

# The N-EWN Knowledge Series

## A Continuing Education Series about Engineering with Nature



### Life Depends on Rivers: Building a Movement to Protect and Restore America's Rivers

*Jenny Hoffner*

*American Rivers*



*Eileen Shader, CFM*

Rivers are essential to all life on earth, but our rivers are at risk as never before from climate change, pollution, drought, flooding, and loss of natural habitat. American Rivers is championing a national effort to protect and restore all rivers, from remote mountain streams to urban waterways. We have 50 years of experience addressing river threats from coast-to-coast — helping partners protect vital habitat, working with communities to reduce river pollution, securing policies to ensure we all have clean water, driving solutions that reduce the risk of floods while reconnecting floodplains, working to remove unnecessary dams, and strengthening a river movement that adds power to this important work. This presentation will provide an overview of American Rivers' conservation strategies being put into action to advance innovative nature-based solutions and promote transformational river management and policy that prioritizes healthy rivers.

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**or scan:**



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**Presented by:**



**Questions? Please contact:**  
**Sage Paris, LimnoTech**  
[sparis@limno.com](mailto:sparis@limno.com)





# Life Depends on Rivers: Building a Movement to Protect and Restore America's Rivers

Jenny Hoffner, VP Conservation Impact  
Eileen Shader, Sr Dir. Floodplain Restoration



**AMERICAN  
RIVERS**



A photograph of a swampy forest with tall, slender trees and water. The water is calm, reflecting the trees and the sky. The trees have thick, textured bark and are surrounded by dense green foliage. The overall scene is serene and natural.

# Our Vision

A nation where  
every river is clean  
and healthy  
for people and  
wildlife



# Rivers of the United States



















- Protect 1M miles
- Remove 30k dams
- Restore 10k Miles & 35k floodplain acres
- Make every city's river swimmable
- Build a River & Water Majority







Protecting rivers and nature near where most people live will make our communities more resilient to drought and flooding, and allow people to access the outdoors.

Reversing the damage caused by hydropower dams will dramatically improve aquatic species survival.

Removing 30,000 harmful dams will reverse decline of migratory wildlife and fish, and help keep water sources cleaner.

Cleaning up pollution and ensuring communities have plentiful clean water will improve our cities and the well-being of people who live in them.

Making sure every river has a community of people speaking up for it will make it possible to create a future of abundant, clean water for all of us.

Advocating for laws that keep waters clean for drinking, fishing, and swimming ensures rivers can be a gateway to health and recreation.

Transforming urban rivers into healthy gathering spots for neighborhoods will inspire the next generation of community leaders, artists, and visionaries.

## Conservation Strategies

- River Protection
- Dam Removal
- Hydropower Reform
- Clean Water
- Floodplain Restoration
- Conservation Partnerships







Protected Rivers  
Explorer

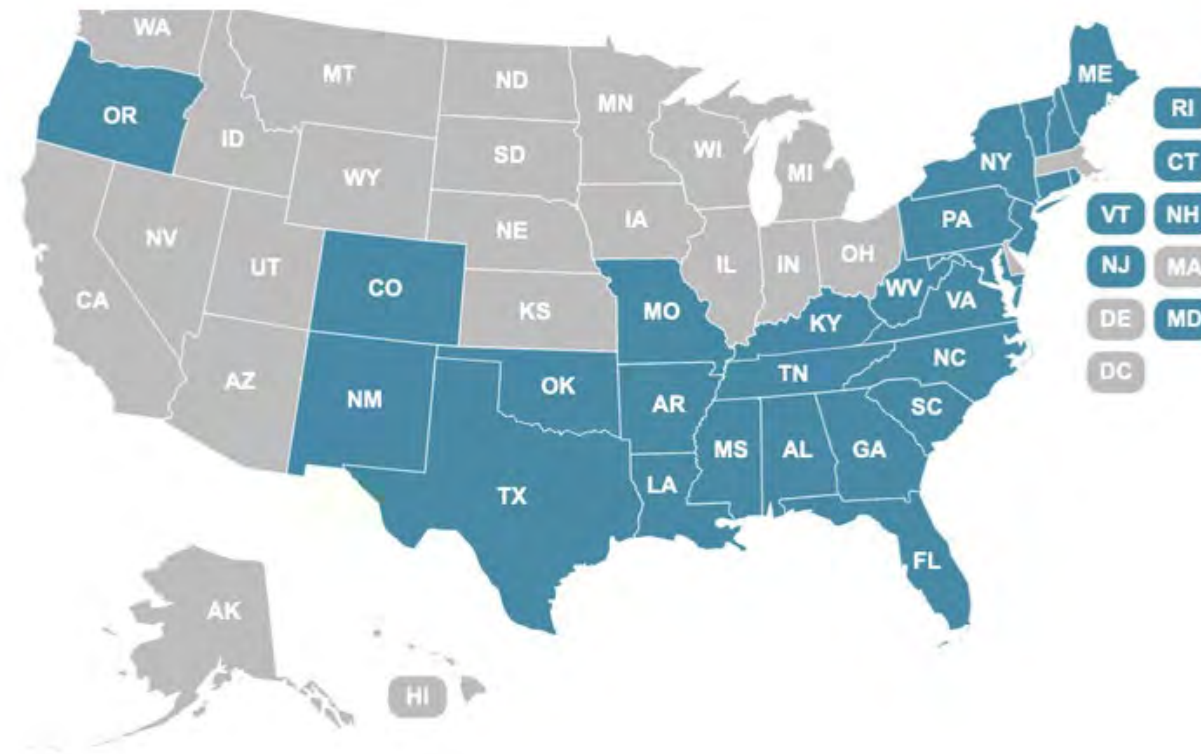


Wild & Scenic  
Rivers Coalition

Scott Bosse, Alsek River







# AQUATIC CONNECTIVITY TEAMS AND DAM TASK FORCES ARE CATALYSTS

State-based collaborations bring together people with diverse backgrounds united around a common set of goals.



**AMERICAN  
RIVERS**



# National Dam Removal Community of Practice

Website  
Membership  
Engagement



## NATIONAL DAM REMOVAL COMMUNITY OF PRACTICE



Upper Citico Creek Dam Removal | Photo by Erin Singer McCombs

Dam removal practitioners are invited to join our National Dam Removal Community of Practice.





Hydropower Reform

Hydropower Reform  
Coalition

Hydropower Reform Coalition







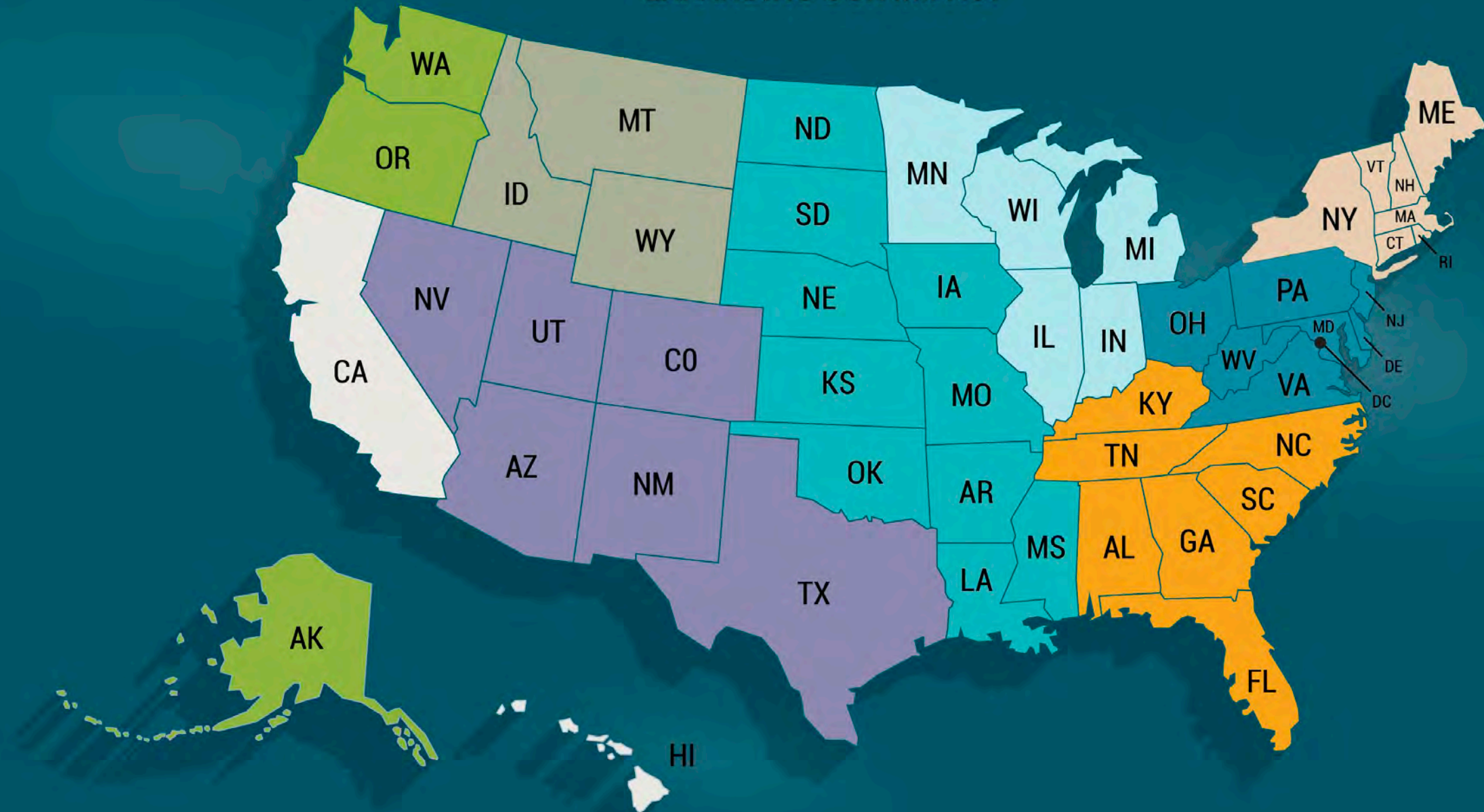
American Rivers  
believes a future of  
clean water and  
healthy rivers  
everywhere for  
everyone is  
essential.





# AMERICAN RIVERS

EXPANDING OUR IMPACT





**Expanding our advocacy to state and local governments to advance policies and ballot and bond measures that support clean water**

**Launching a Congressional River Caucus**

**Uniting the river movement**



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RIVERS**  
ACTION FUND



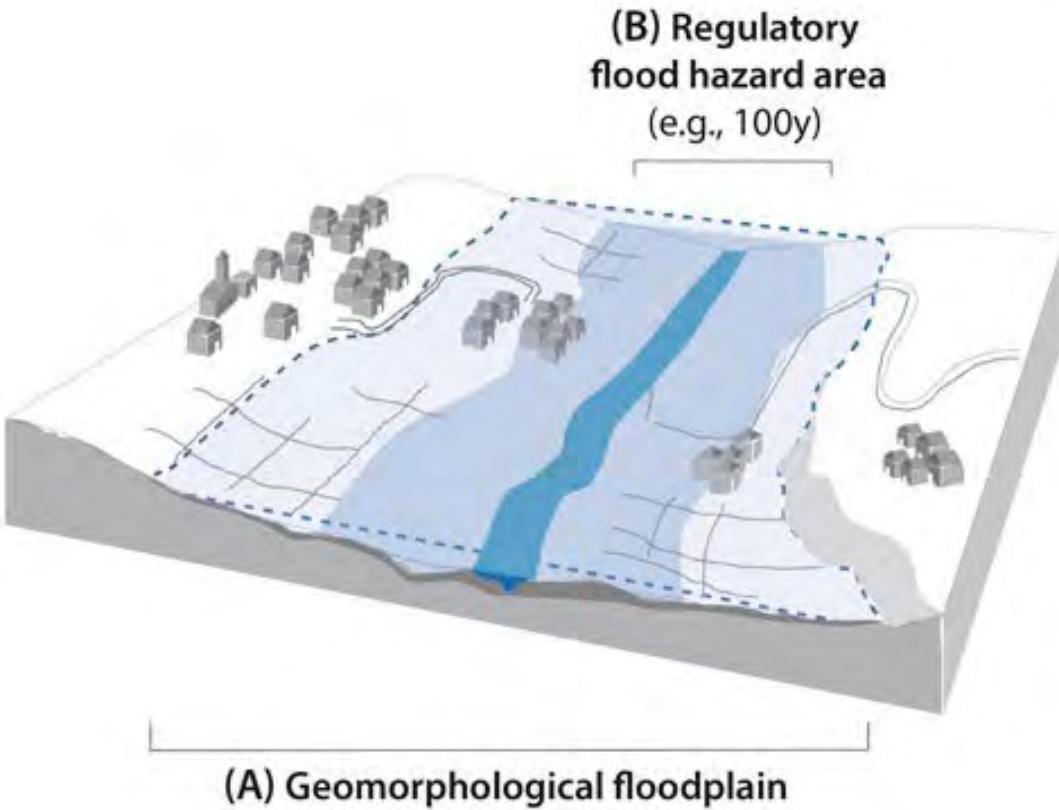
An aerial photograph of a winding river flowing through a vast, green floodplain. The sun is low on the horizon, creating a warm, golden glow and long shadows. The river reflects the sky and the surrounding vegetation. The floodplain is covered in dense green grass and shrubs, with some trees scattered throughout. The overall scene is peaceful and natural.

