



SCV
WATER

6/14/2023

Watershed Resilience Initiative

**Update on the California Environmental Flows
Framework (CEFF) & Habitat Suitability Modeling**

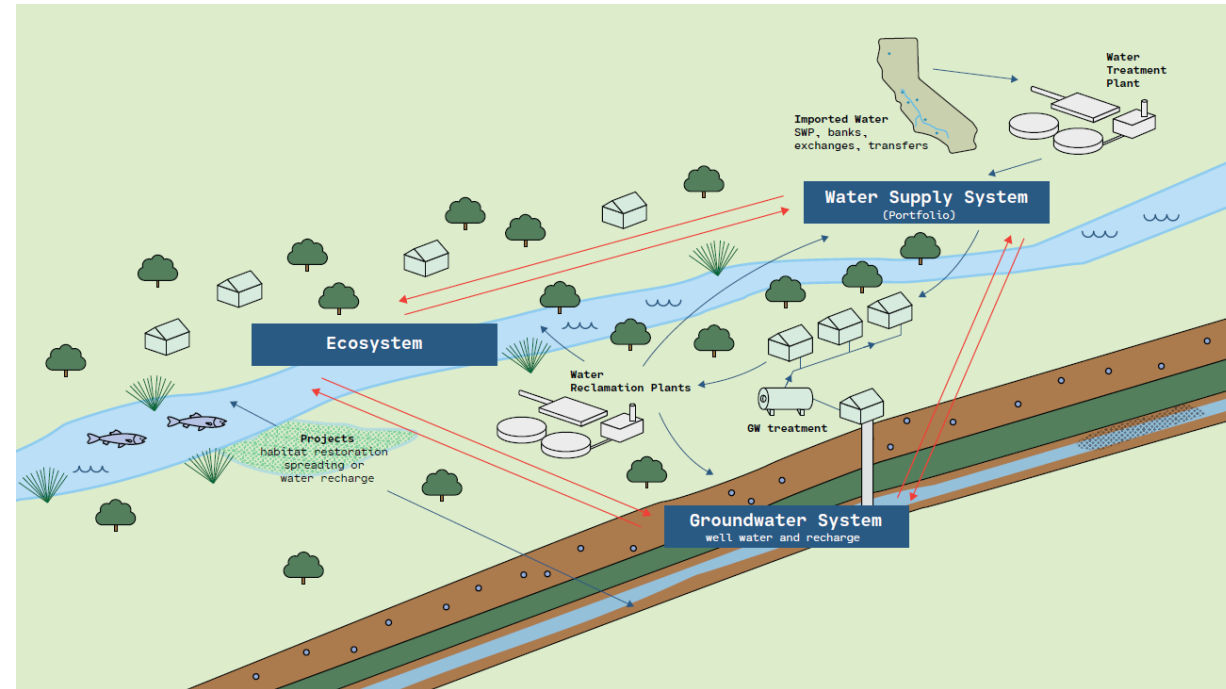
Outline

- Introduction
- Use of California Environmental Flows Framework (CEFF) in agency planning
- CEF Framework and Habitat Suitability Model
- Observations on Existing Conditions
- Next Steps



