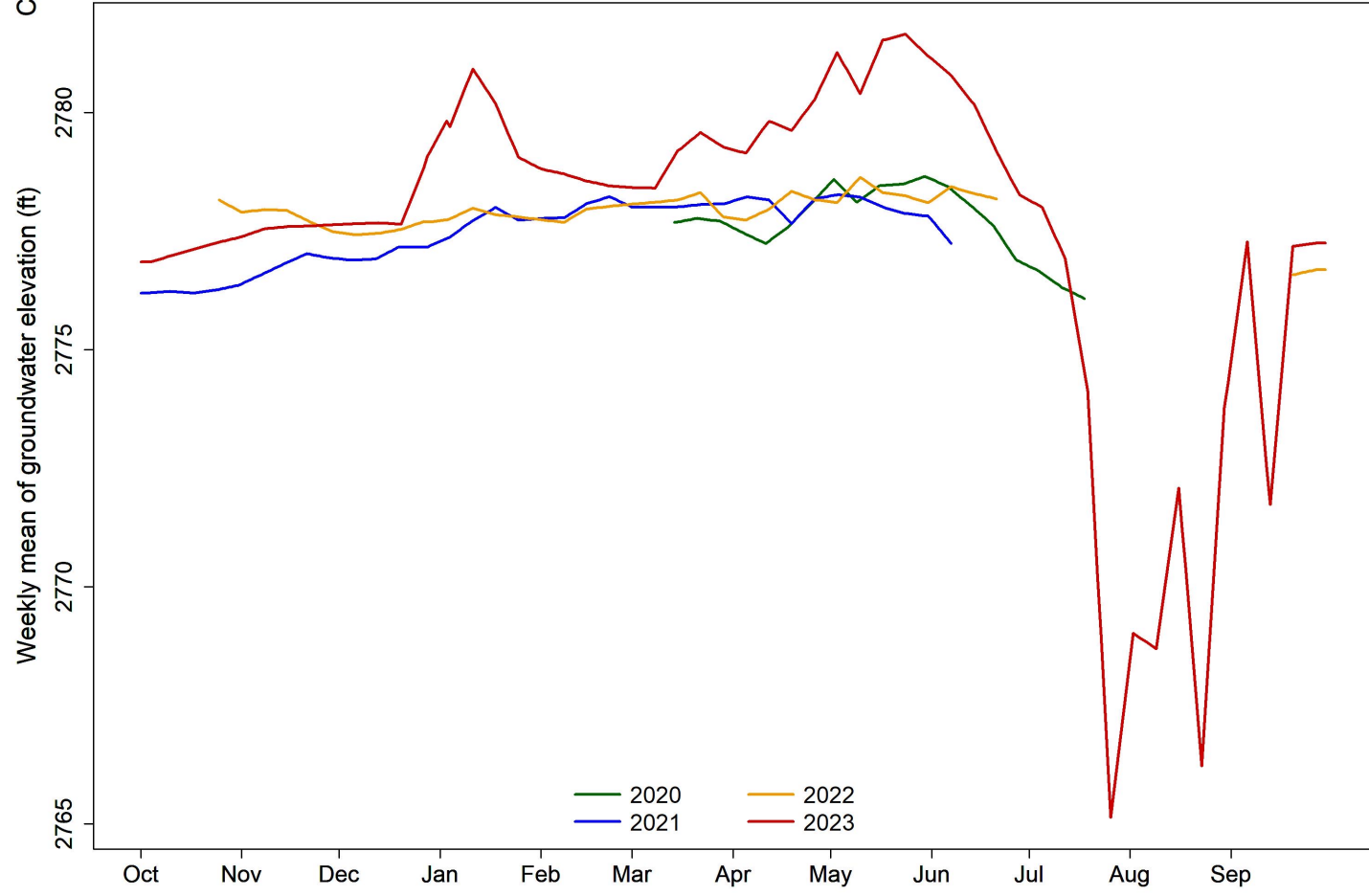
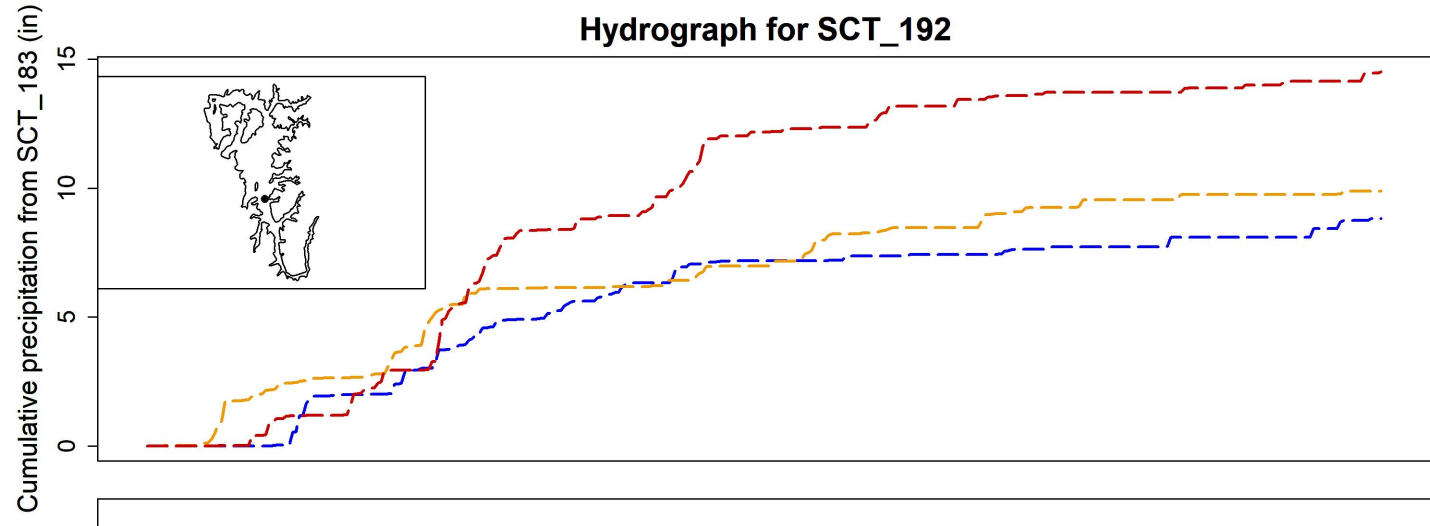


