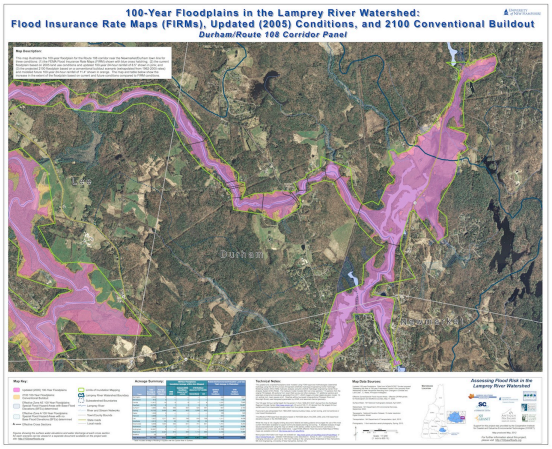
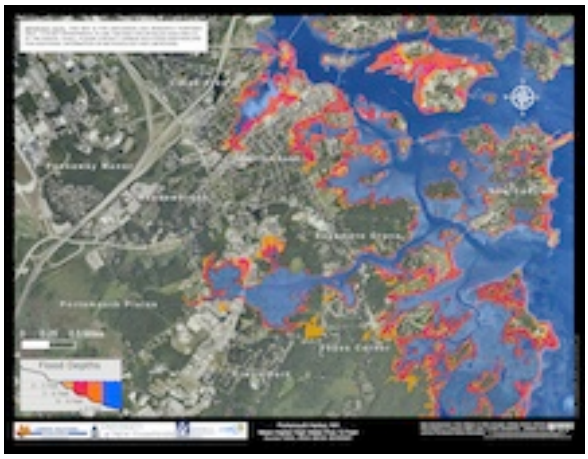
Maps and Models to Support Adaptation Planning in Coastal New Hampshire

Adaptation Maps

	Lamprey River 100-year Floodplain	Sea-Level Rise for Coastal NH
Example		
Purpose(s)	• To update 100-year floodplain maps using current land use and climate data, and potential future land use, and climate variables.	• To assess changes in the 100-year stillwater flood elevations caused by sea level rise • To show the spatial impact of stillwater flood elevations of 6, 9, and 12 feet above high tide on coastal NH
Findings	• Future climate and land use scenarios show major increases in <u>height of flooding,</u> but changes for many areas are contained within riverbanks. Overall, <u>small but significant increases</u> in total floodplain area. • VT Law School determined that municipalities have <u>full legal authority</u> to use these and other maps in regulations and decision-making.	• At New Castle, NH, current 100-year flood stillwater elevation is 11.2 feet above NAVD88. • Current estimates of sea level rise range from 1.0-1.7' by 2050, and 2.5 -6.3' by 2100. • Current estimates of 100-year flood stillwater elevations range from 12.2-12.7' by 2050, and 13.7-17.5' by 2100 • Future 100-year floods result in a significant increase in flooded areas (shown on maps)
Applications	• Guide siting of future development • Inform infrastructure investments • Emergency management planning • Support planning at both municipality and watershed level	• Background information for vulnerability assessment • Support planning in coastal communities
Availability	Summer 2012	Fall 2012
For more information	www.100yearfloods.org http://www.granit.unh.edu/MapLibrary/ProjectMaps Steve Miller Great Bay NERR 778-0015	http://carbonsolutionsne.org/ http://www.granit.unh.edu/MapLibrary/ProjectMaps Cameron Wake University of New Hampshire 862-2329

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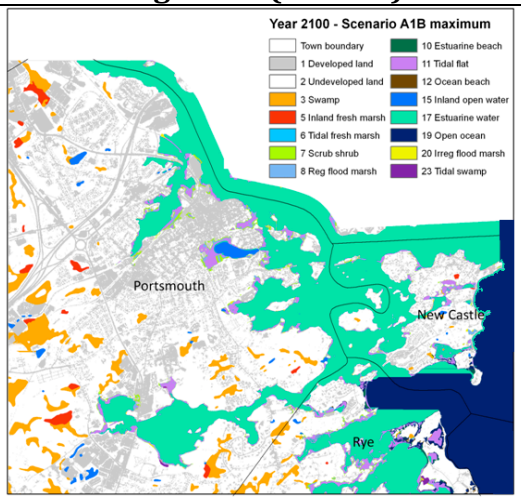
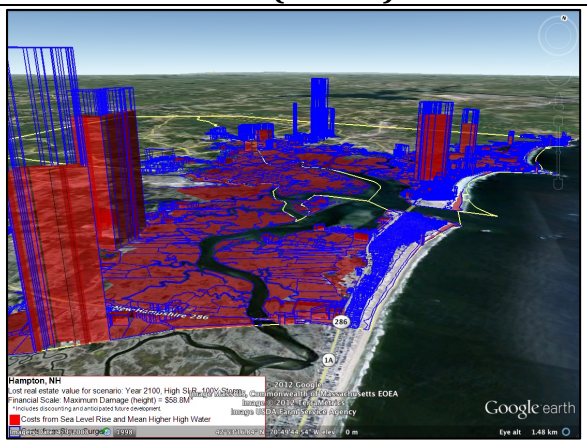
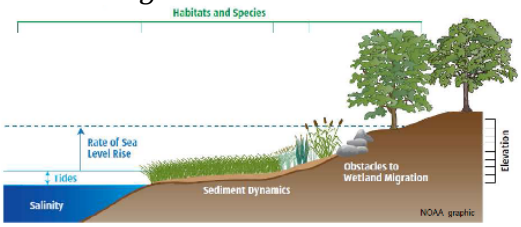
Adaptation Modeling Tools

	Sea-Level Rise Affecting Marsh Migration (SLAMM)	Coastal Adaptation to Sea-level Rise Tool (COAST)
Example		 Blue: Damages from storm surge Red: Damages from sea-level rise
Purpose(s)	• To estimate fresh marsh, salt marsh, and swamp habitat changes under three sea level rise scenarios through 2100.	• To estimate and visualize the <u>economic impacts</u> of storm surge and sea-level rise. • Explore vulnerabilities of <u>buildings</u> to low and high <u>sea-level rise</u> scenarios in 2050 and 2100.
Findings	• *Currently refining input parameters to NH SLAMM for consistency with other regional models.* 	• Cumulative storm surge damages, regardless of SLR, warrant significant action *now*. • Actions are needed to protect coastal real estate, road networks, and utilities from coastal flooding • Strategies can be phased over time as extent of flooded real estate increases to 2100 and beyond.
Applications	• Prioritize wetland habitat for protection and restoration • Support planning at both municipality and watershed level • NH Wildlife Action Plan 2015	• Protect economic future of coastal areas. • Prioritize parcels and facilities to focus adaptation. • Cost-benefit analysis of when to take action.
Availability	Fall 2012; all tidal and estuarine areas in coastal New Hampshire	Spring 2012, specific to Hampton, Hampton Falls, and Seabrook.
For more info	http://www.csc.noaa.gov/digitalcoast Rachel Stevens Great Bay NERR 778-0015	Julie LaBranche Rockingham Planning Commission 778-0885