

Considering Groundwater Dependent Ecosystems and Interconnected Surface Water under SGMA: Tools, Mapping, and a Guidance Framework

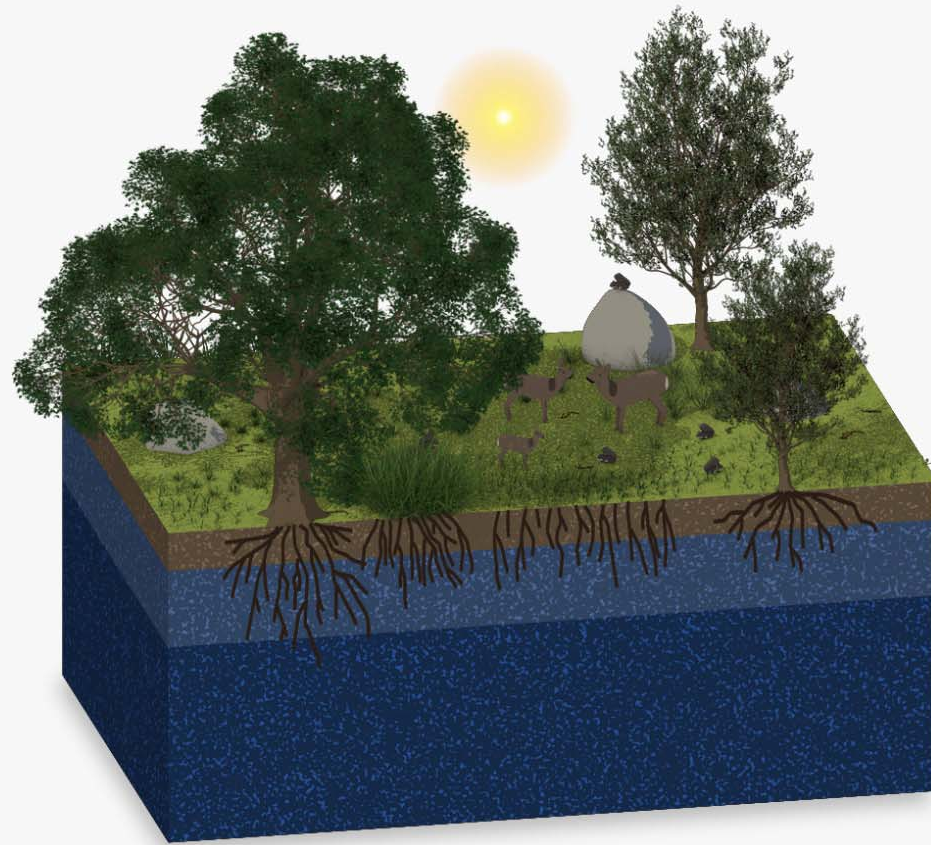
Kirk Klausmeyer / Melissa Rohde
The Nature Conservancy
September 29, 2016



Groundwater Dependent Ecosystems (GDEs)

“Ecological communities or species that depend on groundwater emerging from aquifers or on groundwater occurring near the ground surface”

-GSP Regulations § 351(m)