Hydrograph for SCT_201S_40ft



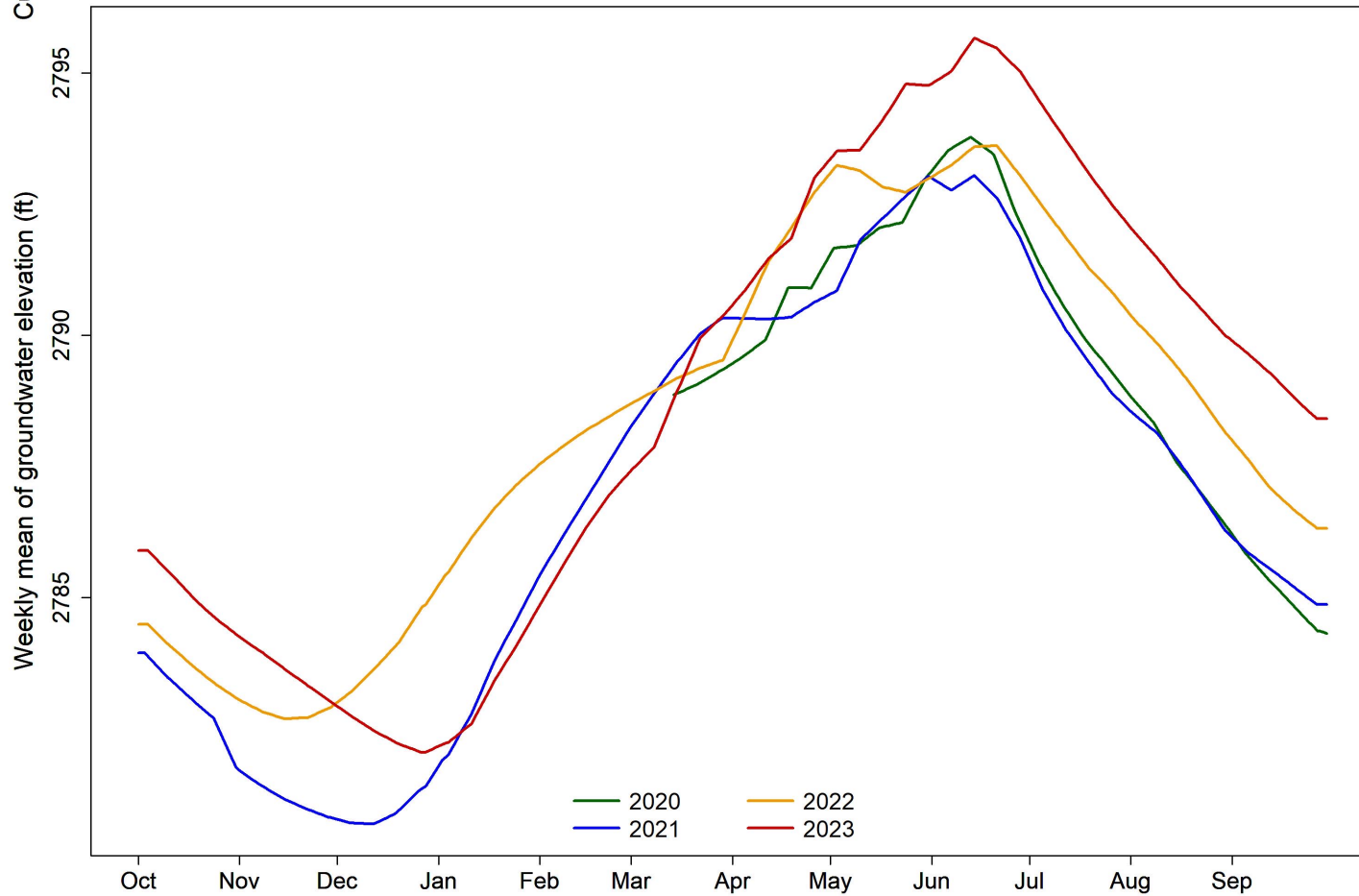
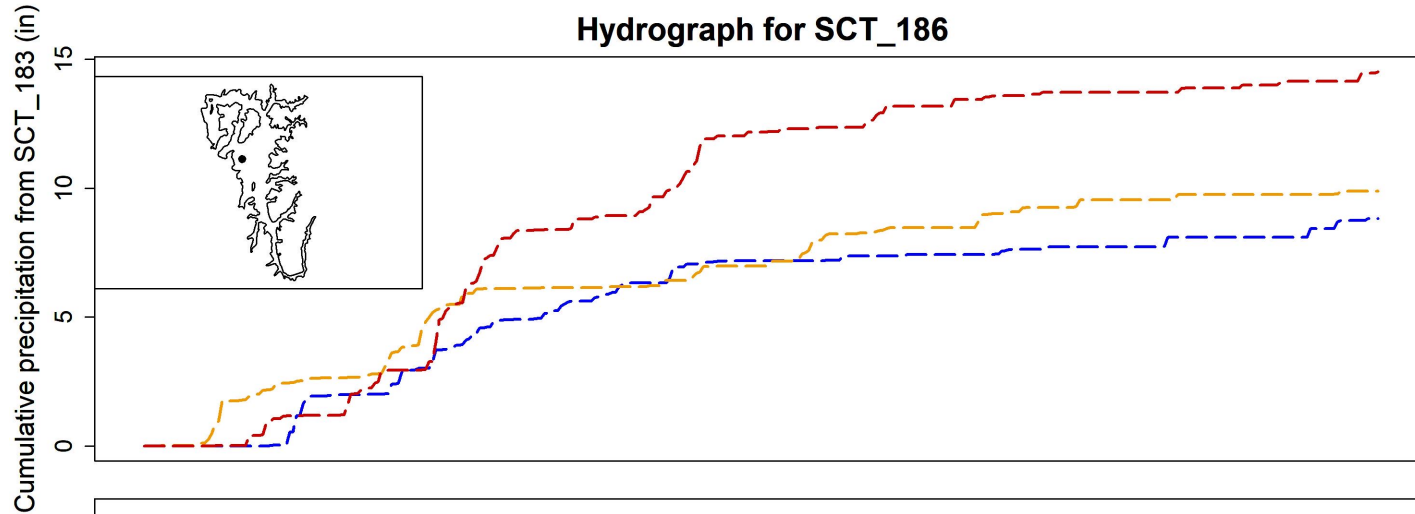
About 10 ft

