

**EXAMPLES ON USE OF MITIGATION RATIOS FROM THE
ADDENDUM TO NEW ENGLAND DISTRICT
COMPENSATORY MITIGATION GUIDANCE:
COMPENSATION FOR IMPACTED AQUATIC RESOURCE
FUNCTIONS.**

EXAMPLE 1

Impacts:

0.75 ac PEM (wet meadow with minimal degradation; saturated to surface October-June)

0.2 ac PSS (buttonbush swamp with minimal degradation)

1.1 ac PFO (logged over red maple and white pine forest)

2.05 ac total direct wetland impact

Indirect impacts to other aquatic resources from development throughout upland which will result in degradation of aquatic resources through the fragmentation of songbird, reptile, amphibian, and large mammal habitat; likely introduction of invasive species; and water quality impacts from lawns throughout the uplands which are upslope of stream and pond. The entire parcel is 58 acres of which 12.5 are aquatic resources plus there are other aquatic resources located on adjacent properties.

Compensation: Site is adjacent to the town forest which is protected from development.

0.5 ac PEM restoration (wet meadow)—site was filled in the 1940s

0.6 ac PSS creation (willow/alder)

3.3 ac PFO creation (red maple, white pine, swamp white oak)

7.5 ac upland preservation (conservation easement to Super Duper Watershed Association) to compensate for remaining PEM (also provides 100' buffer on constructed wetland boundary not abutting the town forest)

9.8 ac upland preservation (conservation easement to Super Duper Watershed Association along with \$5,000 for long term stewardship) to compensate for indirect impacts (negotiated by applicant, Corps, and resource agencies; results in additional buffer of 50-350' on the north and northeast sides of the constructed wetlands)

4.4 ac restoration/creation (which will be preserved as well)

17.3 ac preservation

TOTAL PARCEL: 21.7 ac.

EXAMPLE 2

Impacts:

2.3 ac PFO (red maple swamp with development within 200' on three sides; abuts town conservation land – upland - on the fourth side)

2.3 ac total direct wetland impact

Minimal indirect impacts because of the surrounding development

Compensation: Site abuts the same large town conservation land but on a different side.

2.1 ac PFO enhancement. Will consist of removal of debris, treatment of 0.5 ac of *Phragmites*, and regrading to create appropriate microtopography which had been obliterated by bulldozing prior to 1980, and planting of red maple swamp woody species. This will add habitat for species which utilize wetlands with woody species (initially shrubs and eventually trees), improve aesthetics, increase wetland plant diversity, and eliminate a patch of invasives which threatens to take over a much larger area. Water quality functions and floodstorage will not be increased substantially. It was determined that 7:1 is an appropriate ratio.

1.5 ac PFO restoration (red maple swamp)

25.0 ac preservation of upland (18.2 ac) and wetland (6.8 ac). Fee title to be given to the town Conservation Commission. Mitigation plan documents search for other sites with opportunities for restoration, creation, or enhancement and none better than this site were found. The preservation provides more a 100' buffer on all sides of the site not abutting the town conservation land. It actually slightly exceeds 15:1 for the uncompensated 1.5 acres.

3.6 ac restoration/enhancement (which will be preserved as well)

25.0 ac preservation

TOTAL PARCEL: 28.6 ac.

EXAMPLE 3

Impacts:

0.8 ac PFO (black spruce swamp with minimal degradation)
1 vernal pool (1,245 sf) with no development within 750'

0.8 ac total direct wetland impact

Indirect impacts result from proposed work within 200' of another vernal pool and 560' of a third pool

Compensation: Site is in an intact riparian corridor along Whatchacallit Brook which the state has targeted for protection as areas become available. Nearest existing preserved parcel – by Whatchacallit Land Trust - is 589' to the south.

1.0 ac PFO creation (black spruce and red maple swamp)

Construction of 2 vernal pools along the existing forested edge (900 sf and 660 sf)

49 ac preservation of uplands and 2 vernal pools. Mitigation plan documents search for other sites with opportunities for restoration, creation, or enhancement and none better than this site were found. Conservation easement to be given to the Whatchacallit Land Trust along with \$10,000 for long term stewardship. Preservation provides 400' buffer to vernal pool and at least 100' completely around the PFO creation.

1.0 ac creation (which will be preserved as well)

49 ac preservation

TOTAL PARCEL: 50 ac.

EXAMPLE 4

Impacts:

0.7 ac PEM/PSS mosaic (highly degraded through ATV use, invasive species, and proximity to highway and residential areas)

0.7 ac total direct wetland impact

Minimal indirect impacts because of the surrounding development

Compensation: Site is part of a 50 ac landlocked parcel. Acquisition of this portion will make it very difficult for the remainder of the site to be developed.

