

Flood-MAR

Using Flood Water for Managed Aquifer Recharge

16th Biennial Symposium
Managed Aquifer Recharge
March 6, 2018



CALIFORNIA DEPARTMENT OF
water resources

Presentation Highlights

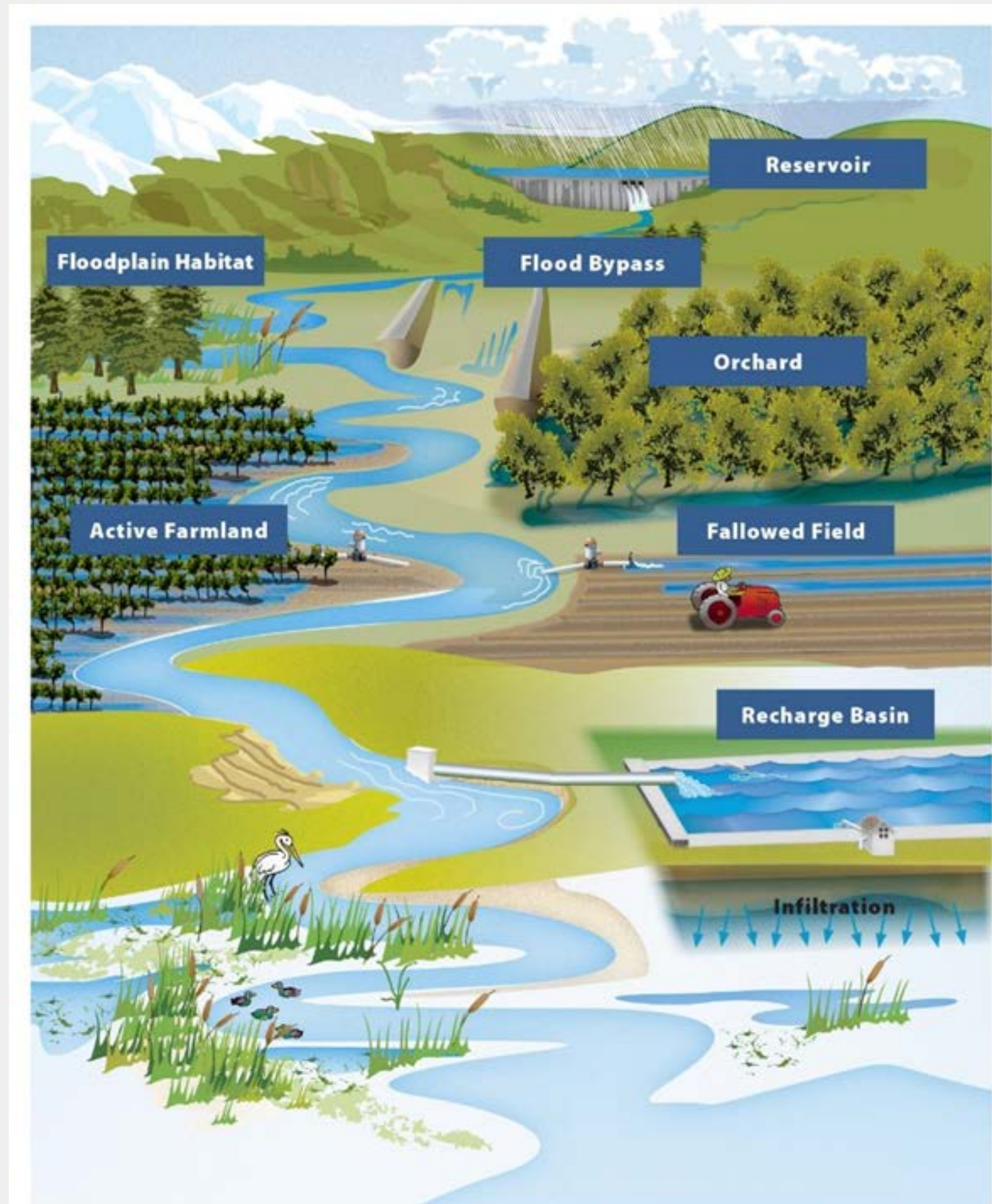
- What is Flood-MAR?
- Why is Flood-MAR necessary?
- What are benefits of Flood-MAR?
- What is needed to expand Flood-MAR implementation?
- Next Steps -- What can I do?



