

Coastal Resiliency Starts with Planning: How are the States Doing?

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Seaside, Florida: Smart Growth in dumb locations?



Key Research Questions

- What is the quality of state mitigation plans prepared under the Disaster Mitigation Act?
- What are the comparative strengths and weaknesses of state plans?
- How well do state mitigation plans address adaptation to climate change?



Definitions

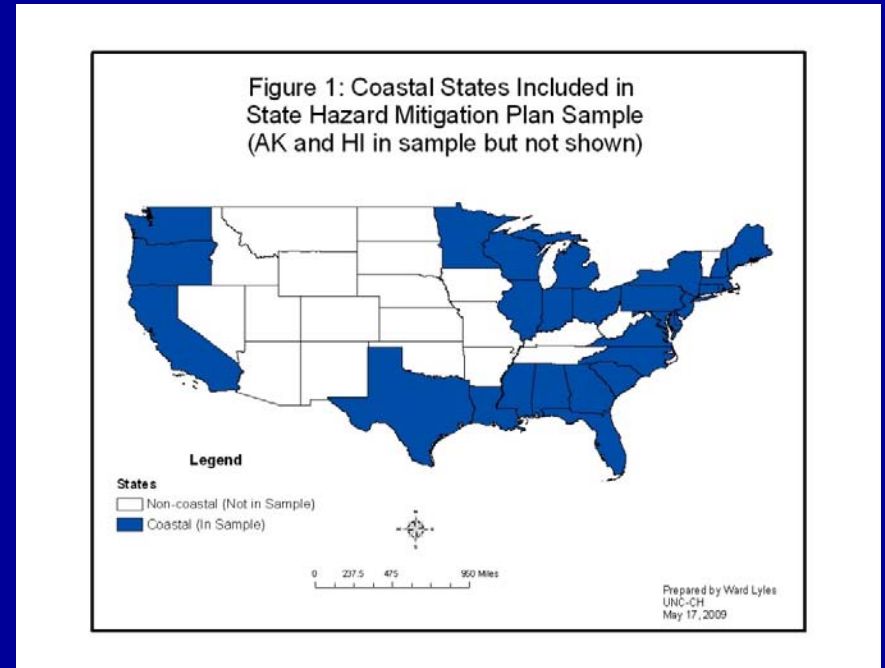
- Resilience ...
 - “...the ability of **social systems**...along with **the bio-physical systems** upon which they depend, to resist or absorb the impacts of natural hazards, to rapidly recover from those impacts and to **reduce future vulnerabilities** through **adaptive strategies**” (Peacock et al. 2008, p. 5).
- Resilient city as the core goal of mitigation...
 - “Designed to **anticipate impacts**...composed of **networked social communities**...[capable of] **adapting to and learning** from disasters...prepared with **up-to-date information**...to **reduce or eliminated vulnerability**” (Beatley 2009, ch. 1).

Principles of Mitigation Plan Quality & Links to Resiliency

1. Goals: Values of social system shape a vision of resiliency.
2. Fact base: Anticipate impacts, reduce uncertainty
3. Policies: Reduce vulnerabilities – avoid hazard areas, structural controls, protect biophysical systems
4. Implementation and Monitoring: Learning and adaptation
5. Inter-governmental coordination: Networked actions
6. Participation: Networked social systems

