

Coastal Impact Matrix

PROJECTED FLOODING IMPACTS TO INFRASTRUCTURE

	BUZZARDS BAY											Buzzards Bay Total	Narragansett Bay Total
	Falmouth*	Bourne	Plymouth*	Wareham	Marion	Mattapoisett	Fairhaven	New Bedford	Dartmouth	Westport			
Structures Flooded from Daily Tidal Flooding Present Day	23	0	7	24	6	1	17	21	10	25	134	28	
Structures Flooded from Daily Tidal Flooding 2050	219	156	0	247	45	111	324	48	69	104	1323	86	
Structures Flooded from 10-Year Coastal Flood Present Day	933	1586	6	2468	526	710	929	123	405	453	8139	1006	
Structures in Areas Flooded from 10-Year Coastal Flood 2050	1386	2655	14	4326	890	1142	1433	270	635	751	13502	1635	
Structures in Areas Flooded from 100-Year Coastal Flood Present Day	1407	2547	11	3981	861	1097	1275	253	668	759	12859	1750	
Structures in Areas Flooded from 100-Year Coastal Flood 2050	2012	3619	26	6365	1464	1576	1759	399	902	1026	19148	2602	
Roads Flooded from Daily Tidal Flooding Present Day (miles)	0.0	0.0	0.3	0.2	0.1	0.2	0.3	0.2	0.2	0.0	1.6	0.4	
Roads Flooded from Daily Tidal Flooding 2050 (miles)	4.0	2.5	0.0	3.2	0.5	3.0	5.7	1.2	3.1	0.8	24.0	1.5	
Roads Flooded from 10-Year Coastal Flood Present Day (miles)	15.6	27.3	0.0	35.0	8.8	13.2	15.6	6.9	10.9	7.4	140.6	15.6	
Roads Flooded from 10-Year Coastal Flood 2050 (miles)	24.5	43.7	0.2	60.9	15.8	19.7	22.9	10.4	15.6	14.1	227.9	28.0	
Roads Flooded from 100-Year Coastal Flood Present Day (miles)	24.1	41.8	0.2	56.8	14.9	19.0	21.2	9.5	16.0	14.7	218.2	30.8	
Roads Flooded from 100-Year Coastal Flood 2050 (miles)	34.4	60.1	0.5	94.6	25.5	26.3	27.7	12.4	20.2	19.5	321.2	45.9	

SHORELINE AND HABITAT CONDITIONS AND PROJECTED IMPACTS

	BUZZARDS BAY											Buzzards Bay Total	Narragansett Bay Total
	Falmouth*	Bourne	Plymouth*	Wareham	Marion	Mattapoisett	Fairhaven	New Bedford	Dartmouth	Westport			
Length of Coast (miles)	26.1	37.4	NA	26.9	24.4	23.2	29.4	11.7	20.0	9.6	208.5	47	
Salt Marsh (miles)	3.6	11.9	NA	8.4	12.3	10.6	15.9	0.0	4.2	1.3	68.4	No data	
Coastal Dune (miles)	8.1	7.7	NA	9.8	1.2	3.9	4.8	0.5	6.5	6.9	49.3	No data	
Coastal Beach (miles)	19.9	23.8	NA	16.7	9.4	10.6	10.8	5.9	16.2	8.6	121.9	No data	
Bulkhead, Seawall, Revetment (miles)	13.4	10.8	NA	9.7	10.5	8.5	6.7	5.8	6.0	0.9	72.3	No data	
Public Coastal Access (miles)	3.1	9.2	NA	7.5	4.0	3.3	9.0	8.0	4.1	5.5	53.7	5.2	
Average Long Term Erosion Rates (Feet/Year) ~150 years (neg. is erosion)	-0.1	-0.1	NA	-0.2	-0.3	-0.3	-0.4	0.2	-0.4	-0.8	-0.2	No Data	
High Marsh (acres) 2011	221	277	1	830	353	366	547	2	1007	828	4431	131	
High Marsh Change (acres) 2011 to 2050 (neg. is loss)	-136	-209	0	-573	-254	-295	-420	-2	-868	-739	-3497	-40	
Percent High Marsh Change 2011 to 2050	-62%	-75%	-16%	-69%	-72%	-81%	-77%	-68%	-86%	-89%	-79%	-31%	
Total Marsh (acres) 2011	257	308	1	869	405	385	571	5	1072	877	4750	168	
Total Marsh Change (acres) 2011 to 2050 (neg. is loss)	-43	-86	0	-89	-86	-67	-39	1	-325	-417	-1150	10	
Total Marsh Percent Change	-17%	-28%	33%	-10%	-21%	-17%	-7%	10%	-30%	-48%	-24%	6%	
Coastal habitat area (sq. miles)	7.7	11.4	0.6	20.7	10.8	7.7	6.7	1.8	12.7	12.5	92.6	13.6	
Percent of coastal habitat protected	10%	11%	25%	16%	32%	31%	31%	6%	39%	24%	23%	10%	

* Only the areas within Falmouth and Plymouth that drain into Buzzards Bay were included in this analysis.

This Coastal Impacts Matrix is a summary table of the data that is provided throughout this report. It allows communities to gauge their specific risks and vulnerabilities in relation to each other and the region. The “Flooding impacts to infrastructure” table (left) provides estimates of roads and buildings flooded during present day high tides and storms, as well as projections for 2050 [CIT. 5].

The “Shoreline and habitat conditions and impacts” table (above) provides values for both existing conditions of shorelines and projections to 2050 for erosion and marsh loss [CIT. 6, 15, 17, 19].

Visit thetrustees.org/coast for interactive maps to further explore projected impacts, or contact us at coast@thetrustees.org.