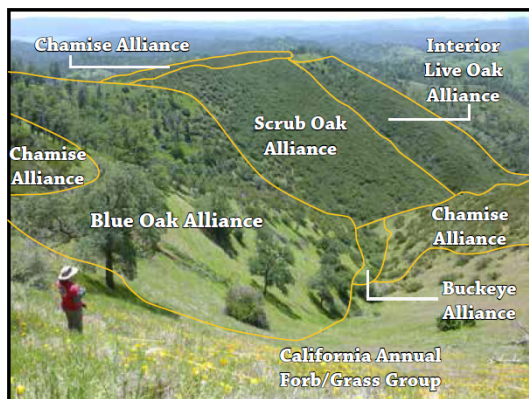


Winter



Seasonal
Fluctuation





Vegetation



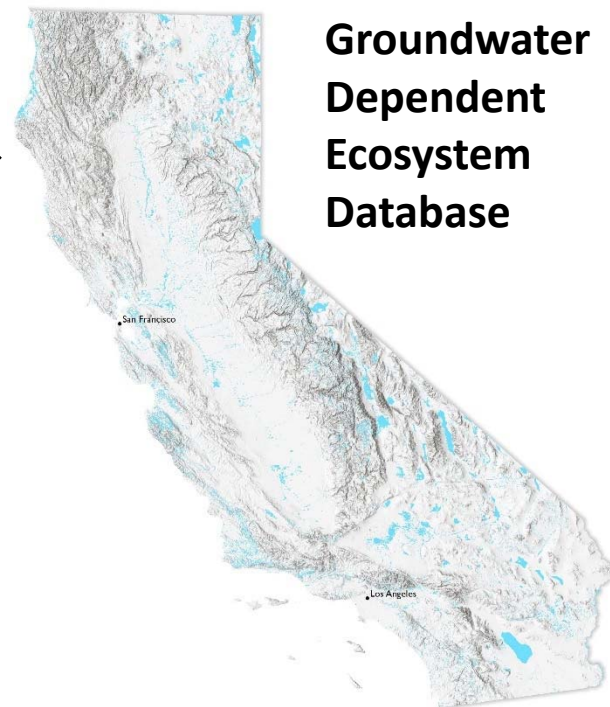
Wetlands



Ecoregions



Expert Review



Potential
Groundwater
Dependent
Ecosystem
Database

Potential Groundwater Dependent Ecosystems (Beta v0.3)

- All medium and high basins have at least one potential GDE
- Covers over 6 million acres