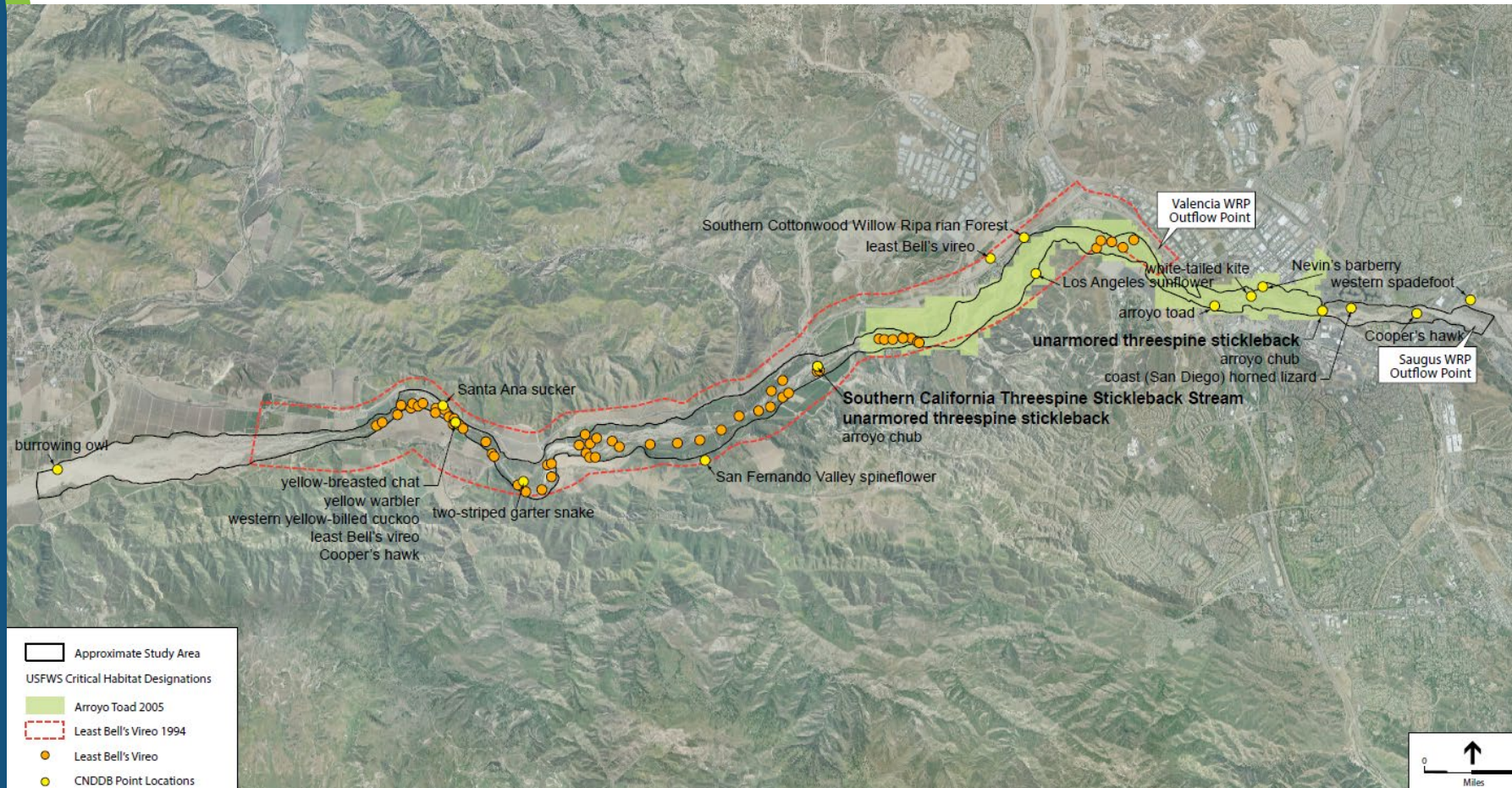
Introduction

- The California Environmental Flows Framework (CEFF) is a planning approach adopted by the State of California to develop scientifically defensible environmental flow recommendations, that balance human and ecological needs for water.



Introduction - Key Species and Habitats

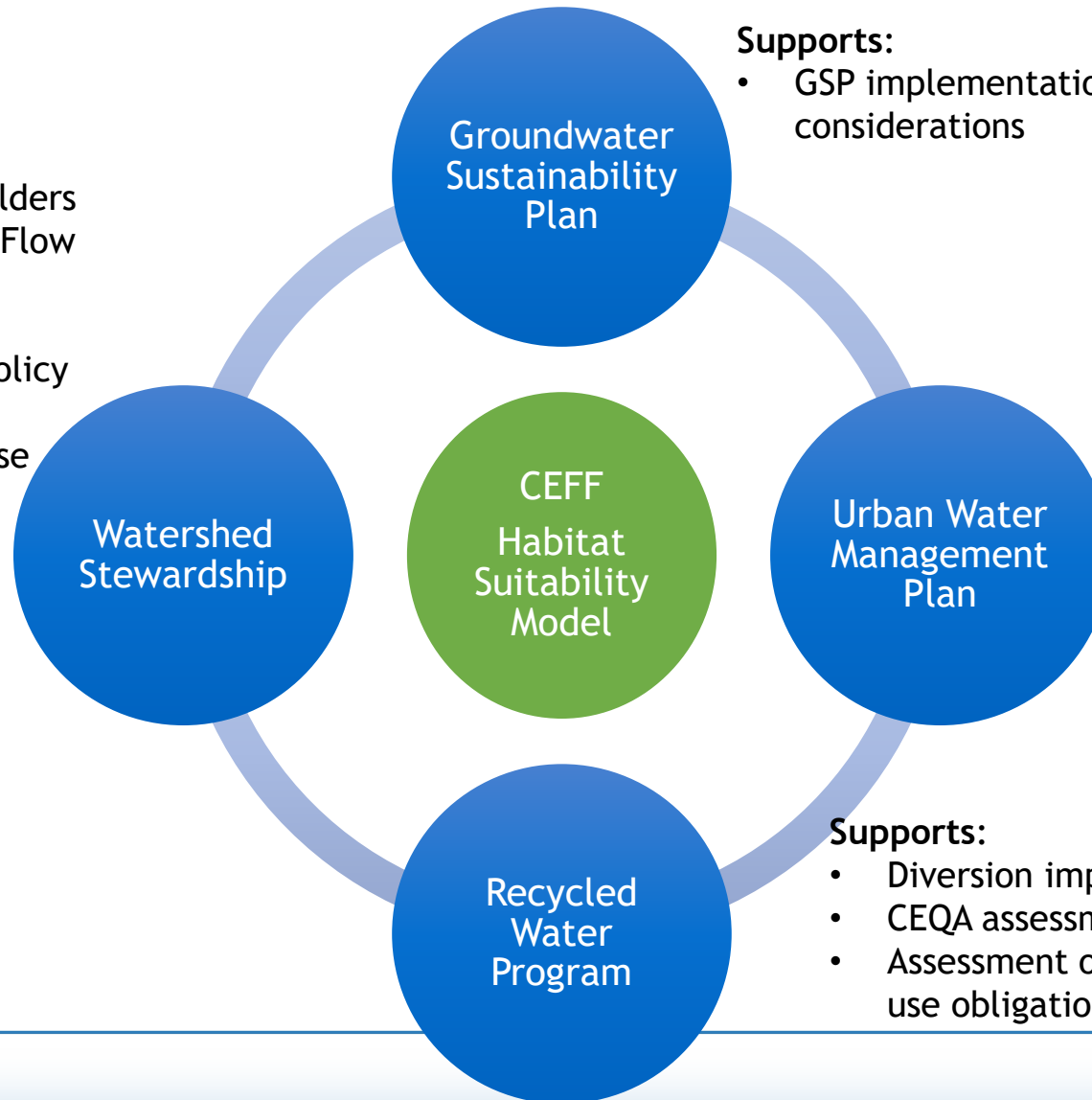
- Riparian woodland and associated species e.g., least Bell's vireo
- Santa Ana sucker (SAS)
- Unarmored three-spined stickleback (UTS)



