

## Water Resource Mitigation Glossary

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**Compensatory Mitigation:** Action taken to restore, create, or enhance a water resource, which provides a gain of resource extent and/or improvement of functions, to compensate for impacts to resources after avoidance and minimization have been achieved to the greatest extent practicable. In some scenarios, mitigation alternatives such as preservation may be accepted as compensation. Compensatory mitigation is required by federal law under the Clean Water Act's [Compensatory Mitigation for Losses of Aquatic Resources \(33 CFR Part 332\)](#) and may be required by state and/or municipal authorities to offset impacts to regulated water resources.

**Mitigation Ratio:** The amount of resource area provided as compensation, as it corresponds to the resource area that is impacted. A mitigation ratio of 3:1 is equivalent to 3 square feet of mitigation per 1 square foot of impact. Mitigation ratios are established by regulatory agencies to standardize the amount of mitigation that is required as compensation for impacts.

### Mitigation Methods

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**Creation:** Establishment of a new wetland or other water resource that did not previously exist by manipulating the physical, chemical, and/or biological characteristics of an area. Creation results in a gain of new water resource area and its associated functions/values.

**Enhancement:** Improvement of an existing water resource by adding or heightening its functions/values through manipulation of the physical, chemical, and/or biological characteristics of a resource. Enhancement does not result in a gain of water resource area however it may add to and/or improve existing resource functions/values.

**Restoration:** Re-establishment of a former water resource to natural/historic conditions by manipulating the physical, chemical and/or biological characteristics of an area. Restoration results in a gain of water resource area and its associated functions/values.

**Preservation:** Putting a legal land protection mechanism into place which prevents the decline of, or removes threat to, an existing water resource. Land preservation is implemented through real estate mechanisms such as conservation easements and deed restrictions, which preserve water resources by prohibiting future activities or land uses that would impact water resources. As preservation does not result in any gain or enhancement of water resources, it does not typically offer adequate compensation to offset impacts, however in some scenarios it may be acceptable as compensation at the discretion of the Commissioner.

### Mitigation Programs

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**Permittee Responsible Mitigation (PRM):** Restoration, creation, or enhancement activities provided directly by the permittee/licensee\* to compensate for impacts to water resources. With PRM the licensee is responsible for all aspects of the mitigation project including (but not limited to): site selection, project design, construction, planting, adaptive management, monitoring, etc. until performance standards are achieved. At CT DEEP if PRM is the approach, project proponents must

\*For the purpose of guidance, the terms permit/license and permittee/licensee are interchangeable. CT DEEP often uses the broader term 'license', which includes permits, registrations, and other types of authorizations.

submit a Mitigation Plan for Commissioner approval as part of the license application so that compensation is authorized at the same time and under the same license as the impact(s).

**In-Lieu Fee (ILF):** A program where licensees provide fees for water resource compensation during the permit process, with the fees deposited into a program fund that is protected and directed toward future mitigation projects. ILF programs can be administered by a public agency or a non-profit organization. After the fees are collected for compensation, the program administrator (sponsor) becomes responsible for mitigation project implementation.

**Mitigation Bank:** A mitigation site where water resources are restored, created, and/or enhanced and then set aside for use as future compensation to offset future impacts. With mitigation banking, licensees may meet mitigation requirements by purchasing 'resource credits' from a bank instead of having to provide their own mitigation or wait for future in-lieu-fee mitigation. Purchasing 'resource credits' allows licensees to offset impacts during permitting, in advance of impact. The resource bank administrator (sponsor) performs mitigation to create resource credits for sale, which in turn are sold to the developer/licensee to compensate for (offset) impacts. Banks may provide streamlined consolidated compensation for multiple permit actions and cumulative impacts.

## General Definitions

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**Benthic Habitat:** The physical, biological and chemical environment occurring at the lowest level of a waterbody, or benthic zone, which includes sediment substrates and flora/fauna (benthos).

**Coastal Waters:** Those waters of Long Island Sound and its harbors, embayments, tidal rivers, streams and creeks, which contain a salinity concentration of at least five hundred parts per million under the low flow stream conditions as established by the Commissioner. [CGS § [22a-93](#)(5)]

**Intertidal Flats:** Very gently sloping or flat areas located between high and low tides composed of muddy, silty and fine sandy sediments and generally devoid of vegetation. [CGS § [22a-93](#)(7)(D)]

**Cumulative Impacts:** The changes to a water resource or ecosystem that are attributable to the collective effect of multiple individual discharges of dredge/fill material or multiple structures. While impact from one discharge or structure may constitute a minor change, the cumulative effect of many piecemeal impacts can result in degradation or impairment of water resources.