# Building a Movement for Healthy Floodplains

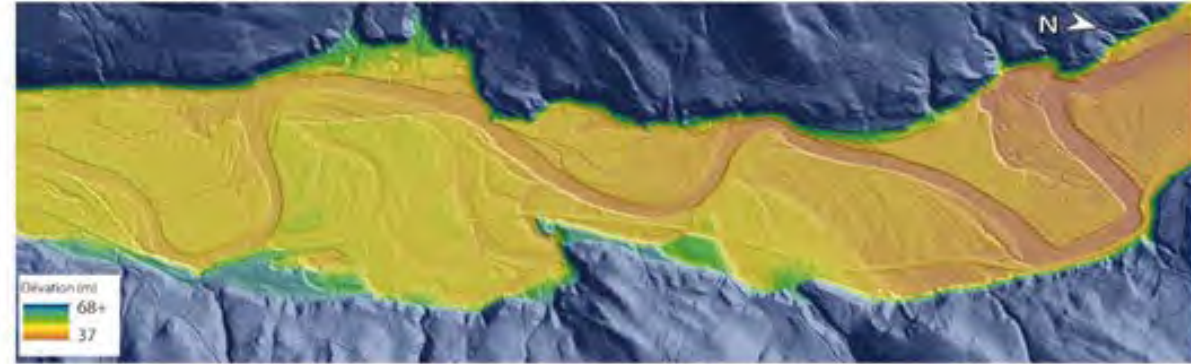


**AMERICAN  
RIVERS**





(A) Geomorphological floodplain  
(based on extent of dynamic channel movement)



(B) Regulatory flood hazard area  
(based on extent of area inundated by 100-year flood)



**Source:** Serra-Llobet, A., Tourment, R., Montané, A., and Buffin-Belanger, T. (2022). Managing Residual Flood Risk behind Levees: Comparing USA, France, and Quebec (Canada). *J. Flood Risk Manage.* e12785. doi:10.1111/jfr3.12785

Defining Floodplains In the  
United States

1. Geomorphological
2. Regulatory
3. Ecological



AMERICAN  
RIVERS





Mitch Paine, Hartney Creek, AK

## **FLOODPLAINS ARE:**

A necessary component of a healthy river

- Essential to safely convey flood water
- The most productive and biodiverse ecosystems on the planet
- Increasing in size due to climate change and land use changes

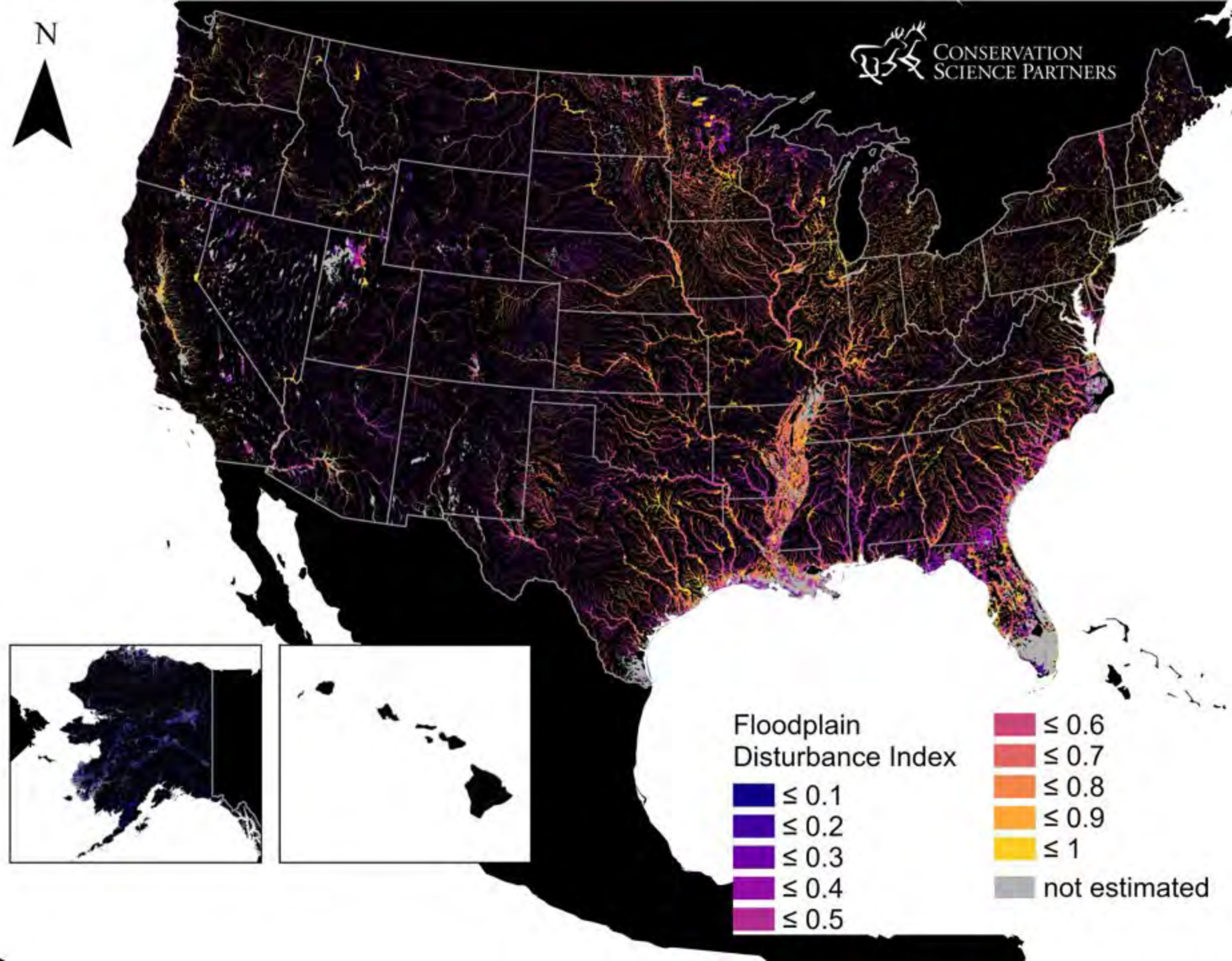




# Floodplain Assessment

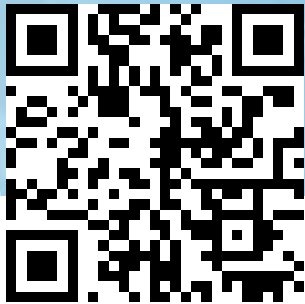
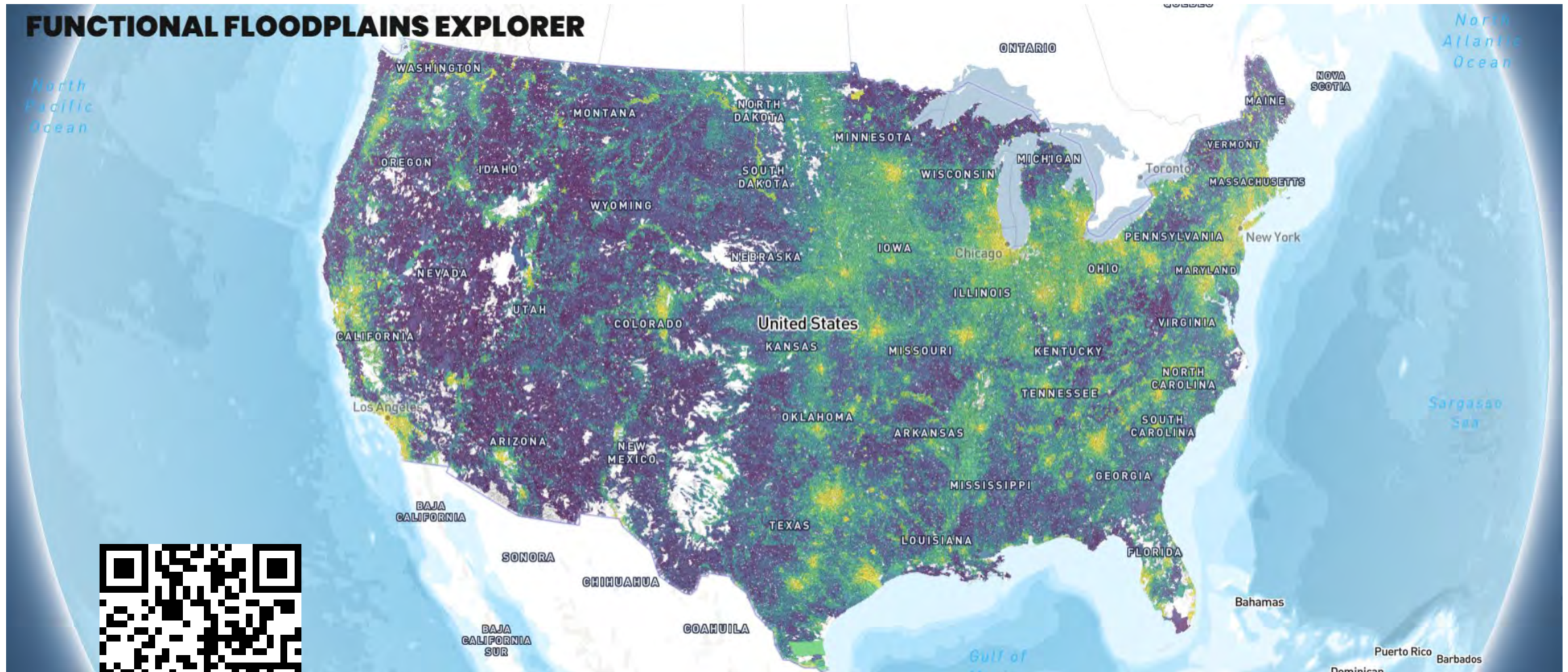
90% of floodplain  
in the lower 48 &  
70% nationally  
are altered.

