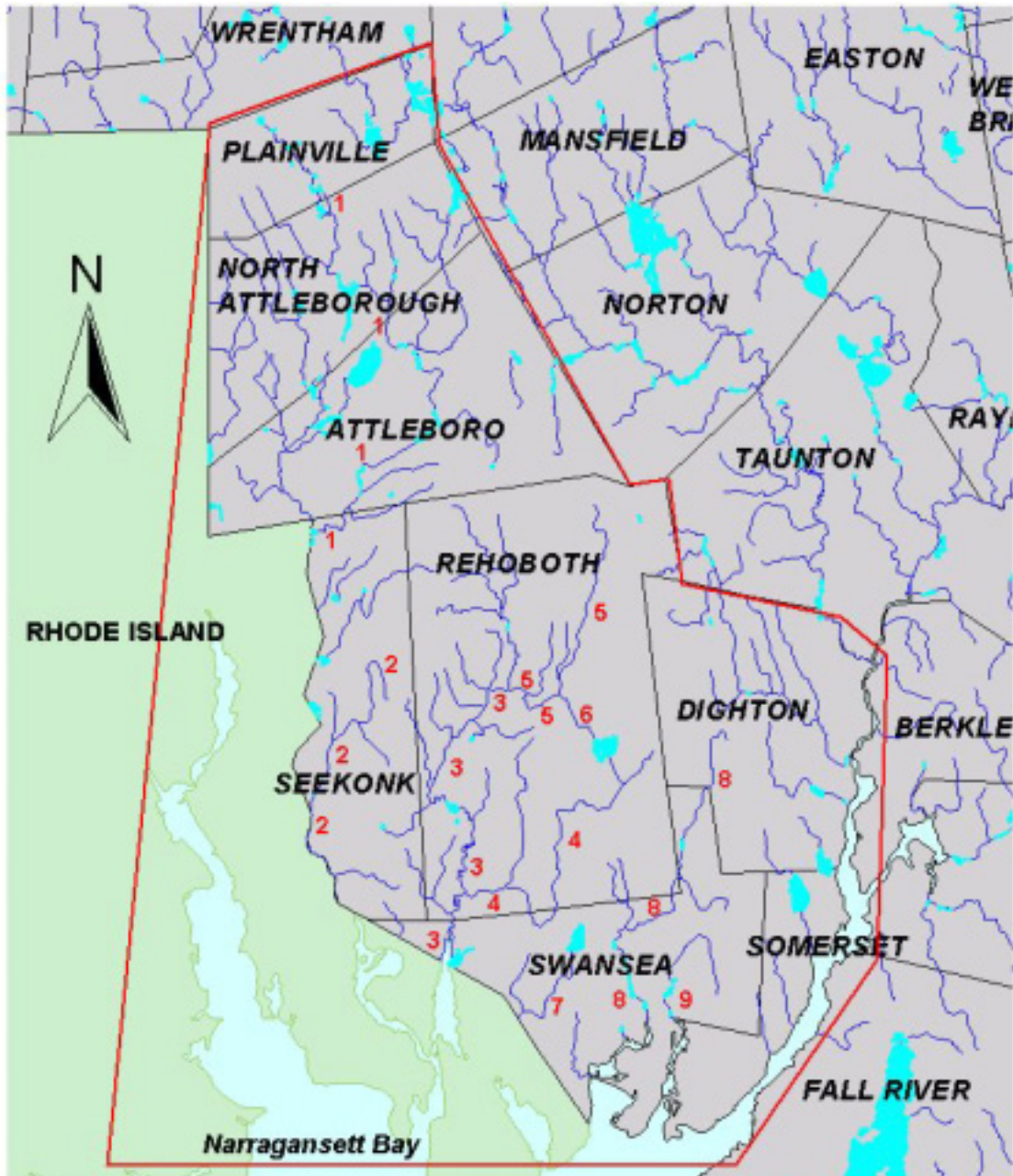


NARRAGANSETT BAY DRAINAGE



Area outlined in red represents the Massachusetts towns included in this report as part of the Narragansett Bay drainage area.