Hydrograph for SCT_192



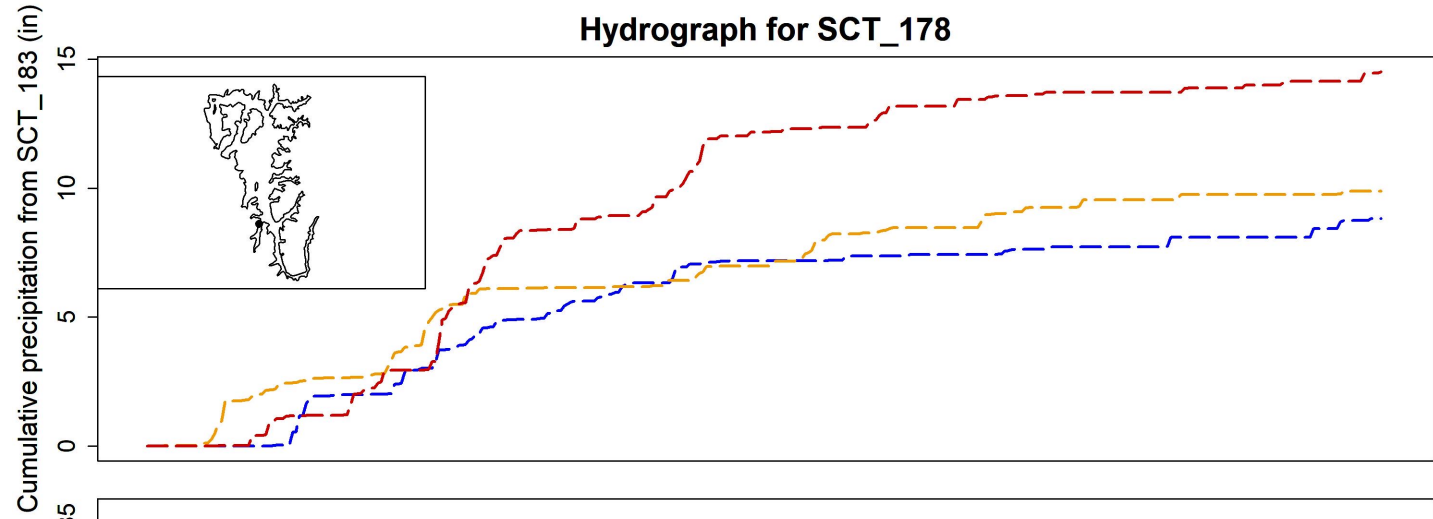
About 20 ft

Hydrograph for SCT_186



About 15 ft