What is Flood-MAR?

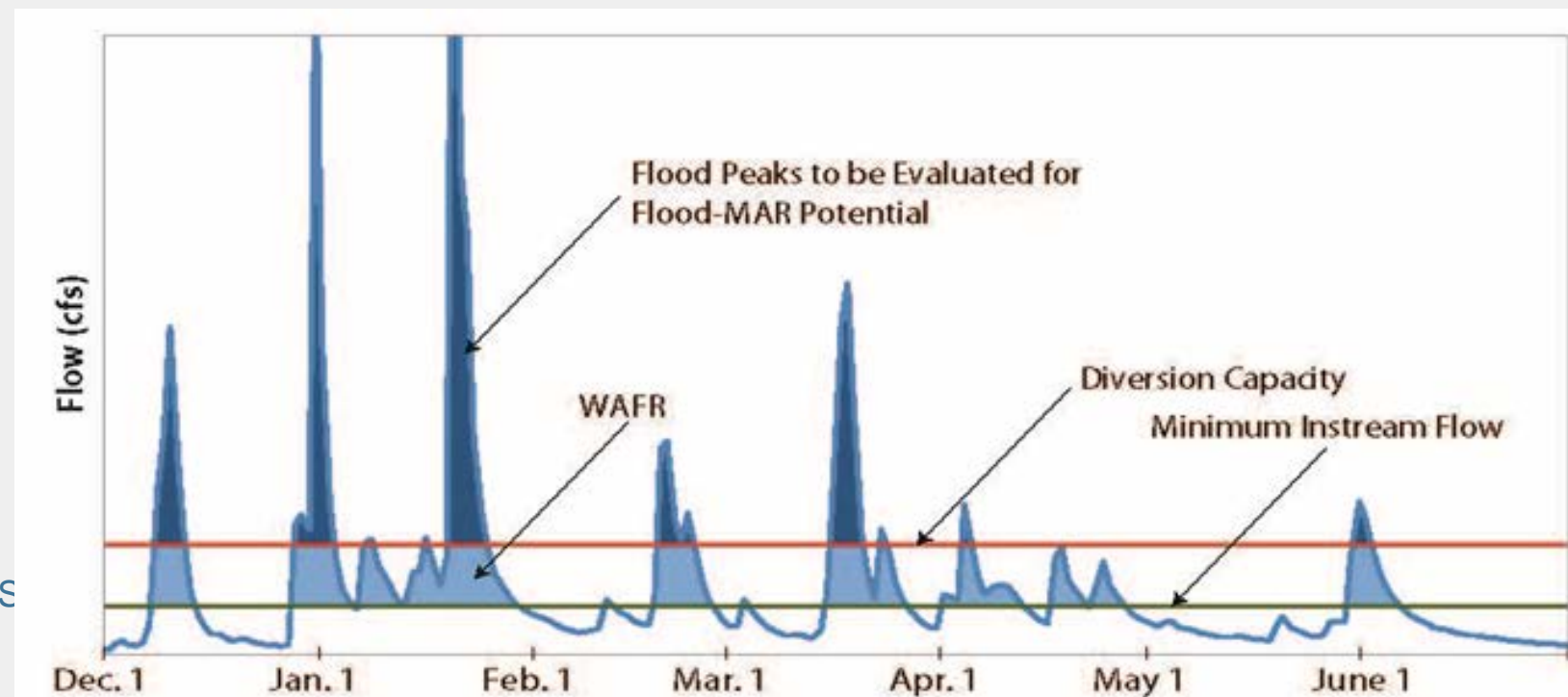
Working Definition:

Using high flows from, or in anticipation of, rainfall or snowmelt, for managed aquifer recharge on agricultural lands and working landscapes