Methods

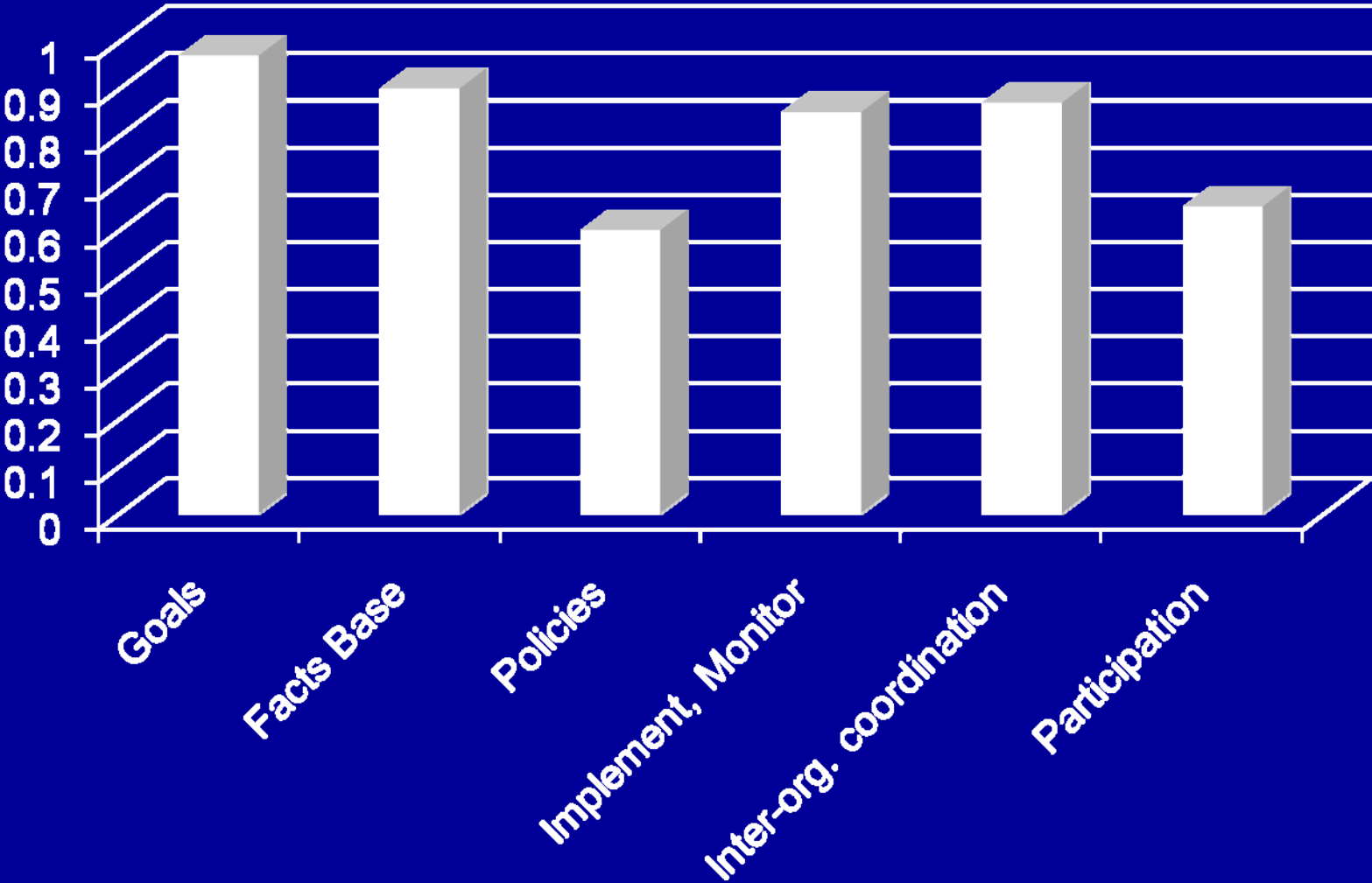
- Evaluation instrument
 - Developed and tested
 - 10 pages with 80 items
- Plan collection
 - 30 coastal state plans
 - First updates (2006-2008)
 - Online download
 - Email and mail requests
- Content analysis
 - Double-coded each plan using independent coders
 - Reliability analysis and score reconciliation
 - Qualitative assessments of strengths and weakness of plans and best practices that can serve as models



