

TOWN OF MASHPEE

- Town Map
- Chart of Site Characteristics
- Sites 1 to 6

TOWN OF MASHPEE








Location of Selected Salt Marsh Restrictions

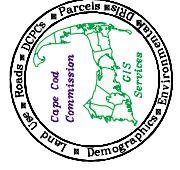
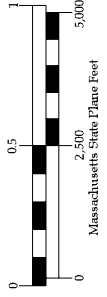
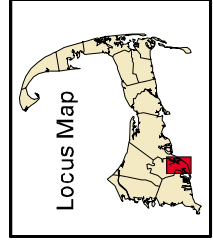
This map was produced by the Cape Cod Commission Geographic Information Systems Unit office, with digital data from MassGIS and the Cape Cod Commission, 2001.

The information depicted on this map is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation, or parcel level analysis.

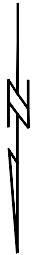
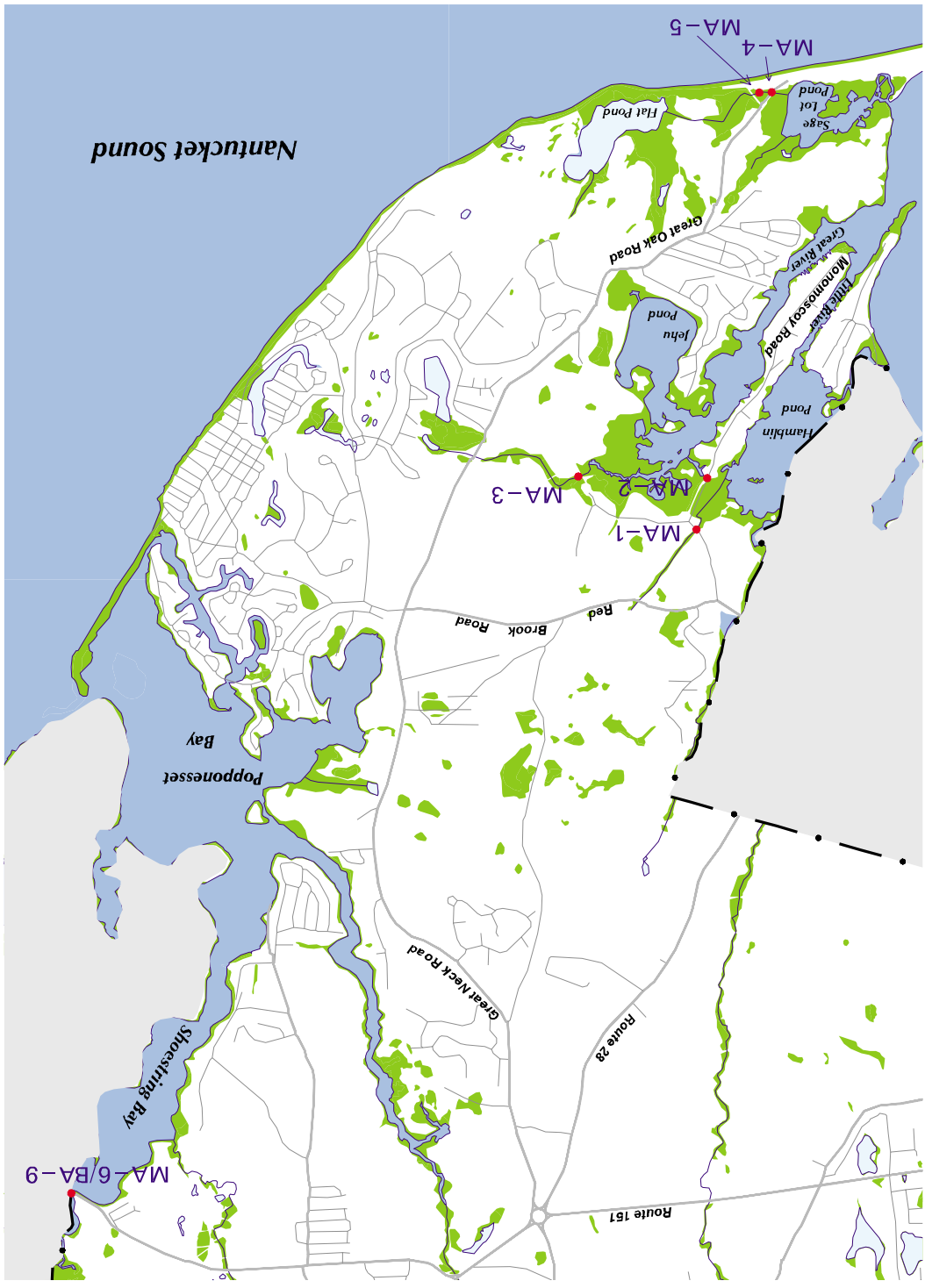
This project was funded, in part, by the Executive Office of Environmental Affairs, Massachusetts Wetlands Restoration Program.