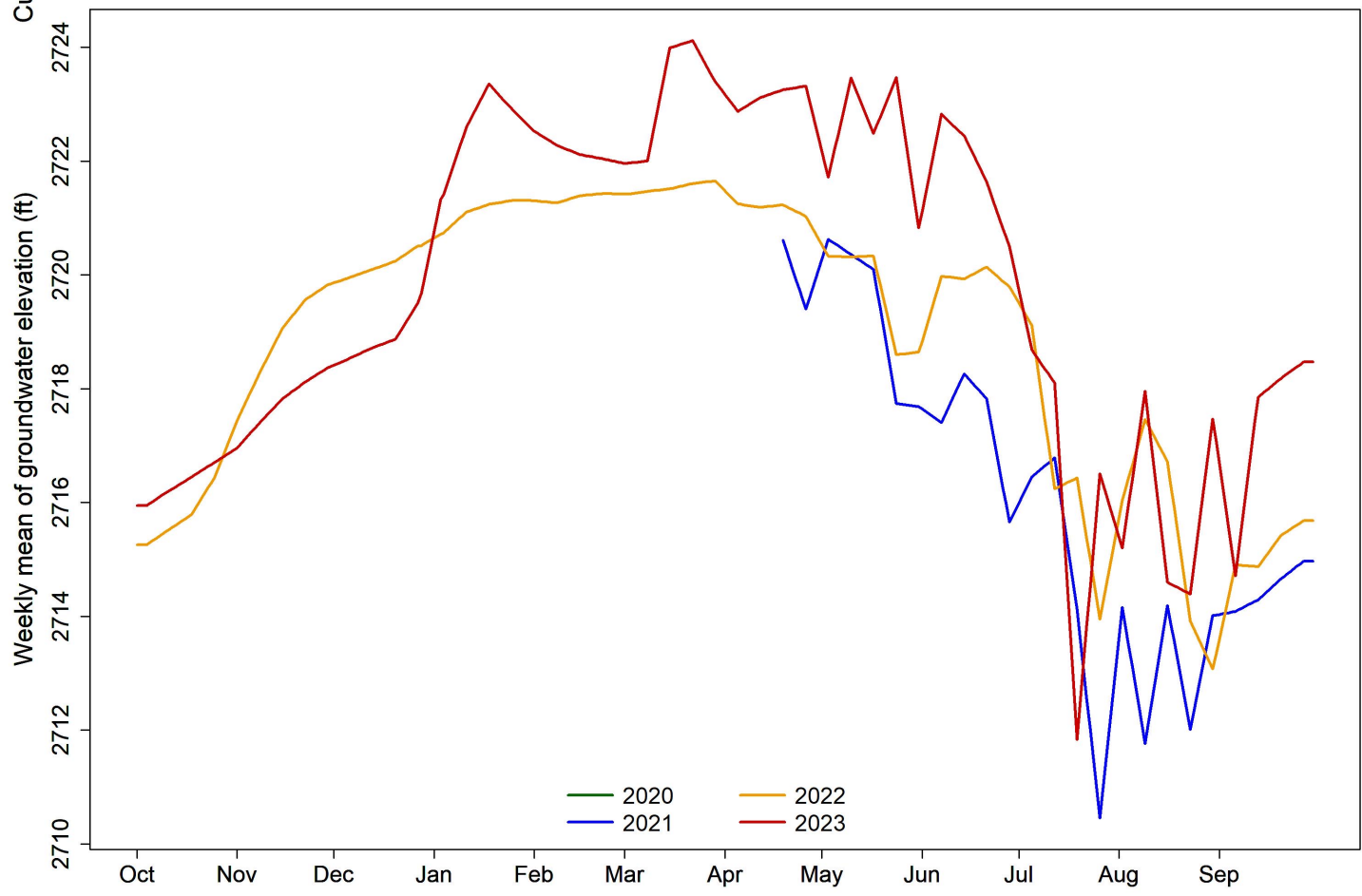
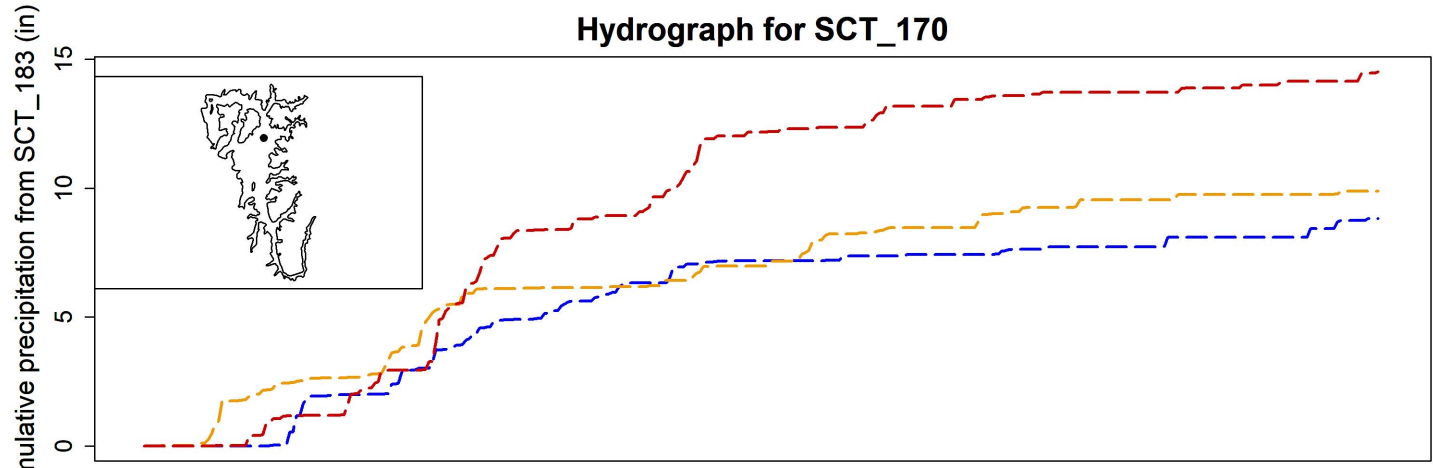
Hydrograph for SCT_178