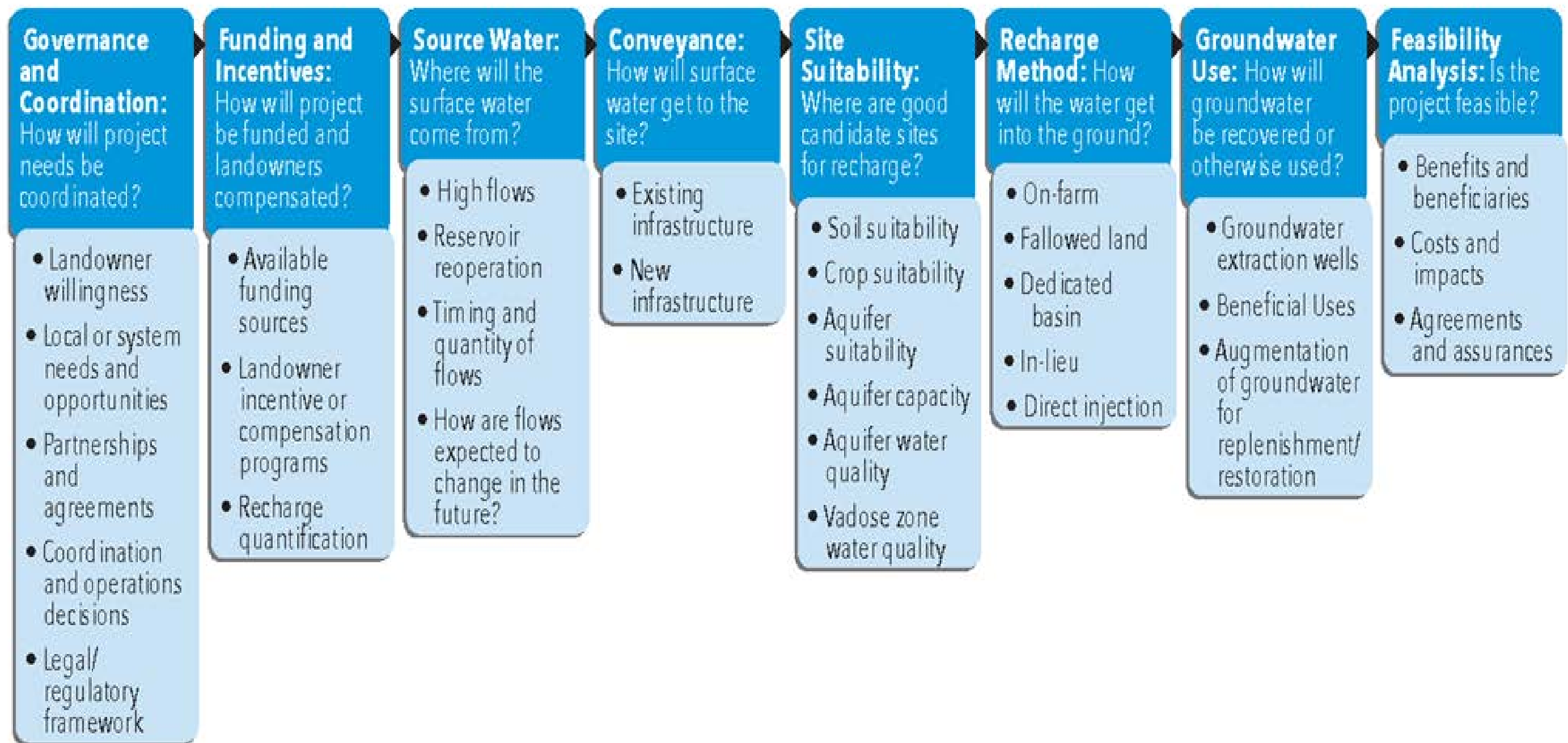
Flood-MAR is...

