



What is Coastal Resilience?

Northeast Region Coastal Hazards Workshop

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NROC Purpose

- To facilitate the development and implementation of coordinated and collaborative regional goals and priorities to improve governmental and socio-economic responses to issues and challenges that are inherently regional and to increase accountability of governmental actions.



NROC Progress

- New England Governors' Coast and Action Plan (2007) – NROC defined as U.S. arm of NEGC/ECP Ocean Working Committee
- 2009 Work Plan - in final preparation
- See NROC Website:
<http://community.csc.noaa.gov/nroc/>



NROC Leadership

- Rotational Chair from 6 states
 - 2007 Leslie-Ann McGee, MA
 - 2008 Brian Thompson, CT
 - 2009 Kathleen Leyden, ME
- Rotational Vice-Chair from DOI, EPA, NOAA
 - 2007 Betsy Nicholson, NOAA
 - 2008 David Russ, DOI
 - 2009 Mel Cote, EPA



Three Standing Committees

- **Ocean and Coastal Ecosystem Health**
Leslie-Ann McGee, MA and Mel Cote, EPA
- **Ocean Energy Planning and Management**
Ames Colt, RI and Ron Beck, US Coast Guard
- **Render New England a “Coastal Hazards Ready” Region**
Ron Rosza, CT and Susan R2, DOI - Adrienne Harrison, NOAA



Coastal Hazards Primary Goals

- Host a regional workshop on resilience
- Identify data acquisition priorities
- Promote regional dialogue on broad-scale adaptation strategies responding to sea-level rise



What is resilience?

Webster's Dictionary describes resilience as synonymous with

Pliability

Flexibility

Plasticity



What is resilience?

For human communities and institutions

“...Resilience for social-ecological systems is often referred to as related to three different characteristics:

- (a) the magnitude of shock that the system can absorb and remain within a given state;
- (b) the degree to which the system is capable of self-organization; and
- (c) the degree to which the system can build capacity for learning and adaptation.”
(Folke et al. 2002)

For ecosystems

“Resilience determines the persistence of relationships within a system and is a measure of the ability of these systems to absorb change of state....and still persist.”
(Holling 1973)

“The capacity of a system to absorb disturbance and re-organize while undergoing change so as to still retain essentially the same function, structure, identity and feedback.”
(Walker et al. 2004)



Action- Oriented Community Resilience

- **Absorb**
 - Buffer capacity
 - Ability to absorb
 - Magnitude of disturbance absorbed
- **Recover**
 - Recovery capacity
 - Speed of recovery
 - Level of recovery
- **Adapt**
 - Adaptive capacity
 - Flexibility
 - Growth potential





Designing for Disasters: Resilient Community Assets

Physical Capital

- Physical capital comprises adequate shelter, buildings, water and sanitation, tools, transport, energy and communications
- ‘Lifeline’ infrastructure in at-risk areas, such as hospitals, emergency headquarters, schools and shelters, should be resistant to disasters serving both a protective and symbolic function



Economic Capital

- Economic capital (savings, income, investments, credit) increase the capacity of individual and communities to absorb disaster impacts and speed recovery



Designing for Disasters: Resilient Community Assets

Human Capital

- Human capital (knowledge, skills, health, education, physical ability) determines individual resilience more than any other asset



Social Capital

- Social capital (reciprocity, affiliations, trust) includes networks that provide informal safety nets during difficult times and help people access resources urgently needed after disaster
- The most resilient communities are those which work together towards a common aim
- Creating community consensus is as valuable as building physical infrastructure



Designing for Disasters: Resilient Community Assets

Natural Capital – The Link to Land Conservation Strategies

- Natural capital including water, land, and natural resources are essential for human survival
- Environmental change and degradation can significantly change the potential impact of disasters on all community assets
- Some natural assets are also directly vulnerable to the impacts of hazards, causing cascading system failures

Measures to increase environmental resilience can provide significant benefits related to physical, economic, and social capital