



National Shoreline Management Study

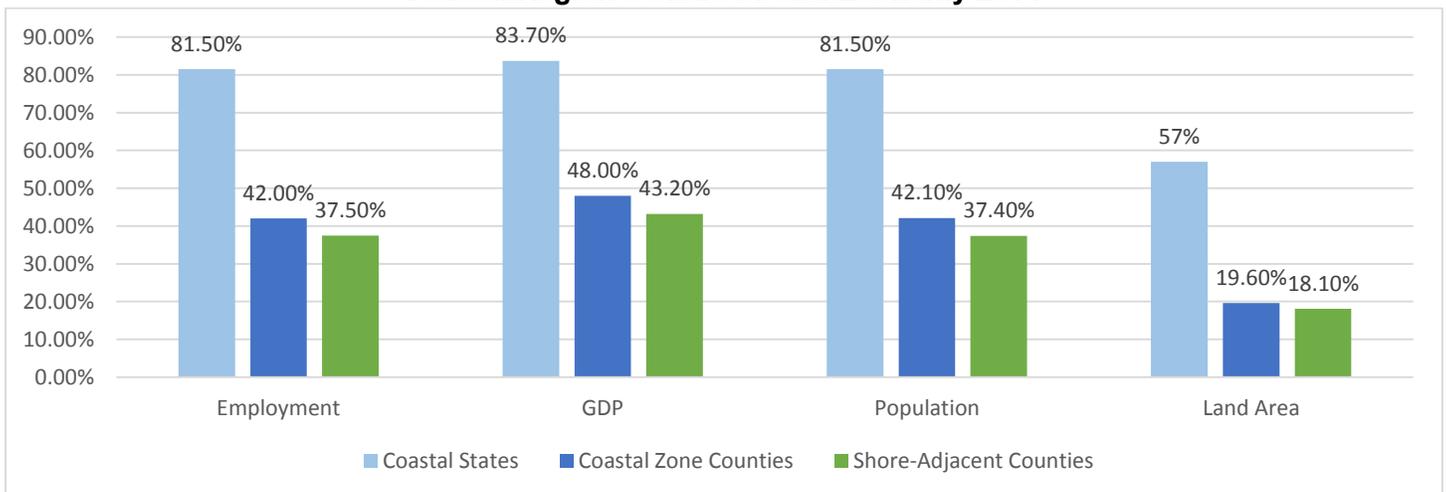
Eroding U.S. Shorelines - A Call for Resilience Planning

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%



California

The erosion of California’s shorelines poses an enormous social, economic, and environmental threat to the State. Dominant port, fishing, and recreation-based coastal economies in particular would suffer from the loss of beaches, cliffs, bluffs, marshes and wetlands. Erosion also threatens real estate and commercial properties, roads and railroads, and negatively impacts tourism, commercial fishing, and fish and wildlife habitats.

Natural factors influencing erosion include El Niño and Pacific Decadal Oscillation. Human factors include a 25 percent reduction in sediment supply caused by dam construction and the practice of shoreline bluff armoring, which covers approximately 10 percent of the states shoreline (30 percent in southern California).

Marshes, mudflats, and wetlands are at serious risk of survival. Naturally narrow beaches could face accelerating net sand losses over the coming decades due to decreasing rates of nourishment and increased storm incidence.

The Ocean Economy

- Generated \$44.2 billion or 2% of the state’s GDP.
- Provided \$19.3 billion in wages and salaries.
- Provided 502,073 jobs.
- 383,941 (76.5%) of the state’s ocean economy employment in tourism & recreation.
- Tourism & recreation contributed \$18.4 billion (41.6%) to state’s ocean GDP.

California’s Direct Ocean Economy	
Tourism & Recreation	\$18.401 billion
Transportation	\$14.679 billion
Minerals	\$9.057 billion
Construction	\$924 million
Ship & Boat Building	\$840 million
Living Resources	\$340 million

Ocean Resources

- In 2014, Federal and state offshore oil generated \$3.02 billion, 16% of California’s production. Federal OCS waters produced \$1.49 billion in oil and \$122 million in gas.
- In 2014, commercial fisheries landings were 358 million pounds, valued at \$234.8 million.

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

Coastal Counties



The Coastal Economy

	Employment	Wages (\$billions)	GDP (\$billions)
State	15,809,082	\$933.4	\$2,311.6
Shore-adjacent	12,220,926	\$770.8	\$1,971.1
Shore-adjacent % of state	77.3%	82.6%	85.3%

State and Coastal Growth, 2007-2014			
	Employment	Wages	GDP
State	1.08%	3.33%	5.97%
Shore-adjacent	0.81%	3.60%	6.90%