



# ***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***