- ...an integrated and voluntary resource management strategy
- ...scalable
- ...an important strategy for improving system integration and flexibility
- ...recommended in the System Reoperation Study Phase 3 Report (August 2017) and California Water Plan Update 2018 (Public Review Draft, March 2018)



Flood-MAR

Implementation Factors



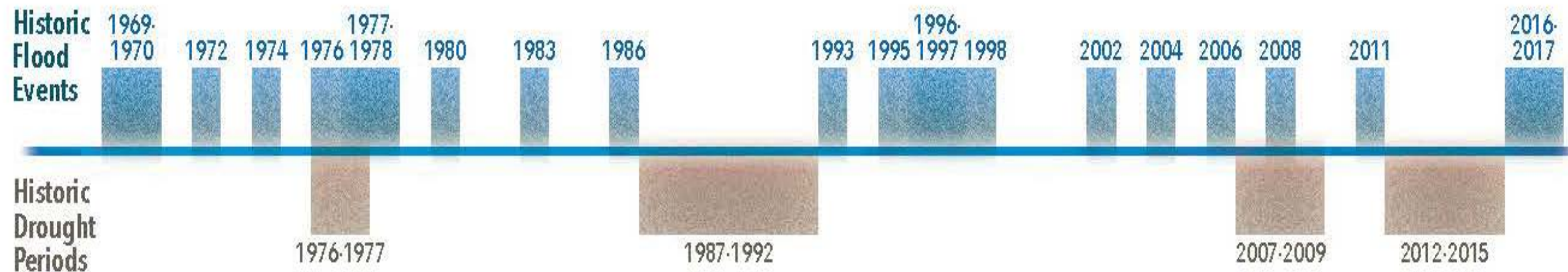
Why is Flood-MAR Necessary?

- Adapting to extreme events and climate change
- Modernizing the current water management system for sustainability
- Achieving multiple benefits

