

General Recommendations

1. With a small number of exceptions, the important river herring spawning/nursery habitats on coastal streams have been made accessible through the construction of fishways. Many of these structures have become deteriorated and are often of obsolete design. The emphasis of future work should be on the replacement of these fish ladders in order to preserve or augment the populations they serve rather than to create new populations by accessing minor habitats.
2. Most river herring fisheries are under local control through the authority granted by Section 94 of Chapter 130. Many towns having this control, however, are unaware that approval of the Director of the Division of Marine Fisheries is required by the statute and often change their regulations without consulting DMF. In order to insure biologically sound and legally valid local management, the Director should inform cities and towns of this condition and request them to submit current regulations and subsequent changes for approval.
3. River herring passage issues have dealt primarily with upstream migration of adults. Downstream passage of adults and more importantly juveniles has been largely ignored and, in some systems, may be an important limiting factor in population productivity. Future work should take this into consideration and place appropriate emphasis on this phase of the life cycle and the problems which are associated with it.
4. Large numbers of juvenile herring are killed each year due to cranberry bog operations. A simple, inexpensive screening system has been developed which will prevent most of these losses. Despite publicizing the availability of this system through industry media, growers have been reluctant to utilize it. Appropriate screening of water withdrawal intakes to prevent stranding, mutilation, entrainment or impingement of young herring should be made a condition of any state permits required for the agricultural operation.
5. Shoaling of pond outlets and encroachment of vegetation has seriously impacted river herring populations in some systems. Deposition of sandy material at the outlets in combination with low late summer/fall water levels has prevented the escapement of large segments of year classes and caused them to be lost to the population either through winter kill or greatly reduced growth rates. Outlet structures which would retain depth, reduce deposition and provide for easier maintenance should be developed and installed at stream outlets where appropriate.
6. The emphasis of anadromous fish management in coastal streams has been on river herring, American shad and rainbow smelt. Consequently little is known about white perch and tomcod populations in the Commonwealth. In the future more attention should be directed toward these species and management strategies which would protect them should be developed.
7. Several large coastal streams, notably the Taunton, Charles and Neponset Rivers, appear to have excellent potential for development of American shad populations. Many years of stocking with adult fish and eggs have yielded negligible results, however. Other states have had success through hatchery egg taking and rearing to fry size before release. This technique should be developed in Massachusetts and applied to the above streams.
8. Removal of dams should be considered as an alternative to fishway construction where appropriate.

Alphabetical Index of Streams

Stream Name	Cape Cod Town(s)	Page
Andrews River	Harwich	77
Bass River/ Muddy Creek/ Weir Creek/ Hamblins	Yarmouth	71
	Dennis	
Bumps River	Barnstable	54
Cedar Lake Ditch	Falmouth	13
Childs River	Falmouth	28
	Mashpee	
Cobbs Pond	Brewster	95
Coonamessett River	Falmouth	21
Flax Pond	Falmouth	24
Fresh Pond Tributary	Dennis	72
Frost Fish Creek	Chatham	79
Halls Creek	Barnstable	58
Herring Brook	Falmouth	16
Herring Brook	Eastham	90
Herring River	Eastham	91
Herring River	Wellfleet	89
Herring River	Harwich	74
Lake Elizabeth/ Red Lily Pond	Barnstable	53
Little Pond	Falmouth	20
Little River	Barnstable	46
Marstons Mills River	Barnstable	48
Mashpee River	Mashpee	37
Mill Creek	Yarmouth	60
Mill Creek	Sandwich	103
Mill Pond	Barnstable	102
Mill Pond/ Green Pond	Falmouth	26
Muddy Creek	Chatham	84
	Harwich	
Oyster Pond	Falmouth	17
Pamet River	Truro	88
Parkers River	Yarmouth	62
Pilgrim Lake	Truro	87
	Provincetown	
Pilgrim Lake	Orleans	85
Plashes Brook	Yarmouth	66
Pocasset River	Bourne	8
Quashnet River	Falmouth	30
	Mashpee	
Quivett Creek	Brewster	98
	Dennis	
Red Brook	Bourne	11
Rock Harbor Creek	Eastham	93
	Orleans	
Rushy Marsh Pond	Barnstable	45
Salt Pond	Falmouth	18
Santuit River	Mashpee	43
	Barnstable	
Sesuit Creek	Dennis	99