Source: Conservation Science Partners (CSP). 2024.  
Protected Floodplains Assessment of the  
United States - Final Report. Truckee, California,  
USA. Available upon request from American Rivers





# Functional Floodplains Explorer – beta version live!



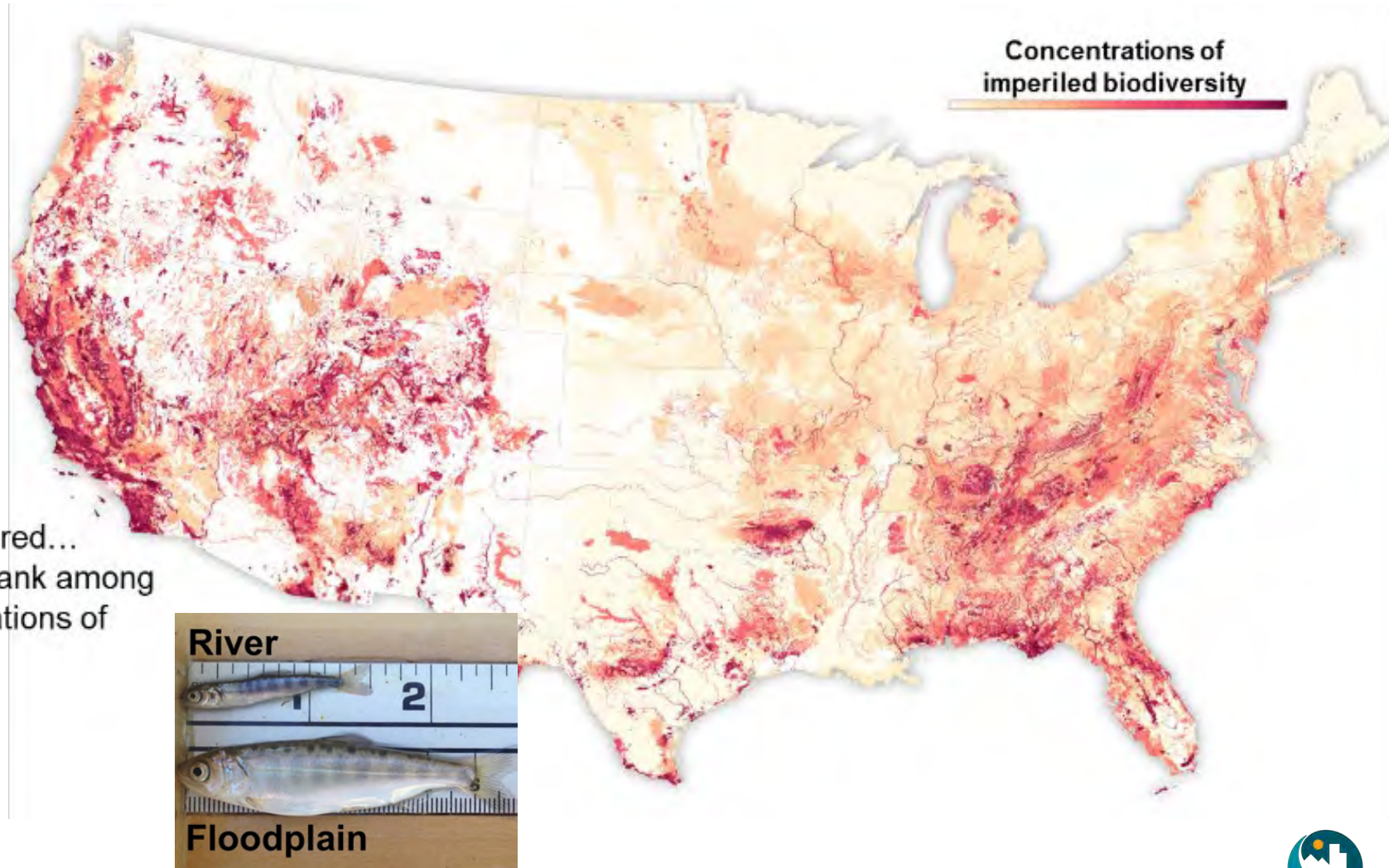
<https://seal-app-r7cbc.ondigitalocean.app/>





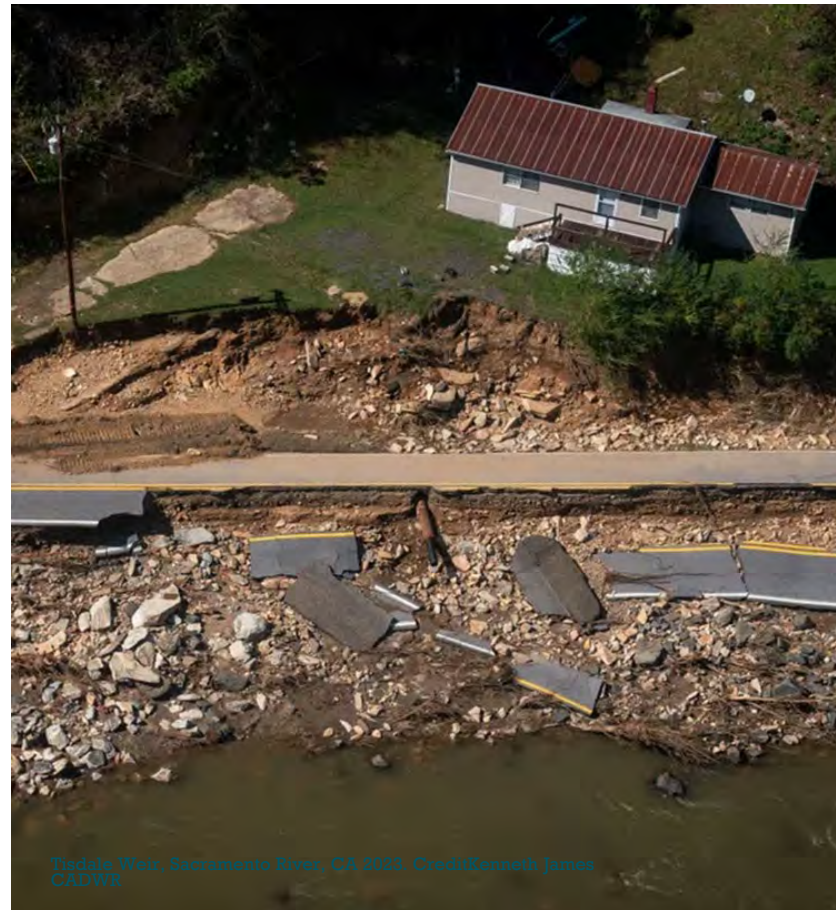
# Consequences of Floodplain Loss

- Species loss
- Poor water quality
- More carbon -> climate change
- Increased drought
- Warmer, faster, more destructive rivers

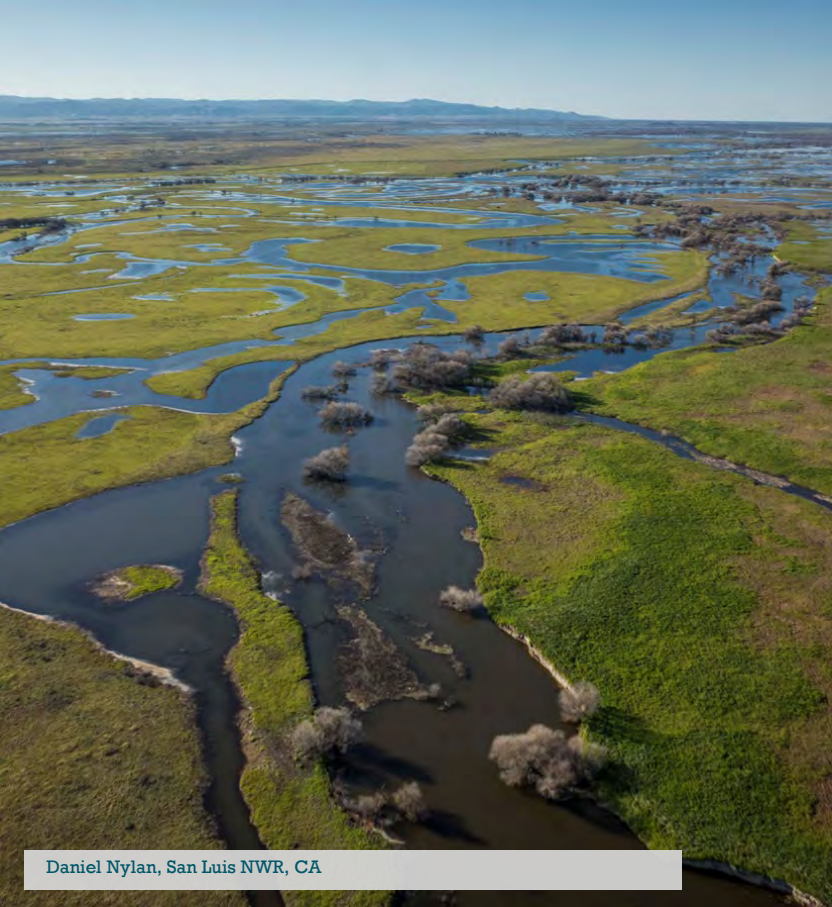




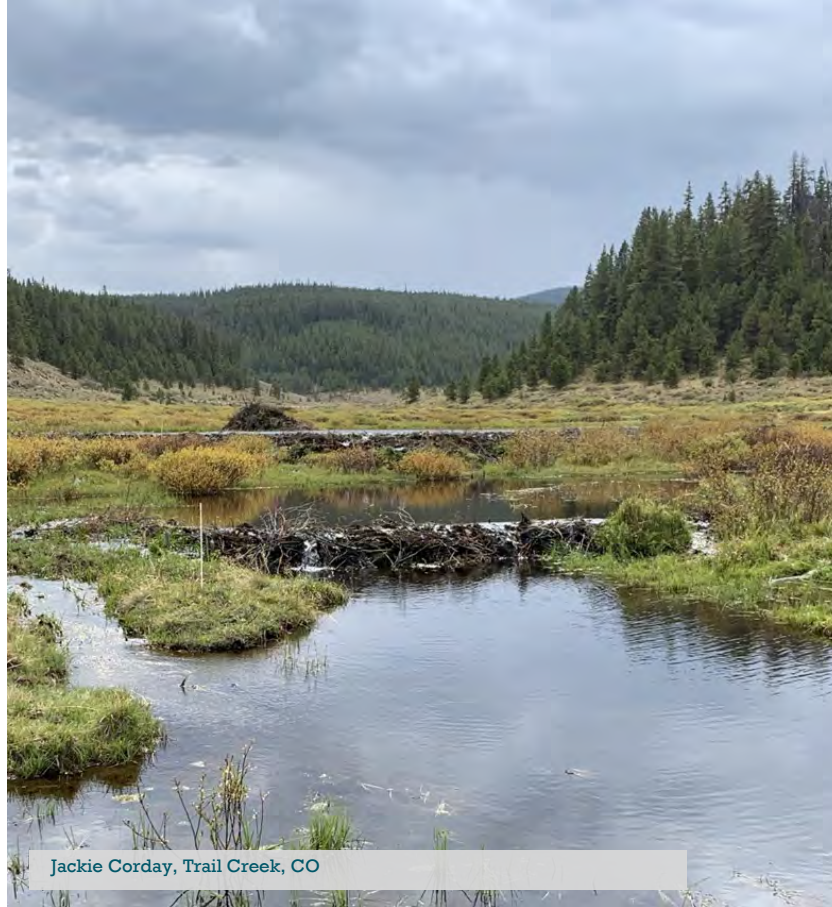
# Rivers need room to flood safely!