Plan Quality Principles: Links to FEMA Blue Book by Section

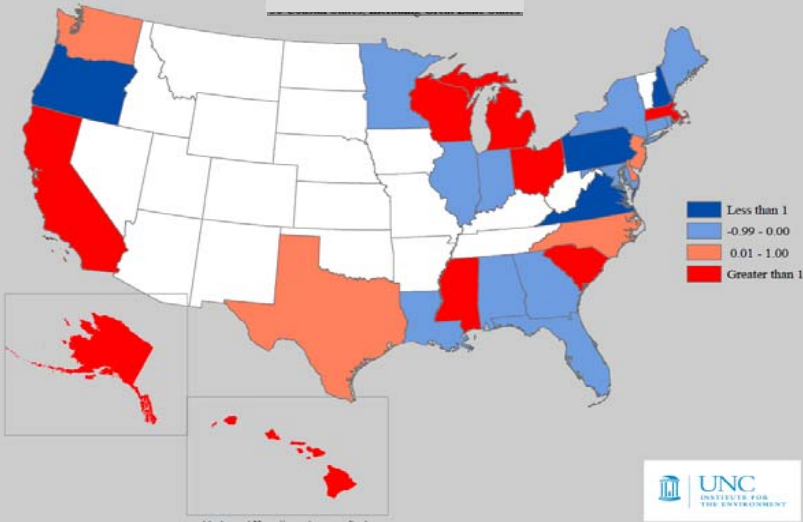
1. Goals: Loss reduction, organizational coordination, environmental protection, economic development
2. Fact Base: Hazard identification, risk assessment, capability assessment
3. Policies: Regulations, incentives, bldg. codes, education
4. Implementation and Monitoring: Plan maintenance, capacity (funds, inspectors, technology)
5. Inter-governmental coordination: State review of local plans, set priorities for funds, tech. assist
6. Participation: Public engagement, private/public organizational involvement