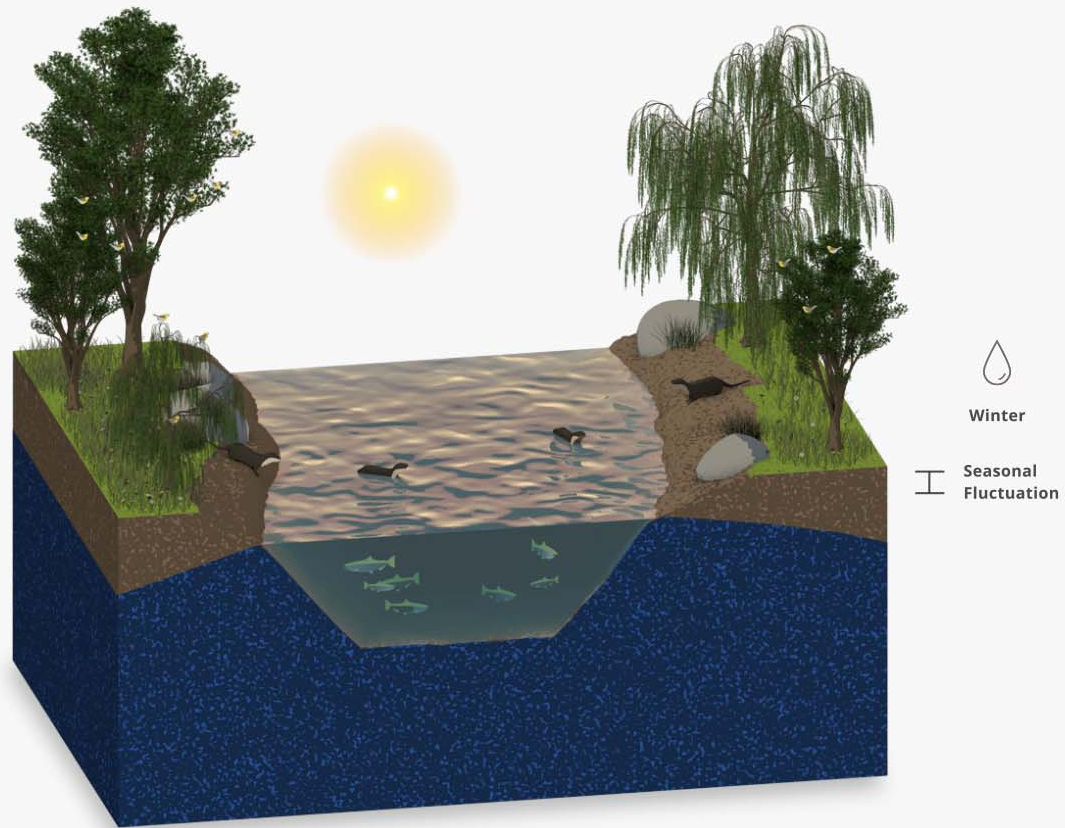


Interconnected Surface Water

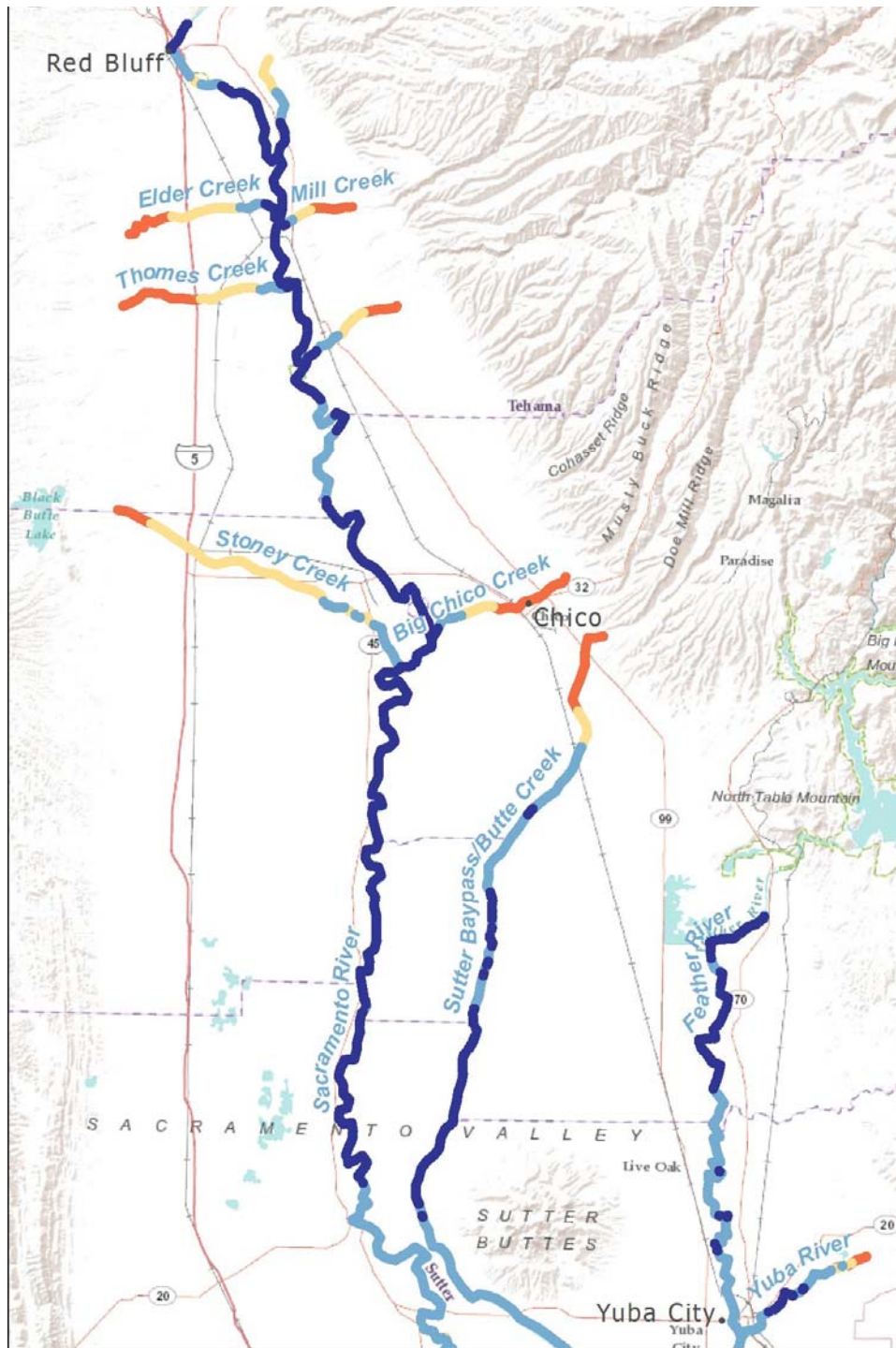


“Surface water that is hydraulically connected at any point by a continuous saturated zone to the underlying aquifer and the overlying surface water is not completely depleted”

