



Tidal Wetlands Primer

What are tidal wetlands?

Tidal wetlands are systems containing plants adapted to wet conditions with tidal flow and poorly drained to very poorly drained mineral-rich organic soil. They occur in intertidal areas of marine, estuarine, and tidal riverine systems where the land meets the water and daily tidal action moves water in and out of the systems. In Connecticut, low marsh areas are flooded by tidal waters twice a day, while high marsh areas are flooded a few times a month.

Tidal wetlands are areas of high nutrient and biological productivity that form in low wave energy environments. They provide habitat for a multitude of aquatic and terrestrial plants and animals and supply detritus (decaying organic matter), which forms the base of the food web in estuarine systems. Thus, tidal wetlands are one of the most complex and dynamic ecosystems on the planet.

Connecticut legally defines [tidal wetlands](#) as, "those areas which 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 62 different plant species]."

Read more about the geology, history, ecology and restoration of tidal wetlands in the bulletin ["Tidal Marshes of Long Island Sound: Ecology, History and Restoration"](#).

Why are tidal wetlands valuable?

Tidal wetlands deliver numerous "[ecosystem services](#)" that benefit Connecticut's communities and its economy. Next to tropical rainforests, tidal wetlands are the most biologically productive resource in the world. Tidal wetlands provide habitat, nesting, feeding, and refuge areas for shorebirds; they serve as a nursery ground for larval and juvenile forms of many organisms that occur in Long Island Sound, as well as many estuarine-dependent oceanic species; and they provide significant habitat for shellfish. Most of the commercial fisheries stock that we eat start their lives in tidal wetlands.

Tidal wetlands improve water quality by trapping sediments, reducing turbidity, restricting the passage of chemical pollutants and heavy metals, trapping nutrients, decreasing biological oxygen demand (BOD), and buffering storm and wave energy. Tidal wetland vegetation stabilizes shorelines and buffers erosion, and the plants and soil also provide carbon sequestration. Tidal wetlands provide recreational opportunities for fishing, wildlife observation and hunting; they are important to commercial and recreational shell- and fin-fisheries; and they are areas of scientific and educational value. Tidal wetlands are also a major source of coastal open space and offer exceptional scenic views.

Why do tidal wetlands need protection?

Human actions, both direct and indirect, can adversely impact tidal wetlands and their functions. Direct actions include activities such as filling, dredging, and trampling; indirect actions include upland uses that result in sedimentation, increased stormwater discharge, proximate septic system failures, or the installation of culverts in a manner that decreases salt water flushing. In these cases, the delicate balance between soil surface, water level, water quality and/or salinity is disturbed. This results in a stressed habitat which is usually less productive than a healthy marsh and frequently promotes infiltration of undesirable or invasive species, most typically Common Reed (*Phragmites australis australis*). Many of these activities have historically occurred in Connecticut, resulting in the loss or degradation of the majority of tidal wetlands. As a result it is even more important to protect the wetlands that remain.

After recognizing the need to lawfully protect the state's tidal wetlands, in 1969 Connecticut passed a legislative policy for the [preservation of tidal wetlands](#), which established:

Much of Connecticut's tidal wetlands have been lost or damaged by unregulated dredging, dumping, filling and like activities, and its remaining tidal wetlands are in jeopardy of being lost or damaged by these and other activities, which will adversely affect or eliminate their function as food and habitat to fisheries and other resources of significant economic value; such loss or damage would substantially reduce marine commerce, recreation and aesthetic enjoyment and disrupt the natural ability of tidal wetlands to reduce flood damage and absorb silt, resulting in the increased silting of channels and harbor areas to the detriment of free navigation and adversely affecting public health and welfare. Thus, it is the public policy of this state to preserve tidal wetlands and to prevent their damage and destruction.

Protection of tidal wetlands is also included in the legislative policies of Connecticut's [Coastal Management Act](#), and the degrading of tidal wetlands is identified as an adverse impact on coastal resources in CGS section 22a-93(15).

How are wetlands regulated in Connecticut?

Tidal Wetlands

The Department of Energy and Environmental Protection (DEEP) administers the regulation of activities occurring within tidal wetlands pursuant to Connecticut General Statutes (CGS) sections [22a-28 – 22a-35a](#) and the [Tidal Wetlands Regulations](#). Regulated activities in tidal wetlands as specified in CGS Section 22a-29(3) include:

- Draining, dredging, excavation, or removal of soil, mud, sand, gravel, aggregate of any kind or rubbish from any wetland or;
- Dumping, filling or depositing thereon of any soil, stones, sand, gravel, mud, aggregate of any kind, rubbish or similar material, either directly or otherwise, and;
- Erection of structures, driving of pilings, or placing of obstructions, whether or not changing the tidal ebb and flow.

Activities that are not regulated in tidal wetlands as specified in Tidal Wetlands Regulations section 22a-30-5 only include certain official activities conducted for public health and safety and activities authorized under sections under sections [22a-361\(d\)](#) & [22a-363b](#) of Connecticut's Structures, Dredging, and Fill statutes, such as conducting mosquito control or the issuance of permits or certificates to repair previously authorized structures within tidal wetlands. Visit the [Coastal Permitting](#) page for more information on this topic.

Non-tidal Wetlands

Non-tidal (inland) wetlands are separately regulated under the [Inland Wetlands and Watercourses Act](#) and the [Inland Wetlands and Watercourses Regulations](#). These laws establish that DEEP administers the regulation of activities affecting inland wetlands and watercourses conducted by state or federal agencies and the supervision of the municipal regulation of such activities conducted by individuals and other entities. Accordingly, the DEEP Inland Wetlands Management Section provides training, regulatory, and technical assistance to Connecticut's municipal inland wetlands agencies. For information about this topic visit DEEP's [Inland Wetlands and Watercourses](#) page.