Connecticut Coastal Management Program
Fact Sheet
for
TIDAL WETLANDS[1]

What are Tidal Wetlands?

Tidal wetlands are those areas that border on or lie beneath tidal waters, such as, but not limited to banks, bogs, salt marshes, swamps, meadows, flats, or other low lands subject to tidal action, including those areas now or formerly connected to tidal waters; and whose surface is at or below an elevation of one foot above local extreme high water; and upon which may grow or be capable of growing some, but not necessarily all, of a list of specific plant species contained in Connecticut General Statutes (CGS) Section 22a-29(2) [CGS Section 22a-29, as referenced by CGS Section 22a-93(7)(E)].

In general, tidal wetlands form in "low energy" environments protected from direct wave action. They are flooded by tidal waters twice a day and support a diverse ecosystem of vegetation and wildlife. Although tidal wetlands are resistant to storm impacts, they will drown if sea level rises faster than the wetlands can accumulate sediment and build-up their surface elevations, or if structures like seawalls prevent the wetlands from migrating landward. Some tidal wetlands in western Long Island Sound are already transitioning to open water.

Why are they valuable?

Tidal wetlands are areas of high nutrient and biological productivity that provide detrital products forming the base of the food web in Long Island Sound. Tidal wetlands provide habitat, nesting, feeding, and refuge areas for shorebirds; serve as a nursery ground for larval and juvenile forms of many of the organisms of Long Island Sound and of many estuarine-dependent oceanic species; and provide significant habitat for shellfish. Tidal wetlands also improve water quality by trapping sediments, reducing turbidity, restricting the passage of toxics and heavy metals, decreasing biological oxygen demand, trapping nutrients, and buffering storm and wave energy. Tidal wetland vegetation stabilizes shorelines and buffers erosion. Tidal wetlands provide recreational opportunities for fishing, wildlife observation, and hunting; are important to commercial and recreational shell- and finfisheries; and are areas of scientific and educational value. Tidal wetlands are a major source of coastal open space.

What are the statutory policies that apply?

> It is declared that much of the wetlands of this state have been lost or despoiled by unregulated dredging, dumping, filling and like activities and despoiled by these and other activities, that such loss or despoliation will adversely affect, if not entirely eliminate, the value of such wetlands as sources of nutrients to finfish, crustacea and

> shellfish of significant economic value; that such loss or despoliation will destroy such wetlands as habitats for plants and animals of significant economic value and will eliminate or substantially reduce marine commerce, recreation and aesthetic enjoyment and that such loss of despoliation will, in most cases, disturb the natural ability of tidal wetlands to reduce flood damage and adversely affect the public health and welfare; that such loss or despoliation will substantially reduce the capacity of such wetlands to absorb silt and will thus result in the increased silting of channels and harbor areas to the detriment of free navigation. Therefore, it is declared to be the public policy of this state to preserve the wetlands and to prevent the despoliation and destruction thereof [CGS Section 22a-28 as referenced by CGS Section 22a-92(a)(2)].
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> To preserve tidal wetlands and to prevent the despoliation and destruction thereof in order to maintain their vital natural functions; to encourage the rehabilitation and restoration of degraded tidal wetlands; and where feasible and environmentally acceptable, to encourage the creation of wetlands for the purpose of shellfish and finfish management, habitat creation and dredge spoil disposal [CGS Section 22a-92(b)(2)(E)].
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> To disallow any filling of tidal wetlands and nearshore, offshore, and intertidal waters for the purpose of creating new land from existing wetlands and coastal waters which would otherwise be undevelopable, unless it is found that the adverse impacts on coastal resources are minimal [CGS Section 22a-92(c)(1)(B)].
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> To disapprove extension of sewer and water services into developed and undeveloped beaches, barrier beaches and tidal wetlands except that, when necessary to abate existing sources of pollution, sewers that will accommodate existing sues with limited excess capacity may be used [excerpt from CGS Section 22a-92(b)(1)(B)].

In addition, the Connecticut Coastal Management Act defines as an adverse impact:

> Degrading tidal wetlands, beaches and dunes, rocky shorefronts, and bluffs and escarpments through significant alteration of their natural characteristics or functions [CGS Section 22a-93(15)(H)]
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> Degrading or destroying essential wildlife, finfish or shellfish habitat through significant alteration of the composition, migration patterns, distribution, breeding or other population characteristics of the natural species or significant alterations of the natural components of the habitat [CGS Section 22a-93(15)(G)].

During the coastal site plan review process, a determination must be made that adverse impacts have been avoided and unavoidable adverse impacts have been minimized in order to lawfully approve the application (see the *Coastal Site Plan Review* and *Adverse Impacts* fact sheets for additional information).

What can a municipality do to minimize impacts to these sensitive coastal resources?

- Update the municipal Plan of Conservation and Development, Municipal Coastal Program, if applicable, and zoning and subdivision regulations to better protect tidal wetlands by providing development setbacks and vegetated buffers from the upland edge of tidal wetlands which are adequate to protect the wetlands from runoff, erosion, construction, and other negative impacts that might result from development on adjacent upland resources (see *Vegetated Buffers* and *Stormwater Management* fact sheets for more information).

