



# Overcoming Policy and Permitting Challenges to Implementing Natural Infrastructure Solutions

A Natural Floodplain Functions Alliance Workshop

# Welcome



# NATURAL FLOODPLAIN FUNCTION ALLIANCE

The Natural Floodplain Functions Alliance (NFFA) is an affiliation of nonprofit and private organizations, government agencies and individuals dedicated to the protection and preservation of the natural functions of floodplains, including coastal areas.

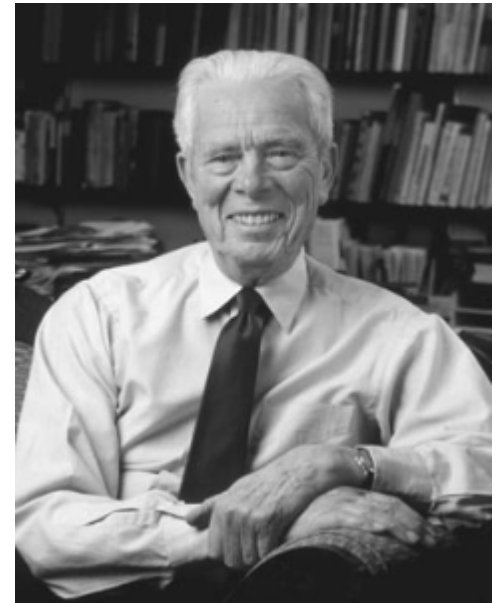


# How We Got Here



# "Human Adjustment to Floods"

- An overreliance on structural works in the [United States](#) had actually increased damage by flooding, rather than decreasing them
- "Floods are an act of God, but flood losses are largely an act of man"



# **Gilbert White (1911-2006)**

## **“Father of Floodplain Management”**

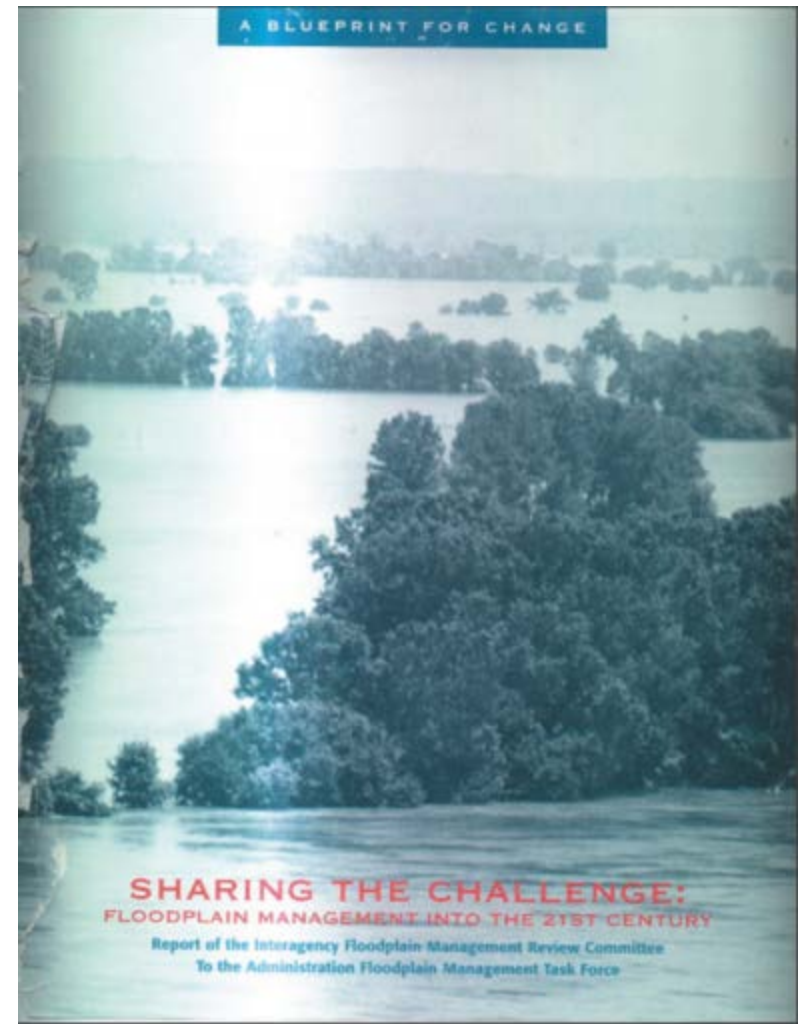
- How to bring safe water to all the world’s people as a human right
- How to reduce significantly the global toll of hazard deaths and damages
- How to facilitate peace, through joint water development and management
- How to make geography (in particular) and science (in general) more useful to the world
- How to enable people to coexist with nature and develop sustainably