Stream Names:

- | | | |
|-------------------|------------------------------|---------------------|
| 1 - Tenmile River | 4 - Rocky Run | 7 - Kickamuit River |
| 2 - Runnins River | 5 - East Branch Palmer River | 8 - Cole River |
| 3 - Palmer River | 6 - Bad Luck Brook | 9 - Lee River |

Narragansett Bay Drainage

Ten Mile River

East Providence, RI; Seekonk, Attleborough, North Attleborough, Plainville, MA

Stream Length (mi)	Stream Order	pH	Anadromous Species Present
22.1	Third	6.9	River herring, American shad

Obstruction # 1

Omega Pond Dam

East Providence, RI

River Mile	Type	Material	Spillway W (ft)	Spillway H (ft)	Impoundment Acreage	Year Built	Owner	GPS
0.0	Dam, stepped	Granite	115	10.9	30.2	-	-	41° 50' 19.524" N 71° 22' 07.072" W



Omega Pond Dam

Fishway

Proposed

Design	Material	Length (ft)	Inside W (ft)	Outside W (ft)	# of Baffles	Baffle H (ft)	Notch W (ft)	Pool L (ft)	Condition/Function
Denil	Concrete with wooden baffles	142.5	4.0	6.0	42	4.5	-	-	Pre-construction

Obstruction # 2

John Hunt House Dam

East Providence, RI

River Mile	Type	Material	Spillway W (ft)	Spillway H (ft)	Impoundment Acreage	Year Built	Owner	GPS
2.1	Dam, semicircular	Stone	83	13.0	4.7	-	-	41° 49' 40.884" N 71° 20' 44.173" W



John Hunt House Dam

Fishway

Proposed

Design	Material	Length (ft)	Inside W (ft)	Outside W (ft)	# of Baffles	Baffle H (ft)	Notch W (ft)	Pool L (ft)	Condition/Function
Denil	Concrete with wooden baffles	137.5	4.0	6.0	29	Varied (5.0-7.0)	-	-	Pre-construction

Obstruction # 3

James Turner Reservoir Dam

East Providence, RI

River Mile	Type	Material	Spillway W (ft)	Spillway H (ft)	Impoundment Acreage	Year Built	Owner	GPS
2.5	Dam	Concrete spillway, stone and earthen berm	201	14.7	115.0	-	-	41° 49' 58.904" N 71° 20' 29.272" W



James Turner Reservoir Dam

Fishway Proposed

Design	Material	Length (ft)	Inside W (ft)	Outside W (ft)	# of Baffles	Baffle H (ft)	Notch W (ft)	Pool L (ft)	Condition/Function
Denil	Concrete with wood baffles	165.8	4.0	6.0	45	5.0	-	-	Pre-construction

Obstruction # 4

Ten Mile River State Park Dam

Pawtucket, RI

River Mile	Type	Material	Spillway W (ft)	Spillway H (ft)	Impoundment Acreage	Year Built	Owner	GPS
5.6	Dam, semicircular	Concrete and stone	129	4.2	21.7	-	-	41° 52' 28.485" N 71° 20' 26.173" W



Ten Mile River State Park Dam

Fishway None

Remarks:

The Ten Mile River watershed encompasses 54 square miles of drainage area, 49 of which are within Massachusetts. Several large impoundments along the Rhode Island/Massachusetts border provide excellent potential habitat for river herring. Fishways are currently planned by Rhode Island's Department of Environmental Management for the first three dams on the system. These ladders would provide access to more than 300 acres of habitat. A fourth fishway, at Tenmile River State Park dam, would add another 21 acres to that amount although the benefit of this additional area would be unsure given the quantity of habitat downstream.

Runnins River Seekonk

Stream Length (mi)	Stream Order	pH	Anadromous Species Present
7.4	First	6.3	River herring, American shad

Obstruction # 1

Mobil Dam

East Providence

River Mile	Type	Material	Spillway W (ft)	Spillway H (ft)	Impoundment Acreage	Year Built	Owner	GPS
0.7	Dam, notched	Concrete and steel	35	8.4	4.9	-	Mobil Corporation	41° 47' 00.145" N 71° 19' 48.546" W



Dam on Mobil Corporation property

Fishway None

Obstruction # 2

Burr Pond Dam

Seekonk

River Mile	Type	Material	Spillway W (ft)	Spillway H (ft)	Impoundment Acreage	Year Built	Owner	GPS
3.5	Dam	Stone with concrete cap	31.0	12.0	4.6	1972	Town of Seekonk	41° 48' 48.681" N 71° 20' 17.585" W



Burr Pond Dam

Fishway None

Obstruction # 3

Old Grist Mill Pond

Seekonk

River Mile	Type	Material	Spillway W (ft)	Spillway H (ft)	Impoundment Acreage	Year Built	Owner	GPS
3.8	Dam	Stone	30	10.0	4.6	1952	Private	41° 49' 00.390" N 71° 20' 08.558" W



Old Grist Mill Pond Dam

Fishway None

Remarks:

The Runnins River has three obstructions to passage along its relatively short course from wetlands in Seekonk to the Barrington River estuary. The first obstruction, the Mobil Dam, is on the Massachusetts/Rhode Island border and situated at the upper end of the Barrington River. This dam is within the influence of tidal fluctuations and is passable at higher tidal stages. A notch in the dam crest is currently blocked with a metal plate. Replacing this with wooden stop logs or a smaller plate to lower the notch invert would allow passage under a greater range of tailwater elevations.

