Sustainable Yield, Surface Flows, Water Rights & SGMA

GRA 2016 Conference

September 28, 2016

Presented by
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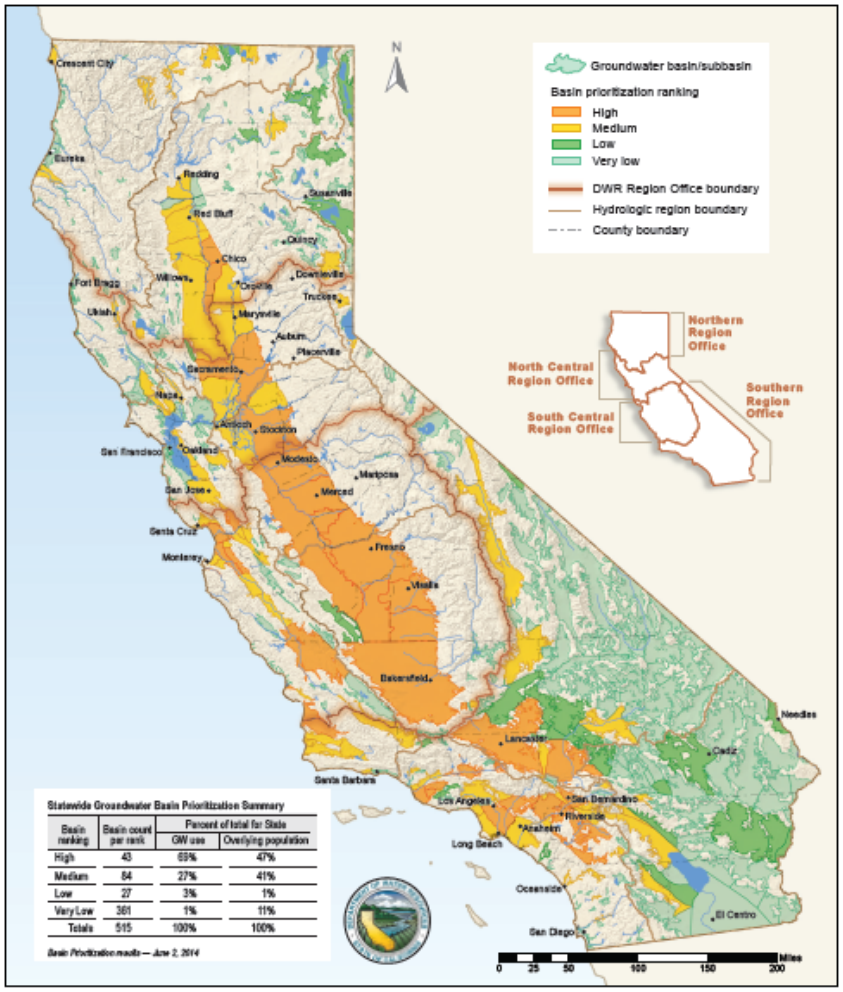
Presentation Objectives

- **How SGMA expands safe yield calculation**
  - The great water quantification is coming
  - To stop undesirable results from unsustainable pumping
  - Including significant depletions of connected surface waters
- **Surface flow drivers**
- **Allocating interconnected waters in a "regulatory shortage"**
  - Water rights priority system
- **Assessing your rights under SGMA**
  - Use California's water rights priority system to evaluate, shape or respond to how SGMA is applied to you

SGMA plans by 2020/22

- 127 high- & medium-priority subbasins
- Plans due 2020/22
- Plans to prevent "undesirable results"
  - to connected surface waters
  - to groundwater dependent ecosystems
- Sustainability by 2040/42
- State intervention if local planning fails