About 25 ft



Hydrograph for SCT_170



About 15 ft



Scott Model Update

- Scott Valley Integrated Hydrologic Model (SVIHM)
 - Streamflow from the Scott Valley Precipitation Runoff Modeling System (PRMS) is being incorporated
 - Updates to Soil Water Budget
 - Incorporate light coupling from Scott Valley Water Evaluation and Planning System (WEAP) model

Scott Valley Precipitation Runoff Modeling System (PRMS)

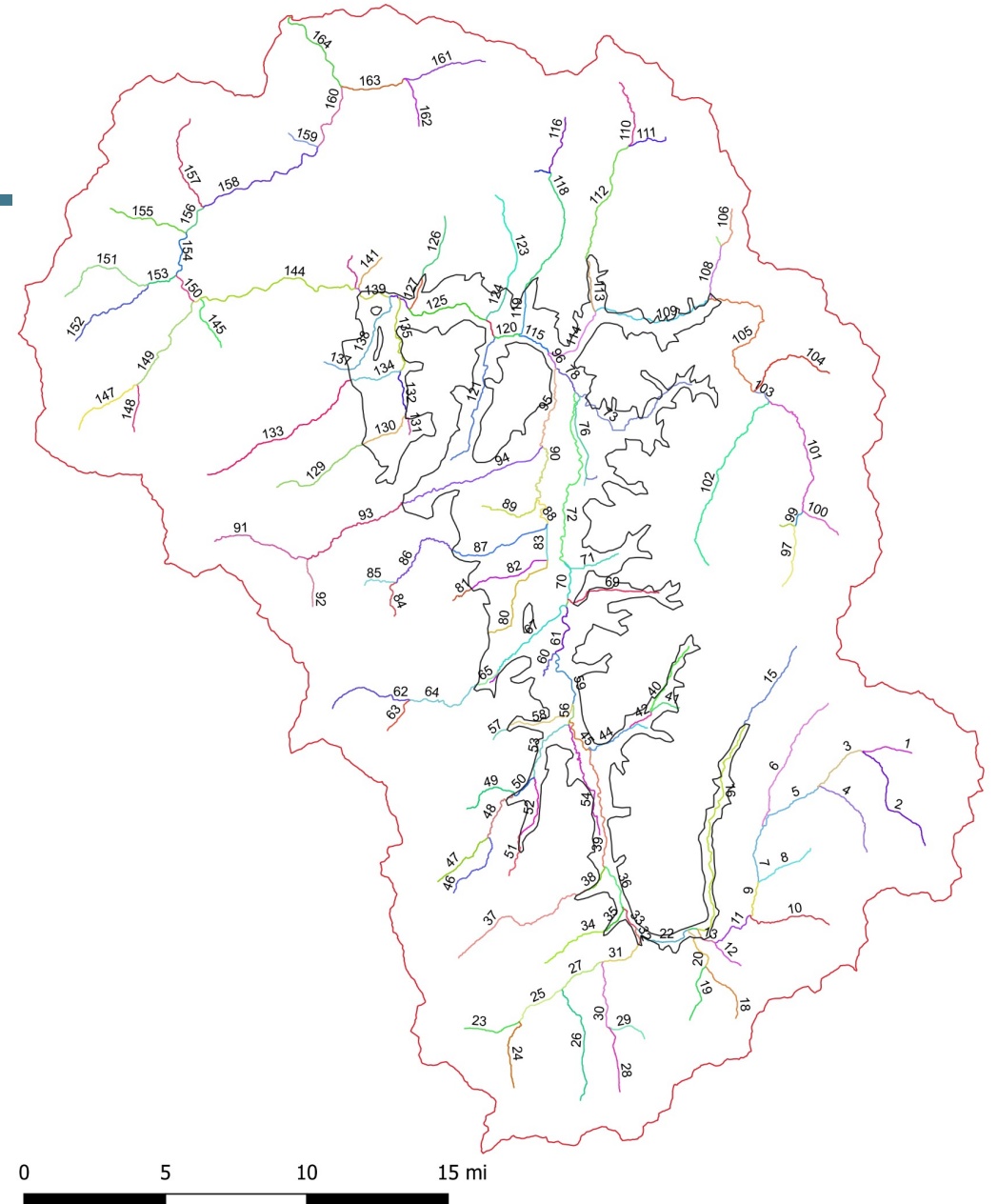
- Scott Valley GSP - Depletion of Interconnected Surface Water
 - Does not use groundwater levels as a proxy
 - Currently available data is too noisy
 - GW levels affected by many factors including groundwater pumping, seasonal climate, recharge, and pumping changes.
 - Quantified with the Scott Valley Integrated Hydrogeological Model (SVIHM), which can be updated to the last completed calendar month (i.e., August 2023).

Scott Valley Precipitation Runoff Modeling System (PRMS)

- SVIHM streamflow
 - Dependent on an estimate of streamflow based on a regression of historical data.
 - Need a better streamflow estimate that uses local monitoring data and can be adjusted for climate change.
 - During GSP development, stakeholders expressed the need for a system that can better simulate possible climate change scenarios.
- Scott Valley Precipitation-Runoff Modeling System (PRMS)
 - Calibrated to local monitoring station data
 - Input precipitation and temperature can be adjusted to simulate different climate scenarios and predict streamflow.

Scott Valley Precipitation Runoff Modeling System (PRMS)