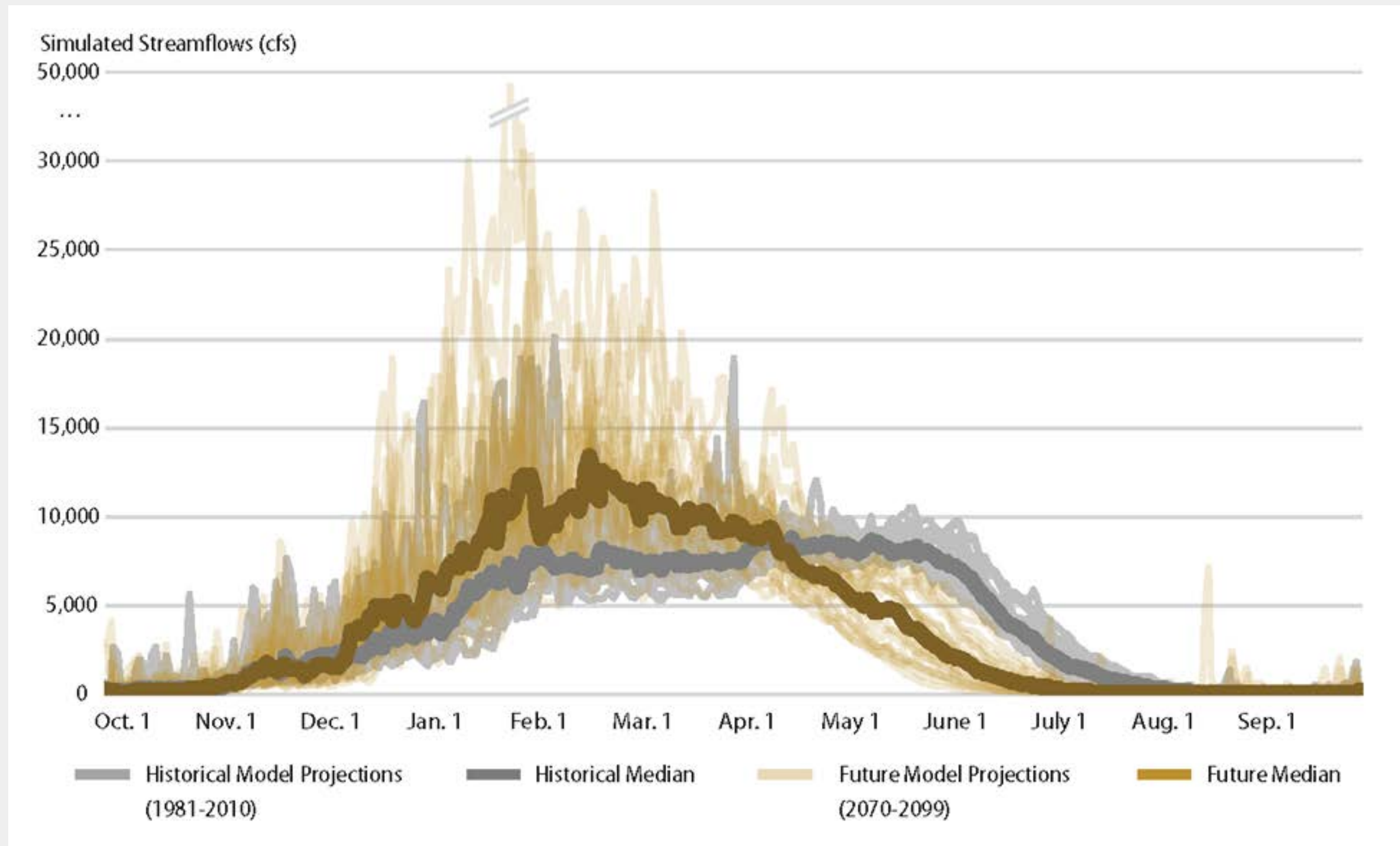


California's Water Management

A Tale of Two Extremes

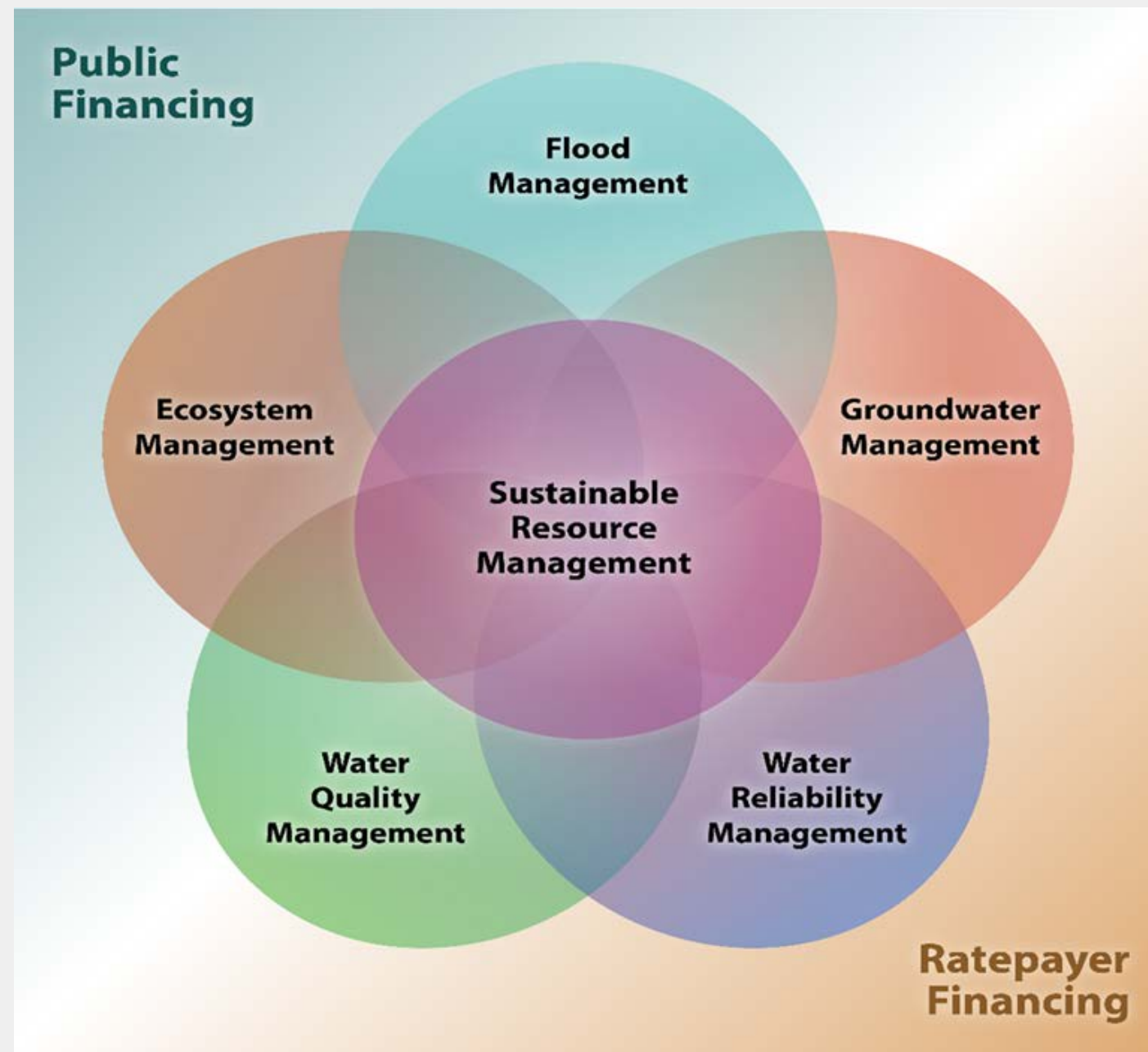


Effects of Climate Change Necessitate Wholesale System Changes



Sustainable and Integrated Water Resources Management

- Governor's Water Action Plan, the Sustainable Groundwater Management Water Act, and Update 2018 of the California Water Plan are **moving California's water resources toward sustainability**
- 2017 Update of the Central Valley Flood Protection Plan Calls for **multiple benefit projects that include ecosystem enhancements**
- Flood-MAR is an important part of California's water resources management portfolio to significantly **improve water resources sustainability and climate resiliency**



What are Benefits of Flood-MAR?

- Public benefits
- Private benefits (e.g., water supply reliability)



Public Benefits of Flood-MAR

- Flood risk reduction ★
 - Drought preparedness ★
 - Aquifer replenishment
 - Ecosystem enhancement ★
 - Groundwater remediation/water quality ★
 - Working landscape preservation and stewardship
 - Climate change adaptation
 - Recreation and aesthetics ★
- ★ Public benefits defined in Proposition 1



What is Needed to Expand Flood-MAR Implementation?

- Open dialogue
- Strong leadership
- Robust partnerships
- Innovative research & pilot projects



Flood-MAR Implementation

Potential Barriers