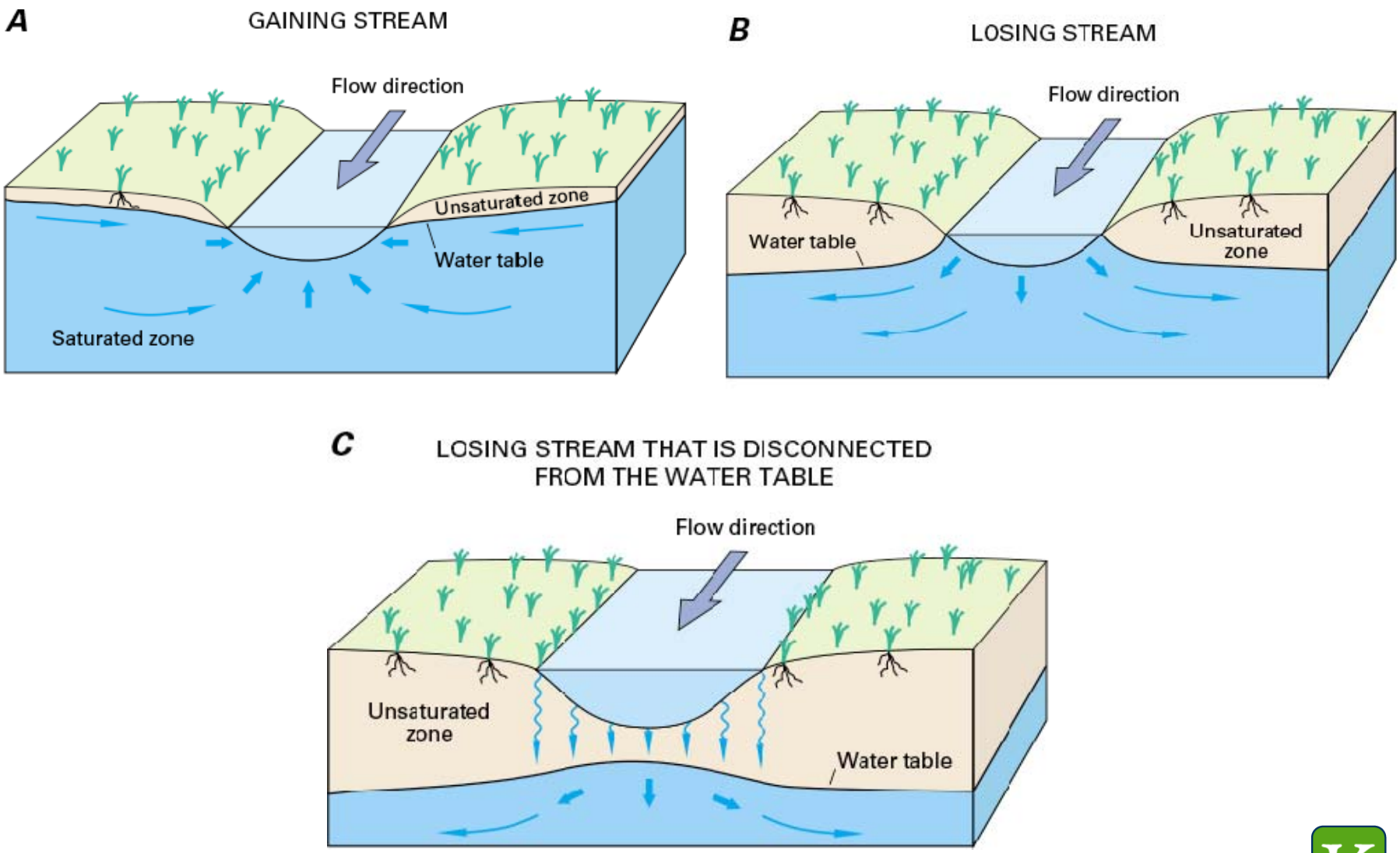


Statewide Groundwater Basin Prioritization Summary

Basin ranking	Basin count per rank	Percent of total for State	
		GW use	Overlying population
High	43	69%	47%
Medium	84	27%	41%
Low	27	3%	1%
Very Low	361	1%	11%
Totals	515	100%	100%

Basin Prioritization results — June 2, 2014

Interconnected waters — *as of 2015*



http://pubs.usgs.gov/circ/circ1186/html/gw_effect.html

Drivers for surface flows

- Existing beneficial uses of surface water
- Instream fishery flows
  - Endangered Species Act
  - Public Trust Doctrine
  - Fish & Game Code section 5937
  - Enforcement by:
    - **Federal regulators** – National Marine Fisheries Service
U.S. Fish & Wildlife Service
    - **State regulators** – State Water Resources Control Board
California Dept of Fish & Wildlife
    - **Citizen suits** – Courts

So . . .

- SGMA prohibits significant and unreasonable depletion of surface flows & groundwater dependent ecosystems (2015 baseline)
- That creates a forum to quantify instream flows driven by ESA, Public Trust Doctrine, etc.
- What do you do if SGMA planning proposes groundwater pumping cuts to prevent depletion of instream flows?