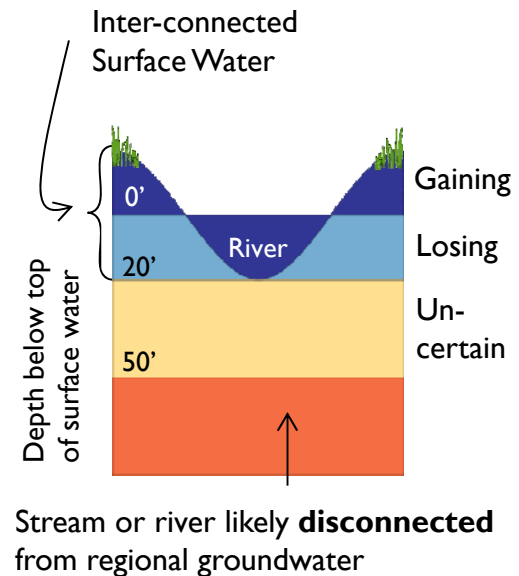
-GSP Regulations § 351(o)

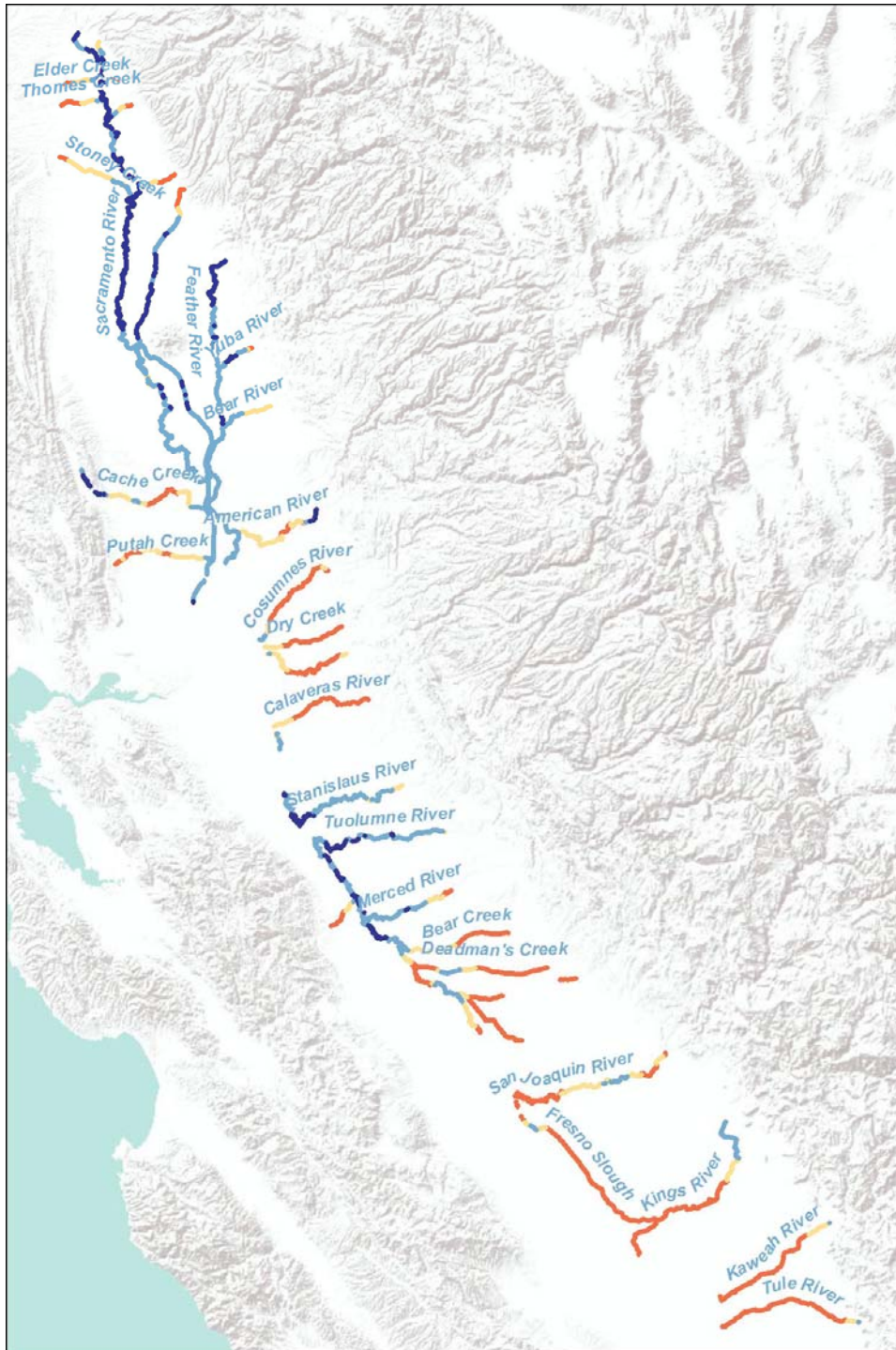




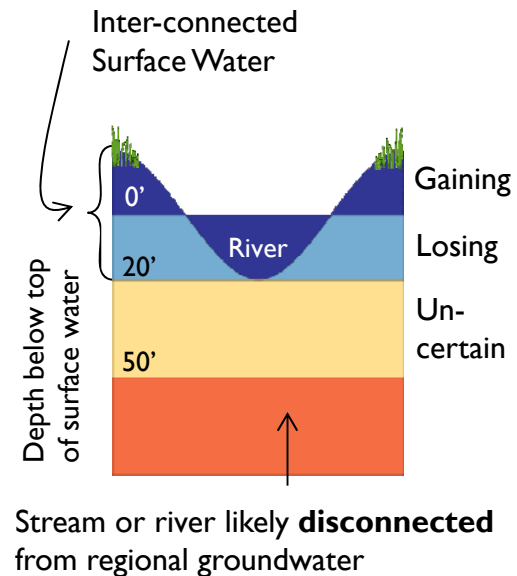


Mapping Interconnected Surface Water



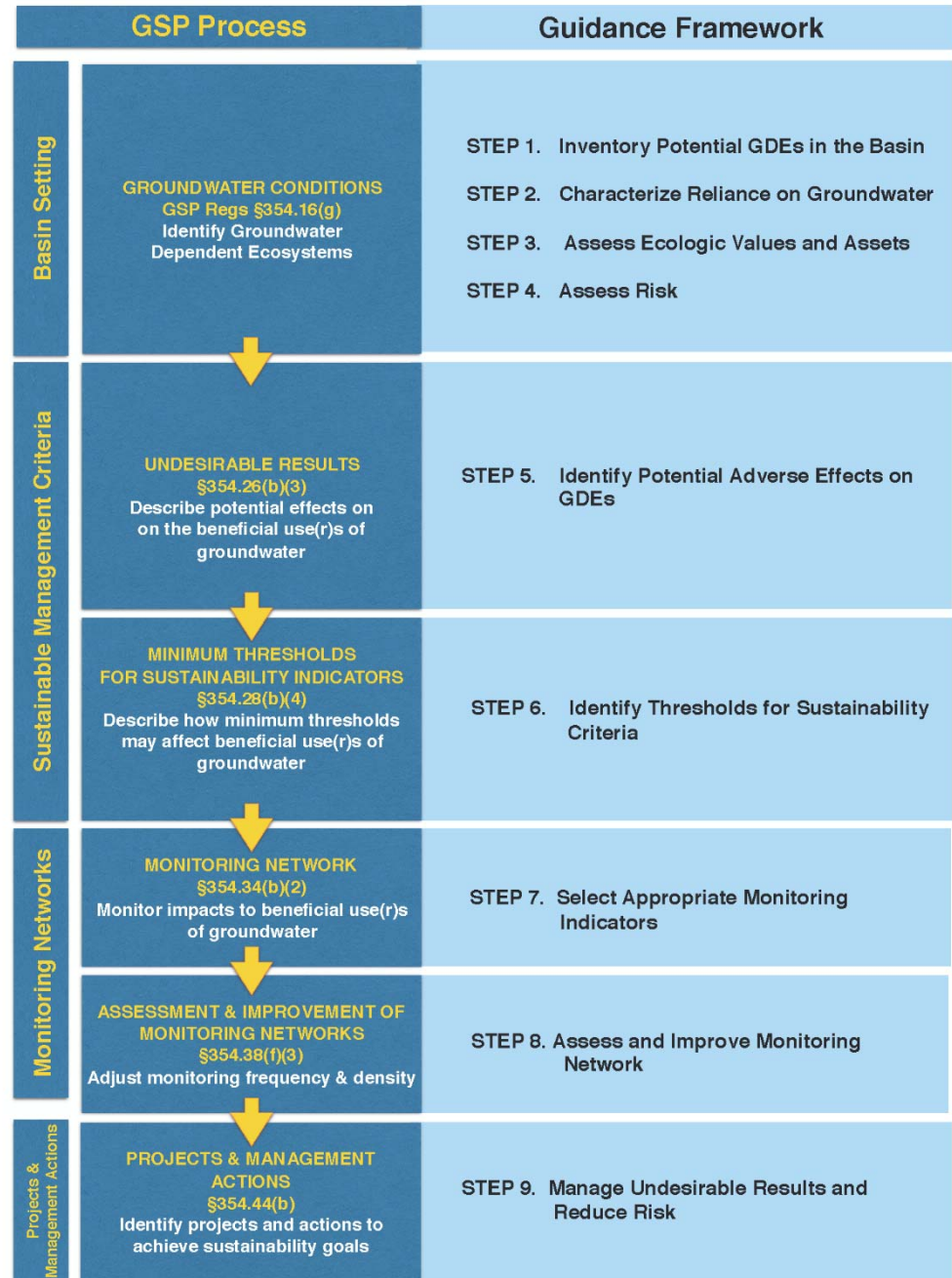


Mapping Interconnected Surface Water

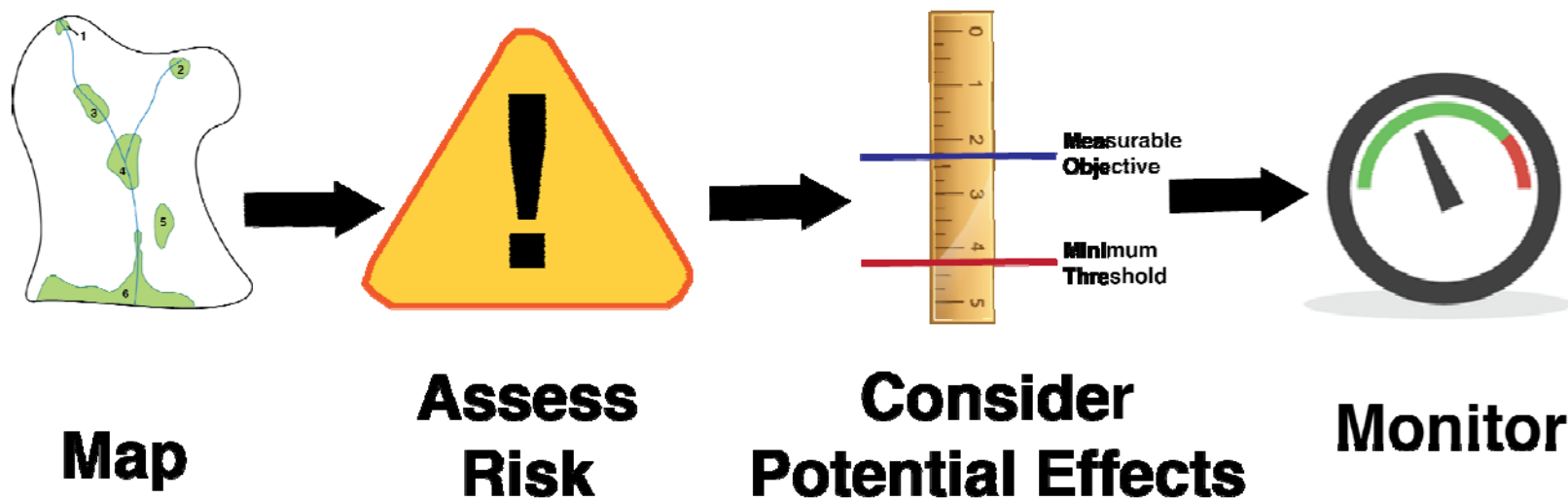