- **Cooperation and Governance** – trust, sector coordination, operations agreements
- **Legal** – water rights, regulations, permitting
- **Policy** – public benefit, beneficial use, landowner compensation/incentives
- **Implementation** – land use, recharge/recovery suitability, conveyance, reservoir operations, economics, funding



Activities to Encourage Dialogue

**Public Forum
Managed Groundwater Recharge to
Support Sustainable Water Management**

WEDNESDAY, NOVEMBER 8, 2017



- **Fact Sheet:**

http://water.ca.gov/system_reop/docs/FloodMAR%20factsheet_Nov%202017.pdf

- **Discussion Draft White Paper:**

http://water.ca.gov/system_reop/docs/Flood%20MAR_Discussion%20Draft_Nov%202017.pdf



Next Steps

- Continued engagement
- Release Final White Paper
- Comment on Draft Research & Data Development Framework
- Fill data gaps
- Conduct pilot studies
- Design & implement projects
- Track and report outcomes



Research & Data Development Framework

- Frame body of knowledge and provide a living inventory of technical research needs
- Inventory, develop, and coordinate technical expertise
- Convene Flood-MAR Research Advisory Committee
- Improve availability of research and technical expertise for all stakeholders
- Frame long-term and continued research and data development
- Provide guidance to stakeholders to support project implementation



Flood-MAR is a Moonshot



What Can I Do?

