



COMMONWEALTH OF MASSACHUSETTS



WATER QUALITY STANDARDS SUMMARY

JOINT PUBLICATION BY

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY

MASSACHUSETTS WATER RESOURCES COMMISSION
DIVISION OF WATER POLLUTION CONTROL

Preface

The information contained herein has been condensed from the Water Quality Standards, Commonwealth of Massachusetts, prepared by the Division of Water Pollution Control and approved by the Federal Government. This summary is intended for all who have an interest in the quality of water in the State.

A summary of this type, by design, omits many pertinent details. For more detailed information, consult the Division of Water Pollution Control or the text of the standards.

December 1971

SUMMARY OF WATER QUALITY STANDARDS
FOR
THE INTERSTATE WATERS OF MASSACHUSETTS

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SUMMARY OF WATER QUALITY STANDARDS
FOR
THE INTERSTATE WATERS OF MASSACHUSETTS

Introduction

In the Water Quality Act of 1965, Congress authorized the establishment of water quality standards for interstate (including coastal) waters. The purpose of these standards is to protect and enhance the quality and productivity of the nation's interstate waters, to serve a variety of beneficial uses, such as public water supply, recreation and protection of aquatic life, and industrial and agricultural uses. This publication summarizes the standards for the general information of the public and Federal, State and local officials as to the uses and associated requirements for interstate waterways.

The Act, which amended the Federal Water Pollution Control Act, provided for the States to have the first opportunity to establish standards for their interstate waters, which were then subject to review and approval by the Administrator, Environmental Protection Agency 1/. All of the States, the District of Columbia and the Territories of Guam, Puerto Rico and the Virgin Islands participated in this landmark effort to set standards. In the course of establishing the standards, public hearings were held by the States and other jurisdictions noted above to give the public an opportunity to participate in setting water quality objectives and standards.

The Commonwealth of Massachusetts adopted standards for its interstate waters in June 1967, which were then submitted to the Federal

1/ Prior to 12/2/70, Secretary of the Interior

Government. Subsequently, certain revisions were made by the Commonwealth in the original standards, and the Federal Government approved the standards, as revised, on August 7, 1967. At the request of the Commissioner, Federal Water Quality Office,^{2/} Massachusetts has also adopted a policy to protect its high quality waters. This antidegradation statement is presented with the water quality criteria.

The approved standards are thus both State and Federal standards, enforceable under the State water pollution control statutes and the Federal Water Pollution Control Act, as amended (Section 10). The waters for which standards were adopted are shown on the maps in Figures 1-30.

The standards consist of three major components: designation of the uses which interstate waters are to serve, specification of narrative and numerical criteria to protect and enhance water quality, and specification of a plan of implementation and enforcement, which includes treatment and control requirements for municipal, industrial and other wastes discharged to or affecting interstate waters. These components are discussed in the following sections; all three are essential to a complete standards program.

The Commonwealth of Massachusetts has also classified all its intrastate waters and applies the same water quality criteria to them that apply to interstate waters. Information concerning intrastate waters can be obtained from the Massachusetts Division of Water Pollution Control.

The standards are now being implemented. However, there will be continuing research on water quality requirements for various beneficial uses and improved collection and evaluation of water quality data. As more information becomes available and experience with implementing the

^{2/} Now Administrator, EPA

standards is gained, the standards will be refined and improved to reflect this new knowledge.

Should more detailed information be required on any aspect of the standards, it may be obtained from the Massachusetts Division of Water Pollution Control or the Environmental Protection Agency in Boston, Massachusetts. Massachusetts is also a member of the New England Interstate Water Pollution Control Commission which assists the states of the New England Compact area, the New England States and New York, in the administration of their water pollution control programs.

The New England Interstate Water Pollution Control Compact, which was approved by Congress and ratified by the legislatures of the seven states, is the legal instrument for cooperation between the states in interstate water pollution control matters.

The addresses of these agencies are given in the Appendix.

Water Uses

The Commonwealth of Massachusetts designates the following classes and uses to be protected in various interstate waters:

Fresh Waters

Class A - Waters designated for use as public water supplies in accordance with Chapter 111 of the Massachusetts General Laws. Character uniformly excellent.

Class B - Suitable for bathing and recreational purposes including water contact sports. Acceptable for public water supply with appropriate treatment. Suitable for agricultural and certain industrial cooling and process uses; excellent fish and wildlife habitat; excellent aesthetic value.

Class C - Suitable for recreational boating; habitat for wildlife and common food and game fishes indigenous to the region; certain industrial cooling and process uses; under some conditions acceptable for public water supply with appropriate treatment. Suitable for irrigation of crops used for consumption after cooking. Good aesthetic value.

Class D - Suitable for aesthetic enjoyment, power, navigation, and certain industrial cooling and process uses. Class D waters will be assigned only where a higher water use class cannot be attained after all appropriate waste treatment methods are utilized.

