



National Shoreline Management Study

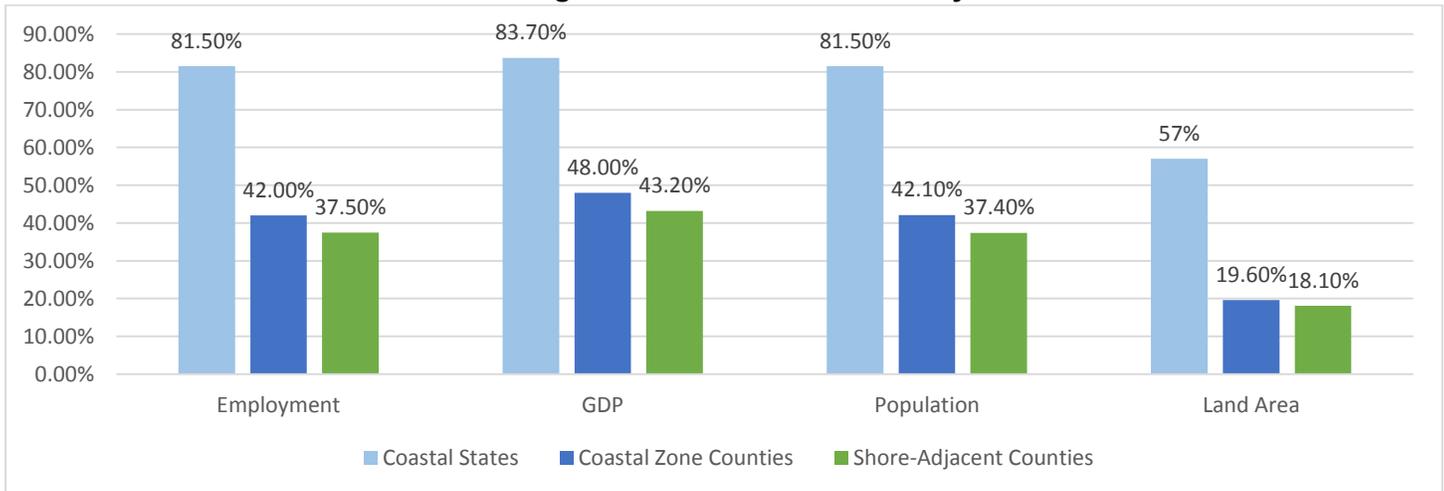
Eroding U.S. Shorelines - A Call for Resilience Planning

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%



North Pacific (OR, WA, AK)

The general trend along the Northern Pacific coastline is one of retreat determined by the interaction of physical forces and the underlying geology. Storm activity is the primary driver of shoreline change throughout the region. Strong storms and the associated wave, wind, and sea-level conditions contribute to discrete periods of erosion and accretion.

Coastal changes among the Northwest Pacific coastline have potentially large social and economic impacts. Commercial fishing, navigation, and mineral extraction are keys to the economies of the Pacific Northwest and Alaska. Shoreline-adjacent counties represent 88, 79, and 43 percent of GDP in Alaska, Washington, and Oregon respectively.

These changes are taking place in a coastal environment with diverse habitats, including wetlands, estuaries, mudflats, permafrost, sandy beaches, and dunes. These areas provide important habitat to a variety of plant and animal life.

Washington's Ocean Economy

- Generated \$11.8 billion or 2.9% of the state's GDP.
- Provided \$4.9 billion in wages and salaries.
- Provided 121,131 jobs.
- 71,811 jobs (59.3%) of the state's ocean economy employment were in coastal tourism and recreation.
- Tourism and recreation contributed \$3.5 billion (30%) to the state's ocean GDP.

Washington's Direct Ocean Economy	
Transportation	\$3 billion
Tourism & Recreation	\$3.5 billion
Living Resources	\$1.44 billion
Minerals	\$287 million
Construction	\$376 million
Ship & Boat Building	\$3.2 billion

Washington's Ocean Resources

- In 2014, commercial fisheries landings were 191.1 million pounds, valued at \$326.3 million. Over 24.7% of the value came from dungeness crab harvests. Hake accounted for 26% of the landed weight.
- Over \$207 million or 64% of the landed value was from crabs, oysters, and clams.

Washington's Coastal Counties



Washington's Coastal Economy

	Employment	Wages (\$billions)	GDP (\$billions)
State	3,043,562	\$167.4	\$427.1
Shore-adjacent	2,193,952	\$132	\$339.2
Shore-adjacent % of state	72.1%	78.8%	79.4%

State and Coastal Growth, 2007-2014			
	Employment	Wages	GDP
State	4.0%	11.2%	10.0%
Shore-adjacent	3.7%	11.9%	11.0%