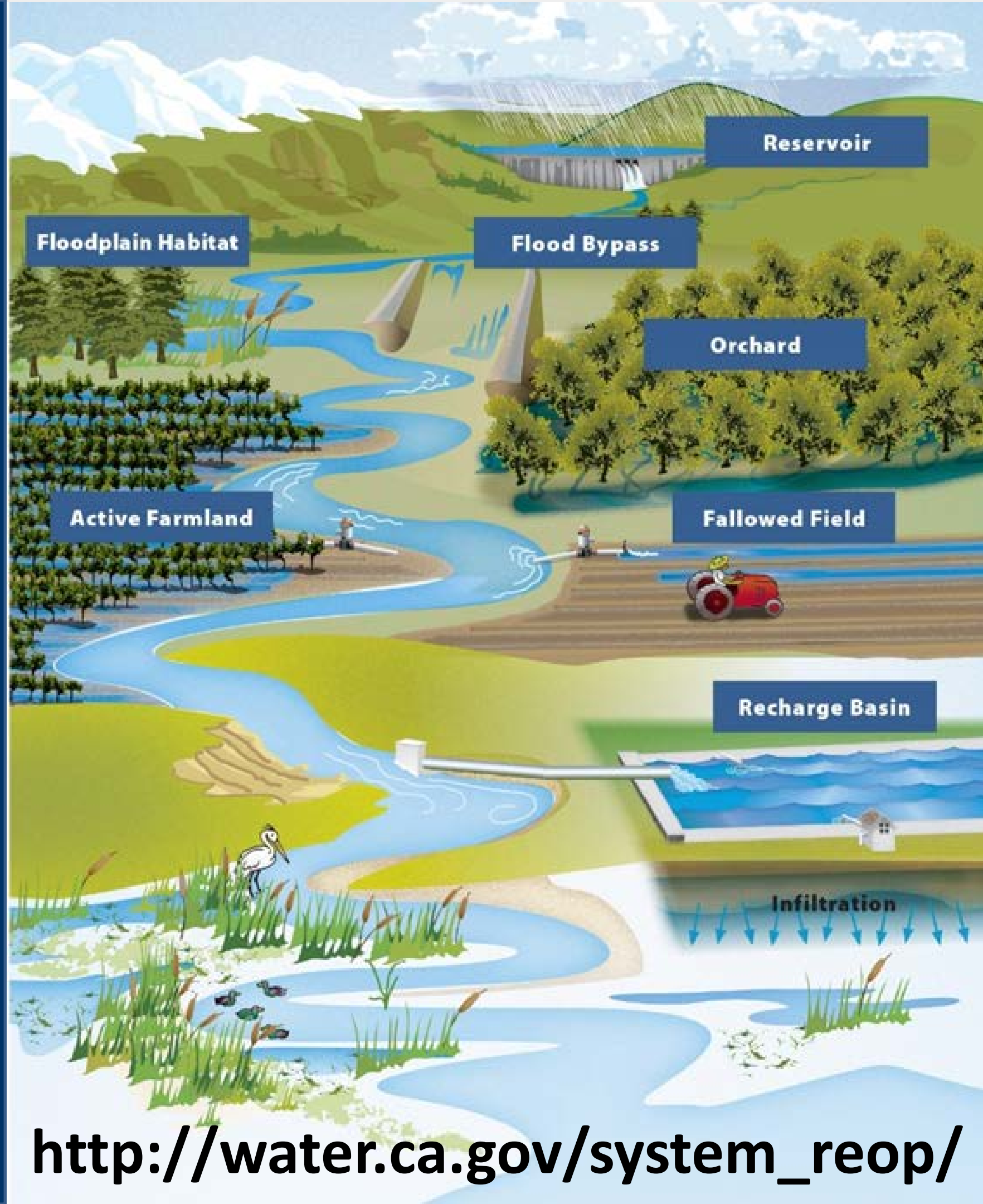
- **Landowners** -- Look for project opportunities and expand partnerships
- **Academia and Private Researchers** -- Continue to fill data gaps and conduct pilot projects
- **NGOs and Other Stakeholders** -- Encourage broad public benefits and look for partnership opportunities
- **Agencies** -- Provide technical and facilitation assistance (financial assistance, when available)
- **Regulators** -- Streamline processes and provide compliance assistance
- **Policy- and Decision-Makers** -- Authorize and fund agencies to remove barriers, conduct research, and support projects



Questions?

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Management

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http://water.ca.gov/system_reop/