Use of CEFF in Agency Planning

Supports:

- Facilitates relationships and leadership with local stakeholders
- Advances SWRCB's In-Stream Flow Analysis Goals
- Comports with Board's stated environmental stewardship policy objectives
- Enhances influence on land use decisions within floodplain



Supports:

- GSP implementation for GDE considerations

Supports:

- Three-year drought water supply availability
- Water Supply Assessments
- CEQA assessments

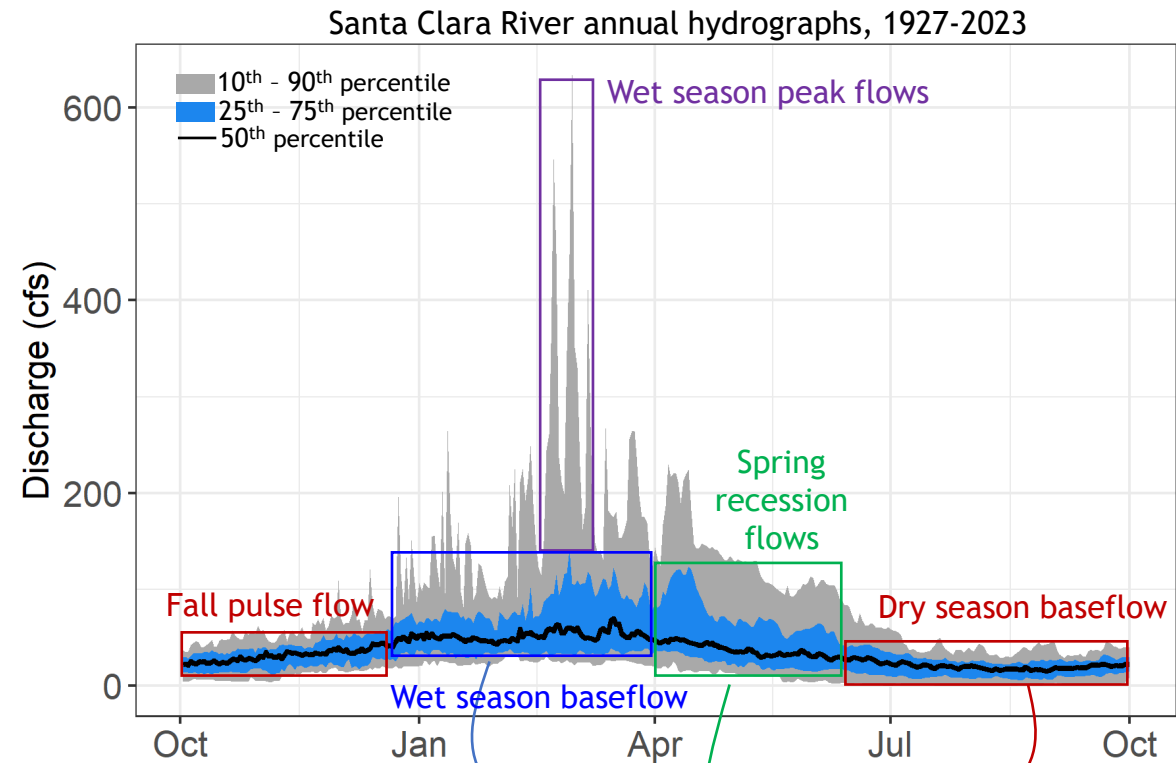
Supports:

- Diversion impacts evaluation
- CEQA assessments
- Assessment of downstream beneficial use obligations and opportunities



California Ecological Flows Framework (CEFF)

- First steps involve the identification of natural flow metrics that support ecosystem functions.