Daniel Nylan, San Luis NWR, CA



Jackie Corday, Trail Creek, CO



WA Dept of Ecology, Chehalis River basin, WA

## Projects: Focus and Accelerate On-the-ground Impact

Enhanced data to prioritize high-value floodplain projects

Influence watershed-scale programs

Implement projects that restore 35,000 acres of floodplain by 2030

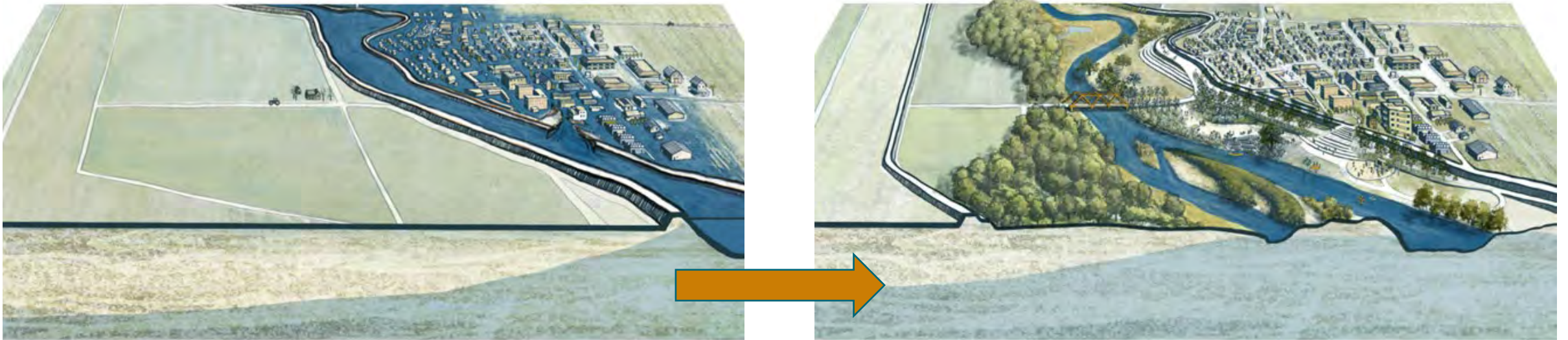


Establish a pipeline of shovel-ready floodplain projects



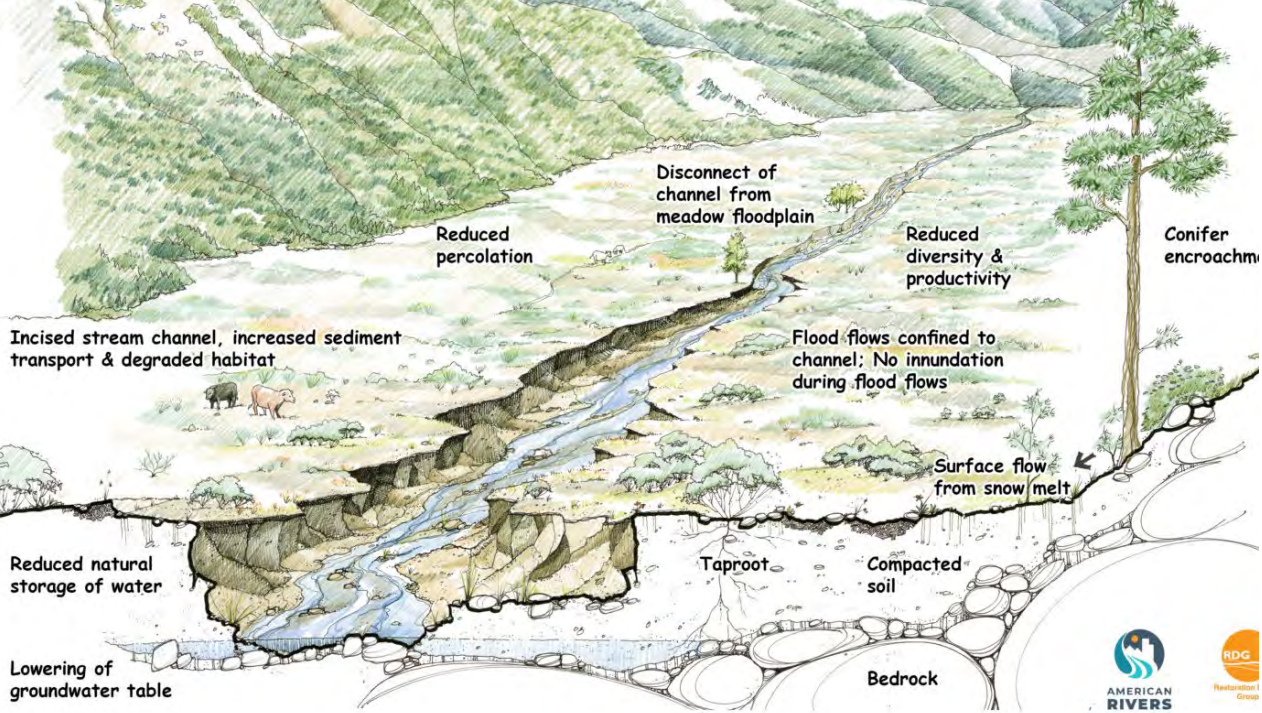


**Floodplain Restoration Projects** restore natural habitat features and reconnect rivers to their floodplains during variable flood events at a scale that will provide meaningful environmental benefits.

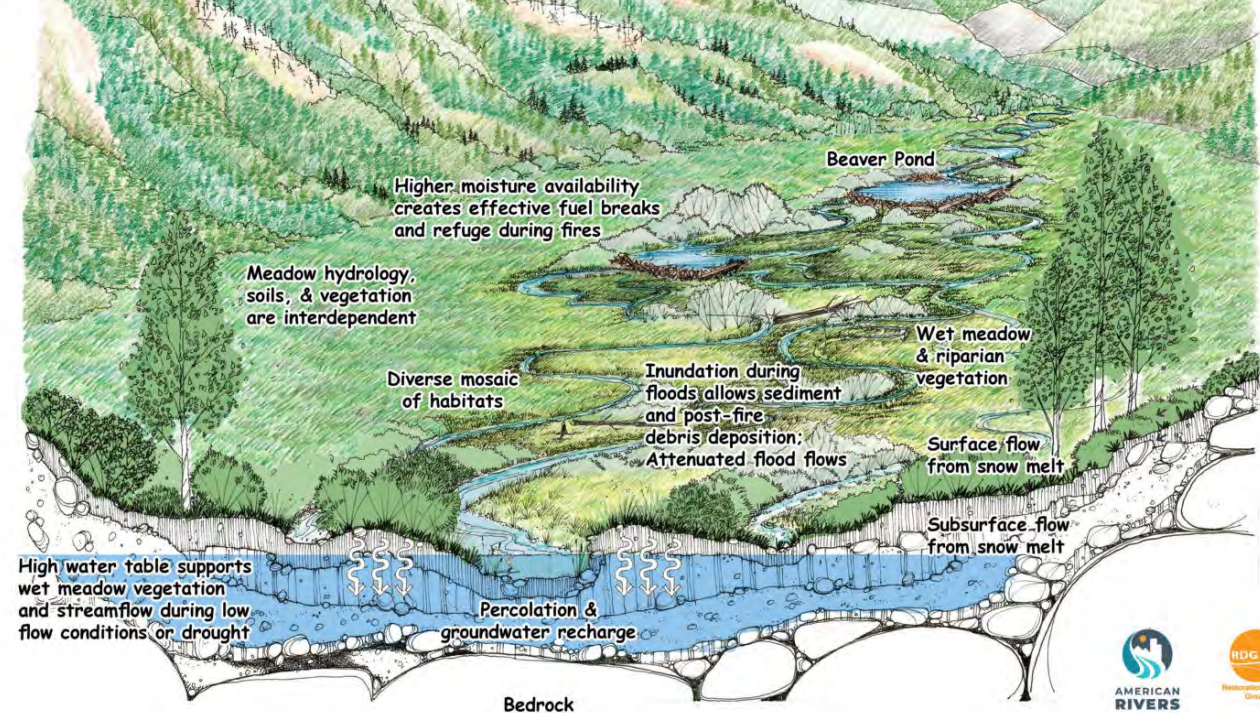




## UNHEALTHY MEADOW



## HEALTHY MEADOW



Sierra Meadows Partnership is restoring 30,000 acres of headwater meadows in Sierra Nevada's by 2030 using:

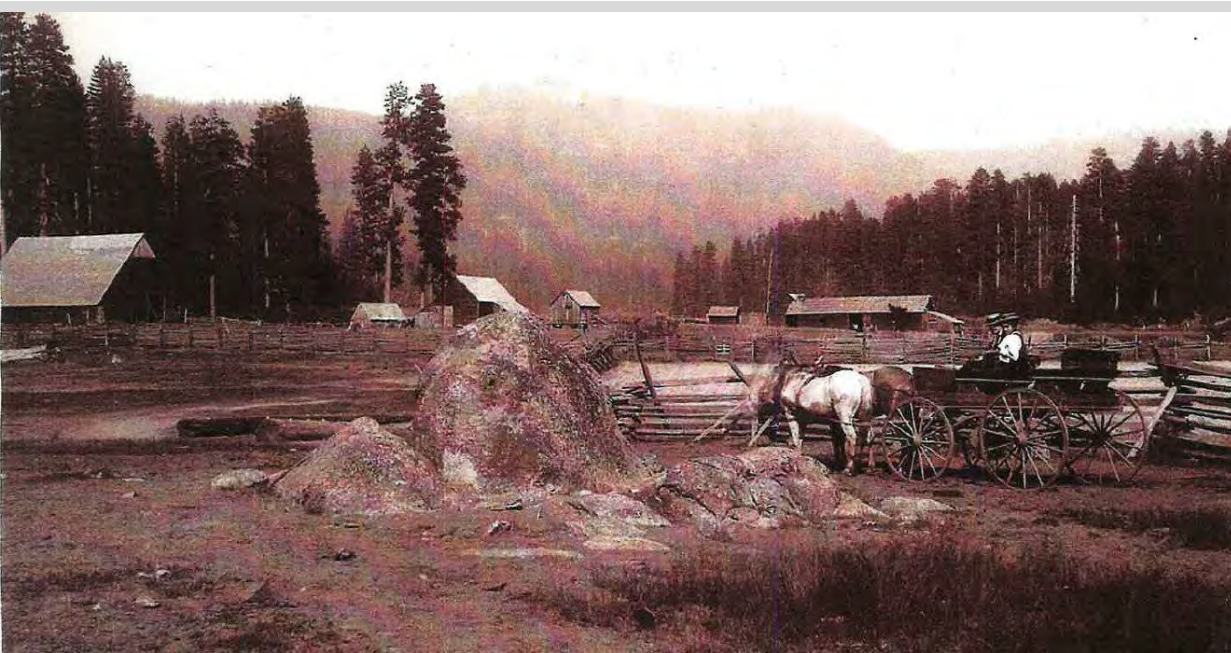
- Fill or partial channel fill
- Infrastructure improvements/modifications
- Riffles
- Beaver dam analogs
- Revegetation

The Sierra  
Meadows  
Partnership





# Ackerson Meadow, CA



National Park Service. Ackerson Meadow circa 1895



American Rivers. Ackerson Meadow 2012.