MA-1 Restriction Site

-  Wetland
-  Ocean
-  Pond or Lake
-  Local Road
-  Major Route
-  Stream
-  Railroad



2001



Town of Mashpee - Site Characteristics

Site Number	Size of upstream affected area (salt marsh acres / total affected acres)	Is the upstream affected area contiguous to protected open space (ownership)?	Does this tidal channel support a shellfish resource area?	Is the channel or system part of an anadromous fish pathway?	Does the culvert/pipe support an engineered flood control structure?	Is the affected area or site within an ACEC boundary?	Does the affected area include Priority Habitat of Rare Species (PH) or Estimated Habitat of Rare Wildlife (WH)?	Are there any restricted sites upstream of this site (site number)?	Ownership of the site (public vs. private)
MA-1	0.0 / 0.73	Yes (Municipal, State)	YES	NO	NO	YES	YES (PH, WH)	NO	PUBLIC
MA-2	Unable to determined	NO	YES	NO	NO	NO	NO	NO	PUBLIC
MA-3	2.26 / 4.38	YES (Municipal, State)	NO	NO	NO	YES	NO	NO	PUBLIC
MA-4	14.68 / 16.43	YES (Municipal, State)	YES	YES	NO	YES	YES (PH, WH)	YES (MA-5)	PUBLIC
MA-5	12.62 / 14.37	Yes (Municipal)	YES	YES	NO	YES	YES (PH, WH)	NO	PUBLIC
MA-6/ BA-9	11.07 / 29.77	No	YES	YES	NO	NO	NO	NO	PUBLIC

MASHPEE

Monomoscoy Road restriction of Dutchmans Creek

Site MA-1

Site Description

Dutchmans Creek crosses under Monomoscoy Road approximately 400 feet north of its mouth at Hamblin Pond. The creek passes under the road via a 1-foot diameter concrete and metal pipe. The pipe is in fair condition; it is not broken but is partially clogged by muck and debris. There are no other tidal restrictions along Dutchmans Creek. The seaward opening of the pipe is set low and is submerged at mean high tide. Hamblin Pond, the receiving water body for Dutchmans Creek, does support shellfish resources and hosts several State shellfish grants, however the northern half of the pond is closed to shellfishing.

General Information

The seaward and upstream channels measure 2 and 3 feet respectively. Because both are smaller than the 1-foot opening, natural flow is restricted. Salt marsh extends to the seaward opening. *Phragmites* and cattails are present in the seaward marsh. Scour and erosion are minimal in the channels. The upstream affected area contains only shrub swamp.

- Restriction width – 1 foot
- Restriction length – 45 feet
- Upstream salt marsh – 0 acres

Comments

The upstream affected area is located on the edge of the Mashpee National Wildlife Refuge. There is very little development adjacent to it (approximately 3 single-family house lots). Tidal waters reaching Hamblin Pond must first pass through Waquoit Bay and then enter the pond through two channels – the Little River and a man-made channel. Neither is a restricted site considered in this Atlas. Because this site lies far inland the velocity of the approaching and receding tides is low, likely accounting for the minimal scour and erosion observed at this site.



Upstream Affected Area (acres): SS – 0.73.



Phragmites and shrubs are taking hold in the salt marsh near the seaward opening of the pipe.



View into the 0.73 acres of shrub swamp located upstream of site MA-1.