What do you do …

- if SGMA planning proposes groundwater pumping cuts to prevent surface flow depletion:
  - Assess if pumping affects surface flows
  - Assess reasonableness of surface flows that SGMA plan seeks to protect
  - **Assess reasonableness of groundwater pumping cuts proposed to protect surface flows**

Assessing proposed pumping cuts

- Pumping cuts to protect surface flows create a water shortage (**regulatory shortage**)
- California law creates **water right priority** system for allocating shortage
- Are SGMA pumping cuts consistent with water right priority system?
  - **Water Code §§ 10720.5, 10726.8(b): Water rights savings clauses**

Assessing proposed pumping cuts

- Pumping cuts to protect instream flows create a water shortage (regulatory shortage)
- California law creates a water right priority system for allocating water during shortage
- Are proposed groundwater pumping cuts consistent with the water right priority system?
- **What is the water right priority system?**

First, what is "groundwater"?

- "Percolating" presumption
  - Rebuttable

- Water Code § 1200: Surface water includes "subterranean streams flowing through known and definite channels"

"Groundwater" v. "Surface Water"

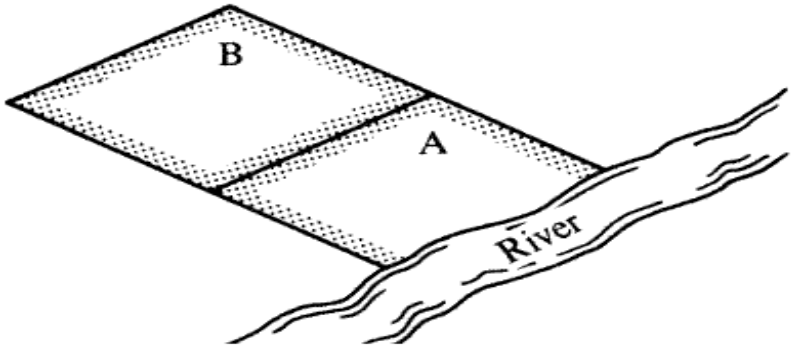
- SWRCB "subterranean stream" test:
  1. Subsurface channel exists
  2. Channel has relatively impermeable bed and banks
  3. Channel course can be determined by reasonable inference
  4. Groundwater flowing in channel
- Broad alluvial valleys issue

Water Rights

- Land-based rights:
  1. Riparian surface water rights
  2. Overlying groundwater rights
- Use-based rights:
  1. Appropriative rights
  2. Prescriptive rights

Land-based Rights

- Riparian & overlying rights
  - Based on land ownership
    - Riparian land adjacent to surface water
    - Overlying land … over groundwater
  - Use water only within watershed/basin
  - No set amount: reasonable and beneficial use
  - If shortage,
    "correlative sharing"



Use-based Rights

- Appropriative rights
  - Based on actual use
  - Apply only to surplus water after riparian/overlying rights satisfied
  - Municipal water service generally "appropriative"
  - Follows priority system (first in time, first in right)
  - SWRCB permits for surface water only

Water Rights Priorities

- Priority Rules
  - Overlier v. Overlier: Correlative sharing
  - Overlier v. Riparian: Correlative sharing
  - Overlier/Riparian v. Appropriator: Overlier wins
  - Appropriator v. Appropriator: Earliest wins

Prescriptive Groundwater Rights

- Prescriptive Rights
  - Acquire: Pump five consecutive years during overdraft
  - Quantity: Minimum pumped five consecutive years during overdraft
    - Can grow with increased pumping
    - Once acquired, not lost if pumping continues during temporary “surplus”
  - Priority over overlying rights, unless . . . .