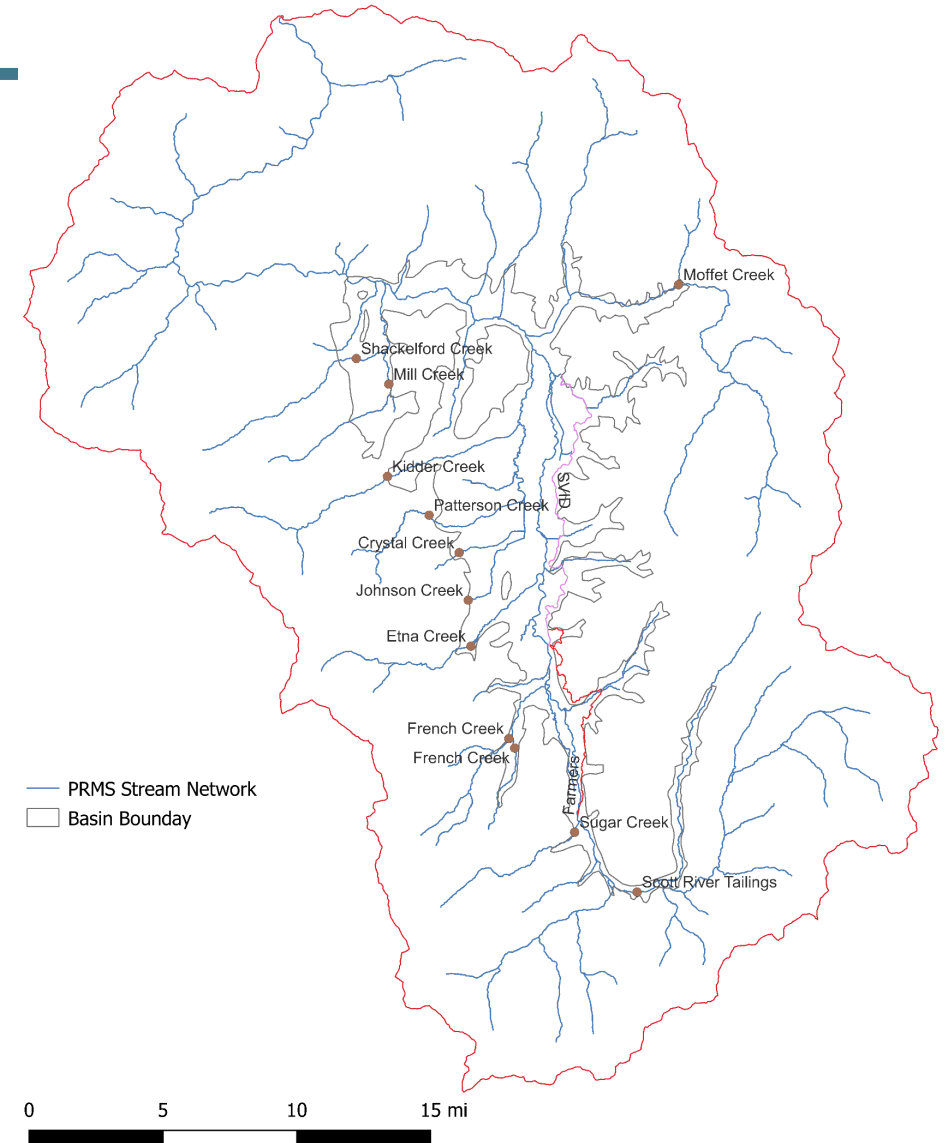
- Update SVIHM with PRMS
 - PRMS calculates streamflow while considering snowpack, runoff, plant canopy, and other parameters.
 - Watershed scale
 - Time-dependent streamflow from October 1990 to June 2023
 - Low flow and high flows
 - Daily streamflow
- Future Work
 - More calibration and automatic yearly updates



Scott Valley Precipitation Runoff Modeling System (PRMS)