MASHPEE

Monomoscoy Road restriction of channel between Hamblin Pond and the Great River

Site MA-2

Site Description

Just before Monomoscoy Road enters the private development on Monomoscoy Island it passes through an extensive area of salt marsh forming the boundary between Hamblin Pond to the west and the Great River to the east. A small channel passes under the road via a 2-foot diameter concrete pipe. The pipe is structurally in good condition but is partially clogged by muck and debris. This site was intentionally excluded from the boundary of the Waquoit Bay Area of Critical Environmental Concern, which was drawn to exclude Monomoscoy Island and part of its access road. The southern portion of Hamblin Pond does support shellfish resources and hosts several State shellfish grants, however the northern half of the pond (near this site) is closed to shellfishing.

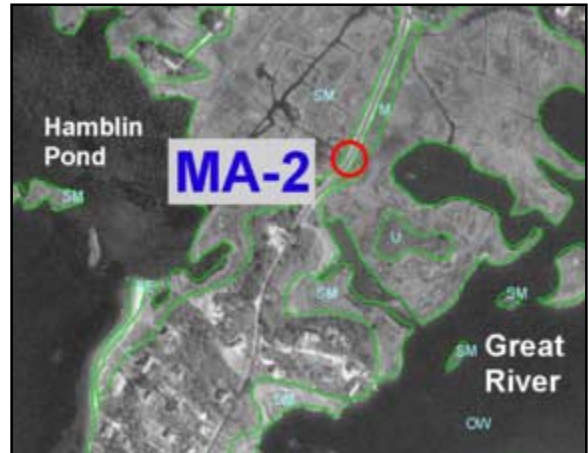
General Information

Local officials have observed incoming tidal flow entering this pipe from both the east and the west depending upon the prevailing winds. Therefore, seaward and upstream “sides” are not appropriate labels for this location. The channel extending to the road from Hamblin Pond is approximately 2 feet wide. The channel extending to the road from the Great River is approximately 4 feet wide. There is minor bank erosion and small scour pools near both ends of the pipe. *Phragmites* grows along the eastern side of the road.

- Restriction width – 2 feet
- Restriction length – 35 feet
- Upstream salt marsh – unable to determine

Comments

The town replaced this pipe in 1999, and therefore no work is likely to be undertaken at this site in the near future. No hydrologic study was conducted to determine the appropriate size for this pipe; rather the reconstruction replicated the previously approved engineering specifications from the 1950's. This was done in order to expedite replacement of the collapsed pipe. To redesign and resize the pipe would have involved extensive permitting, an endeavor that the town was not willing to undertake at that time.



Upstream Affected Area (acres): SM – unable to determine.



Phragmites grows in the marsh east of the road near this 4-foot channel connecting to the Great River.



Visual indicators of a restriction seen near the western end of the pipe include this small scour pool and pooling/ponding water.

MASHPEE

Great Hay Road restriction of Abigail's Brook

Site MA-3

Site Description

Abigail's Brook passes under Great Hay Road via a 30-inch diameter corrugated metal pipe. This crossing is near the mouth of the brook at the upper reaches of the Great River. Great Hay Road is a limited access, narrow dirt road located within the Mashpee National Wildlife Refuge. When observed during mid, incoming tide the seaward pipe opening was nearly submerged. The pipe itself was in good condition and was not clogged. Abigail's Brook does not support an anadromous fish pathway, nor does it support any shellfish resources.

General Information

The 10-foot wide seaward channel flows through salt marsh in the upper reaches of the Great River to this culvert. *Phragmites* and cattails are scattered in this marsh area. Adjacent to the seaward pipe opening, a significant scouring basin and severe bank erosion scar the channel. Vegetation has begun to die back at its edges. The upstream channel is only 5 feet wide, half the seaward width. It also exhibits significant bank scouring and erosion. *Phragmites* growth is significant in the upstream affected area and shrubs are visibly taking hold.

- Restriction width – 30 inches
- Restriction length – 17 feet
- Upstream salt marsh – 2.26 acres

Comments

Vehicle access to this site was limited due to the poor condition of the narrow dirt road. The area upstream of the site is part of the Mashpee National Wildlife Refuge, a cooperative project between the Town Conservation Commission and the State of Massachusetts. Most of the land area of the Refuge is excluded from the Waquoit Bay Area of Critical Environmental Concern (ACEC), however Abigail's Brook and this restriction site are within the ACEC boundary.