Prescriptive Groundwater Rights

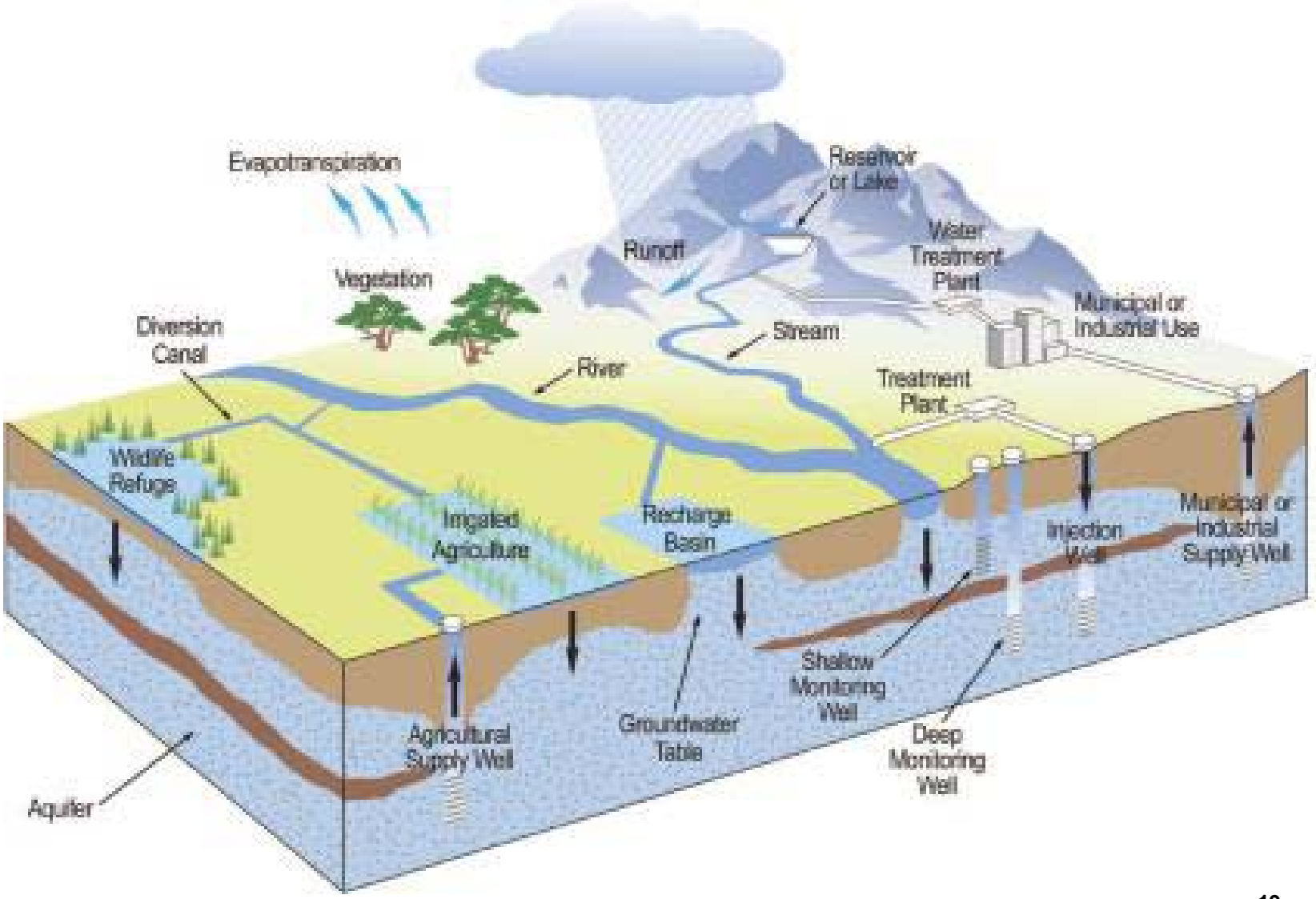
- "Self-help" Defense Against Prescription
  - "Self-help" = continued overlier pumping
  - Amount of overlying right pumped during prescriptive period

Rights to store & recapture water

- Rights to Store and Recapture
  - Groundwater banking/ASR programs
  - *Store:* Unused storage space is a resource
  - *Recapture:* One who **by artificial means adds new water to a groundwater basin** has the paramount right to extract and use that water, as well as any **return flows** that percolate back into the basin after the water's initial beneficial use.

    Rights of others in native supply shall not be diminished.

Applying water rights priorities



So . . .

- What if SGMA pumping cuts conflict with water rights priorities?
  - SGMA water rights savings clauses
  - Disadvantaged rights holders may request SGMA Plan revision to comport with water right priorities
  - Disadvantaged rights holders may
    - Challenge SGMA Plan for violating water right priorities
    - Initiate a water rights adjudication

Concluding Thoughts

- Is groundwater in your SGMA subbasin connected to surface streams with special-status fish or wildlife?
- Monitor role of instream surface flows in SGMA plans
- Assess surface flow obligations for reasonableness
- Assess any pumping cuts proposed for surface flows
- If pumping cuts conflict with water right priorities, consider further action
  - Seek SGMA plan revisions
  - Litigate