# Ackerson Meadow, CA



Melissa Steller. Ackerson Meadow



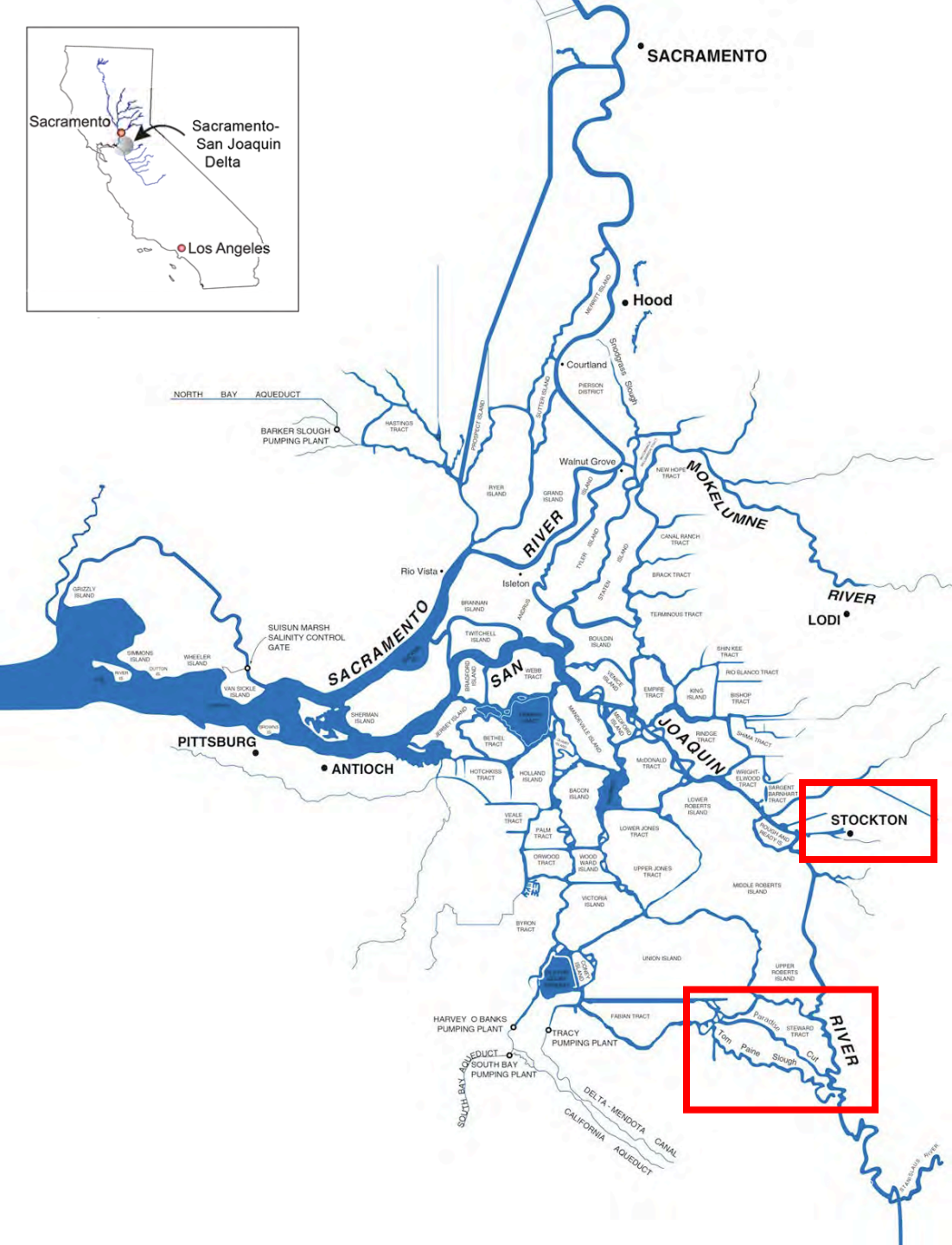
Melissa Steller. Ackerson Meadow







# Sacramento-San Joaquin Delta



# Paradise Cut Expansion and Multi-Benefit Project

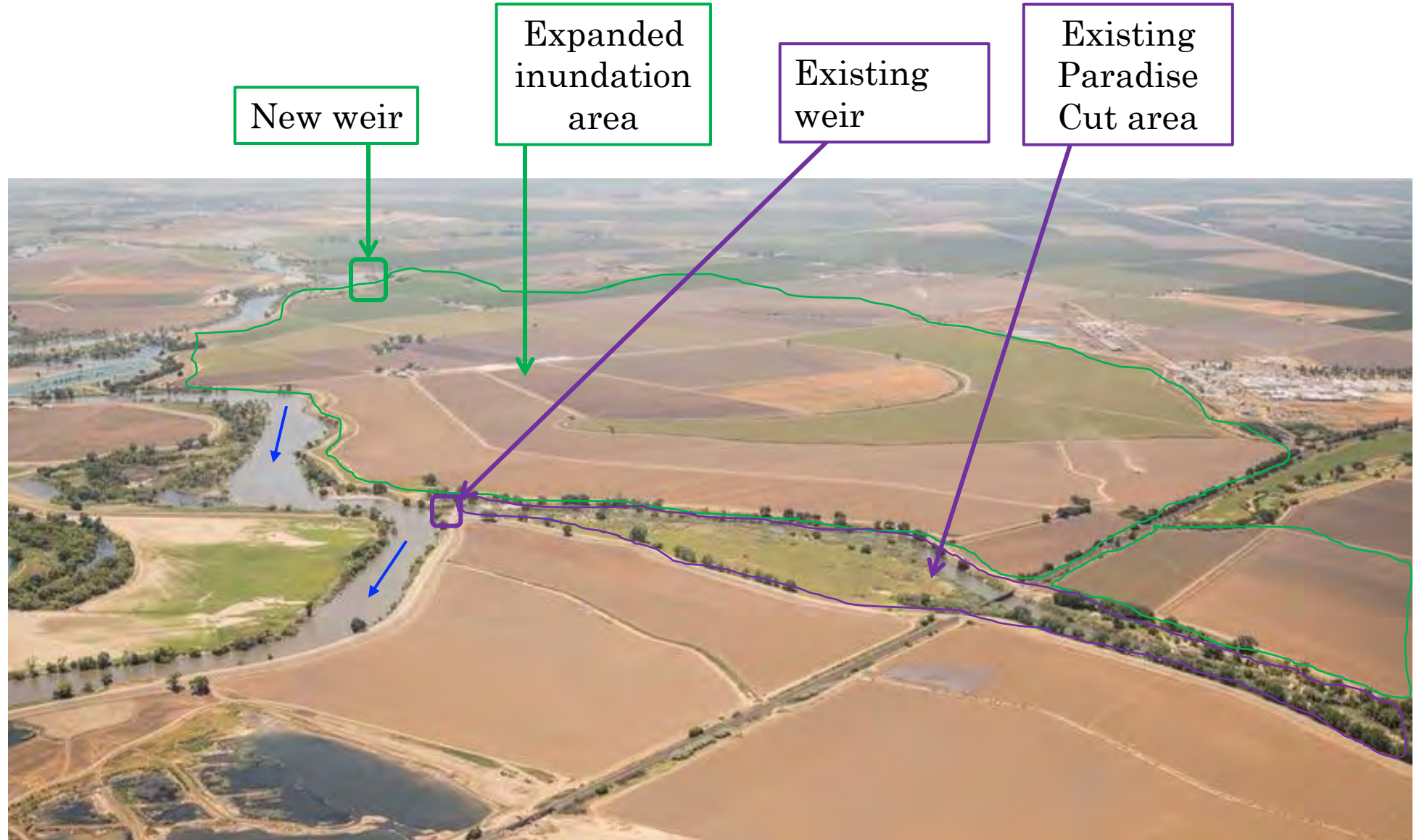




# What Is the Paradise Cut Flood Bypass?

Farm land and open space used to divert and hold flood flows from the San Joaquin River and slowly release them downstream into the Paradise Cut channel

<10% chance of flood waters on Paradise Cut in any given year



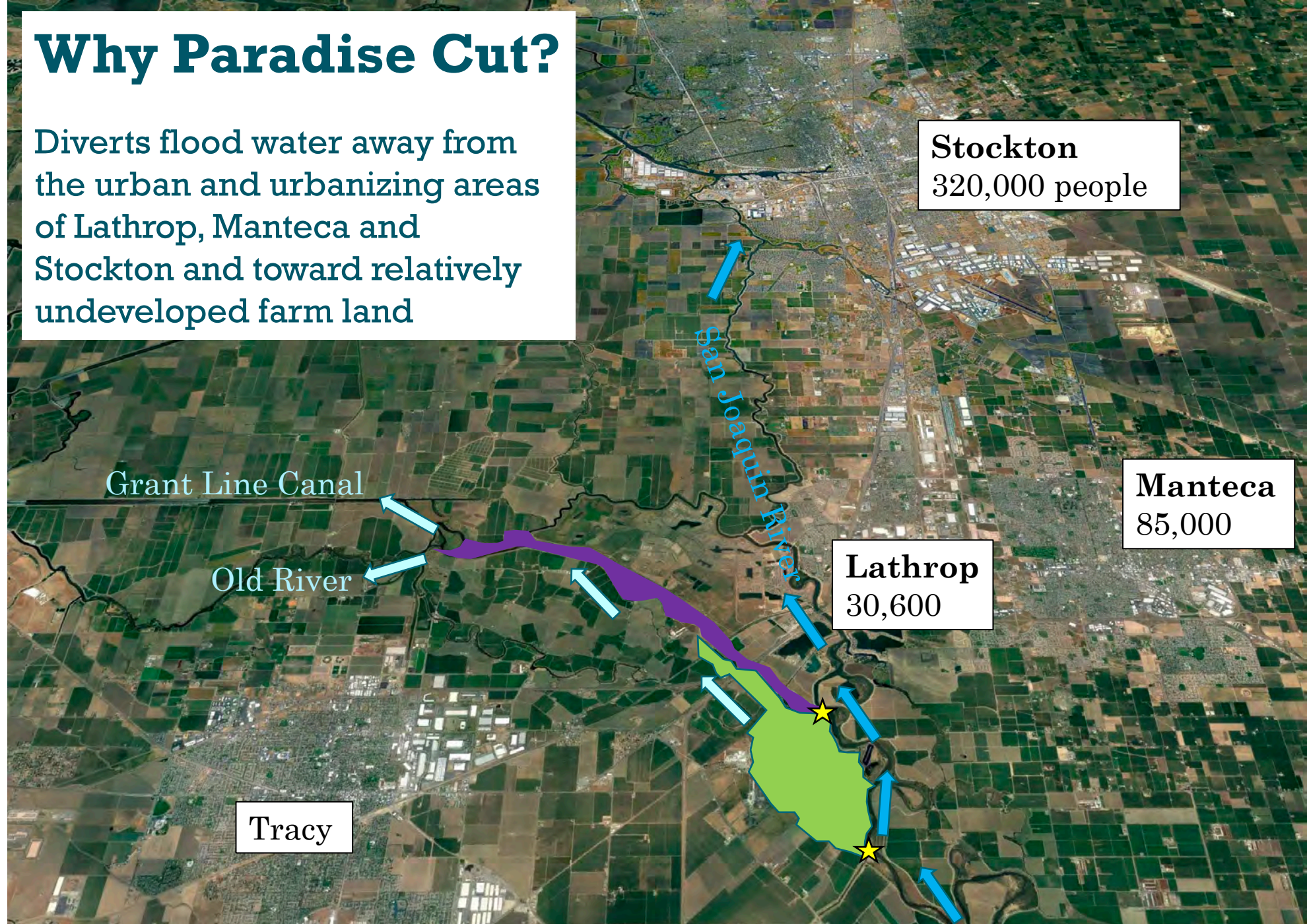
Looking South up the San Joaquin River. Photo by Daniel Nylen, American Rivers.





# Why Paradise Cut?

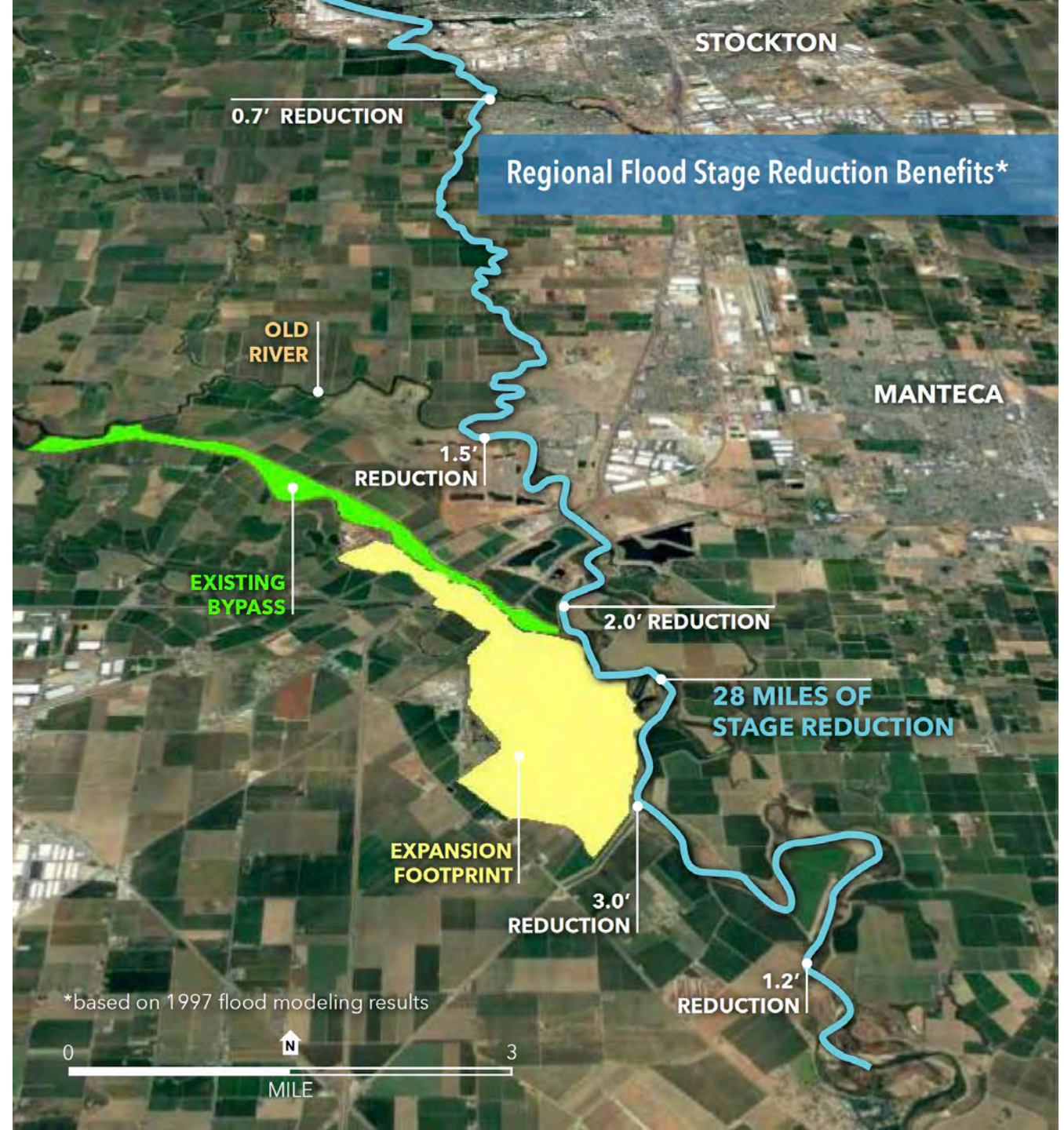
Diverts flood water away from the urban and urbanizing areas of Lathrop, Manteca and Stockton and toward relatively undeveloped farm land





