



2019 FLOOD-MAR PUBLIC FORUM

COLLABORATIVE ACTION FOR CALIFORNIA WATER RESILIENCE

At the October 2019 Flood-MAR Public Forum, academics, agencies, agricultural producers, scientists, water managers, and interested members of the public gathered to advance a vision for a more resilient water future in California. Through panel and group discussions, attendee polls, poster sessions, and informal conversations at this two-day event, more than 200 attendees discussed policies, strategies, and innovations needed to concurrently reduce flood risk, replenish aquifers, and enhance terrestrial and aquatic ecosystems. The participants explored strategies and opportunities to plan and implement multi-benefit projects using floodwaters for managed aquifer recharge known as Flood-MAR.

“What you do today will fuel the innovation that is the hallmark of California and will lead the world.”

-- Karen Ross, CA Department of Food and Agriculture Secretary

State Agency Momentum: Building Collective Will to Advance Flood-MAR

In 2017, the California State Board of Food and Agriculture, the California Department of Food and Agriculture (CDFA), and the

California Department of Water Resources (DWR) convened a forum on managed aquifer recharge (MAR) with more than 300 participants to discuss how MAR can help address California’s water challenges and opportunities. The participants identified the opportunity to use floodwater as an untapped water source for recharging aquifers – putting the “flood” in Flood-MAR. Since the 2017 Forum, California has seen progress in policy, research, and public awareness about the need for Flood-MAR projects, including:

- The California State Board of Food and Agriculture, in partnership with DWR and the California State Water Resources Board (SWRCB), sent the Brown Administration a dozen recommendations describing how State government can advance MAR implementation.
- SWRCB issued guidance in both recognizing the in situ beneficial uses of groundwater recharge and offering an optional streamlined permitting process.
- Passage of Assembly Bill (AB) 658 facilitates permitting water diversions for groundwater recharge.



Five key forum findings and recommendations are listed below.

1. Create Partnerships and Opportunities for Collaboration

The solutions to California's water challenges can be effectively advanced through partnerships among experts and practitioners with the capacity and motivation to coordinate efforts and exchange knowledge and expertise. Making Flood-MAR possible requires a network that accommodates multiple levels of engagement of existing initiatives and collaboratives. Forum attendees recommended that the network begin with two priorities – to inventory existing and future Flood-MAR studies and projects and to develop protocols for data consistency.

“Unless we come up with a framework to develop collaborative networks and develop systems to allow small farmers to thrive, there’s a real possibility that we will end up with a California worse off than it is today.”

-- Harrison Zeff, University of North Carolina

- Studies and pilot projects were initiated to demonstrate Flood-MAR opportunities and benefits, such as the Merced River Basin Flood-MAR Reconnaissance Study.
- Cooperative efforts were convened to explore technical and research needs for expanding groundwater recharge, such as the Recharge Roundtable.

In 2018, DWR convened a Flood-MAR Research Advisory Committee (RAC) to address related data and knowledge gaps. About 200 researchers, water managers, non-governmental organizations, and agencies jointly compiled existing science, data, and tools pertaining to Flood-MAR; identified information gaps and priority research actions to fill those gaps; and explored strategies to implement the priority actions. In 2019, the RAC released the Flood-MAR Research and Data Development Plan (R&DD Plan) that presents 39 priority actions to improve research, data, tools, and guidance to expand Flood-MAR implementation.

Moving Flood-Mar From Concept To Implementation

The 2019 Flood-MAR Forum yielded new insights and increased collective momentum. Presenters and panel discussions focused on policy and technical aspects of Flood-MAR project implementation. The forum generated recommendations ranging from new policies and technical approaches, to removing barriers and collaborating with unlikely partners.

Here's What You Can Do Now

- Examine the level of risk and return that your organization is able and willing to undertake to participate in a Flood-MAR network.
- Create cross-sector opportunities to plan and implement Flood-MAR projects, on a local, regional, or statewide basis.

2. Increase Agency Cooperation and Alignment

Institutional silos and inefficiencies impede watershed-based solutions, multi-sector management strategies, and multi-benefit projects. Cooperation and alignment of agencies is essential to facilitating the pre-planned and real-time decision-making needed for Flood-MAR projects. Achieving the public and private benefits of Flood-MAR requires

expediting permitting processes, incentivizing landowner participation, and protecting floodplains and recharge sites.

“Business as usual is not good enough. We are seeing change and cooperation among agencies, and I hope that we continue these efforts into the future, so that projects are simpler and faster to get through, and with high priority.”

-- Don Cameron, State Board of Food and Agriculture

Here's What You Can Do Now

- Develop guidance and incentives for consistency in water accounting methods.
- Increase coordination within and among basins for sharing data and lessons learned, formulating multiple benefits projects, and coordinating implementation.

3. Increase Flexibility for Water Managers

Water managers need the flexibility to make quick decisions on behalf of water users in their area to maximize water storage and



decrease the impacts of catastrophic flood events. Increased flexibility may be achieved through multi-agency agreements, coordinated operations, access to multiple water supply sources, clear water and storage rights, and early coordination with permitting agencies.

“Flood-MAR is a great concept, but if we don't have an expedited review and approval process then this is an academic exercise. Flood water is short term, and we need to have the permissions at hand to move it quickly or miss the opportunity.”

-- Eric Averett, Rosedale-Rio Bravo Irrigation District

Here's What You Can Do Now

- Coordinate recharge and flood management operations and get agreements in place prior to the flood season.
- Pursue temporary, streamlined, and permanent water rights permits at the same time to be ready for the next and future events.

4. Design Pilot Projects and Research Studies Focused on Data Gaps

Research is needed for more accurate water accounting, mapping, and comprehension of the complete picture of water available for recharge, soil and aquifer characteristics, and groundwater/surface water interactions. Identification of optimal recharge locations and technologies for water accounting are critical to maximizing effectiveness and efficiency of recharge projects.

“Practicing recharge without an understanding of the soils and subsurface geology is like operating on a person without an understanding of human anatomy.”

-- Graham Fogg, UC Davis

Here's What You Can Do Now

- Implement recommendations of the Recharge Roundtable and Flood-MAR R&DD Plan.
- Formulate and implement pilot projects, monitor outcomes, and share lessons learned and best practices.

5. Increase Technical Support and Streamline Funding for Landowners and Local Agencies

To implement Flood-MAR projects, landowners and local agencies require funding and technical support, as well as an understanding of the benefits and costs of Flood-MAR.

"We need to do three things. First, align public funding streams, applications, requirements, and timing. That's one of local communities' biggest barriers. Second, build local capacity to unlock innovative, integrative, at-scale projects. Finally, we need to accelerate relationship-building across agencies, stakeholders, regional and city lines. We need to come together around a common vision and common humanity."

-- Mary Creasman, Wildlife Conservation Board

Here's What You Can Do Now

- Develop guidance for project selection and implementation using case studies.
- Create opportunities and incentives for partnerships.
- Incentivize and inform landowners on the risk and rewards of piloting and monitoring recharge projects on their land.

Resources

[Subscribe to the Flood-MAR listserv](#)

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[Flood-MAR Research Advisory Committee
Research and Data Development Plan](#)

[DWR's Sustainable Groundwater
Management Program](#)

[California Water Resources Control Board](#)

[Recharge Roundtable](#)

[Groundwater Exchange](#)