What ecological functions or species are supported by each component of the annual hydrograph? e.g., UTS spawning April-July



Ecological Flows Framework (CEFF)

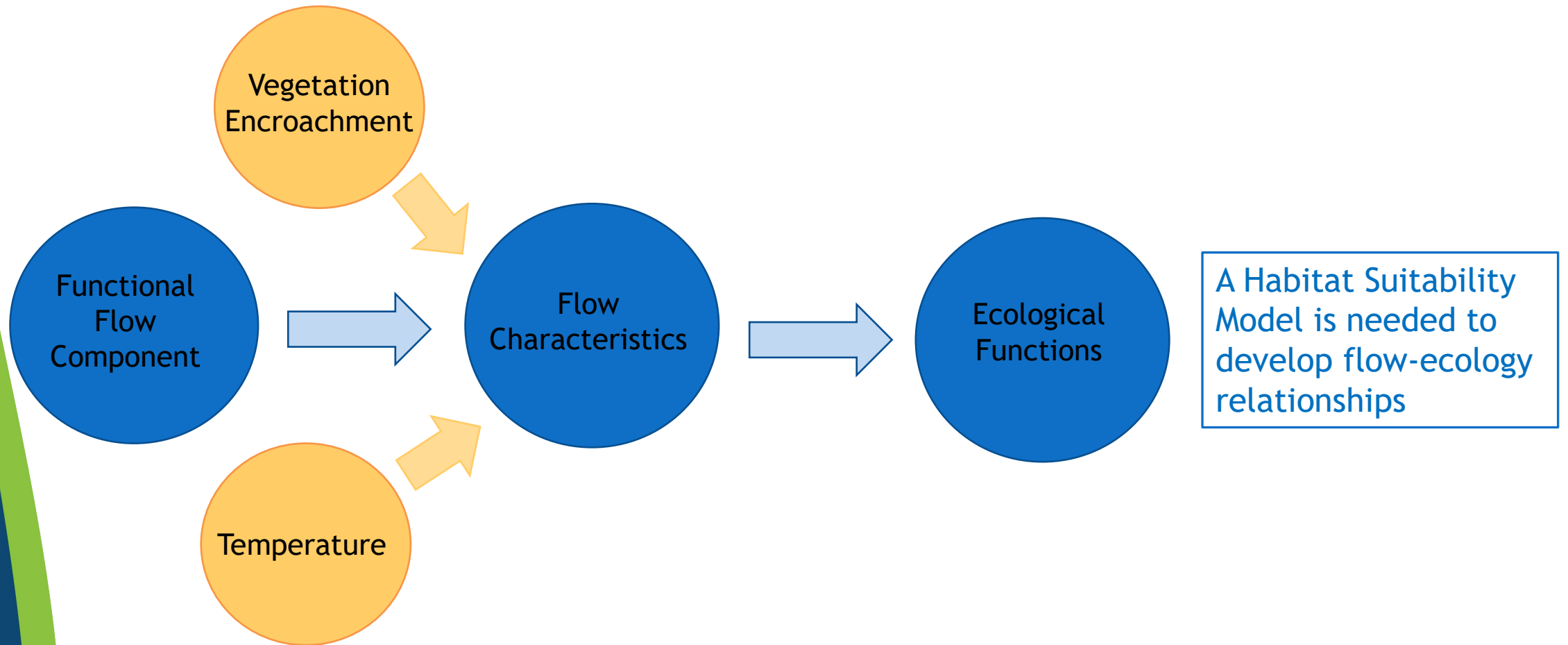
Castor Bean



Arundo donax

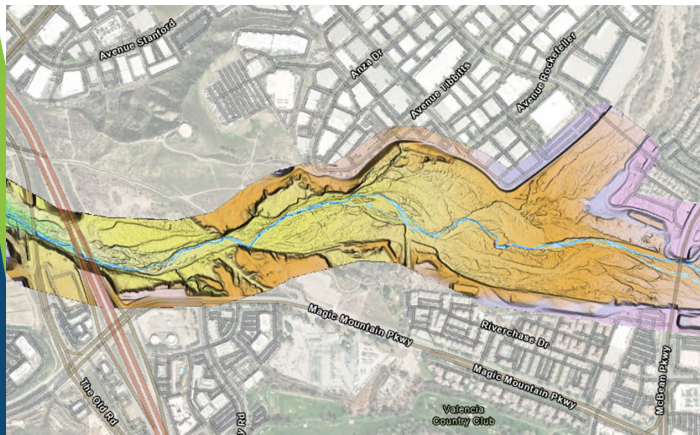


California Ecological Flows Framework (CEFF)

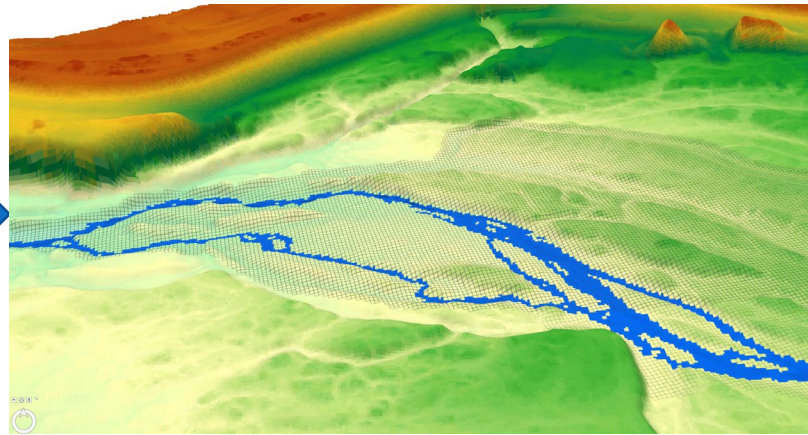


Habitat Suitability Model

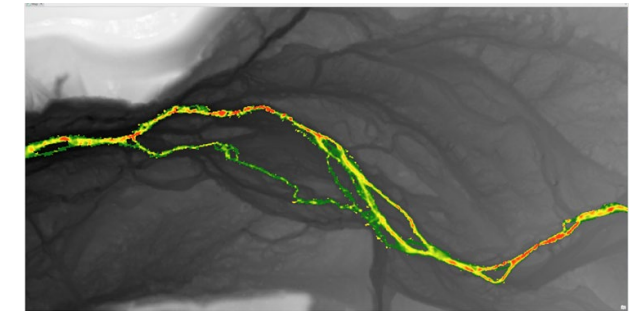
LiDAR survey of river channel completed in July 2022 from Bouquet Canyon Road to Ventura County Line