**Mitigation Credit:** A unit of measure representing the gained value of a mitigation water resource or site. When water resources are 'built' (i.e. created, enhanced or restored) under a mitigation bank or in-lieu-fee program, they become 'resource credits' that are sold to (purchased by) developers to offset resource impacts.

**Mitigation Debit:** A unit of measure representing the water resource impacts, i.e. the area of resource loss and/or degradation of functions. Debit values directly relate to the water resource impacts from construction activities. With consolidated mitigation projects, resource credits are purchased as compensation to offset the impacts (debits).

**Navigable Waters:** Long Island Sound, any cove, bay or inlet of Long Island Sound, and that portion of any tributary, river or stream that empties into Long Island Sound upstream to the first permanent obstruction to navigation for watercraft from Long Island Sound. [CGS § [22a-359](#)(e)]

**Open Water:** Lakes, ponds, pools, and other bodies of fresh or salt water, natural or artificial, vernal or intermittent, public or private. Inland open water lakes and ponds are defined as 'watercourses' in the Inland Wetlands and Watercourses Act [CGS § [22a-38](#)(16)], and tidal open waters of Long Island

Sound and its coastal harbors and embayments are defined as 'coastal waters' in the Coastal Management Act [CGS § [22a-93\(5\)](#)].

**Soil Scientist:** An individual duly qualified (to identify soils in Connecticut) in accordance with standards set by the federal Office of Personnel Management. [CGS § [22a-38\(5\)](#)] For further information on qualifications that satisfy the state definition of soil scientist, refer to [Soil Scientist Qualifications for the State of Connecticut Inland Wetlands and Watercourses Act](#).

**Special Resource:** Bogs, fens, swamps (cedar, spruce, or calcareous seepage), and vernal pools; areas with native submerged aquatic vegetation (SAV) and waters providing habitat for at-risk species by the Connecticut Natural Diversity Database (NDDDB) may also be considered Special Resources. Special Resources correspond to 'special wetlands' under the state 401 water quality certification program, and may include 'special aquatic sites' under the federal 404 program (as defined in [40 CFR 230.3](#) and [40 CFR 230 Subpart E](#)).

- **Bog:** a peat-accumulating wetland dominated by sphagnum moss, with other typical plant species including leatherleaf, black spruce, pitcher plant, and sundew.
- **Fen:** a peat-accumulating wetland typically dominated by low sedges, ericaceous shrubs, sphagnum, and other mosses.
- **Cedar Swamp:** a forested wetland characterized by the presence of Northern White Cedar and/or Atlantic White Cedar.
- **Spruce Swamp:** a forested wetland characterized by the presence of Red and/or Black Spruce.
- **Calcareous Seepage Swamp:** a forested wetland characterized by the discharge of groundwater with a chemistry influenced by an underlying limestone geology.
- **Vernal Pool:** an often-temporary body of water occurring in a shallow depression of natural or human origin that may typically fill up during rain/snow events and dry up during summer months. Vernal pools support populations of obligate species adapted to reproducing in aquatic habitats. Vernal pools are subject to State jurisdiction pursuant to the Connecticut WQS.

**Stream:** Inland streams include rivers, streams, brooks, or waterways, as defined under watercourses in the Inland Wetland and Watercourses Act [CGS § [22a-38\(16\)](#)], and tidal streams include tidal rivers, streams, and creeks, as defined under 'coastal waters' in the Coastal Management Act [CGS § [22a-93\(5\)](#)].

- Regulated streams may be natural or artificial, vernal or intermittent, or public or private;
- Intermittent inland streams shall be delineated by a defined permanent channel and bank and the occurrence of two or more of the following characteristics: (A) evidence of scour or deposits of recent alluvium or detritus, (B) presence of standing or flowing water for a duration longer than a particular storm incident, and (C) presence of hydrophytic vegetation;
- Tidal streams include fresh or brackish waters that are tidally influenced.

**Submerged Aquatic Vegetation (SAV):** Rooted vascular plants that live permanently submerged below water (except during periods of low tide) and often form large stands or beds. SAV support nesting, spawning, nursery and foraging areas for many fish and wildlife. The US EPA designates certain areas with SAV as "special aquatic sites" in the Clean Water Act § 404(b)(1) guidelines, where SAV is referred to as 'vegetated shallows' (see [40 CFR 230 Subpart E](#)). In Connecticut salt waters the primary species of SAV are eelgrass (*Zostera marina*) and widgeon grass (*Ruppia maritima*). In brackish and fresh waters there are 17 species of SAV, with the dominant being wild celery (*Vallisneria spiralis*).