0.7 ac PEM/PSS/PFO mosaic creation

10.5 ac preservation of upland. Mitigation plan documents search for other sites with opportunities for restoration, creation, or enhancement and none better than this site were found. This includes 150-290' buffer on the east and south sides of the created wetlands, 100 – 130' on the west side, and none on the north side but that is where the remainder of the 50 ac parcel is located. Conservation easement to be held by town ConCom.

0.7 ac creation (which will be preserved as well)

10.5 ac preservation

TOTAL PARCEL: 11.2 ac.

EXAMPLE 5

Impacts:

0.1 ac *Spartina alterniflora* saltmarsh

0.3 ac *Phragmites australis* saltmarsh

0.1 ac SAV (eelgrass)

0.1 ac mudflat

0.6 total direct aquatic resource impact

Some indirect impacts to nearby SAV may occur during construction

Compensation:

10.8 ac saltmarsh enhancement (replacement of undersized culvert to improve tidal flow and reduce *Phragmites*)

Restoration and enhancement of up to 2 ac of SAV and mudflat habitat (reconstruction of stormwater outfall to reduce pollutant discharges to area of likely past SAV (based on gap in SAV on aerials) and current degraded mudflat

12.8 ac (max) of mostly enhancement and some restoration

EXAMPLE 6

Impacts:

259 linear feet of stream (being piped) – neither stream, banks, nor riparian area degraded

0.1 ac PEM (along stream)

0.12 ac of direct aquatic resource impact

Indirect impacts to downstream waters and wetlands during construction

Compensation: Site is 0.75 mi downstream of impact area where stream goes through a farm and it is immediately upstream of state wildlife management area

30 lf restoration (removal of road crossing)

100 lf enhancement of channelized stream with denuded banks

360 lf enhancement of channelized stream with well vegetated banks

0.5 ac PEM restoration (along stream) – it is likely that this area was wetland prior to agricultural use but this cannot be proven

2.2 ac preservation (50' buffer on each side of 490' restored/enhanced channel plus 25' on each side of an additional 900' of stream channel) Conservation easement to be held by state department of fish and wildlife.

490 lf restoration and enhancement (will be preserved along with a 25' buffer on each side as well)

0.5 ac wetland restoration (which will be preserved as well)

2.2 ac preservation

TOTAL PARCEL: 2.7 ac

EXAMPLE 7

Impacts:

1.2 ac POW (pond)

0.2 ac PSS (fringe wetlands)

1.4 ac direct aquatic resource impacts

There are no indirect impacts

Compensation: Site is on town conservation land

0.1 ac POW restoration (filled in 1972)

0.9 ac POW enhancement through regrading and revegetation of upland banks

2.7 ac POW enhancement through removal of milfoil

0.6 ac PSS/PEM enhancement through regrading and planting of areas around pond with wetland hydrology

Installation of educational signage

4.3 ac restoration and enhancement

TOTAL PARCEL: 4.3 ac

EXAMPLE 8

Impacts:

3.1 ac PFO (mature forest with very little degradation)

3.1 ac direct wetland impacts

Indirect impacts to wetlands on adjacent parcel

Compensation: Site is adjacent to land owned by Maine Audubon

12.4 ac PFO creation

35.2 ac preservation (includes at least 100' around site except where abuts other preserved land)

12.4 ac creation (will be preserved as well)

35.2 ac preservation

TOTAL PARCEL: 45.6 ac

EXAMPLE 9

Impacts:

0.3 ac PEM

0.9 ac PSS

6.7 ac PFO

0.2 ac POW

1,237 linear feet of streams and rivers (numerous crossings) – 0.3 ac

8.4 ac direct aquatic resource impacts

Indirect impacts are limited to just a portion of the project area and are primarily to water quality and amphibian habitat.

Compensation: Involves 4 sites: 3 address site-specific water quality issues and flood storage and are located adjacent to the impact. One site is intended to address wildlife habitat issues, primarily, and is located off-site.

0.6 ac PEM creation (on-site)

2.1 ac PSS creation (on-site)

1.3 ac PFO restoration (off-site)

10.7 ac PFO creation (off-site)

0.2 ac POW (off-site)

100 lf restoration (removal of concrete channel)

250 lf restoration (daylighting of stream)

387 lf enhancement (channelized stream with denuded banks)

0.8 ac preserved (the 25' buffer for the restored and enhanced stream)

0.8 ac preserved (25-50' buffer “ ”)

68.0 ac preserved (to address direct impacts to wetlands; 6 ac on-site, 62 ac off-site)

20.0 ac preserved (to address direct impacts to streams plus indirect impacts)

14.9 ac creation and restoration (will be preserved as well; on-site work and 100' buffer – included in preservation number below – will be protected by a deed restriction because no entity would accept an easement)

737 lf restoration and enhancement (will be preserved along with a 25' buffer on each side as well)

89.6 ac preservation

TOTAL PARCELS: 8.7 ac on-site; 101.7 ac off-site