# Why Paradise Cut?

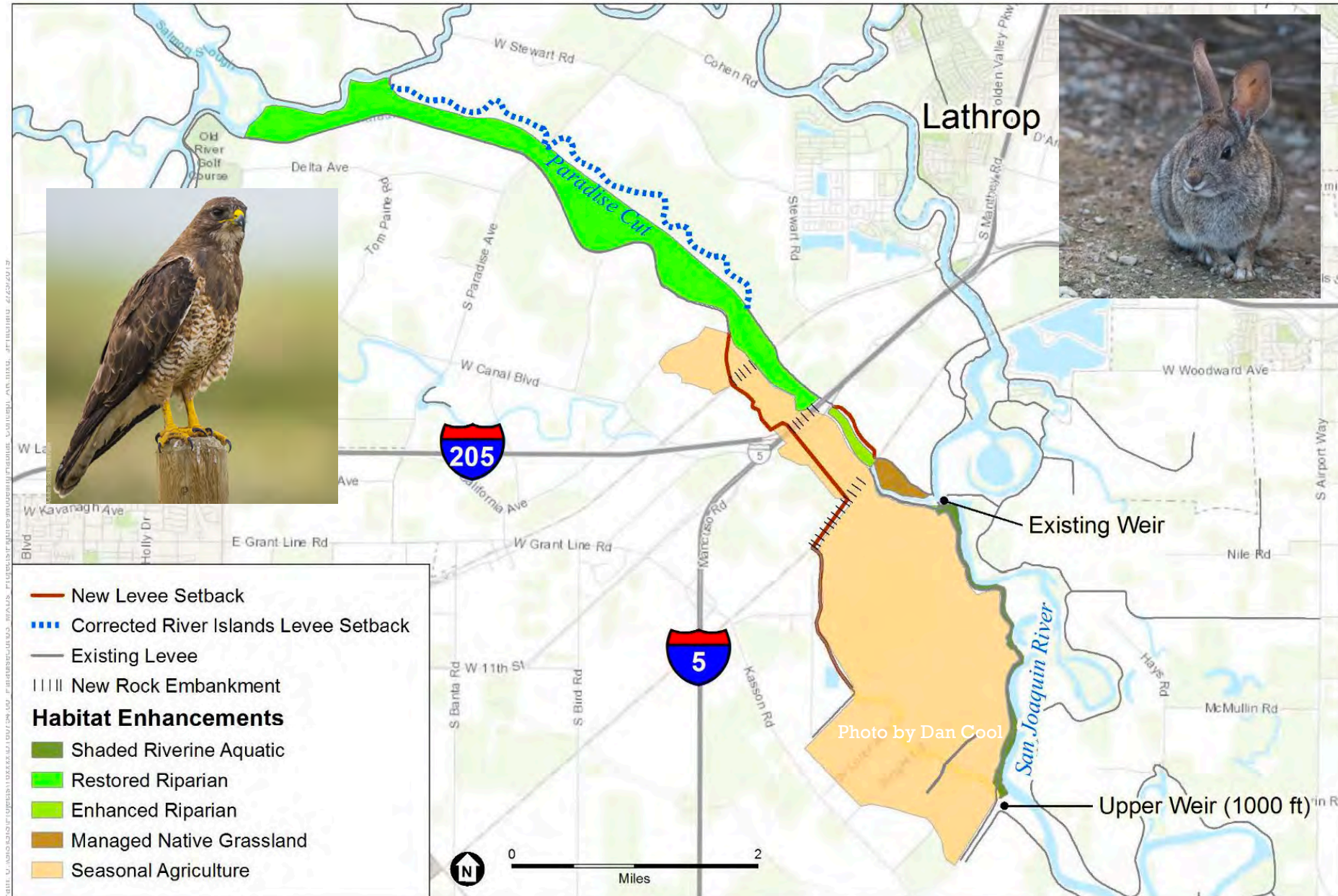
- Reduces flood water levels by 0.7 – 3.0 feet along a 28-mile corridor between Stanislaus River and Stockton Deep Water Ship Channel
- Reduces probability of levee failure downstream
- Increases systemwide resiliency to climate change
- Multi-benefit solution





# Ecosystem Restoration

- 2,570 ac Swainson's hawk forage
- 810 ac restored riparian habitat
- 29 ac enhanced riparian habitat
- 41 ac of native grassland
- 3.5 mi shaded riparian aquatic habitat







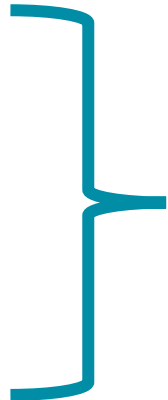
River Action Day 2025



Disappearing Rivers, Extent of Floodplain Alteration in the West

# Policy: Transform Federal and State Floodplain Management

- Increase federal investments and support for floodplain restoration.
- Launch a “50 State+ Strategy” to expand the practice of floodplain restoration and equitable flood management in all states.
- Promote common-sense floodplain management policies

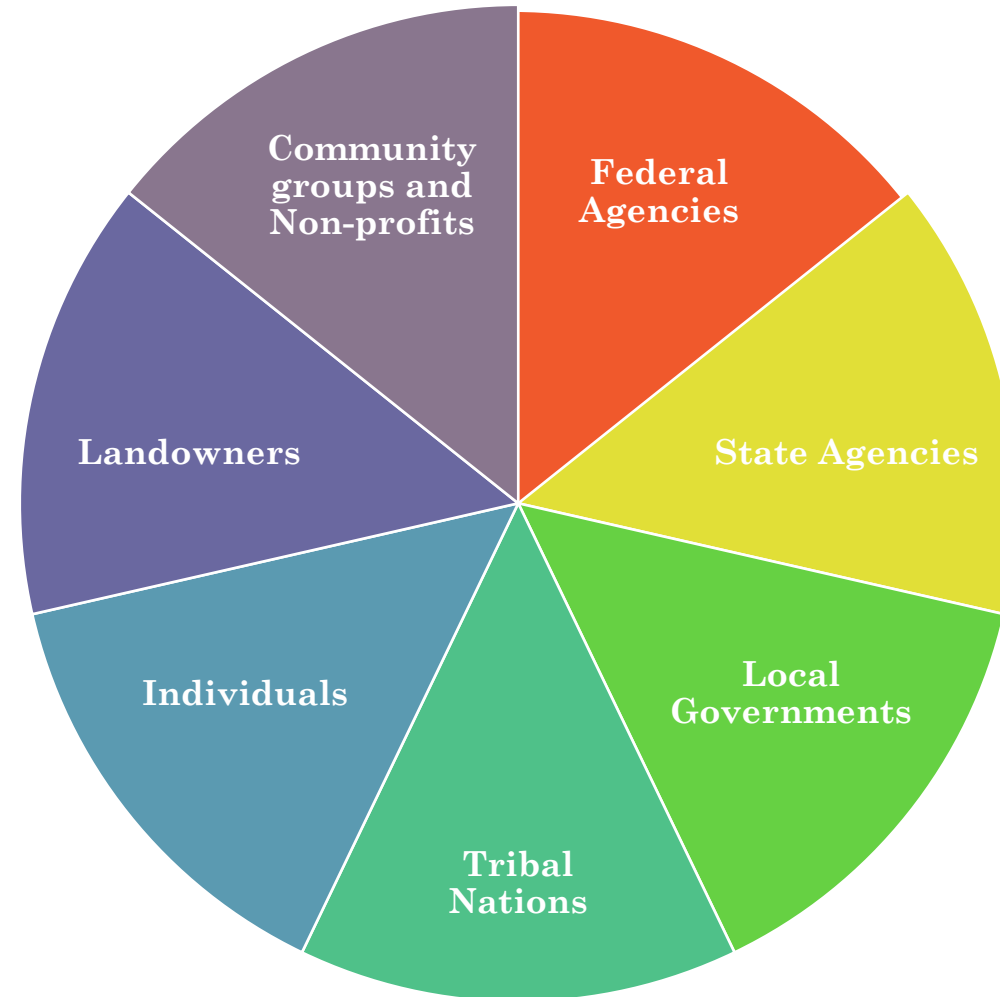


Work at scale to address urgency of the problem





# Floodplain Management is a SHARED RESPONSIBILITY

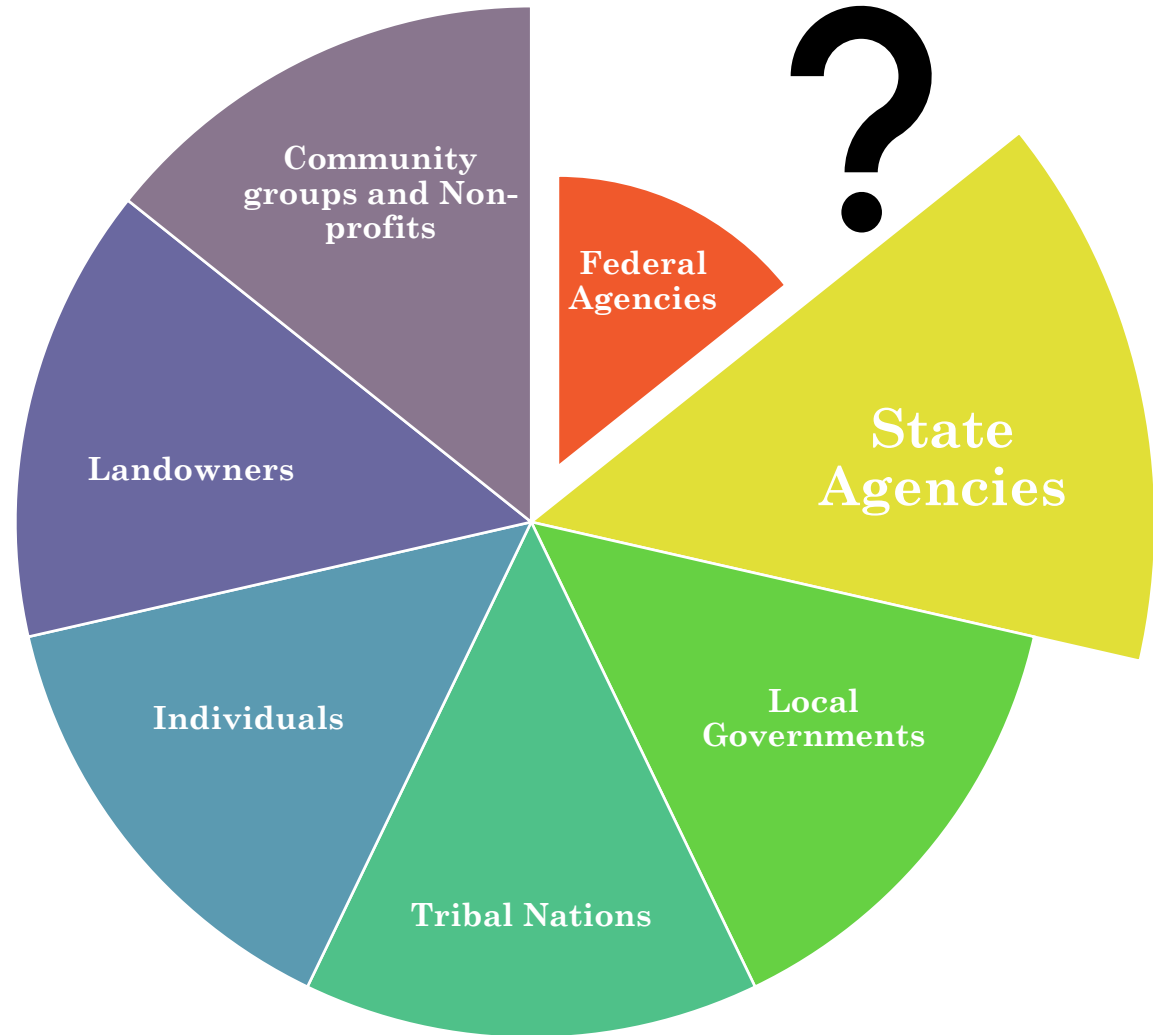




## Floodplain Management is a SHARED RESPONSIBILITY

### State Roles in Floodplain Management:

- Clear legal authority to establish state standards
- Work cooperatively with local governments and state and federal agencies
- Provide technical assistance and resources to local governments
- Coordinate the state activities that affect the NFIP
- Develop State Hazard Mitigation Plans