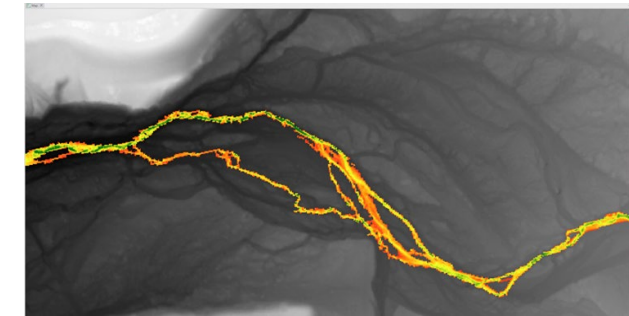
Hydraulic model of river at different flow rates.



Output: velocity and depth at each cell, at a given flow rate.



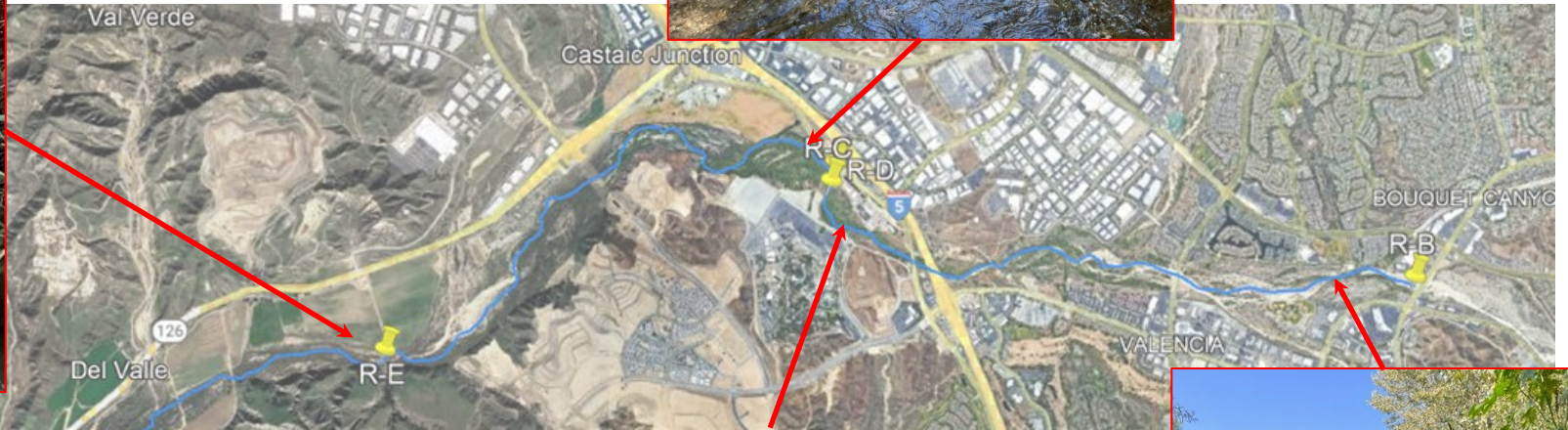
velocity



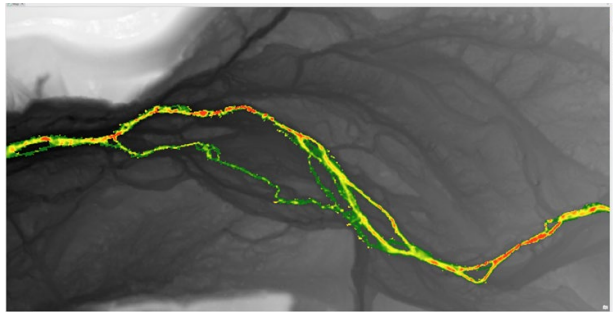
depth



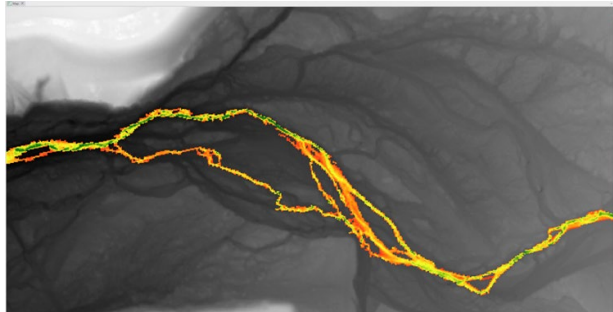
Field calibration of the hydraulic model (velocity and depth)