Thank You

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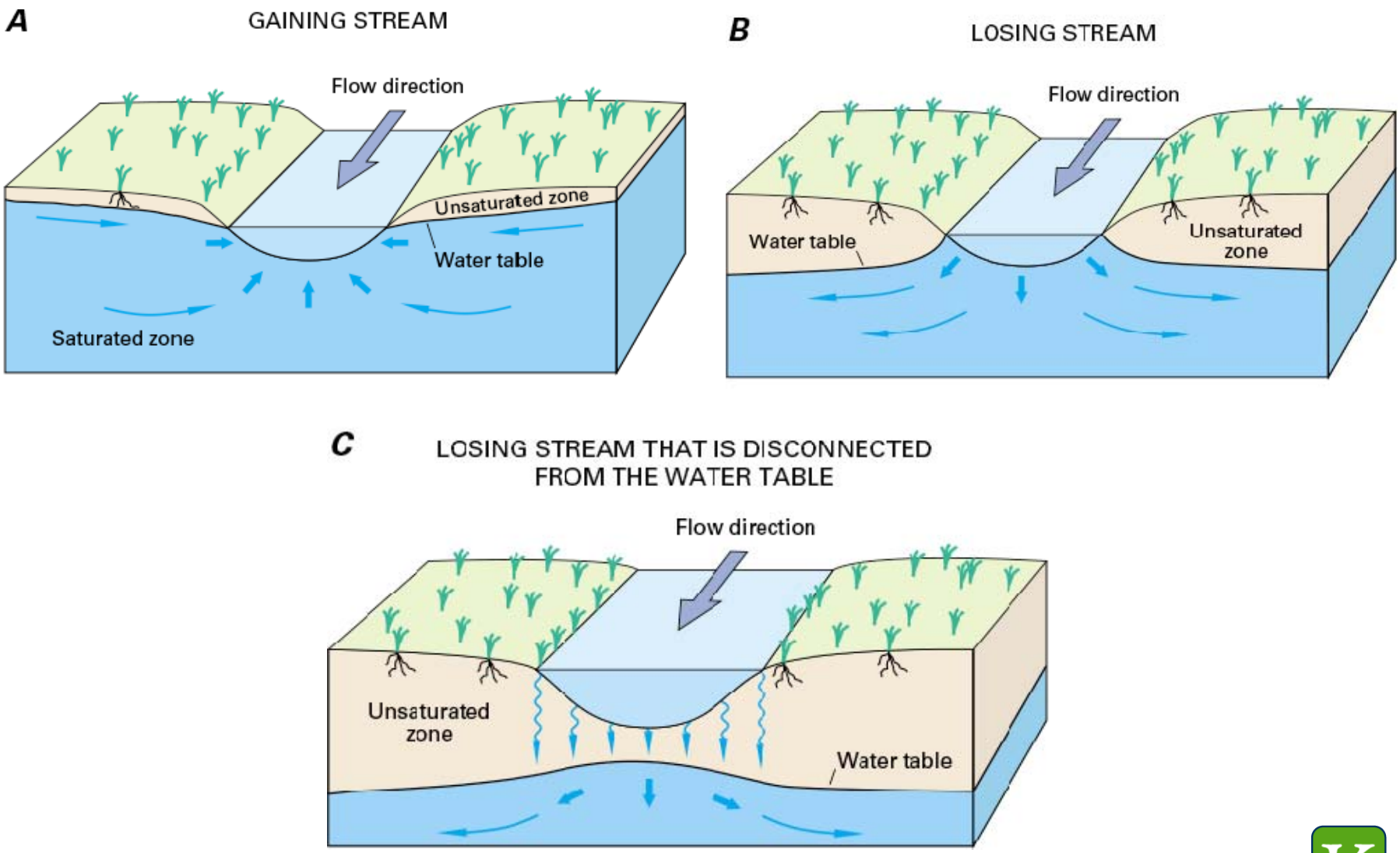
Interconnected waters



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Drivers for instream surface flows

- Endangered Species Act
  - No unauthorized “take” of listed species
    - Need actual death or injury to individual species member
    - Proximately caused by defendant
    - Habitat changes w/out death/injury not “take”