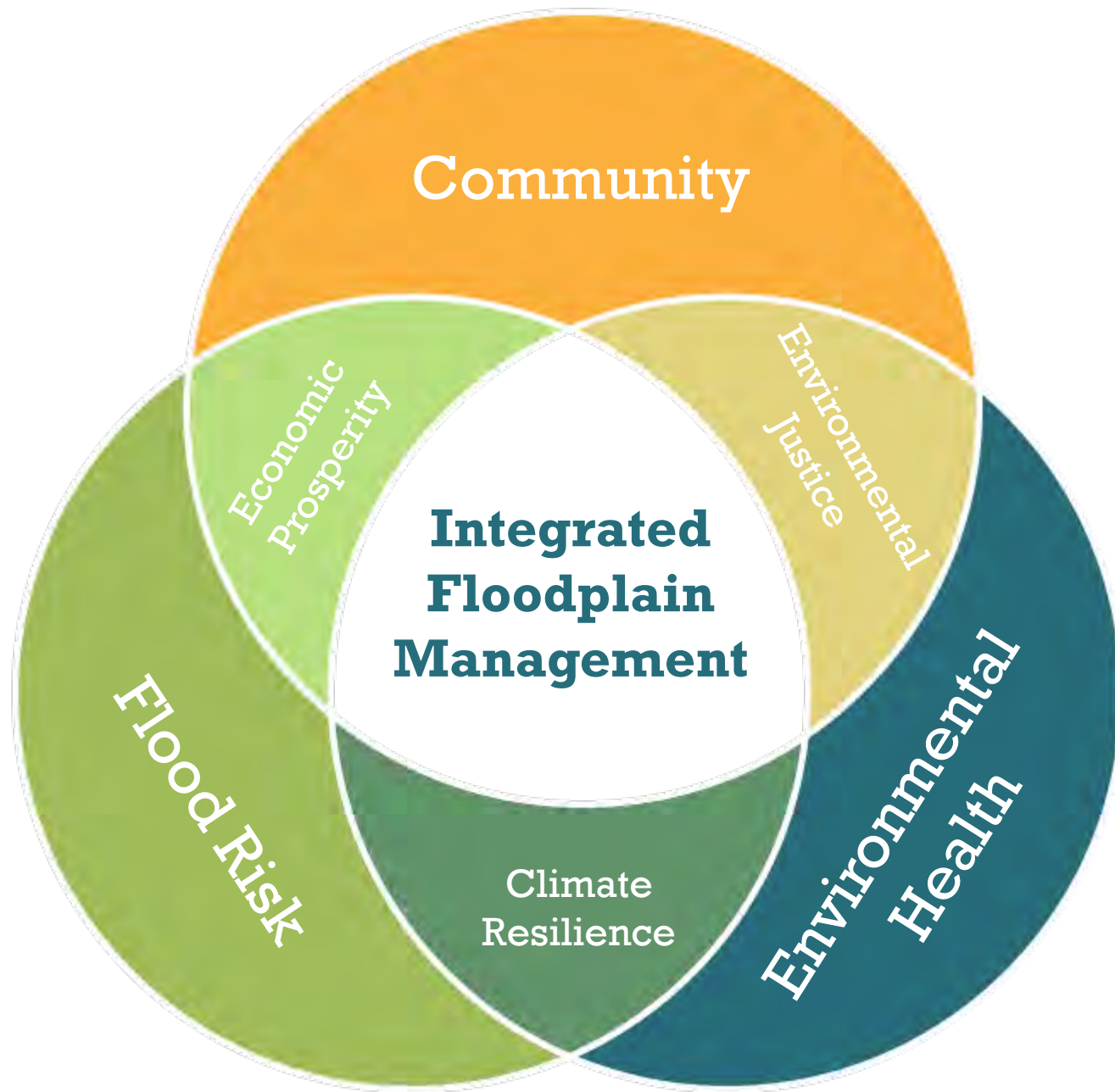
# Floodplain Landscape & Governance

- Floodplain management is complex with many stakeholders and agencies involved
- There are many competing visions for what happens on a floodplain- flood management, river conservation, development, agriculture, etc.
- Siloed, single purpose floodplain management results in conflicts and, ultimately, development and disconnection of the floodplain



Source: Naturally Resilient  
Communities: [www.nrcsolutions.org](http://www.nrcsolutions.org)





## **INTEGRATED FLOODPLAIN MANAGEMENT:**

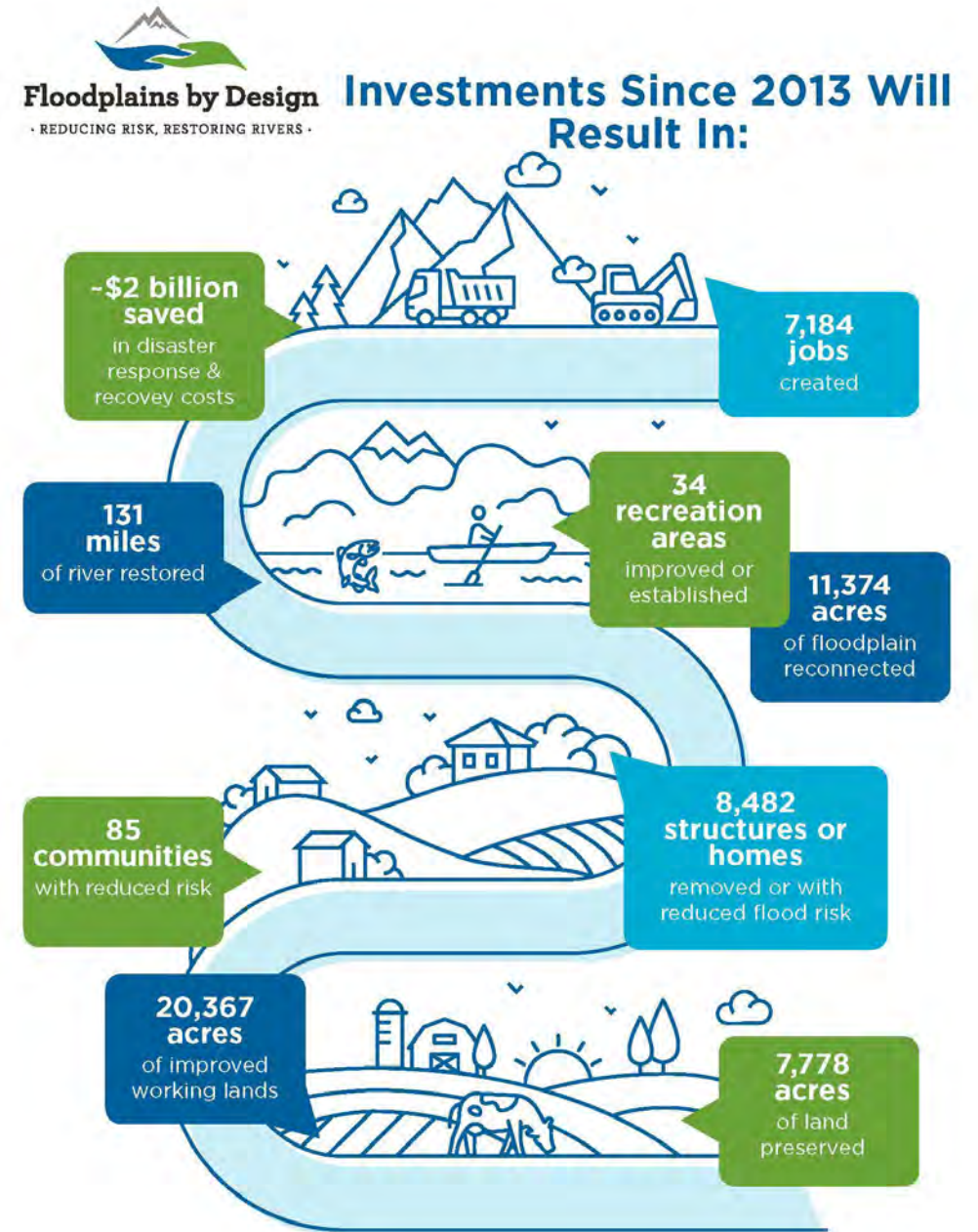
An approach that seeks to overcome competing demands and find solutions that provide multiple benefits for people and nature by breaking down the silos between the many floodplain stakeholders.





# Integrated Floodplain Management: A Proven Solution

- Washington state's **Floodplains by Design Program** funds multi-benefit floodplain projects across 19 counties to date.
- **Iowa Watershed Approach** collaborative program that voluntarily engages stakeholders throughout priority watershed to achieve state flood resilience and water quality goals.
- **Vermont's Rivers Program** protects river corridors to reduce flood risk and restore floodplain functions.