The second dam, at Burr Pond is not passable and, due to its height, would require a costly fishway installation not justified by the potential spawning area available in the upstream impoundment. A dam at the Old Grist Mill Pond, only a few hundred yards upstream, also obstructs fish passage. A fishway at this location would also be difficult to install given the structures in the vicinity of the dam.

Although river herring and possibly shad are currently utilizing the lower sections of the stream, further development is not practical due to difficulties in providing passage at the upper dams. The owner of the first dam should be approached with suggestions for altering the crest notch configuration.

Palmer River

Warren, RI; Swansea, Rehoboth, MA

Stream Length (mi)	Stream Order	pH	Anadromous Species Present
17.3	Third	6.6	River herring, American shad, smelt, white perch, tomcod, trout, lamprey

Obstruction # 1

Shad Factory Pond Dam

Rehoboth

River Mile	Type	Material	Spillway W (ft)	Spillway H (ft)	Impoundment Acreage	Year Built	Owner	GPS
7.7	Dam	Concrete	100	8.0	38.4	1912	Bristol County Water Supply	41° 48' 32.204" N 71° 16' 43.526" W



Shad Factory Pond Dam

Fishway Being replaced

Design	Material	Length (ft)	Inside W (ft)	Outside W (ft)	# of Baffles	Baffle H (ft)	Notch W (ft)	Pool L (ft)	Condition/Function
Weir-pool	Concrete	321.0	3.0	5.0	19	1.0	-	16.0	Poor Inefficient passage



Lower Section of Ladder at Shad Factory Pond



Fishway exit at Shad Factory Pond

Obstruction # 2

Perryville Dam

Rehoboth

River Mile	Type	Material	Spillway W (ft)	Spillway H (ft)	Impoundment Acreage	Year Built	Owner	GPS
14.2	Dam	Stone	30.0	8.0	3.3	1987	Town of Rehoboth	41° 51' 48.723" N 71° 15' 30.824" W



Perryville Dam

Fishway None

Remarks:

The Palmer River flows from its source in the wetlands of northern Rehoboth to its confluence with the Barrington River. The river supports one of the few small stream American shad fisheries in the Commonwealth and the only one south of Cape Cod. In addition, an increasingly important river herring fishery exists here as do rainbow smelt and white perch populations. While herring utilize the fishway to spawn above the Shad Factory Pond dam, the other species successfully spawn in the section of river below the dam. The fishway at Shad Factory Pond has been known to pass small numbers of shad as well as river herring but its poor condition and collapsing walls may soon make it completely impassable. Designs for a similar weir-pool ladder have been prepared and the ladder will be replaced if funding can be acquired. Modifications to the dam in the form of a notch on the south side of the crest or stop logs across the north side would direct more flow to the fishway side of the tailwater pool, resulting in greater attraction to the fishway entrance. An obstructing deposit of sediments near the fishway entrance has recently been removed. The channel to the ladder should continue to be maintained and kept free of blockages to passage.

While little significant alewife habitat exists upstream of Shad Factory Pond, the upper river does appear to provide some potential as American shad spawning area. The above recommendations would also improve shad passage into this section of the river. Once a new fishway is installed, monitoring for successful shad passage would be of value.

There is little value in providing fish passage at the Perryville Dam due to the lack of significant upstream habitat.

Rocky Run

Swansea, Rehoboth

Stream Length (mi)	Stream Order	pH	Anadromous Species Present
8.6	Second	6.6	River herring, rainbow smelt

No Obstructions**Remarks:**

Rocky Run is a tributary to the lower Palmer River. While river herring and rainbow smelt have been observed in the stream, no significant spawning area exists for either species. Rocky Run has limited potential for anadromous fish development.

