

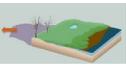
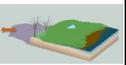
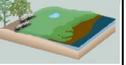
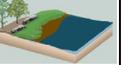
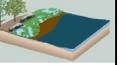
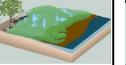
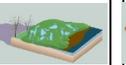
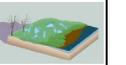
Best Management Options for Enhancing Tidal Marsh Resiliency

This table summarizes recommended management options to enhance tidal marsh resiliency based on the current condition of each marsh and its predicted adaptive capacity to relative sea level rise. Management options are considered from an ecological, rather than socioeconomic, perspective. For example, "managed relocation" refers to marsh gain in the footprint of a former building rather than societal consequences of abandoning or buying out property.

Management options in this table are recommended conservatively so that only the most relevant for each marsh resiliency category are shown.

A "✓" means that option is **highly relevant** for this marsh resiliency category and a "X" means the financial, ecological or logistical **cost is high** so this type of management option should be avoided.

Recommendations are made as an objective overview. It is fully recognized other factors, such as funding availability, need for a demonstration project in a specific location, or political will may supersede management options recommended here.

Current Condition Current vulnerability to RSLR Adaptation Potential	1	2	3	4	5	6	7	8
	High Low High	High High High	High Low Low	High High Low	Low High Low	Low Low Low	Low High High	Low Low High
Good condition marsh that is likely to migrate inland naturally for the long-term. It's in good shape, don't mess with it!		Marsh is in good shape for now but try to make less vulnerable (e.g., living shoreline or thin layer placement) so it has a chance to adapt in the future.	Its in good shape for now. Focus on upland modifications that enhance adaptation potential.	Cannot maintain current footprint without active management. Address upland options <i>only if</i> vulnerability is mitigated first. Exception is if essential function is present so protect all current high marsh.	Low condition marsh that is unlikely to persist in the future. Makes this a good place to test experimental restoration approaches.	There is a need to restore current conditions <i>but prioritize only if</i> barriers to adaption in upland are mitigated.	Focus established restoration techniques that improve current condition <i>and</i> decrease vulnerability to RSLR here. Need to address both aspects to make a project sustainable.	Prioritize established restoration projects here. This marsh is likely to self-sustain in the long term so projects will be cost effective.
								
Number of MUCs in NH	22	26	31	35	24	21	26	39
Total acreage in NH	706	2,667	386	584	209	131	833	275
Average size (acres)	32.1	102.6	12.4	16.7	8.7	6.3	32.0	7.1
Size range (acres)	2.4 - 119.3	0.6 - 212.8	0.7 - 115.8	0.3 - 174.8	0.03 - 64.9	0.16 - 53.7	0.04 - 212	0.07 - 74.8
Priority for resource investment in NH?	YES	YES	YES	?	?	?	?	YES
Example project types								

Management Options | Rationale | Example project types

NO ACTION is the default for all Marsh Units.

LAND USE / POLICY

Remove / decrease / modify development potential on salt marsh itself.	When current condition is high and either vulnerability is low or adaptation potential high.	Special overlay districts. Building restrictions. Road infrastructure modification.	✓	✓	✓	✓				
Remove / decrease / modify development potential in the migration pathway.	When adaptation potential is high.	Removal and restoration of parking areas. Removal of buildings. Abandonment of roads. Removal of septic systems.	✓	✓					✓	✓
Managed relocation of structures and/or infrastructure in the saltmarsh itself	When current condition is high and either vulnerability is low or adaptation potential high.		✓	✓	✓	✓				
Managed relocation of structures and/or infrastructure in the way of the migration pathway	When adaptation potential is high.		✓	✓					✓	✓
Incentives for voluntary easements or land acquisition of critical migration pathways and buffer strips.	When adaptation potential is high.	Set back or buffer ordinances. Zoning or overlay districts.	✓	✓					✓	✓

LAND PROTECTION

Priority for protection of marsh itself (all high current condition marshes are considered important for protection).	When current condition is high and either vulnerability is low or adaptation potential high.	Fee purchase.	✓	✓	✓	✓				
Protection of migration space.	When adaptation potential is high.	Purchase fee or conservation easement.	✓	✓	X	X	X	X	✓	✓
Incentives for voluntary easements or land acquisition of critical migration pathways and buffer strips.	When adaptation potential is high.	Purchased easement. Rolling easements. Deed restrictions. Tax incentives.	✓	✓					✓	✓
Limit investment in land protection as effectiveness will be relatively short-term.	When all three resiliency categories (current condition, vulnerability, and adaptive potential) are negative.	Save your \$!					✓			

RESTORATION OR ADAPTATION TECHNIQUES

Traditional, well proven, techniques with most benefits to the current marsh footprint.	When current condition is low or vulnerability is high.	Removal of barriers to hydrologic flow (tidal restrictions, ditch remediation etc.). Open marsh water management (OMWM) remediation. Invasive species management.		✓		✓	✓	✓	✓	✓
Experimental, or highly manipulative, techniques within the current marsh footprint.	When current condition is low and vulnerability is high.	Thin layer deposition, ditch remediation, runnelling, tide gates, dredge material removal.					✓		✓	
Traditional, well proven, techniques within the migration pathway that do not require slope modification.	When adaptation potential is high.	Removal of elevation barriers to migration, either close to the marsh edge or higher up in the watershed. Conversion of built, non-occupied, infrastructure in migration pathway to natural cover.	✓	✓					✓	✓
Experimental landscape modifications on either the seaward or upland side of the current marsh footprint.	When adaptation potential is low and current condition high.	Lower topology of the migration pathway. Removal of woody vegetation along ecotone. Living shoreline projects. Build hardened "toe" to extend marsh seaward. Use coir logs to promote sediment stabilization.			✓	✓				
Limit investment in restoration or adaptation projects as effectiveness will be short-term.	When all three resiliency categories (current condition, vulnerability, and adaptive potential) are negative.	Save your \$!					✓			