CDFW + SGMA + E-Flows

May 14, 2019

What's at Stake?

Wetlands

Rivers, Streams and Estuaries

Springs and Seeps

Terrestrial Vegetation

CDFW Groundwater Program Objectives

Promote **fish and wildlife protections** in SGMA implementation

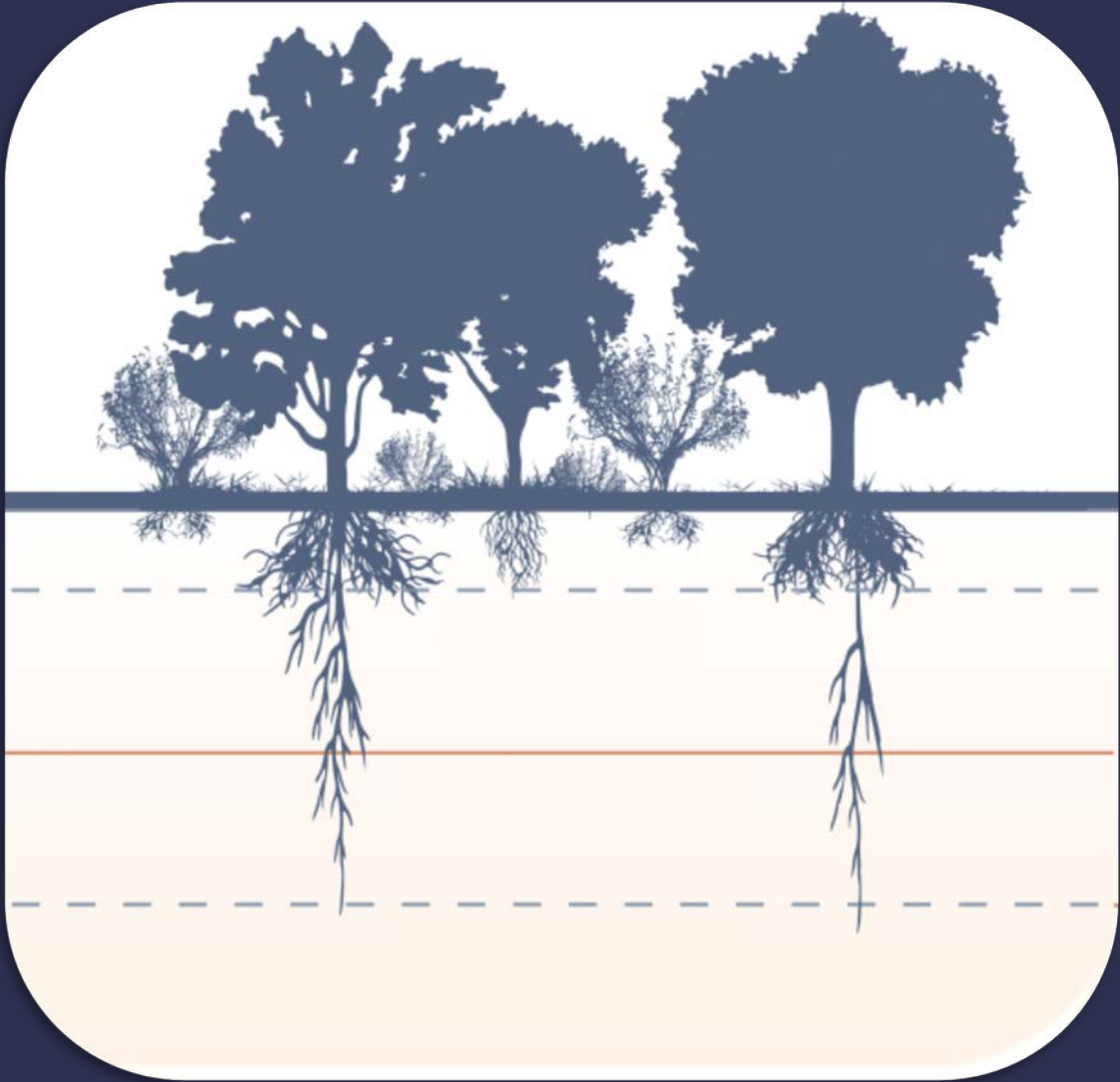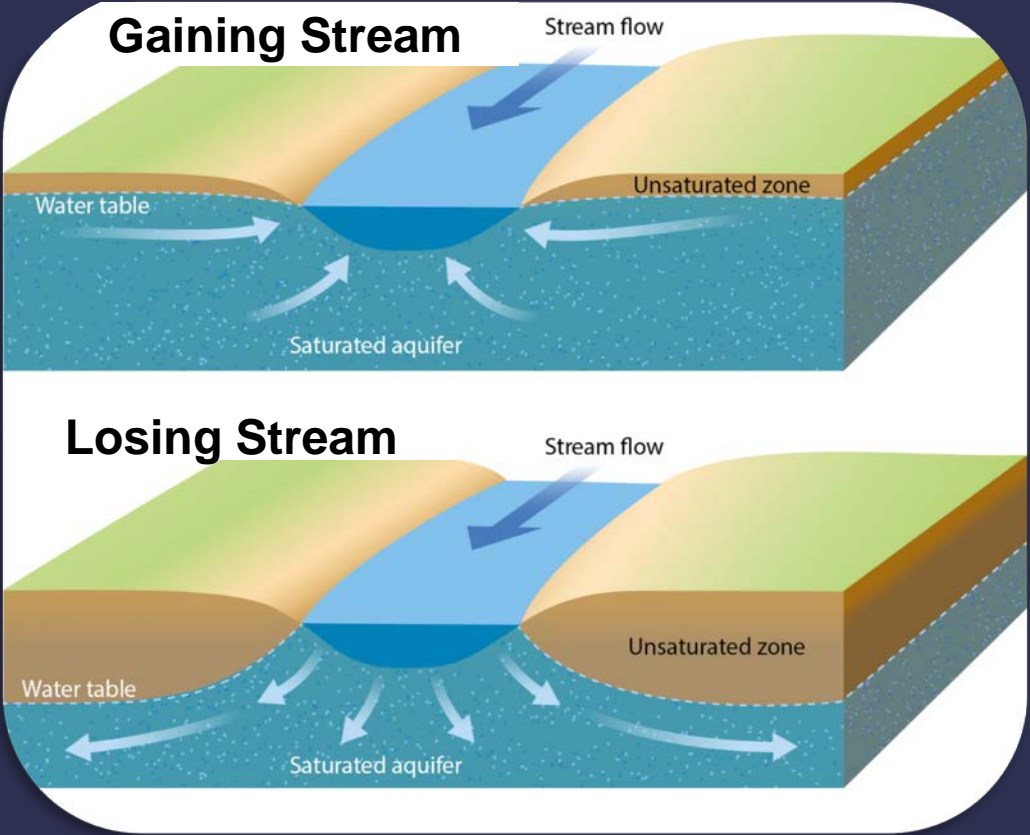Ensure SGMA **compliance on CDFW Lands**