# The Great Flood of 1993

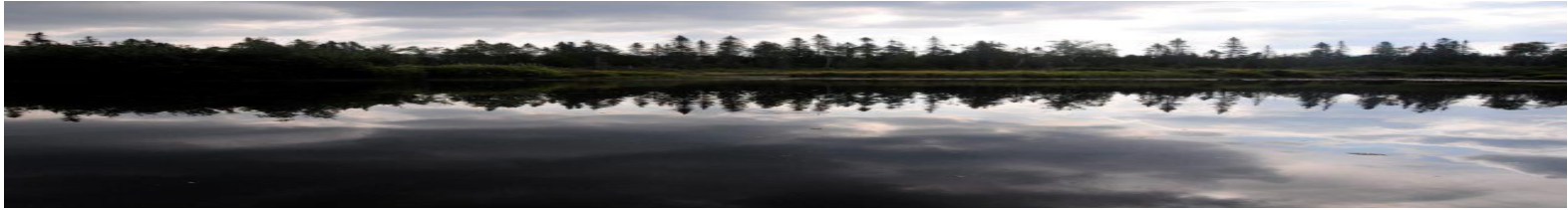
The Galloway Report envisioned - a comprehensive approach to "flood damage reduction" as opposed to strict flood control.

Deploy all available tools, both structural (such as levees and dams) and non-structural (such as wetlands and floodplain restrictions).

Recognize that completely clearing floodplains is unrealistic. Instead strike a balance among the many competing uses of the river, with government, businesses and private citizens sharing more responsibilities.



# Seeking/Supporting Natural Infrastructure Solutions



- Community Rating System
- No Adverse Impact
- Green Infrastructure
- Living Shorelines
- Floodplain Executive Order (revised) - FFRMS
- No Net Loss of Wetlands Policy
- Wetlands Restoration
- Stream Restoration
- Watershed Approach
- Dam removal
- Valuing Ecosystem Services



# Natural Infrastructure Solutions

## New California Law Recognizes Meadows, Streams As “Green Infrastructure”, Eligible For Public Works Funding

Author: Kelli Barrett

*As degraded watersheds drag California into its sixth year of drought, a new law makes forests, farms, and fields eligible for infrastructure funding – and the state is hardly alone, according to new research by Ecosystem Marketplace, which shows a dramatic surge in payments for watershed services across the United States and around the world.*



## Coastal wetlands and flood damage reduction

SOURCE(S): LLOYD'S  
NATURE CONSERVANCY, THE  
UNIVERSITY OF CALIFORNIA, SANTA CRUZ  
WILDLIFE CONSERVATION SOCIETY (WCS)

### Using risk industry-based models to assess natural defences in the northeastern United States of America (USA).

This study illustrates the direct and indirect flood risk reduction benefits that coastal wetlands provide by reducing flood heights and also by decreasing exposure. It shows that coastal wetlands can reduce property damage from storms and that these effects can be readily incorporated into the insurance industry's risk models. These results help inform (i) risk reduction and conservation management priorities and (ii) the development of incentives for the conservation and restoration of natural defences.

## Wetland credited with reducing flood's crest

More absorbent watershed 'makes an impact,' Department of Natural Resources biologist says



A wetland in the waterfowl refuge of the Big Marsh Wildlife Management Area is shown outside of Parkersburg on Friday, Oct. 28, 2016. The wildlife area includes wetlands from the flood plains of the Cedar River's west fork. (Rebecca F. Miller/The Gazette)

# Protecting Human Health and Safety

NATION & WORLD

Posted November 23

Updated November 23

INCREASE FONT SIZE

## Antarctic glacier may melt on its own, raise sea level 10 feet

A situation at the bottom of the world may not be human-caused – and that raises concerns and seas.

POLITICS

### Alabama's 'Worst Drought In Memory' Is About To Get Even Worse

With 98 percent of the state affected, Alabama's abysmal water management planning is under intense scrutiny.

© 10/23/2016 08:34 am ET | Updated Oct 31, 2016

### Pain of Sandy endures

Recovery from 2012 superstorm not possible in a few neighborhoods

Ula Ihlytzky, Associated Press | Published 10:50 pm, Friday, October 28, 2016



### NASA images show Utah's Great Salt Lake shrinking dramatically

Updated by Brad Plumer | @bradplumer | brad@vox.com | Nov 6, 2016, 11:05pm EST



# A Balancing Act



## Voluntary Restoration of Wetlands: Complex Issues in the Regulation of Restoration Projects

Prepared by the Association of State Wetland Managers  
November, 2013

### Background

The voluntary restoration of wetlands is often essential for maintaining or improving the integrity of aquatic systems - to maintain, connect or expand habitat; to protect biodiversity; for the protection of water quality and management of stormwater; to recharge and protect water supplies; to buffer against flooding and storm surges; and increasingly to adapt to climate change. These positive goals are well defined and understood.

However, because wetland restoration (including wetland enhancement and some aspects of ongoing management) frequently involves the alteration of existing aquatic systems, permitting requirements are frequently triggered. The Association of State Wetland Managers (ASWM) initiated a project in 2011<sup>1</sup> to investigate how state and federal agencies are currently addressing permitting for voluntary restoration, and what steps have been identified that might serve to expedite the permitting process for those projects that provide a net resource benefit. Working with a number of stakeholders, ASWM compiled this information into a report entitled *Permits for Voluntary Wetland Restoration: A Handbook*.