East Branch Palmer River Rehoboth

Stream Length (mi)	Stream Order	pH	Anadromous Species Present
7.1	Second	5.9	None known

Obstruction # 1

Village Dam

Rehoboth

River Mile	Type	Material	Spillway W (ft)	Spillway H (ft)	Impoundment Acreage	Year Built	Owner	GPS
0.9	Dam	Stone with concrete cap and wooden boards	4.0	6.0	0.7	-	Town of Rehoboth	41° 50' 28.235" N 71° 15' 02.665" W



Village Dam

Fishway None

Remarks:

The East Branch of the Palmer River is obstructed by Village Dam at Bay State Road. The dam may be passable under some flow conditions due to a bypass channel on its east side. There is little spawning habitat available above the dam, however, and further development is a low priority.

Bad Luck Brook

Rehoboth

Stream Length (mi)	Stream Order	pH	Anadromous Species Present
2.2	First	5.5	None known

Obstruction # 1

Bad Luck Brook Dam

Rehoboth

River Mile	Type	Material	Spillway W (ft)	Spillway H (ft)	Impoundment Acreage	Year Built	Owner	GPS
0.4	Dam	Concrete with wooden boards	3.0	5.0	0.6	-	Private	41° 50' 28.784" N 71° 14' 02.153" W



Bad Luck Brook Dam

Fishway None

Obstruction # 2

Upper Warren Reservoir Dam

Rehoboth

River Mile	Type	Material	Spillway W (ft)	Spillway H (ft)	Impoundment Acreage	Year Built	Owner	GPS
1.7	Dam	Concrete with aluminum stop logs	55.7	7.9	137.6	1912	Anawan Club	41° 49' 47.977" N 71° 13' 25.734" W



Upper Warren Reservoir Dam

Fishway None

Remarks:

This stream flows from 138 acre Upper Warren Reservoir to the East Branch of the Palmer River. The reservoir is owned by the Anawan Club and leased to the Bristol County Water Authority for an auxiliary water supply. The need to improve passage at the Village Dam, install fishways at a private dam on County Street (Bad Luck Brook Dam) and at the reservoir dam in addition to insuring outflow from the reservoir during migration periods make development of this system difficult and costly despite the substantial potential spawning area.

Kickamuit River

Warren, RI; Swansea, MA

Stream Length (mi)	Stream Order	pH	Anadromous Species Present
7.8	Second	6.9	River herring

Obstruction # 1

Bristol County Water Supply Dam Warren, RI

River Mile	Type	Material	Spillway W (ft)	Spillway H (ft)	Impoundment Acreage	Year Built	Owner	GPS
2.4	Dam	Concrete and steel	55	5.3	25.6	-	-	41° 43' 45.881" N 71° 15' 47.516" W



Bristol County Water Supply Dam

Fishway None

Obstruction # 2

Unnamed Bristol County Water Supply Dam Warren, RI

River Mile	Type	Material	Spillway W (ft)	Spillway H (ft)	Impoundment Acreage	Year Built	Owner	GPS
3.3	Clapper valve	Concrete culvert with metal gate	4.0	4.0	14.4	-	Bristol Co. (RI) Water Authority	41° 44' 23.882" N 71° 15' 33.955" W



Unnamed Bristol County Water Supply Dam

Fishway None

Obstruction # 3

Warren Reservoir Dam

Swansea

River Mile	Type	Material	Spillway W (ft)	Spillway H (ft)	Impoundment Acreage	Year Built	Owner	GPS
7.0	Berm	Earthen	123.0	12.0	84.0	1920	Bristol County Water Co.	41° 45' 55.518" N 71° 13' 51.680" W



Warren Reservoir Dam

Fishway None

Remarks:

The Kickamuit arises in Warren Reservoir and flows southerly to Bristol Narrows in Rhode Island. The first obstruction, a small dam owned by the Bristol County Water Authority, is located at the head of the tide in Warren, and river herring have been reported to the base of this dam. A fishway is planned at this location and a conceptual design has been developed.

A second dam, also owned by BCWA, is located at the upper reaches of the first impoundment. A 48 inch diameter culvert is equipped with a clapper valve and may be impassable.

Warren Reservoir, the only spawning area in the Massachusetts portion of the watershed, is used as an auxiliary water supply by BCWA. No outflow other than seepage through the dam was observed at the time of the survey suggesting that potential for development of a river herring population is severely limited.