Habitat Suitability Model



velocity



depth



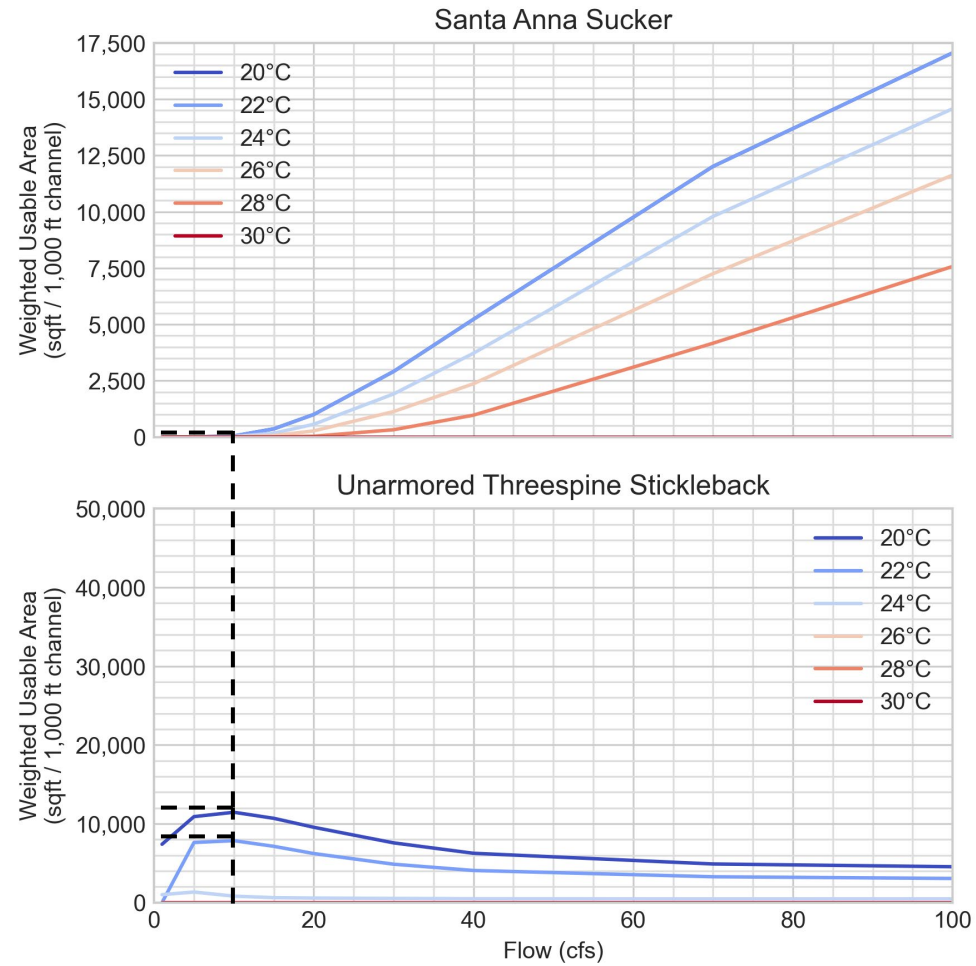
temperature



Habitat
Suitability
Curves



Habitat Suitability Model



Observations on Existing Conditions

Castaic Creek to Piru

- Temperature unsuitable or limited for UTS every summer/fall
- Suitable for SAS
- Suitable for riparian habitat
- Some sensitivity to groundwater level but other factors play stronger role

Valencia WRP to Castaic Creek

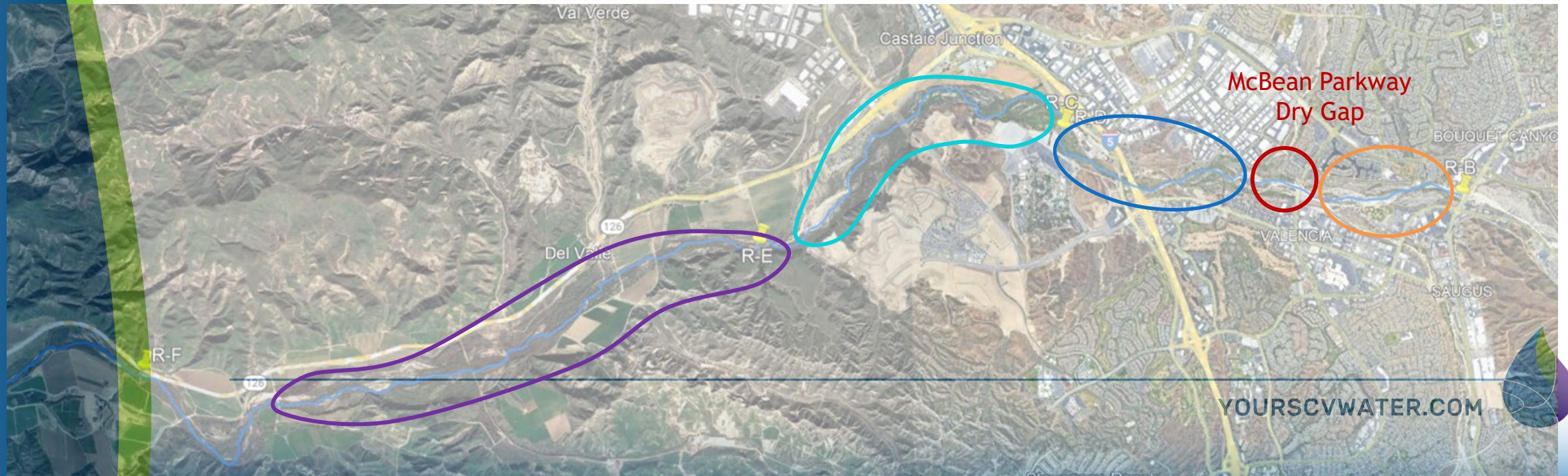
- Thermally unsuitable or constrained for UTS every summer/fall
- Suitable for SAS
- Highly suitable for riparian habitat
- Persistently high groundwater since 1940s near Valencia, some habitat sensitivity to GW near Castaic