Upstream Affected Area (acres): SM – 2.26; SS – 0.91; M – 1.21.



Seen during mid, incoming tide water flows over the channel banks and pools at the roadway berm; the top of the pipe is barely visible under a clump of grass (opening circled in photo above).



Upstream of the Great Hay Road restriction the land is part of the Mashpee National Wildlife Refuge. *Phragmites* growth is extensive toward the rear of this affected area.

MASHPEE

Great Oak Road restriction of channel from Sage Lot Pond to Flat Pond

Site MA- 4

Site Description

Great Oak Road provides access to South Cape Beach State- and Town-owned parklands. Near its southern terminus the road forks to two parking areas, each fork restricting the tidal creek that connects Sage Lot Pond with Flat Pond. Site MA-4 is on the western fork, lying seaward of site MA-5 and site MA-d (see Appendix B). At this site the roadway is a one lane, dirt road. The restriction is a 4-foot diameter concrete pipe that is in fair condition – although the pipe has fractured and split on each side of the road, flow is not impeded by these breaks. This channel serves as an anadromous fish pathway between Waquoit Bay and Flat Pond specifically used by white perch. Eelgrass grows in Sage Lot Pond just seaward of MA-4. Shellfish resources are abundant in Waquoit Bay near the mouth of this channel, although subject to seasonal closures. Sage Lot Pond also supports shellfish resources.

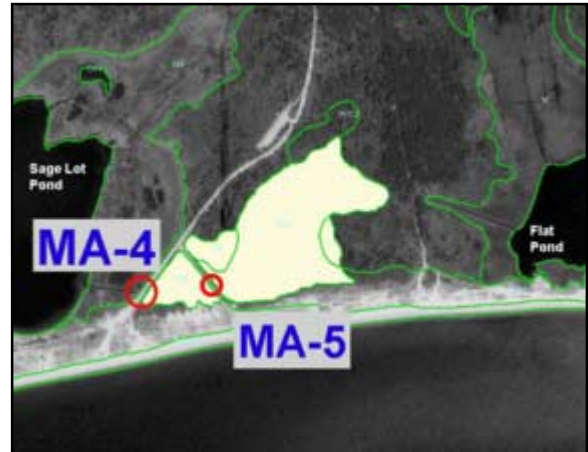
General Information

The seaward and upstream channels are approximately 10 feet wide. Stream flow is partially dammed by the roadway berm as water tries to flow through the 4-foot diameter pipe. The upstream channel flows approximately one-eighth of a mile before reaching upstream site MA-5, where flow is again restricted. Minor scour basins are present on either side of the pipe. *Phragmites* growth in the vicinity of this site is minor.

- Restriction width – 4 feet
- Restriction length – 45 feet
- Upstream salt marsh – 14.68 acres

Comments

While this restriction is not egregious, the channel width-to-culvert opening ratio does not allow free flow and does not resemble natural stream conditions. While the pipe is broken in such a way that the severed segments remain in place, there is cause for future concern. Should these segments shift or roll from their *in situ* break they could contribute further to the restriction. The Massachusetts Wetlands Restoration Program is currently studying this site for potential future restoration.



Upstream Affected Area (acres): SM – 14.68; SS – 1.75.



The seaward opening is seen nearly submerged during this mid, incoming tide. Large boulders have been placed by the culvert to help prevent erosion of the dirt berm.



Looking into the upstream channel scour pools are visible, as is the clean break in the exposed pipe.

MASHPEE

Great Oak Road restriction of channel from Sage Lot Pond to Flat Pond Site MA- 5

Site Description

Great Oak Road provides access to South Cape Beach State- and Town-owned parklands. Near its southern terminus the road forks to two parking areas, each fork restricting the tidal creek that connects Sage Lot Pond with Flat Pond. Site MA-5 is on the eastern fork, lying upstream of site MA-4. Flow passes under the paved road via a 4-foot diameter concrete pipe that is in good condition – the pipe is neither broken nor clogged. This channel serves as an anadromous fish pathway between Waquoit Bay and Flat Pond specifically used by white perch. Shellfish resources are abundant in Waquoit Bay near the mouth of this channel, although subject to seasonal closures. Sage Lot Pond also supports shellfish resources.