<sup>1</sup> This project was funded by a Wetland Program Development Grant from the U.S. Environmental Protection Agency. Please note that the views of multiple organizations and agencies are represented in this paper, and no particular opinion should be attributed to any one entity.

## Permits for Voluntary Wetland Restoration:



## A Handbook

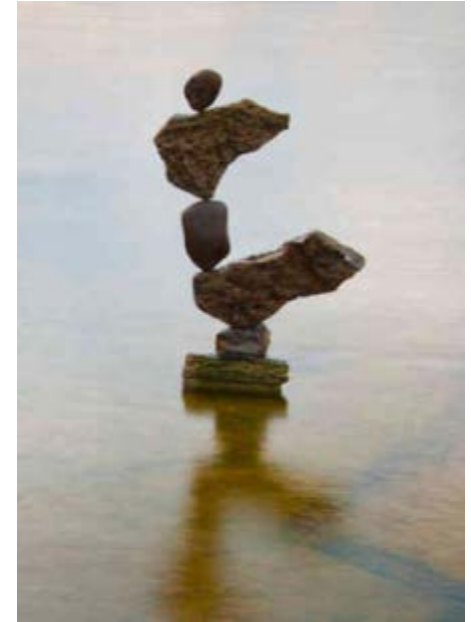
November 2013

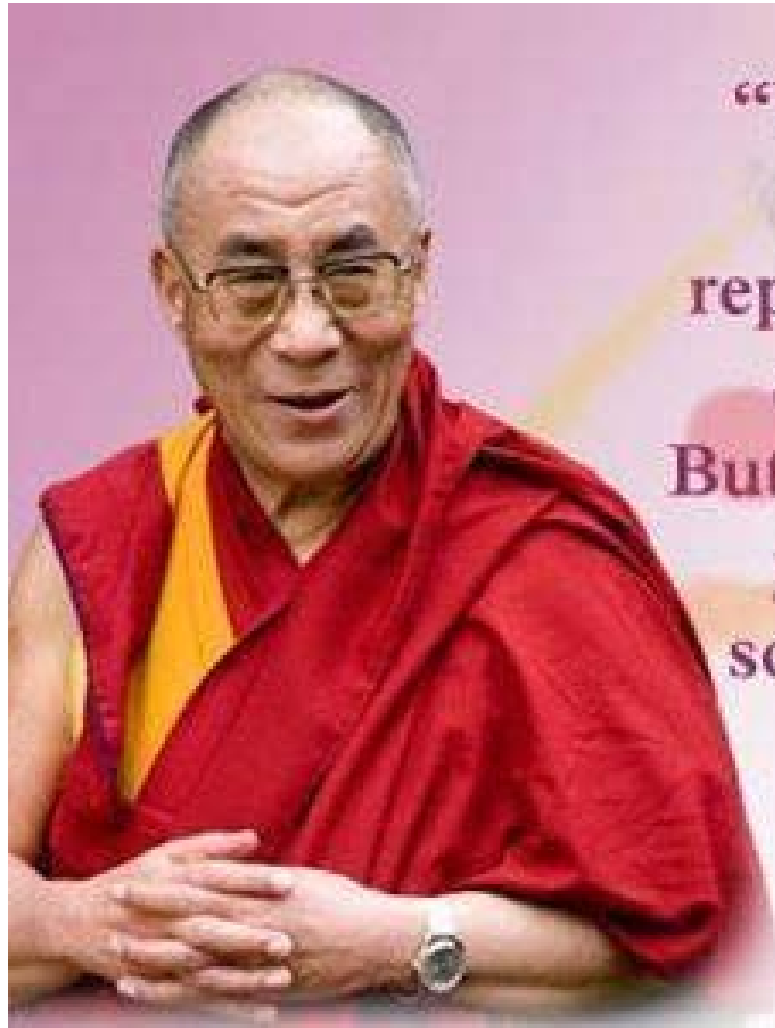


Association of State Wetland Managers

# A Balancing Act

- What are appropriate regulatory requirements for natural infrastructure?
- What's natural and what's not?
- Establishing reference on an altered landscape
- What's the baseline for restoration ?
- What's the baseline for natural infrastructure?
- What's appropriate mitigation for restoration projects?
- How should expectations be changed when conditions are changing (temperature, sea level rise, etc.)?





“When you talk,  
you are only  
repeating what you  
already know;  
But when you listen,  
you may learn  
something new.”

-DALAI LAMA

# The Agenda

- Morning presentation of case studies with time for discussion
- Lunch
- Panel and discussion
- More discussion
- Next steps
- Wrap-up
- Still more discussion



# Possible Outcomes



## Identification of Potential:

- Changes to Policy
- New or Revised Guidance
- Training Needs
- Research Needs
- Collaboration & Coordination of Efforts
- Outreach and Education

Let's get this show on the road!