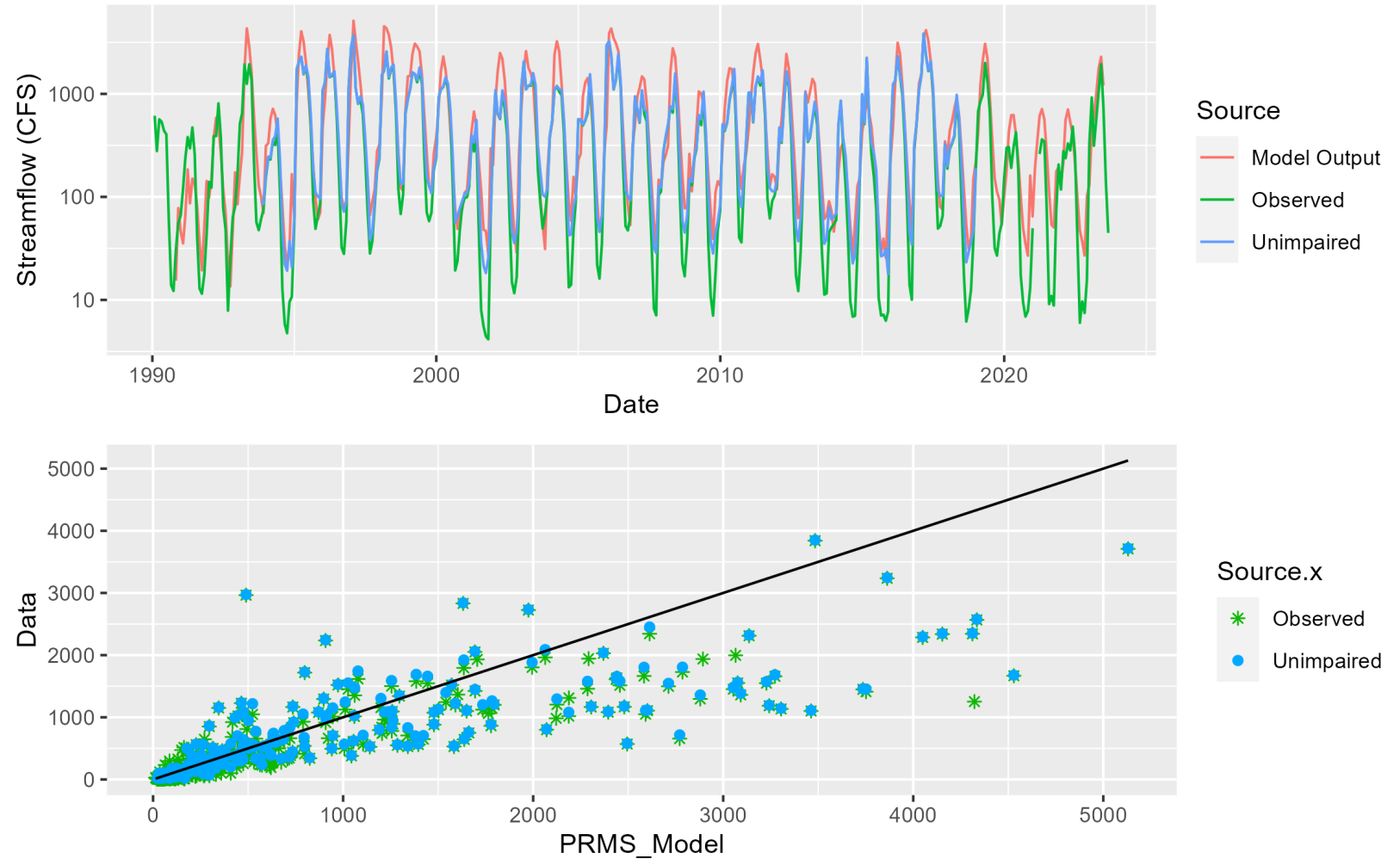


- Unimpaired Streamflow
 - Diversions (Basin Only)
 - Calculated in SVIHM Soil-Water Budget
 - Represents diversions within the groundwater basin
 - Calculated Diversions
 - Scott River (upriver of Sugar Creek)
 - Creeks: Sugar, French (2), Etna, Johnson, Crystal, Patterson, Kidder, Moffett, Mill, Shackelford
 - Irrigation Ditches: SVID and Farmer's Ditch



Scott Valley Precipitation Runoff Modeling System (PRMS)

Fort Jones
USGS station
on Scott River



SVIHM Update

Implementation Round 2 Funding Final Awards

COMPONENT	FUNDING AWARDED
SGMA Compliance and GSP Updates <ul style="list-style-type: none">• <i>Database Management</i>• <i>GSP Revisions</i>• <i>Reporting</i>• <i>Model Updates and Scenario Evaluation</i>• <i>Data Gaps and Monitoring Expansion</i>• <i>Outreach</i>	\$1,478,000
Fee Study and Economic Analysis <ul style="list-style-type: none">• <i>Evaluation of fee/rate options</i>• <i>Parcel specific groundwater use and supply</i>• <i>Fee/rate schedule development</i>• <i>Economic analysis</i>	\$220,000

Implementation Round 2 Funding Final Awards

COMPONENT	FUNDING AWARDED
Well Inventory <ul style="list-style-type: none">• <i>Well inventory</i>• <i>Well Risk Assessment and Mitigation Program Development</i>• <i>Database Development</i>• <i>Well Construction and/ or Instrumentation</i>	\$320,000
SVID Recharge Project <ul style="list-style-type: none">• Design, Planning, Permitting• Construction/ Monitoring Instrumentation• Monitoring and Data Analysis• Reporting	\$1,100,000