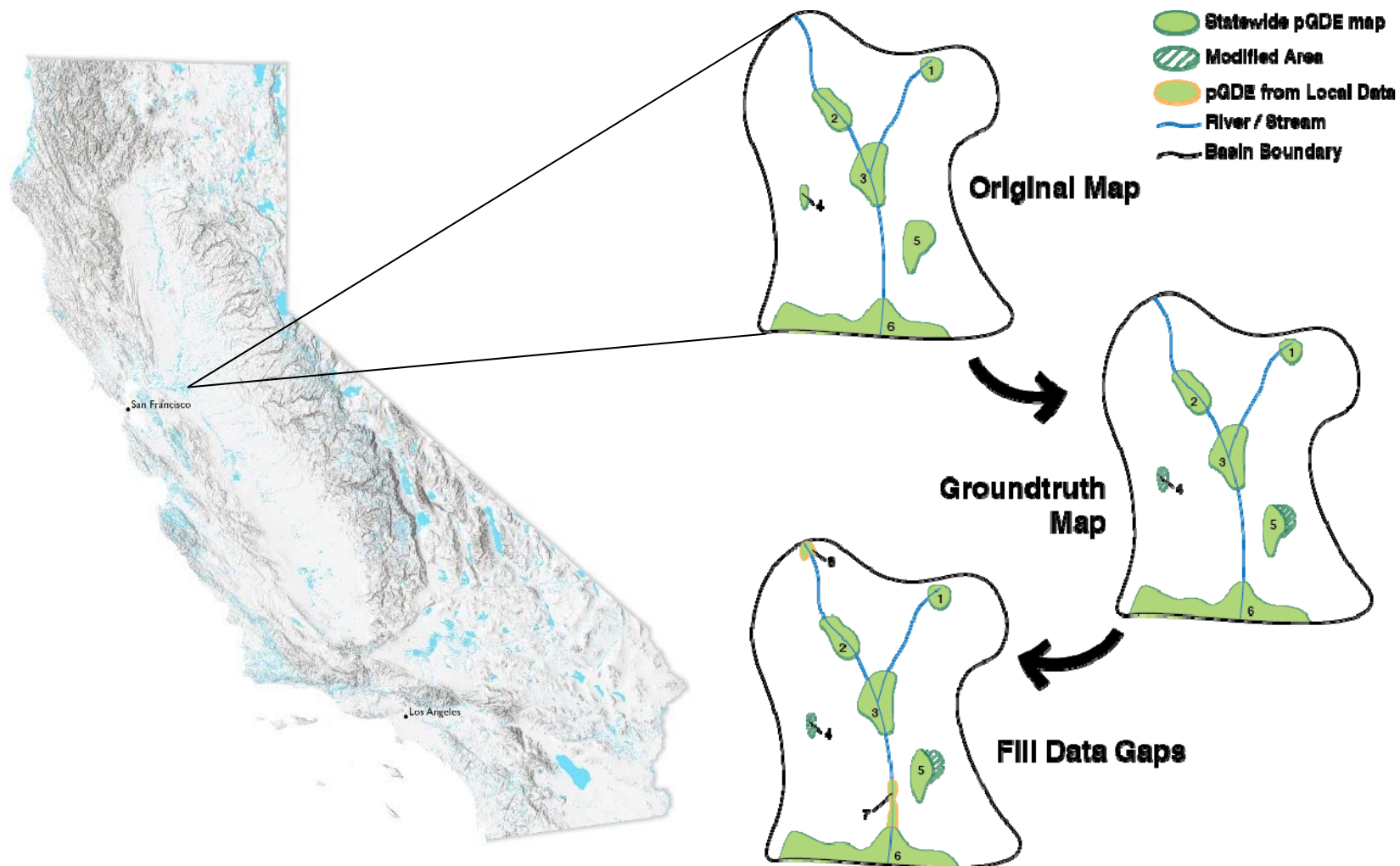
3 Guiding Principles

1. Consistent with SGMA & GSP Regulations
2. Facilitates Local Control
3. Practical, easy-to-use



GDE Guidance Framework

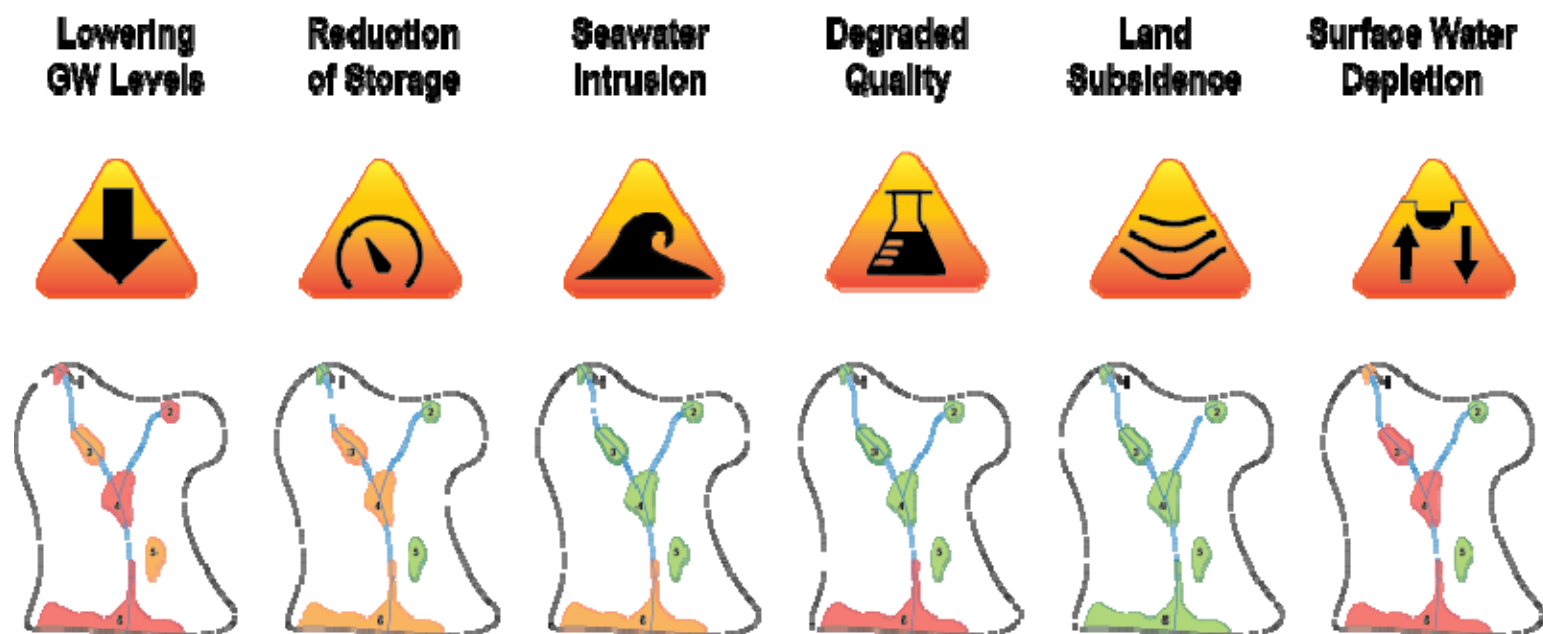




Map

		GROUNDWATER SUSCEPTIBILITY (Step 4.1)		
		High	Medium	Low