- Amend zoning regulations to require on-site upland retention of the runoff associated with the first one-inch of rainfall and to direct additional runoff, after appropriate treatment, away from tidal wetlands. Freshwater inputs such as those associated with stormwater runoff adversely impact the brackish and saline ecosystems that characterize most tidal wetlands in Connecticut (see *Stormwater Management* fact sheet for additional information).

- Review the existing zoning regulations regarding the maximum impervious cover allowed. Reduce this wherever possible, especially adjacent to coastal waters and other sensitive coastal resources.

- Include in the municipal Plan of Conservation and Development or Municipal Coastal Program, if applicable, an inventory of tidal wetland areas and adjacent upland for possible open space acquisition.

- Use the Sea Level Affecting Marshes Model (SLAMM) to identify the municipality's most significant marsh migration areas and develop strategies to prevent the conversion of these areas to land uses that would restrict their capacity to accommodate the creation of new marsh. SLAMM is a computer model that predicts how sea level rise (SLR) may affect Connecticut's tidal wetlands, and model results indicate it's highly likely that Connecticut's tidal wetlands will change from high marsh- to low marsh-dominated plant communities by 2100 under moderate or moderately high SLR scenarios.

- Preserve or restore the structure, function, and integrity of the physical and biological components of tidal wetlands by encouraging projects that would: (1) maintain or restore the natural tidal flushing, circulation, and chemical characteristics of tidal wetlands and adjacent estuarine waters; (2) maintain or restore the natural plant and animal species that inhabit tidal wetlands; and, (3) avoid adverse impacts to U.S. and state listed threatened and endangered species.

- Disallow extensions of water and sewer lines into tidal wetlands except sewers that will accommodate existing uses with limited excess capacity may be used when necessary to abate existing sources of pollution.

- Employ siting alternatives which will avoid or substantially limit negative impacts, such as the following: (1) siting inconsistent uses out of tidal wetlands on adjacent upland areas, or (2) siting consistent uses in such a manner as to avoid or minimize the tidal

wetland area affected. When siting consistent uses, consider requiring construction techniques which will avoid or substantially limit impacts such as: (1) elevation of consistent uses on low impact pile foundations at a height sufficient to prevent or minimize the effects of shading on the wetland vegetation; (2) storage of construction materials and equipment in non-wetland areas; (3) provision of waterborne access to the construction site, or use of temporary elevated construction accessways; (4) schedule construction activities during late fall, winter or early spring months when impacts to wetland systems are generally the least harmful; (5) schedule construction activities so as to avoid shorebird, shellfish and finfish breeding seasons; and (6) restore all disturbed marsh surfaces as nearly as possible to their natural topographic condition following construction activities and re-establishing a natural vegetation cover.

- Where applicable, as a component of permitted activities, rehabilitate and restore degraded tidal wetlands through such means as (1) restoration of natural tidal range or circulation patterns (2) restoration of tidal flushing and circulation to wetlands which were formerly connected to tidal waters, and (3) re-establishment of marsh vegetation.

What is tidal wetland restoration?

The Connecticut Department of Energy and Environmental Protection (DEEP) is a national leader in efforts to restore degraded tidal wetlands to healthy, productive conditions. Historically, many tidal wetlands were diked and drained, filled, or otherwise cut off from tidal waters in an effort to control mosquitoes and create dry land for development. Restoration efforts generally involve the removal of obstacles that prevent tidal waters from reaching the degraded areas. Once tidal flushing is re-established, the natural fish predators of mosquitoes can enter the wetlands and feed on mosquito larvae which helps minimize the need for chemical controls. Connecticut is the first state in the nation to establish a unit dedicated to wetland restoration and mosquito management. Through the efforts of the DEEP Wildlife Division's Wetlands Habitat and Mosquito Management Program, many of the state's tidal wetlands will be restored and enhanced for the benefit of waterfowl, shorebirds, and other wetland-dependent wildlife.

Does the DEEP regulate activities on tidal wetlands?

Yes. DEEP has direct regulatory jurisdiction over activities occurring in tidal wetlands and/or waterward of the coastal jurisdiction line. If any construction activities or structure(s), in part or in whole, or any incidental work proposed in conjunction with the construction of structure(s) is proposed at or waterward of the coastal jurisdiction line, authorization from the DEEP's Land and Water Resources Division would be required prior to construction in accordance with the Tidal Wetlands Act (CGS Sections 22a-28 through 22a-35) and/or the statutes governing the placement of structures, dredging, and fill in tidal, coastal or navigable waters (CGS Sections 22a-359 through 22a-363f, inclusive).

1. This fact sheet is one of 13, which detail coastal resources. Fact sheets are available for the following coastal resources: beaches and dunes, bluffs and escarpments, coastal hazard areas, coastal waters, developed shorefront, estuarine embayments, intertidal flats, islands, rocky shorefronts, shellfish beds, shorelands, submerged aquatic vegetation, and tidal wetlands.