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Skunknett River	Barnstable	55
Stewarts Creek	Barnstable	59
Stillwater Pond/ Lovers Lake	Chatham	80
Stoney Brook	Brewster	96
Swan Pond River	Dennis	73
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Chilmark Pond	Chilmark	120
Edgartown Great Pond	Edgartown	114
Farm Pond	Oak Bluffs	109
Gay Head Herring Creek	Chilmark	121
	Aquinnah	
James Pond	West Tisbury	122
Jobs Neck Pond	Edgartown	114
Lagoon Pond	Tisbury	108
	Oak Bluffs	
Lake Tashmoo	Tisbury	123
	Vineyard Haven	
Mattakeset Herring Creek	Edgartown	113
Mill Brook	West Tisbury	117
Oyster Pond	Edgartown	115
Sengekontacket Pond	Oak Bluffs	110
	Edgartown	
Tiasquam River	Chilmark	118
	West Tisbury	
Tisbury Great Pond	Chilmark	116
	West Tisbury	
Trapps Pond	Edgartown	112
Stream Name	Nantucket Town(s)	Page
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Hither Creek and Long Pond	Nantucket	129
Hummock Pond	Nantucket	130
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Sesechacha Pond	Nantucket	127

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	Marstons Mills River	48
	Mill Pond	102
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	Santuit River	43
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	Stewarts Creek	59
	Wequaquet Lake/Long Pond	57
Bourne	Pocasset River	8
	Red Brook	11
Brewster	Cobbs Pond	95
	Quivett Creek	98
	Stoney Brook	96
Chatham	Frost Fish Creek	79
	Muddy Creek	84
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	Fresh Pond Tributary	72
	Quivett Creek	98
	Sesuit Creek	99
	Swan Pond River	73
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Eastham	Herring Brook	90
	Herring River	91
	Rock Harbor Creek	93
Falmouth	Cedar Lake Ditch	13
	Childs River	28
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	Oyster Pond	17
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Harwich	Andrews River	77
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	Muddy Creek	84
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	Mashpee River	37
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Cape Cod Towns, cont.	Stream Name	Page
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Chilmark	Black Point Pond	119
	Chilmark Pond	120
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Edgartown	Edgartown Great Pond	114
	Jobs Neck Pond	114
	Mattakeset Herring Creek	113
	Oyster Pond	115
	Sengekontacket Pond	110
	Trapps Pond	112
Oak Bluffs	Farm Pond	109
	Lagoon Pond	108
	Sengekontacket Pond	110
Tisbury	Lagoon Pond	108
	Lake Tashmoo	123
Vineyard Haven	Lake Tashmoo	123
West Tisbury	James Pond	122
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Nantucket Towns	Stream Name	Page
Nantucket	Folgers Marsh	128
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Appendix 1: Anadromous species of the Commonwealth of Massachusetts

Alewife (*Alosa pseudoharengus*)
Blueback (*Alosa aestivalis*)
American shad (*Alosa sapidissima*)
Rainbow smelt (*Osmerus mordax*)
White perch (*Morone americana*)
Atlantic salmon (*Salmo salar*)
Brook trout (aka Salter trout) (*Salvelinus fontinalis*)
Rainbow trout (aka Steelhead trout) (*Oncorhynchus mykiss*)
Brown trout (sea run) (*Salmo trutta*)
Coho salmon (*Oncorhynchus kisutch*)
Lamprey (*Petromyzon marinus*)
Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*)
Shortnose sturgeon (*Acipenser brevirostrum*)
Gizzard shad (*Dorosoma cepedianum*)
Hickory shad (*Alosa mediocris*)
Tomcod (*Microgadus tomcod*)
Striped bass (*Morone saxatilis*)