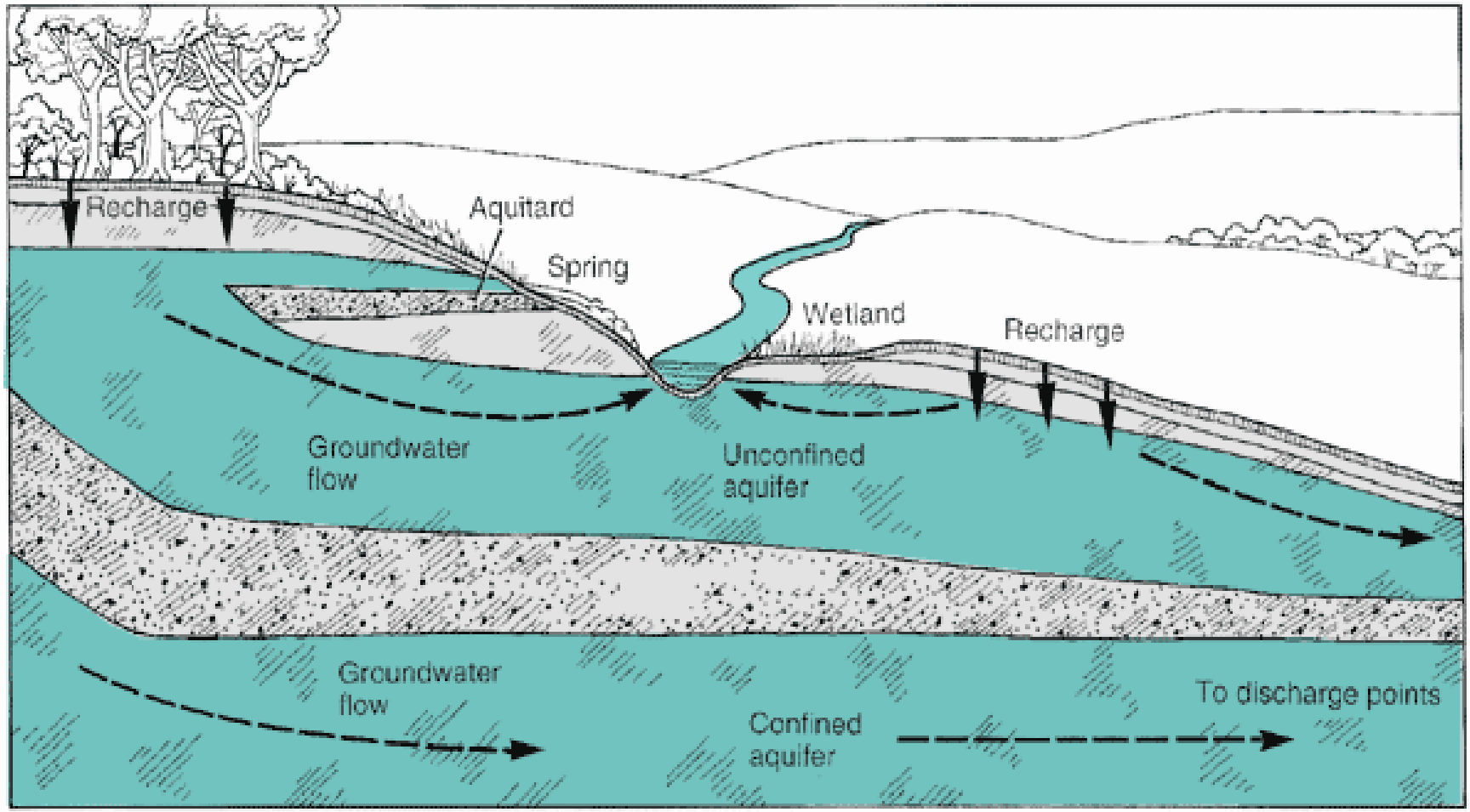
Drivers for instream surface flows

- Public Trust Doctrine
  - *Nat'l Audubon Soc'y v. Superior Court* (1983) 33 Cal.3d 419
  - Applies to waters **navigable** at statehood (Sept. 9, 1850)
  - State duty "to protect public trust uses whenever **feasible**" and "so far as consistent with the **public interest**."
  - BUT "population and economy … depend upon … vast quantities of water for uses unrelated to instream trust values"
  - Instream use does **not** automatically trump consumptive use
- *Envt'l Law Found. v. SWRCB, County of Siskiyou*
  - Trial Court: PTD applies to groundwater that is tributary to navigable surface stream (County well permit case)

Drivers for instream surface flows

- Fish & Game Code section 5937
  - Dam owner shall bypass sufficient water to keep fish below the dam in good condition
  - What if groundwater use depletes flows that dam owner bypasses to keep fish in good condition?
  - Dam operator and fisheries agencies may have reason to advocate for groundwater pumping cuts to preserve reservoir releases for Section 5937 compliance

Interconnected water systems



What do you do …

- if SGMA planning proposes groundwater pumping cuts to prevent surface flow depletion:
  - Assess whether pumping affects surface flows
  - Assess reasonableness of instream flows that SGMA planning seeks to protect
  - Assess reasonableness of groundwater pumping cuts proposed to protect fishery flows

First, what is "groundwater"?