Habitat Resources

IMAGE CREDIT: Adapted from The Nature Conservancy

TERRESTRIAL GROUNDWATER DEPENDENT ECOSYSTEMS

INTERCONNECTED SURFACE WATERS

IMAGE CREDIT: University of California, Agriculture and Natural Resources

Gaining Stream — Stream flow — Unsaturated zone — Water table — Saturated aquifer

Losing Stream — Stream flow — Unsaturated zone — Water table — Saturated aquifer

2015 Benchmark…

DWR's <u>Draft Best Management Practices for the Sustainable Management of Groundwater: Sustainable Management Criteria</u>:

SGMA states that a GSP 'may, but is not required to, address undesirable results that occurred before, and have not been corrected by, January 1, 2015.' Once minimum thresholds have been developed and an undesirable result numerically defined, the GSA may evaluate whether that undesirable result was present prior to January 1, 2015. This evaluation is not possible until the GSA has defined what constitutes a significant and unreasonable condition (an undesirable result). If the evaluation indicates that an undesirable result occurred prior to January 1, 2015, the GSA must set measurable objectives to either maintain or improve upon the conditions that were occurring in 2015.
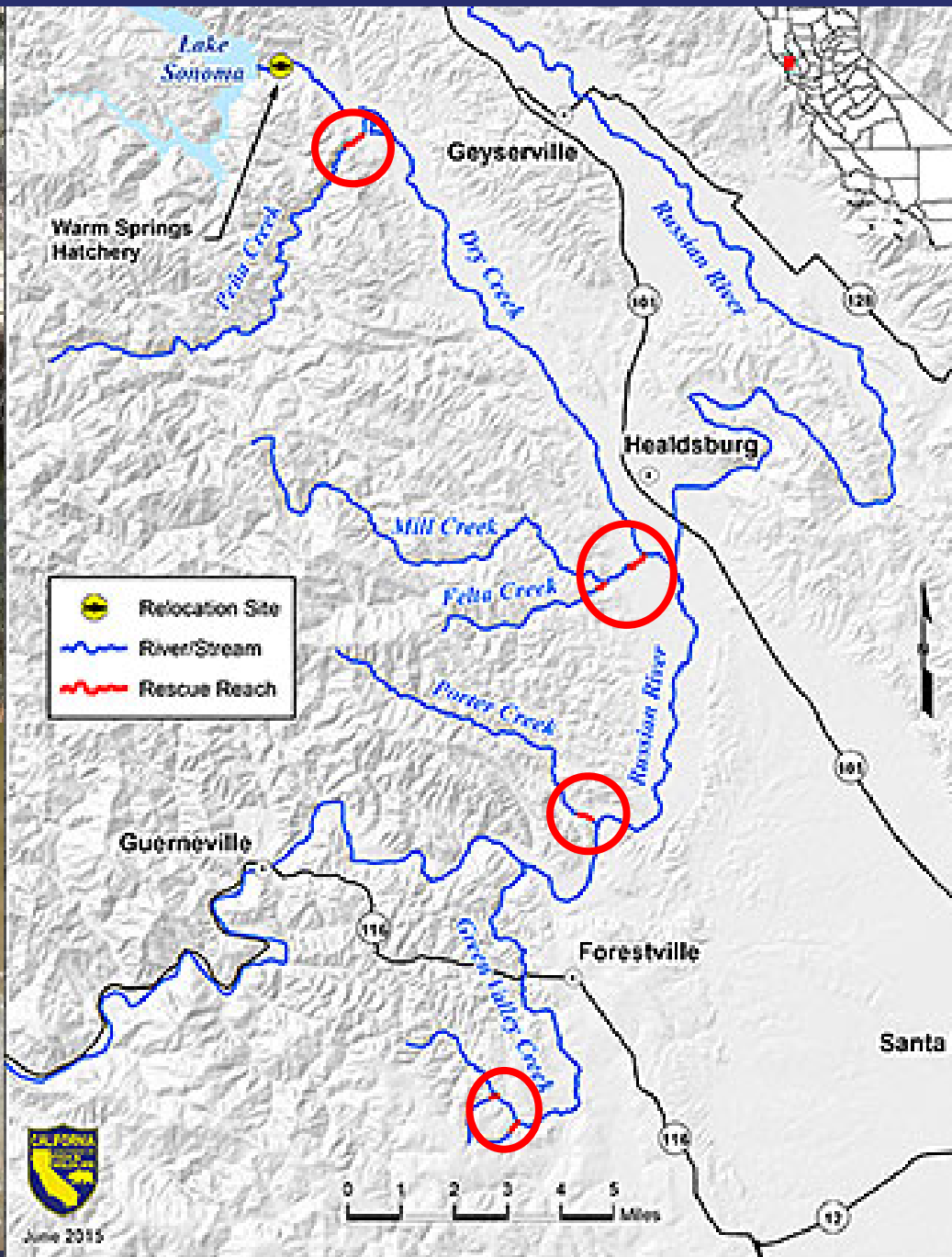
Fish & Wildlife Groundwater Planning Considerations

Legal, Regulatory, and Policy → **Scientific** → **Management**

E-Flows + SGMA Implementation

GSP regulatory compliance

Robust interconnected surface waters analysis

Synthesis/analysis of GSP products

E-Flows + SGMA Implementation:
Identifying Interconnected Surface Waters

Compliance Consideration	Environmental Challenge	E-Flows Contribution Idea
Identification of Interconnected Surface Waters – 2015 Benchmark [CCR 354.16 (f)]	Severe species stress during drought	• Identify likelihood of interconnectivity • Contemplate approach to valid hydrologic 'benchmarks' circa 2015

E-Flows + SGMA Implementation:
Estimating Surface Water Depletion

Compliance Consideration	Environmental Challenge	E-Flows Contribution Idea
Estimation of quantity and timing of surface water depletion [CCR 354.16 (f)]	Quantity/timing/location of groundwater depletions matters to species; tolerance for Δ varies (habitat, life stage, exposure duration)	Identify: unimpaired baseflows; unimpaired recession rates; transitional reaches

E-Flows + SGMA Implementation: Developing Surface Water Depletion Minimum Thresholds

Compliance Consideration	Environmental Challenge	E-Flows Contribution Idea
Determination of Rate or Volume of Surface Water Depletions Caused by GW Use → Adverse Impacts [CCR 354.28 (c)(6)] Note: GW elevation can be used as proxy metric [CCR 354.28 (d)]	Deviations from natural hydrograph may → adverse impact on F&W; threshold effects at play	Identify Δ in hydrograph or Δ baseflow attributable to Δ GW table

Synthesizing Surface Water Depletion Outcomes

…Before 2025?

- Value/limitations of E-Flows → SGMA

- Integrate GSP information on ISWs into E-Flows tools (basin characteristics, etc.)

- Support DWR Bulletin 118 2025 update with statewide patterns

- Others?

Questions?