Appendix 2: State River Herring Regulations

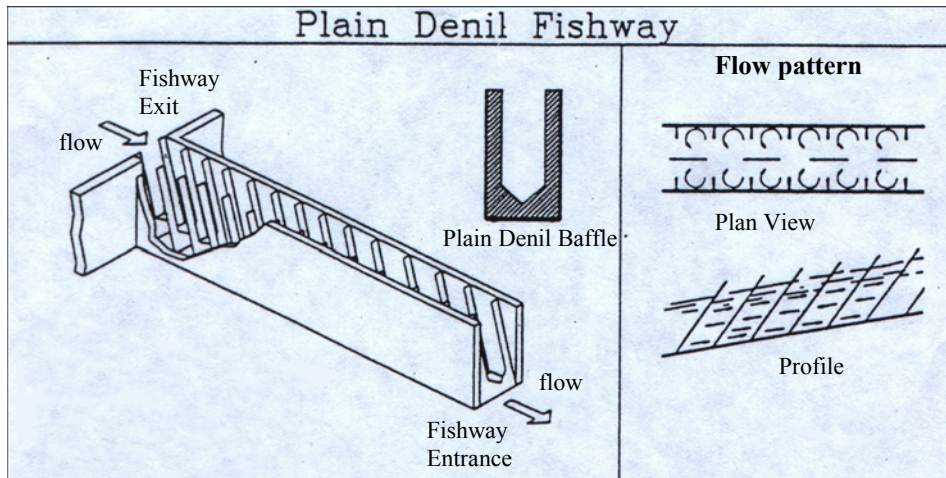
The following regulations affect the catch of river herring (alewives and bluebacks) in cities and towns without local control. These regulations establish catching days, daily catch limits, and gear restrictions and are being promulgated to establish consistent state management of river herring not under the local control of a city or town by operation of M. G. L. c. 130, s.94. These regulations are easily understood, readily enforceable, and will help assure adequate escapement of river herring for spawning.

Below is section 6.17 of 322 CMR:

6.17 River Herring

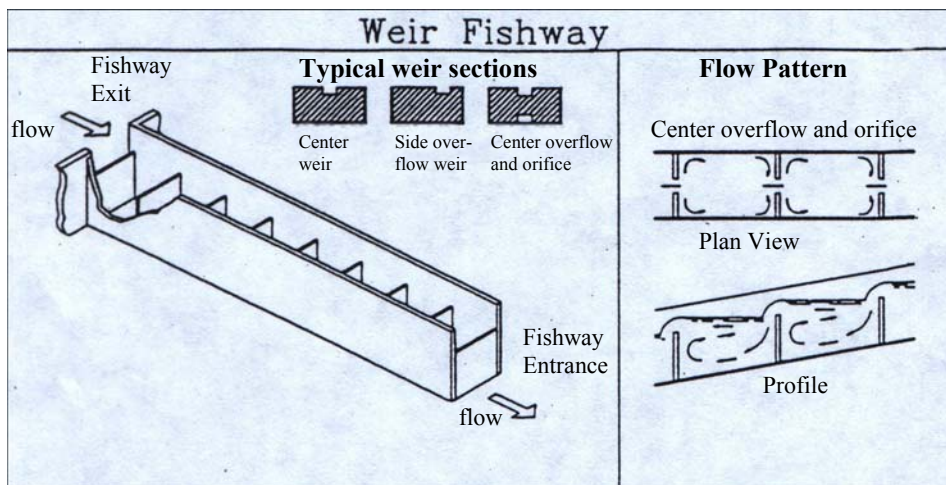
- 1) Purpose. This regulation is promulgated to establish consistent state management of river herring fisheries not under local control of a city or town by operation of M. G. L. c. 130 s. 94.
- 2) Definition. For purpose of this regulation, the term River Herring means those species of fish known as alewives (*Alosa pseudoharengus*) and bluebacks (*Alosa aestivalis*).
- 3) Catching Days. It is prohibited and unlawful for any person to catch river herring on Tuesdays, Thursdays, and Sundays.
- 4) Daily Catch Limit. It is prohibited and unlawful for any person to catch more than 25 river herring per day.
- 5) Gear Restrictions. It is prohibited and unlawful to catch river herring with any net other than hand-held dip nets.
- 6) Exception. These regulations shall not apply to the catching of river herring in cities and towns which have acquired local control by operation of M. G. L. c. 130, section 94, or to the catching of herring authorized by the Director under 322 CMR 4.02 (1)(b) and (1)(c).