- Not all water produced by a well is "groundwater"
  - "California is the only western state that still treats surface water and groundwater under separate and distinct legal regimes …."
  - "[C]lassification disputes in this field quickly take on an Alice-in-Wonderland quality …."
  - "[T]he legal categories ... are drawn from antiquated case law and bear little or no relationship to hydrologic realities."

Water Rights Priorities

- Priority Rules Hypothetical
  - A: Overlier 1900
  - B: Appropriator 1910
  - C: Appropriator 1915
  - D: Riparian 1920

- Who wins?
  - *A v. B:* A wins b/c overlier beats appropriator
  - *B v. C:* B wins b/c its water use started earlier
  - *C v. D:* D wins b/c riparian beats appropriator
  - *A v. D:* Correlative sharing

Prescriptive Groundwater Rights

- Prescriptive Rights
  - Device to prevent priority system from wiping out urban economy built on junior rights
    - Agricultural irrigation = overlying rights
    - Municipal water service = appropriative rights
    - Overlying rights (farms) beat appropriative rights (cities), unless . . .

Prescriptive Groundwater Rights

- "Safe Yield" (SGMA calls "sustainable yield")
  - Maximum quantity that can be withdrawn annually without causing an undesirable result
- "Overdraft" (SGMA calls "undesirable result")
  - Long-term condition when pumping beyond safe yield causes undesirable result
    - Chronic groundwater level decline
    - Seawater intrusion
    - Land subsidence

Groundwater Rights (Overdraft)

