



Symposium 2

Flood Risk Perception, Communication, and Behavior

November 4, 2009
Washington, D.C.

**Held in preparation for the Third Assembly of the
Gilbert F. White National Flood Policy Forum**

This document is intended to help invitees prepare for informed and effective participation in Symposium 2. At the Symposium, the group's major task will be to examine the ways by which information can be conveyed in order to foster behavior by individuals and collectives that will help minimize flood risk and maximize floodplain resources.

PROCEDURES and APPROACH to SYMPOSIUM 2

Step 1 — We need an effective strategy for communicating to the public and to decisionmakers the actions that are needed to appropriately manage the nation's flood risk and its floodplain resources. (9:15–9:45 am)

At present, most floodplain management initiatives operate on the assumption that, given accurate and understandable information about flood risks and resources, people will choose to do the “right” thing. Unfortunately, this has not proved to be the case. In consequence, the nation is left with increasing flood-related losses and damage and a diminishing base of riparian and coastal natural resources. Corrections need to be made in the way we communicate to the public and to groups the complex realities of flood risk and resources—particularly in view of impending changes in climate, population growth, and intensified development.

Step 2 — Influences on Behavior by Individuals and Collectives with regard to Flood Risk and Floodplain Resources (9:45 –10:30 am)

Making progress in managing flood risks and floodplain resources is dependent upon obtaining appropriate behavior on the part of individuals, households, governments, organizations, and other groups. Research over the last several decades has illuminated a range of factors that influence behavior by individuals and by collectives, but the exact processes by which people (alone or in groups) make decisions about their response to hazards such as floods, remain cloudy. In addition to the mystery of decisionmaking processes, other known obstacles must be overcome to obtain appropriate mitigative behavior, notably political, financial, and social factors. Certain motivators are known to be effective in inducing certain types of behavior, but many initiatives that floodplain managers use to try to motivate people are of uncertain value or have even been shown to be ineffective. For a succinct review of the social science research on adoption of mitigative behavior, see Mileti (1999).

The behavior of individuals and collectives is influenced in part by different motivators. For example, political factors are an obstacle to many collective decisions, but are less important for households. However, it is known that a key motivator for local government decisionmaking with regard to hazard mitigation is the presence of an energetic, knowledgeable individual who will advocate for appropriate changes. Thus, educating and motivating individuals should have the benefit of influencing collective decisionmaking over the long term.

During this phase of the Symposium, Dr. Dennis S. Mileti will describe a recent research project that has culminated in a recipe for motivating household preparedness for flood disasters.

Step 3 — Cross-walk of Behaviors with Desired Management Outcomes (10:45 –11:45 am)

The matrix below will serve as a starting point for discussion during this phase of the Symposium. Across the top axis are listed the five broad outcomes that are desired from a flood risk management strategy, as agreed to at Symposium 1. The vertical axis shows some possible actions (or “behaviors”) by individuals, households, organizations, and governments that should bring about, at least in part, the desired outcomes. Note that the behavior of “collectives” in this context means primarily decisionmaking and applies to Congress and legislatures, local governments, executive leadership (public and private), program staff, non-governmental organizations and stakeholder groups, etc.. The question to be considered is, “What behaviors/actions by individuals, households, organizations, and governments, will bring about the outcomes we hope to generate through effective ‘flood risk management?’” In small groups, participants will list additional behaviors not shown here and then assess how well each of the behaviors contributes to each of the desired outcomes.

DESIRED BEHAVIOR BY INDIVIDUALS (I) & COLLECTIVES (C) (add to list as needed)	DESIRED MANAGEMENT OUTCOMES (from Symposium 1)					
	Minimal harm to Society (fewer deaths & injuries, minimal social and economic disruption, other)	Minimal damage/loss to built environment (residential, commercial, infrastructure, other)		Protection and restoration of natural floodplain functions and resources (habitat, filtration, buffers, recreation, biomass, other)	Resilient households, communities, nation	Proper apportionment of costs
		Proposed develop-ment	Existing develop-ment			
Buy and keep flood insurance (I)						
Use setbacks from waterways, levees, etc. (C)						
Prepare household for flood disaster (I)						
Preserve floodplain open space (parks, conservation easements, etc.) (C)						
Adopt & enforce building codes (C)						
Operate & maintain dams & levees (C)						
Restore natural floodplains & coasts (C)						
Strategic retreat from coasts (C)						
Retrofit / floodproof house, business (I)						
Respond to warnings (I)						
Keep critical facilities out of hazard area (C)						
Being informed about risks and resources (I,C)						
Others						

Step 4 — Crosswalk of Methods to Influence Behavior (12:30 – 2:00)

The ways by which floodplain managers seek to influence behavior toward flood risks and floodplain resources can be thought of as falling into five broad categories.

- **Information & Education** (messages to bring understanding and awareness)
Examples: flood maps, handbooks, etc.
- **Persuasion & Marketing** (messages to induce specific behavior)
Examples: Turn Around, Don't Drown; FloodSmart, etc.
- **Incentives & Disincentives** (financial rewards, technical assistance, funding, recognition)
Examples: mitigation grants, Community Rating System, conservation easements, etc.
- **Standards** (guides for degrees of safety or quality)
Examples: 100-year flood, freeboard, "clean" water, "no net loss of wetlands," etc.
- **Mandates** (laws or rules requiring or prohibiting behavior, with penalties attached)
Examples: Coastal Barrier Resources Act, mandatory purchase requirement, etc.

In a second breakout session participants will work to assess existing/recent programs or activities that send messages about risk and/or resources in anticipation of motivating desired behaviors. The matrix on the next page will serve as a starting point. Across the top are displayed the same desired behaviors that were listed and analyzed in the morning breakout session. The vertical axis lists a few examples of existing programs and activities that are intended to motivate behavior in some way (grouped roughly according to the five categories listed above). The small groups will provide a qualitative assessment of whether these activities/campaigns are "effective," "ineffective," or "unknown" in terms of bringing about the desired behavior.

Step 5 — Recommendations (2:15–4:15 pm)

In the final stage of the Symposium, participants will return to the plenary group to report on the small-group discussions, consolidate comments, and formulate of recommendations. The group will consider such questions as

- Which behaviors by individuals and collectives are priorities for effective management of flood risks and floodplain resources?
- Are the techniques we are using to motive those behaviors effective?
- What other communication strategies could bring about desired actions and attitudes?

References

Mileti, Dennis S., 1999. *Disasters by Design: A Reassessment of Natural Hazards in the United States*. Washington, D.C.: The Joseph Henry Press.

WAYS TO MOTIVATE BEHAVIOR (add to list as needed)	DESIRED BEHAVIORS (from morning Breakout Session 1)														
	Buy and keep flood insurance	Use setbacks from waterways, levees	Prepare household for flood disaster	Preserve floodplain open space	Adopt & enforce building codes	Operate & maintain dams & levees	Restore natural floodplains & coasts	Retreat from riparian & coastal zones	Retrofit/floodproof house	Respond to warnings	Critical facilities out of hazard area	Being informed	Others (from morning		
Flood maps															
Publications															
others															
FloodSmart,															
Turn Around															
others															
Mitigation grants															
Community Rating System															
Conservation easements															
other															
100-year flood															
freeboard															
others															
Floodplain management regulations															
COBRA															
Mandatory purchase															
Others															