Upland Management <ul style="list-style-type: none">• Project Planning and Design• Permitting and Environmental Documentation• Data Collection and Analysis	\$410,000

Project Schedule

	Not started yet
	Ongoing
	Completed

		October 2023	February 2024	May 2024	August 2024
1	SGMA Compliance and GSP Updates				
	• GSP Revisions				
	• Reporting (Data reporting and Annual report)				
	• Model Updates and Scenario Evaluation				
	• Data Gaps and Monitoring Expansion	Data gap subcommittee met in October 2023			
	• Database Management				
	• Outreach				
2	Fee Study and Economic Analysis				
3	Well Inventory				
4	Recharge project	SVID project, some west side evaluation			
5	Upland management				

Data Gap Work Group- Recap

- Reviewed Data Gaps listed in Appendix 3-A of the GSP
 - Multiple efforts underway for streamgage additions, coordinate with other groups
 - Groundwater quality currently nitrate and specific conductivity, suggestion to add temperature
 - Continuous groundwater levels
 - Recommend putting together map of additional desired locations
 - Additional locations- lower reaches of the Valley, all of Reach 9, Oro Fino
 - **HIGH priority** data gap revised to include:
 - Evapotranspiration
 - Extraction data

Land Efficiency Study Opportunity



- **Mobile Irrigation Lab**- free on-site evaluation of agricultural irrigation systems
- More information can be found here:
<https://www.tehamacountyrcd.org/mobile-irrigation-lab>





Thank You