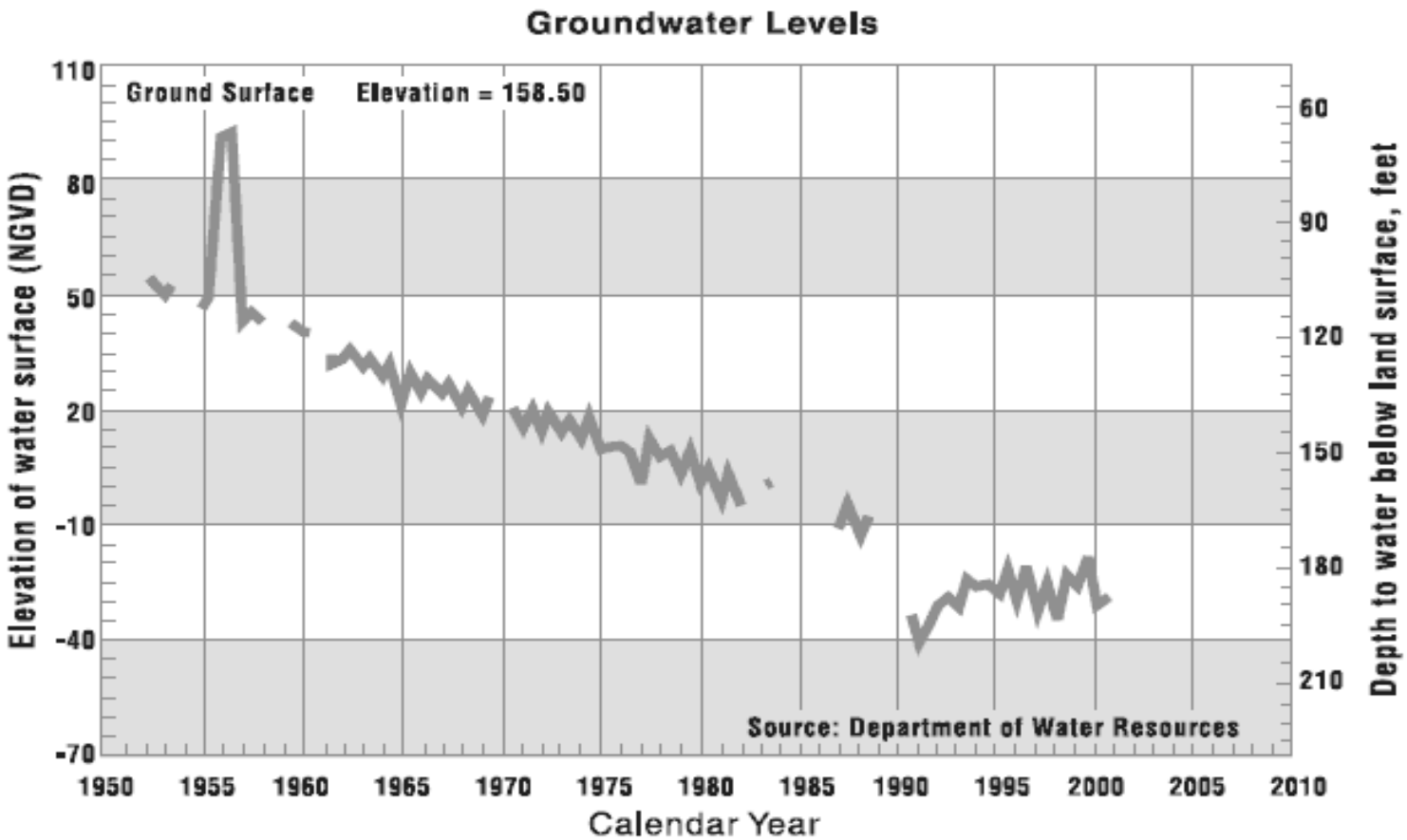
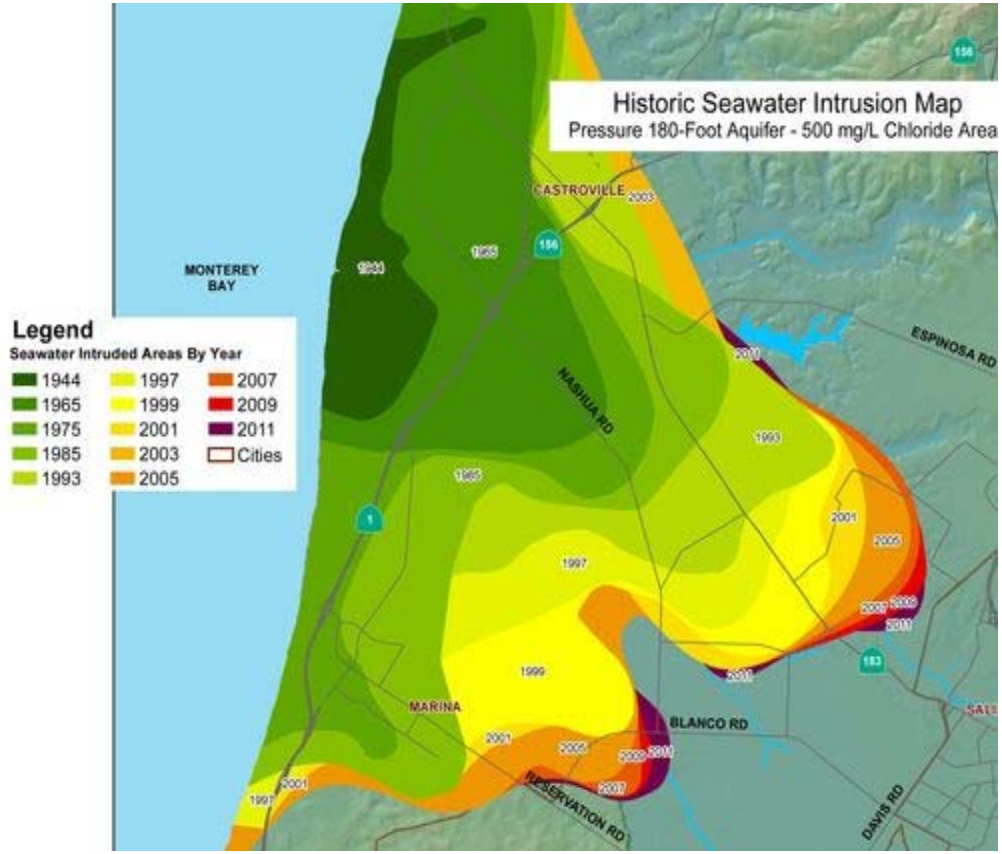


Figure 18 Hydrograph Indicating Overdraft

Groundwater Rights (Overdraft)