San Francisquito Canyon to Valencia WRP

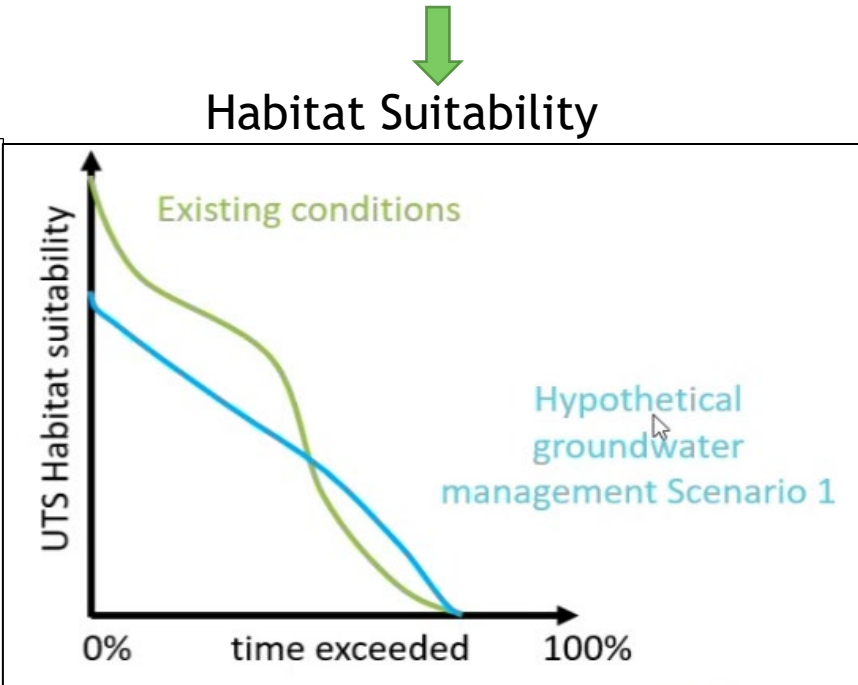
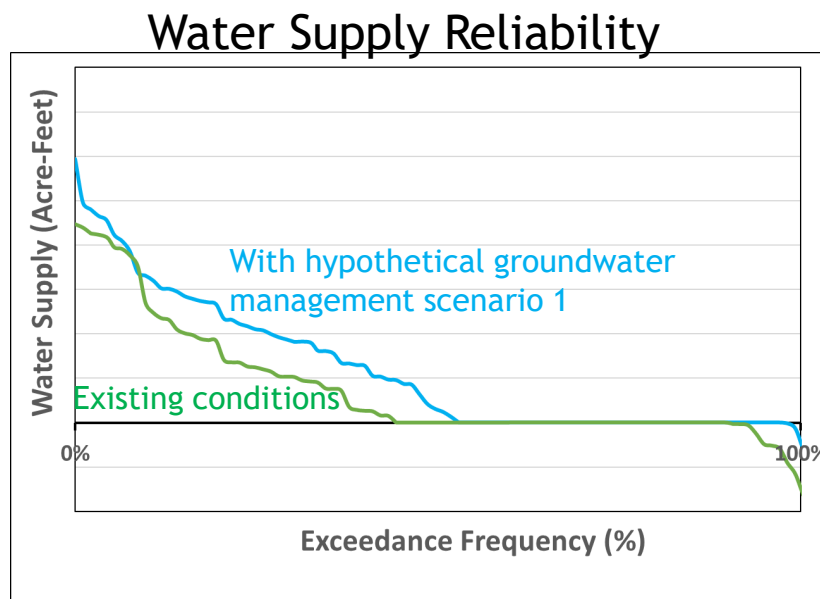
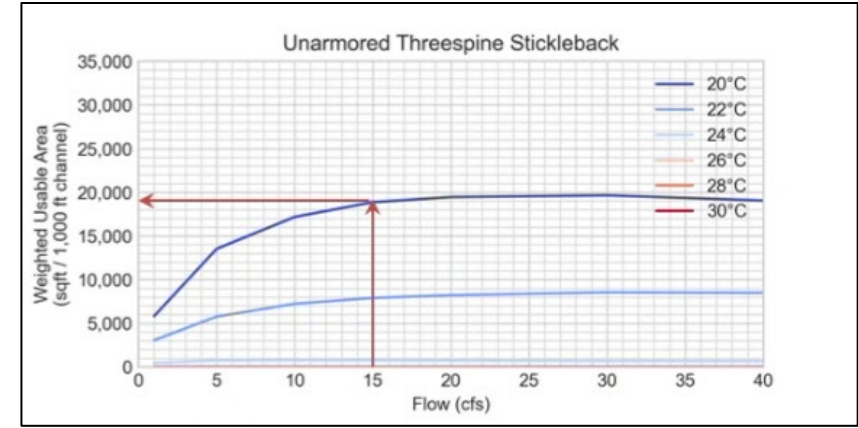
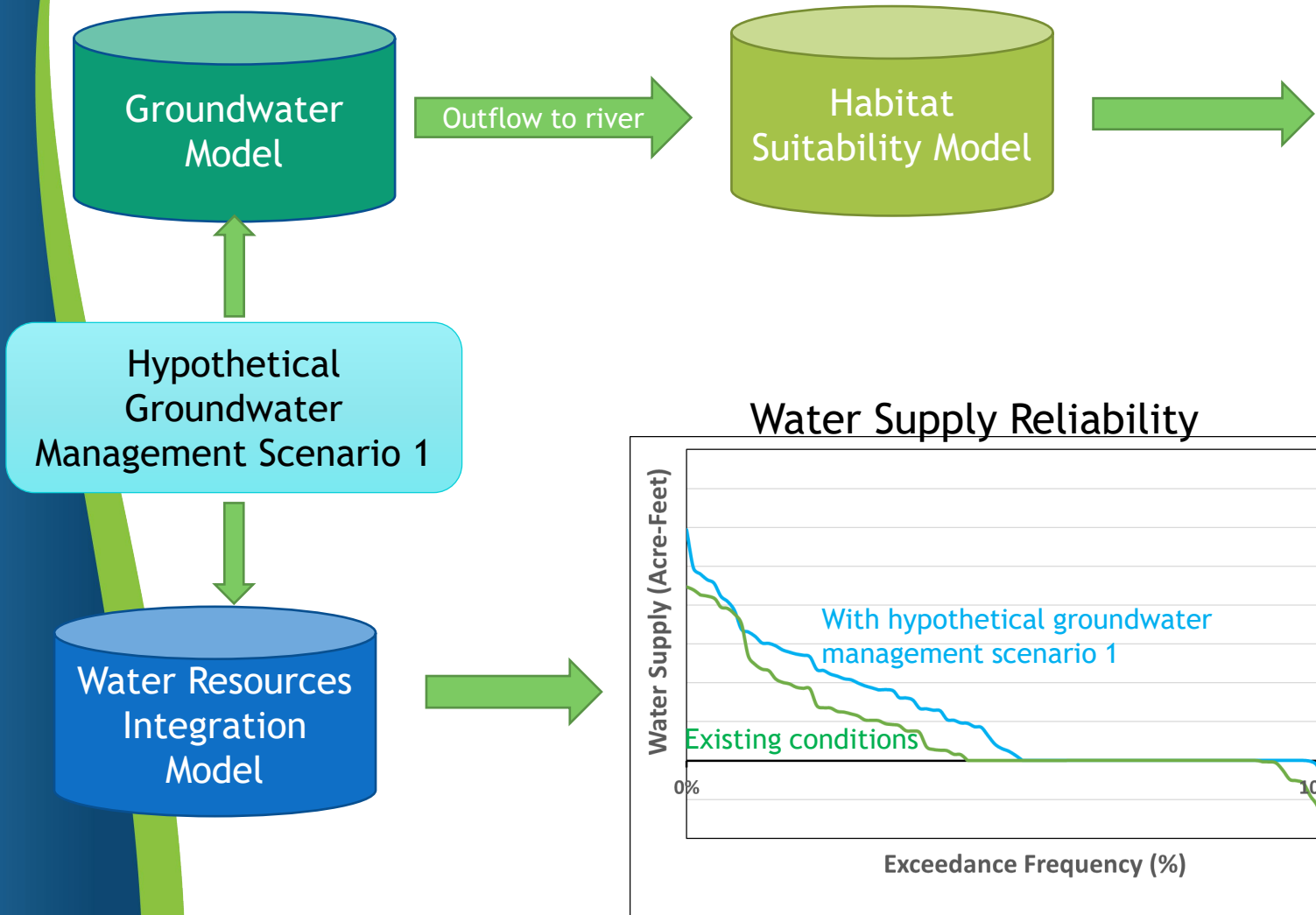
- Suitable for UTS when flow exceeds ~1 cfs but temperature constrained most summers
- Unsuitability for SAS due to low flows
- Suitable for riparian habitat
- UTS habitat expands and contracts in response to groundwater depth

Saugus WRP to McBean

- Thermally unsuitable for UTS every summer/fall
- Flow too low for SAS year-round
- Supports riparian habitat
- Unaffected by groundwater fluctuations



Next Steps - Integrated Analysis



Compare tradeoffs

Next Steps

- Develop criteria and objectives for the agency to drive management of the watershed and water resources.
- Finalize the CEFF work.
- Evaluate new groundwater and recycled water management actions that address ecological needs and improve water supply reliability.