National Shoreline Management Study

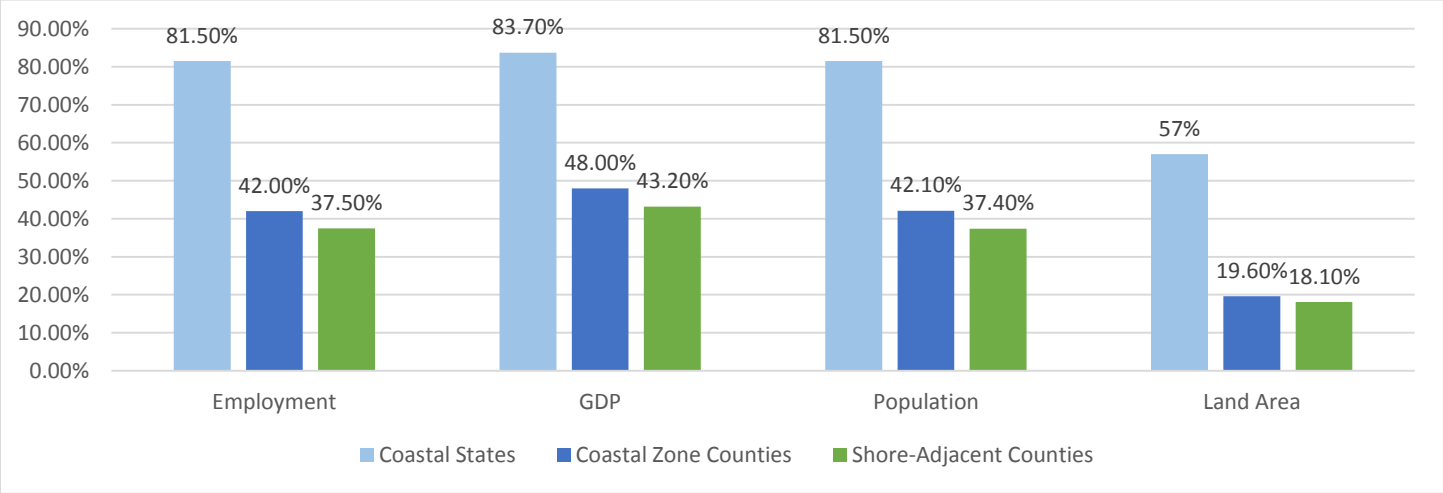
Eroding U.S. Shorelines - A Call for Resilience Planning

The congressionally-authorized National Shoreline Management Study (NSMS) is the first undertaking in nearly a half-century to document the physical, economic, environmental, and social impacts of shoreline change across each region of the U.S. Under the leadership of the *Institute for Water Resources* of the U.S. Army Corps of Engineers, NSMS provides coastal scientists, government policymakers, and stakeholders with information about the coastal regions most in need of resilience planning.

While Congress has funded NSMS since 2001, appropriations in recent years have declined. This decrease in support has come just as there is a public awakening to the dangers of increased coastal flooding. The congressionally-mandated Comprehensive Study following SuperStorm Sandy shows the critical role that Federal leadership and funding plays to help States, local government, businesses and other key stakeholders engage in planning that addresses potential future risks and allows for a fundamental shift away from costly and near-sighted disaster-driven responses.

Continual erosion of the U.S. shoreline presents a considerable financial and safety risk to coastal infrastructure, economies, and populations. Individual regions face unique challenges and require solutions reflective of that. The following graphs and charts underscore the importance of the coastal economy to the national economy.

Coastal Region's Share of U.S. Economy 2014



Growth Rates in the Coastal Economy 2010-2014

Region	Employment (millions)			GDP ($Trillion, 2009)			Population (millions)		
	2010	2014	Annual Change	2010	2014	Annual Change	2010	2014	Annual Change
United States	127.8	136.6	1.72%	$14.6	$15.8	1.9%	309.3	318.9	0.77%
Coastal States	104.1	111.3	1.73%	$12.3	$13.2	2.0%	252.1	259.8	0.76%
Coastal Zone Counties	53.6	57.3	1.72%	$7.0	$7.6	1.9%	129.9	134.2	0.84%
Shoreline Adjacent Counties	47.8	51.2	1.78%	$6.3	$6.8	2.0%	115.5	119.3	0.82%

Northeast Atlantic

The region is heavily developed, with routine storm damage, high costs of erosion, competing coastal economies, and a sediment-starved beach network.

Given the population density and potential social and economic effects of changes in ocean circulation and sea level, the Northeast Atlantic coast of the U.S. may be one of the most vulnerable regions in the world to rising sea levels.

There is a need to aggressively manage and re-use available sediment for ecological restoration and protection from future nor'easters, hurricanes and storm surge. The challenge is moving from site-specific crisis management to comprehensive, systematic, and sustainable regional shoreline management.

Massachusetts's Ocean Economy

- Generated $6.2 billion or 1.4% of the state's GDP.
- Provided $3 billion in wages and salaries.
- Provided 84,403 jobs.
- 67,356 jobs (79.8%) of the state's ocean economy employment were in coastal tourism and recreation.
- Tourism and recreation contributed $3.2 billion (51.7%) to the state's ocean GDP.

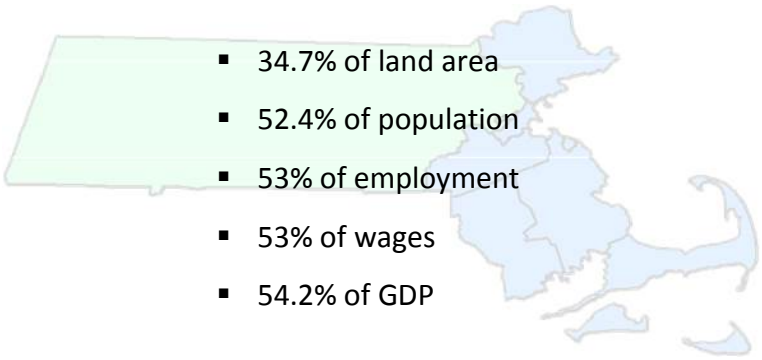
Massachusetts's Direct Ocean Economy	
Tourism & Recreation	$3,192.2 million
Transportation	$2,168.4 million
Ship & Boat Building	$27.6 million
Construction	$106.8 million
Minerals	$22.5 million
Living Resources	$660.4 million

Massachusetts's Ocean Resources

- In 2014, commercial fisheries landings were 274 million pounds, valued at over $525 million. 51.8% of the value came from sea scallops harvests, the nation's second most valuable fishery. Lobsters, the most valuable fishery, added $68.4 million in value.

Source: National Ocean Economics Program (NOEP) National Report 2016

Massachusetts's Coastal Counties



- 34.7% of land area
- 52.4% of population
- 53% of employment
- 53% of wages
- 54.2% of GDP

Massachusetts's Coastal Economy

	Employment	Wages ($billion)	GDP ($billion)
State	3,360,035	$215.4	$459.3
Shore-adjacent	1,781,582	$114.2	$249.2
Shore-adjacent % of State	53%	53%	54.2%

State and Coastal Growth, 2007-2014			
	Employment	Wages	GDP
All Counties	3.9%	5.5%	8.7%
Shore-adjacent Counties	4.0%	4.7%	8.2%