State Mitigation Plan Quality Scores

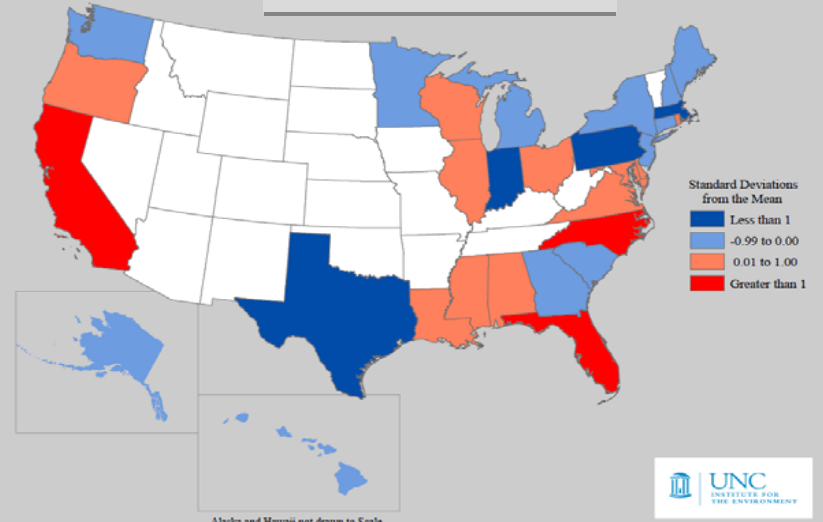


Maximum score = 2

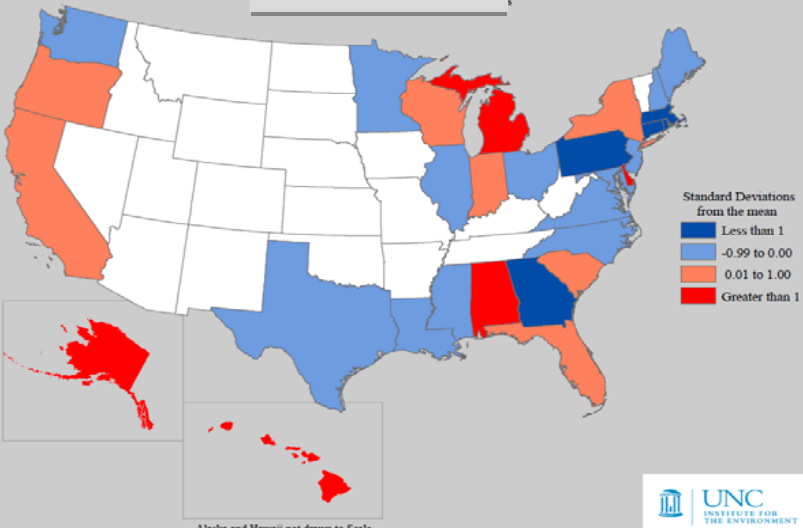
Goals



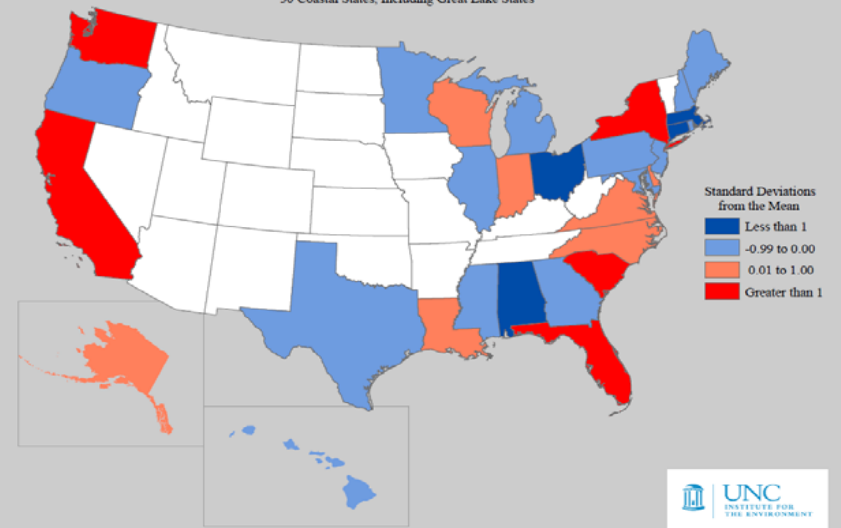
Fact Base



Policies



Implementation & Monitoring



HIGH

LOW

Links to Climate Change

- 5 of 30 plans explicitly address adaptation to climate change.
 - California, Connecticut, Hawaii, Massachusetts, New Hampshire
- Early stages: Fact Base and Policies scored highest.
 - Fact Bases are verbal descriptions.
 - Policies emphasize education and call for studies of impacts.
 - Policies of CA, CT, and MA emphasize mitigation of greenhouse gas emissions as adaptive actions.

Key Conclusions

1. State Hazard Mitigation Plans meet basic FEMA requirements but there is wide variability in plan quality.
 - plan quality has improved over the last decade
 - **Grades: C- (Godschalk et al. 1999) to C**
2. Many plans score high on multiple principles, but almost all plans below average on one or more key principles.
3. Few plans explicitly address adapting to climate change.

Policy Recommendations

- PQ evaluations should be routine to guide development of plans.
 - FEMA's 5-year update cycle
- Next generation of plans should account for adaptation to climate change.
 - Solid foundation for climatic hazards
 - All state plans address floods; large majority address fire, drought, hurricanes and storms

Future Research: Broken Promise, Kept promise, No Promise?

- How successfully are the hazard issues raised by state plans dealt with by local plans?
- Does the quality of state plans influence the local actions taken on these issues?
- How influential are the local capacity building practices used by state agencies in bringing about implementation of local plans?

Brief Notes on Climate Change

- Solid foundation for climatic hazards
 - All state plans address floods; large majority address fire, drought, hurricanes and storms
- Climate change largely absent
 - Only five plans explicitly mention: CA, CT, HI, MA, NH
- Early stages of incorporating climate change in five plans
 - General discussion of climate impacts
 - Emphasis on climate change mitigation strategies
 - Emphasis on education and awareness actions
- Side note: at least 10 state have or are in the process of developing climate adaptation plans