ECOLOGIC VALUE (Step 3)	High	HIGH RISK <i>Continue to Step 5</i>	HIGH RISK <i>Continue to Step 5</i>	MODERATE RISK <i>Continue to Step 5</i>
	Medium	HIGH RISK <i>Continue to Step 5</i>	MODERATE RISK <i>Continue to Step 5</i>	MODERATE RISK <i>Continue to Step 5</i>
	Low	MODERATE RISK <i>Continue to Step 5</i>	MODERATE RISK <i>Continue to Step 5</i>	LOW RISK <i>Revisit Risk Matrix ranking in next GSP</i>

Assess Risk



Consider Potential Effects



TNC's Role in SGMA: GDE Resource Center



Statewide
Potential GDE map



DISCLAIMER
This is a working draft and is not final. It is subject to ongoing development and testing with local and state water agencies. Please contact Melissa Rios, melissa.rios@tnc.org, with any questions or comments you may have regarding the Guidance Framework.

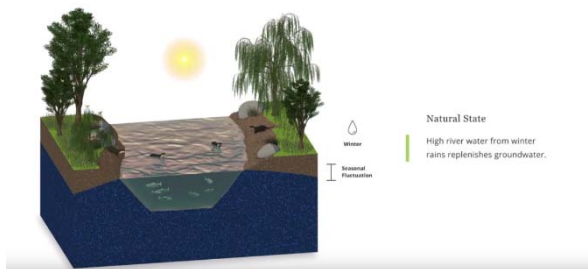


Guidance on
Considering GDEs in
Plans



Data and Research

GDE 101
Online Visualization



Case Studies