Cole River

Swansea, Dighton

Stream Length (mi)	Stream Order	pH	Anadromous Species Present
9.9	Second	7.1	River herring, smelt, white perch

Obstruction # 1

Route 6 Dam

Swansea

River Mile	Type	Material	Spillway W (ft)	Spillway H (ft)	Impoundment Acreage	Year Built	Owner	GPS
2.5	Dam	Concrete with wooden boards	124	8.2	6.2	1925	Montaup Electric Co.	41° 44' 49.723" N 71° 12' 10.208" W



Cole Fishway Dam (with ladder along left side of spillway)

Fishway Present

Design	Material	Length (ft)	Inside W (ft)	Outside W (ft)	# of Baffles	Baffle H (ft)	Notch W (ft)	Pool L (ft)	Condition/Function
Notched weir-pool	Concrete	63.8	3.0	4.3	6	Varied (2.0-4.1)	1.5	7.0	Fair Inefficient passage



Cole River Fishway

Obstruction # 2

Milford Pond Dam

Swansea

River Mile	Type	Material	Spillway W (ft)	Spillway H (ft)	Impoundment Acreage	Year Built	Owner	GPS
3.7	Dam, semicircular	Granite block with puddingstone base	114.0	12.0	31.6	1900	Montaup Electric Company	41° 45' 04.317" N 71° 12' 23.110" W



Milford Pond Dam



Spillway of Milford Pond Dam, seen from below

Fishway None

Remarks:

Cole River supports a small river herring population and some smelt spawning has been observed below the first obstruction. Although equipped with a notched weir-pool fishway, fish passage at this location is inefficient. Deposited material and rooted vegetation in the tailwater area have eliminated any defined channel and most spillway flow is directed to the side of the stream opposite the ladder. With the resulting lack of attraction to the entrance, few fish actually ascend the ladder. In addition, the ladder design is inefficient and compounds the problem.

Montaup Electric Company, the owner of the dam and ladder, has been advised on methods to improve effectiveness of the fishway. Removal of deposited materials below the ladder entrance and redirection of crest flow to the fishway side by adding stoplogs at the opposite end of the dam would increase attraction to the ladder. Also, replacement of the fishway with a more efficient design or lining the existing ladder with aluminum steeppass sections would greatly improve its function.

The second dam on this stream creates a relative large impoundment, which could significantly increase available habitat if it was made accessible. Once the problems at the lower dam have been corrected, consideration should be given to construction of passage facilities at the Milford Pond dam.

Lee River

Swansea

Stream Length (mi)	Stream Order	pH	Anadromous Species Present
5.3	Second	7.1	River herring

Obstruction # 1

Swan Finishing Dam

Swansea

River Mile	Type	Material	Spillway W (ft)	Spillway H (ft)	Impoundment Acreage	Year Built	Owner	GPS
3.0	Dam control structure	Concrete with wood and steel gate	20.0	7.3	5.5	1900	Montaup Electric Co.	41° 44' 43.847" N 71° 11' 32.530" W



Swan Finishing Dam

Fishway None

Obstruction # 2

Lewin Brook Pond Dam

Swansea

River Mile	Type	Material	Spillway W (ft)	Spillway H (ft)	Impoundment Acreage	Year Built	Owner	GPS
3.4	Dam	Stone and concrete	55.0	10.0	11.6	1900	Montaup Electric Co.	41° 44' 58.900" N 71° 11' 43.253" W



Lewin Brook Pond Dam

Fishway None

Remarks:

Two dams, both owned by Montaup Electric Company, obstruct fish passage on this stream. A combined potential habitat of 16 impounded acres does not justify the cost of providing passage over these relatively high dams. Therefore, restoration in this system is given a low priority.

Narragansett Bay Drainage Recommendations:

1. The focus of work in the Narragansett Bay watersheds should be on improving and maintaining the river herring and shad runs in the Palmer River. A source of funding for constructing and maintaining a new fishway at Shad Factory Pond must be found and the ladder then built. The owner of the dam, Bristol County Water Authority, should be encouraged to approve the suggested dam modifications, which will provide better attraction to the fishway entrance. The Town of Rehoboth should continue to develop and enforce, with the assistance of the state agencies, its local regulations for the river herring fishery.
2. Given the amount of potential habitat available on the Ten Mile River system, DMF supports development of fish passage facilities to James Turner Reservoir and continued stocking of river herring broodstock in that impoundment in order to establish a population imprinted on the system prior to fishway completion. It would also be of benefit for Massachusetts and Rhode Island to develop an interstate management plan for this population since it is likely that fishery will take place in Rhode Island while the bulk of the spawning habitat is in Massachusetts.
3. Efforts to improve fish passage at the first dam on the Coles River should continue. A channel from the main stream to the ladder entrance should be established and the suggestions to modify the dam crest to direct flow the fishway side of the spillway should be followed. Consideration should be given to upgrading the existing ladder through step modification or lining the existing weir-pool with an aluminum steep pass fishway.