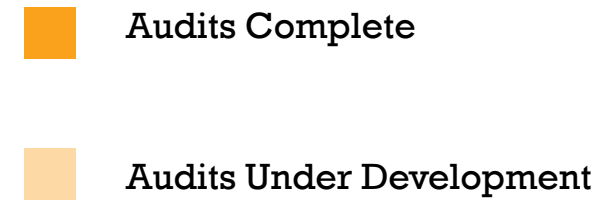
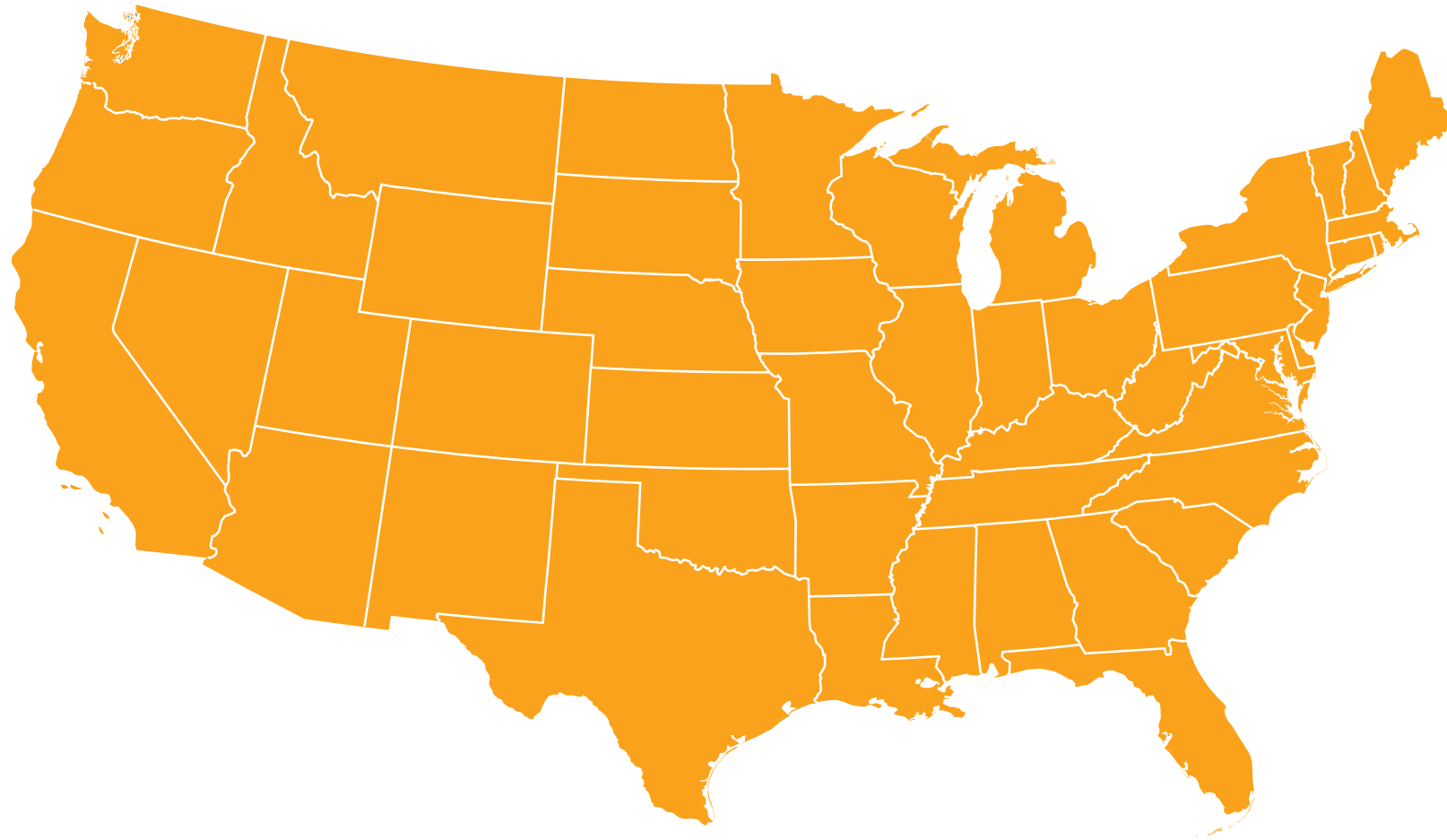
# Our goal: foster enabling conditions for Integrated Floodplain Management in every state

- 1 **A lead organization**
- 2 **Dedicated funding** for floodplain/river restoration projects
- 3 **Legal and programmatic framework**
- 4 **Driving factors** that bring diverse partners to the table
- 5 **State data, mapping, and modeling**
- 6 **Capacity building** for local communities
- 7 **Center environmental justice**





# State IFM Audits: All 50 States Complete



For more information contact Brandon Parsons, [bparsons@americanrivers.org](mailto:bparsons@americanrivers.org)

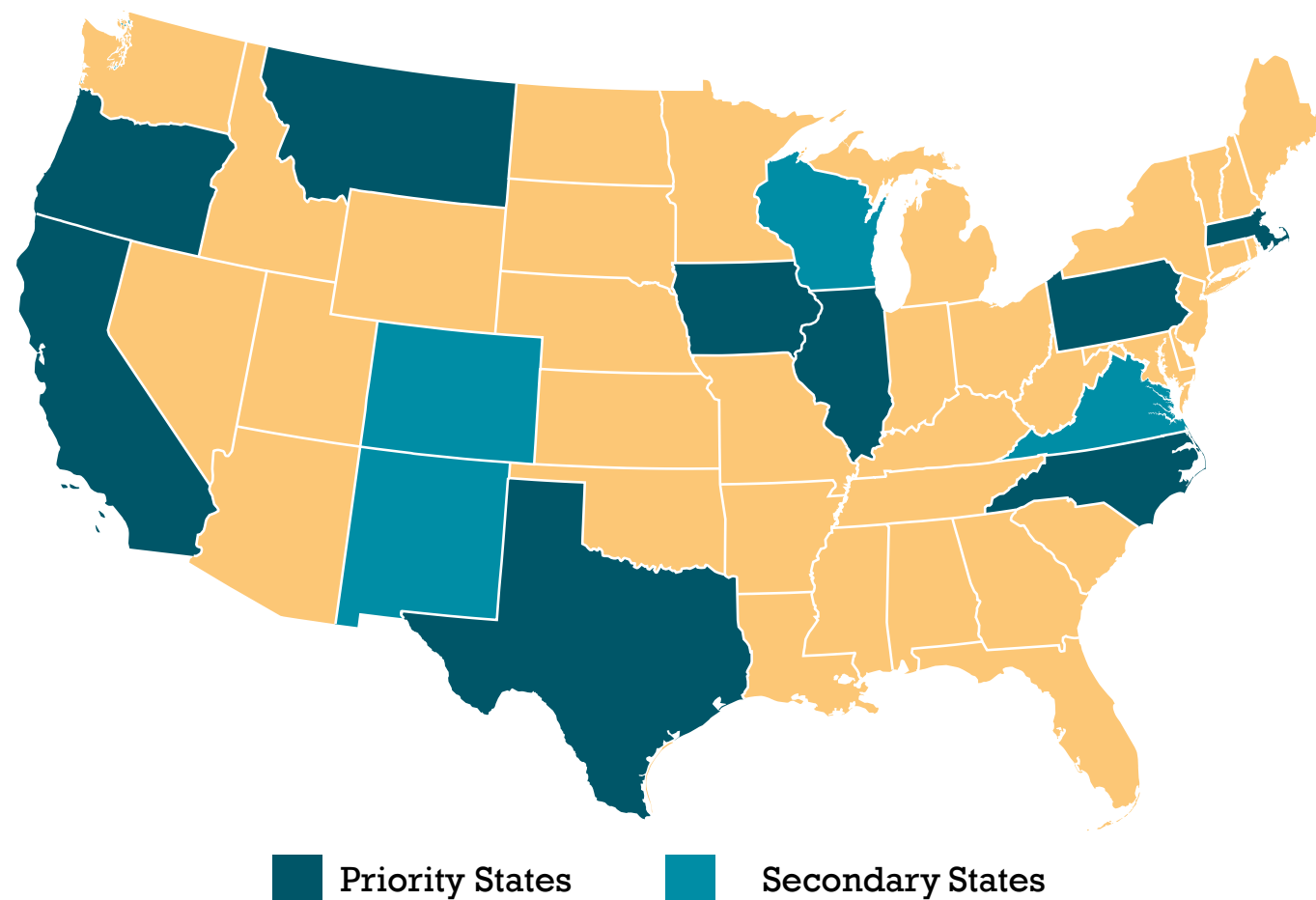




# Next step: State IFM Campaigns

Priority States – As of now...

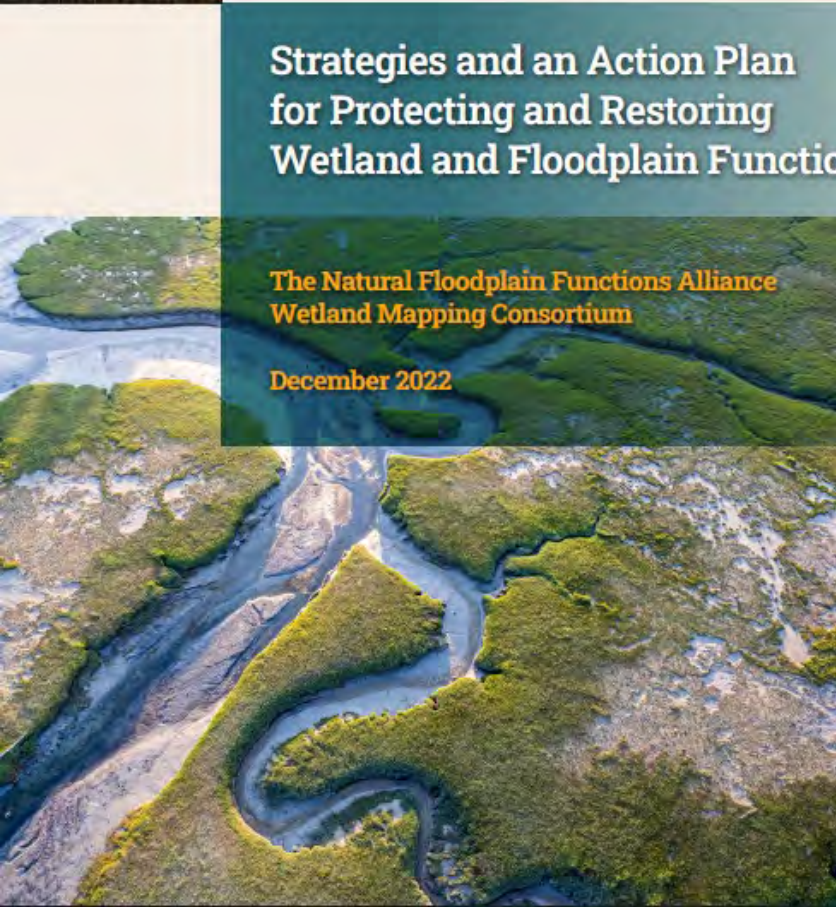
1. NE - Massachusetts
2. Mid Atlantic - Pennsylvania (VA as secondary)
3. SE - North Carolina
4. Great Lakes - Illinois (WI as secondary)
5. Central - Iowa
6. Northern Rockies - Montana
7. SW - Texas (CO and NM as secondary)
8. California
9. PNW - Oregon



- AR priority state campaign plans to be complete by end of 2025
- Create a cohort of state IFM leaders







## People: Inspiring and Educating Floodplain Champions

Lead the Natural Floodplain Functions Alliance, a floodplain restoration community of practice

Center those most impacted by floods

Foster floodplain restoration leaders

Coalesce and strengthen a movement for floodplain restoration





# Natural Floodplain Functions Alliance (NFFA)

**JOIN US IN**

BUILDING  
CONNECTIONS

**AND**

CHANGING THE  
NARRATIVE OF

**FLOODPLAIN PROTECTION  
AND RESTORATION**





**Communities of color and other historically marginalized communities are systematically more vulnerable to flood-related disasters.**

**Exposure:** Communities of color are more likely to live in flood-prone areas.

**Susceptibility:** Just because someone is in physical proximity to a disaster source does not mean they will be equally harmed.

**Resilience:** Coping with and recovering from disasters is costly and time-consuming.





# Illinois Floodplain Community Justice Network



**Connect Community  
Organizers and Floodplain  
Management Decision Makers**

**Community Education**

**Take action to change policy**



# Floodplain Community Justice Networks: Bringing Community Leaders into Floodplain Decision-Making

Community Led Problem Solving	More Projects	Equitable Economic Growth
<ul style="list-style-type: none"><li>- Public education around flood issues and solutions</li><li>- Support for community visioning</li><li>- Access to decision-makers and other people in power</li><li>- Recognizing that floodplain management is intertwined with housing, transportation, access to food and other social services.</li></ul>	<ul style="list-style-type: none"><li>- Direct funding to do projects</li><li>- Outreach to community leaders to update building codes and local ordinances</li><li>- Homeowners insurance agent education</li><li>- Incentives for private sector job growth in flood hazard mitigation and nature-based solutions</li></ul>	<ul style="list-style-type: none"><li>- Economic revitalization grants, forgivable loans, or low-interest loans for planning and development</li><li>- Policies and ordinances to ensure communities of color benefit from economic growth</li><li>- Financing to reducing housing discrimination in flood prone areas</li></ul>



# Questions?



Jenny Hoffner, [jhoffner@americanrives.org](mailto:jhoffner@americanrives.org)  
Eileen Shader, [eshader@americanrivers.org](mailto:eshader@americanrivers.org)





# Life Depends on Rivers<sup>SM</sup>





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