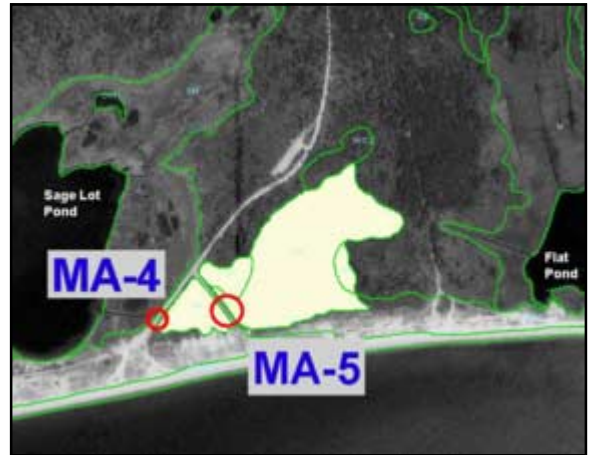
General Information

The seaward channel varies between 5 and 10 feet and small scour pools and minor bank erosion are visible near the pipe opening. The seaward opening becomes submerged at mean high tide. The upstream channel is approximately 5 feet wide. The storm water drainage from a paved parking lot adjacent to this site appears to be directed straight into this channel. *Phragmites* growth is minimal in the upstream affected area.

- Restriction width – 4 feet
- Restriction length – 32 feet
- Upstream salt marsh – 12.62 acres

Comments

This unnamed tidal channel continues east from this site into Flat Pond by first crossing site MA-d (see Appendix B). The three infrastructure crossings along this unnamed channel must be considered jointly in any remediation discussions. The Massachusetts Wetlands Restoration Program is currently studying this site for potential future restoration.



Upstream Affected Area (acres): SM –12.62; SS – 1.75.



Pavement extends out over this seaward pipe directing roadway runoff into the tidal channel and likely adding to the erosion seen occurring around this pipe.



Phragmites and shrubs are seen encroaching into the marsh near the upstream pipe opening.

MASHPEE/BARNSTABLE

Quinaquissett Road/School Street restriction of the Santuit River

Site MA-6/BA-9

Site Description

The Santuit River forms the town line between Mashpee and Barnstable. Commonly known as the School Street bridge, this site links Quinaquissett Road in Mashpee with School Street in Cotuit, Barnstable. The 45-foot long by 25-foot wide bridge spans the river at its mouth on Shoestring Bay. The upstream banks of the Santuit are largely undeveloped. A narrow strip of salt marsh lines the eastern bank, becoming a larger upstream marsh area comprised of salt marsh, shallow marsh, and shrub swamp. The Santuit River supports an annual her-ring run. Shellfish are present in Shoestring Bay near this bridge, though shellfishing is prohibited.

General Information

The seaward side of the bridge parallels the northern extent of Shoestring Bay, therefore a channel measurement is not relevant. The Santuit River begins on the upstream side of the bridge and is approximately 100 to 150 feet wide – clearly wider than the 45-foot bridge span. Long bridge abutments were built out from the natural banks to decrease the need for construction of a wider span – obvious contributors to the tidal restriction. Minor scour is visible in the river and bay near the opening. Cattails (seaward and upstream) and *Phragmites* (seaward only) are present along the riverbanks.

- Restriction width – 45 feet
- Restriction length – 25 feet
- Upstream salt marsh – 11.07 acres

Comments

Reconstruction of the bridge began in the fall of 2000. The project is intended to widen the bridge and increase its height above the Santuit River. Unfortunately, reconstruction did not include increasing the width of the span to allow increased tidal flow.



Upstream Affected Area (acres): SM – 11.07; SS – 1.19; M – 17.51.



Construction underway on the Santuit River bridge to widen and raise the roadway; unfortunately plans do not include alleviating the restriction.



Upstream of the bridge salt marsh lines the eastern riverbank while development is visible on the western bank.