Appendix 3: Fishway Designs and Examples



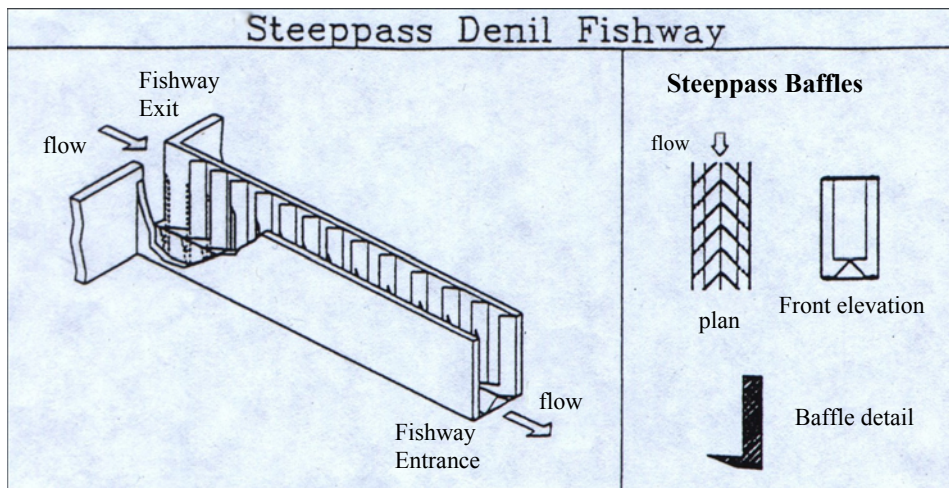
Denil Fishway

- Slope: 10-25%
- Resting pools are required between long segments
- Limited by large water depths
- Greater discharge of water than the other fishways, and therefore a greater attraction capability.



Weir Fishway

- Slope usually 10%
- Sensitive to water level fluctuations



Steeppass Fishway

Fishway designs taken from:

Fish Passageways and Diversion Structures

Section 3

United States Fish & Wildlife Service

Presented by:

Branch of Aquatic Resources Training

National Education and Training Center

June 17-21, 1996

Richland, Washington

Examples of fishways in use:

Denil Fishways



Denil – Newton Lower Falls, Newton



Denil – Ipswich Mills Dam, Ipswich

Weir pool fishways



Notched weir pool fishway – Pleasant St. Dam, Weymouth



Notched weir-pool – Broad St. Dam, Weymouth

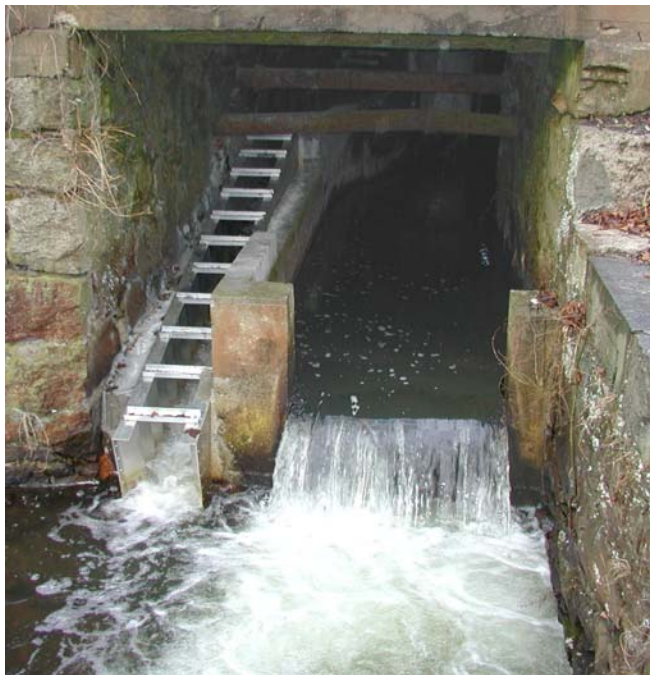


Weir pool – Triphammer Pond Dam, Hingham



Weir pool – Benoit's Pond Dam, Bourne

Steeppass Fishways



Alaskan Steeppass – Newfield St. Dam, Plymouth



Alaskan Steeppass – Elm St. Dam, Kingston

Stream Baffles



Stream baffles – Brook St. Culvert, Kingston

Vertical Slot Fishways



Modified Ice Harbor vertical slot fishway – Pawtucket Dam, Lowell

Fish Lifts



Fish lift – hopper rising with fish – Essex Dam, Lawrence

Appendix 4: Abbreviations used in this publication:

DCR**	Department of Conservation and Recreation
DMF	Division of Marine Fisheries
DPW	Department of Public Works
EOEA	Executive Office of Environmental Affairs
GPS	Global Positioning System
NOAA	National Oceanic and Atmospheric Administration
USFWS	United States Fish and Wildlife Service

**DCR is a new agency that was once two separate agencies: Department of Environmental Management (DEM) and the Metropolitan District Commission (MDC)