**Temporal loss:** The time lag between the loss of water resource area/functions caused by impacts and the replacement of water resource area/functions at the compensatory mitigation site. Higher compensation ratios may be required to accommodate temporal loss.

**Temporary Impact:** Impacts that result when “the discharge or activity is temporary, occurring over a period of days or months, not years” in conformance with the [Connecticut Water Quality Standards](#) Antidegradation regulations [RCSA § [22a-426-8](#)(g)(1)(a)]. Under the Antidegradation standards and implementation policies, activities impacting wetlands or high-quality waters for over a year in duration would reasonably be expected to significantly lower water quality. Temporary impacts to water resources are required to be restored to pre-construction conditions, to ensure temporary impacts do not permanently destroy or degrade water resources.

**Threatened, Endangered or Special Concern Species; Significant Natural Communities and/or Critical Habitats:** Species and habitats that are listed by CT DEEP’s Natural Diversity Data Base (NDDb) program as threatened or endangered, species of special concern, significant natural communities, and/or critical habitats pursuant to CGS § [26-304](#)(7-9).

**Vernal Pool:** An often-temporary body of water occurring in a shallow depression of natural or human origin that may typically fill up during rain/snow events and dry up during summer months. Vernal pools support populations of obligate species adapted to reproducing in aquatic habitats. Vernal pools are considered ‘special wetlands’/‘special resources’ that are subject to state jurisdiction pursuant to the Connecticut WQS 401 certification program.

**Water Resource:** Connecticut water resources include ‘inland wetlands and watercourses’ as defined in CGS § [22a-38](#)(15-16), ‘tidal wetlands’ as defined in CGS § [22a-29](#)(2), ‘coastal waters’ as defined in CGS § [22a-93](#)(5), ‘navigable waters’ as defined in CGS § [22a-359](#)(e) and ‘intertidal flats’ as defined in CGS § [22a-93](#)(7)(D).

‘Water resource’ is an umbrella term used to capture all state-regulated surface waters that are applicable to the compensatory mitigation program. Note that mitigation applies to impact and compensation activities that occur in the benthic habitats of the water resources listed above, not within the surface water column; see also see Benthic Habitat definition.

#### **Wetland:**

**Inland Wetland:** [Inland] Land, including submerged land, not regulated pursuant to CGS § [22a-28](#) to [22a-35](#), inclusive, which consists of any of the soil types designated as poorly drained, very poorly drained, alluvial, and floodplain by the National Cooperative Soils Survey, as may be amended from time to time, of the Natural Resources Conservation Service of the United States Department of Agriculture. [CGS § [22a-38](#)(15)]

**Tidal Wetland:** [Tidal] Areas which border on or lie beneath tidal waters, such as, but not limited to banks, bogs, salt marsh, 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 the following species\*: salt meadow cordgrass (*Spartina patens*), smooth cordgrass (*Spartina alterniflora*), black grass (*Juncus gerardii*), saltgrass (*Distichlis spicata*), high-tide bush (*Iva frutescens*) and groundsel bush (*Baccharis halmifolia*). [CGS § [22a-29](#)(2)] \*Note the species listed here indicate the most common tidal wetland plants found in Connecticut; for all plant species listed in the statutory definition of tidal wetland, last updated 1972, refer to CGS § [22a-29](#)(2).

#### **Watercourse:**

**Inland Watercourse:** Rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs and all other bodies of water, natural or artificial, vernal or intermittent, public or private, which are contained within, flow through or border upon this state or any portion thereof, not regulated pursuant to CGS § [22a-28](#) to [22a-35](#), inclusive. [CGS § [22a-38](#)(16)]

Note that while the statutory definition of inland 'watercourses' includes all non-wetland surface waters, for mitigation purposes, marshes/swamps/bogs are considered wetlands and lakes/ponds are considered open water.

**Tidal Watercourse:** Refer to 'Stream' and Coastal Waters'.

**Watershed:** A watershed, or drainage basin, is an area of land that channels waters (such as rainfall, snowmelt, runoff, and streams) from higher elevations to lower elevations into a common body of water (such as a stream, lake, or estuary).

**Watershed approach:** An analytical process for making compensatory mitigation decisions that supports the sustainability or improvement of water resources in a watershed. The watershed approach uses a landscape-scale perspective to consider watershed needs, and how site locations and different types of compensatory mitigation projects address those needs, to identify the types and locations of mitigation projects that will benefit the watershed while offsetting losses of water resource functions. The watershed approach may involve consideration of historic, current, and/or projected water resource conditions and impacts when determining compensatory mitigation requirements.