Coastal and Marine Waters

Class SA - Suitable for any high quality water use including bathing and water contact sports. Suitable for approved shellfish areas.

Class SB - Suitable for bathing and recreational purposes including water contact sports, industrial cooling, excellent fish habitat, good aesthetic value, and suitable for certain shellfisheries with depuration.

Class SC - Suitable for aesthetic enjoyment, for recreational boating, habitat for wildlife and common food and game fishes indigenous to the region, industrial cooling and process uses.

The general aim in designating uses for particular interstate waters is to recognize present uses and practicable future uses, to provide where possible for a variety of uses, and to assure compatibility of standards with Federal, State and local resource planning. In order to satisfy the intent of the Federal Water Pollution Control Act to enhance water quality, the standards specifically provide that no interstate waters may be used solely or primarily for waste assimilation. All interstate waters must be aesthetically pleasing, and this quality is usually protected by narrative criteria preventing unsightly or obnoxious conditions, such as floating debris, oil slicks, unpleasant odors and colors.

Specific use designations for all interstate waters covered by the standards are provided in Table 1.

WATER USES

Table I		Adopted* Classification	Public Water Supply	Recreation	Fish & Wildlife Propagation	Industrial Processing	Power	Shellfish	Agriculture	Aesthetics
Interstate Waters										
<u>Blackstone River Basin</u>		C,D		X	X	X	X		X	X
Blackstone River		B		XX	X	X	X		X	X
Abbott Run Brook		A		XX	X	X	X		X	X
Burnt Swamp Brook		B		XX	X	X	X		X	X
Mill River		B		XX	X	X	X		X	X
Miscoe Lake		B		XX	X	X	X		X	X
Peters River		B		XX	X	X	X		X	X
Round Top Brook		B		XX	X	X	X		X	X
Wallum Lake		B		XX	X	X	X		X	X
<u>Connecticut River Basin</u>										
Connecticut River		B,C		XX	X	X	X		X	X
Falls River		B		XX	X	X	X		X	X
<u>Deerfield River Basin</u>										
Deerfield River		B,C		XX	X	X	X		X	X
Green River		B,C		XX	X	X	X		X	X
Mill Brook		B		XX	X	X	X		X	X
North River, East Branch		B		XX	X	X	X		X	X
North River, West Branch		B		XX	X	X	X		X	X
<u>Farmington River Basin</u>										
Farmington River, West Branch		B		XX	X	X	X		X	X
Hubbard Brook		A,B	X	XX	X	X	X		X	X
Pond Brook		A,B	X	XX	X	X	X		X	X
Taylor Brook		A,B	X	XX	X	X	X		X	X
Valley Brook		A,B	X	XX	X	X	X		X	X
<u>French River Basin</u>										
French River		B,C		XX	X	X	X		X	X
<u>Hoosic River Basin</u>										
Hoosic River		C		X	X	X	X		X	X
Hoosic River, North Branch		B,C		XX	X	X	X		X	X
<u>Housatonic River Basin</u>										
Housatonic River		B,C		XX	X	X	X		X	X
Green River		B		XX	X	X	X		X	X
Konkapot River		B		XX	X	X	X		X	X
<u>Hudson River Basin</u>										
Bash Bish Brook		B		XX	X	X	X		X	X
Kinderhook Creek		B		XX	X	X	X		X	X
<u>Under Recreation</u>										
Note: X - Indicates other than water contact recreation										
XX - Indicates primary water contact recreation										
* - See Page 4 for explanation these classifications										

WATER USES

Table 1		Adopted Classification	Public Water Supply	Recreation	Fish & Wildlife Propagation	Industrial Processing	Power	Shellfish	Agriculture	Aesthetics
Interstate Waters										
<u>Kickamuit, Warren and Barrington River Basins</u>										
Barrington River	SA	XX	X	X	X	X	X		X	
Kickamuit River	B	XX	X	X	X	X	X		X	X
Palmer River	B	XX	X	X	X	X	X		X	X
Runnins River	B	XX	X	X	X	X	X		X	X
Warren River	SA	XX	X	X	X	X	X	X		X
<u>Merrimack River Basin</u>										
Merrimack River	B,C	XX	X	X	X	X	X		X	X
	SB,SC	XX	X	X	X	X	X	X		X
Back River, Merrimac	B	XX	X	X	X	X	X			X
Back River, Amesbury	B	XX	X	X	X	X	X			X
Beaver Brook	B	XX	X	X	X	X	X		X	X
Black Rock Creek	SB	XX	X	X	X	X	X	X		X
Harris Brook	B	XX	X	X	X	X	X		X	X
Little River	B	XX	X	X	X	X	X		X	X
Plum Island River	SA	XX	X	X	X	X	X	X		X
Powwow River	B	XX	X	X	X	X	X		X	X
	SB	XX	X	X	X	X	X	X		X
Salmon Brook	B	XX	X	X	X	X	X		X	X
Snows Brook	B	XX	X	X	X	X	X		X	X
Spickett River	B,C	XX	X	X	X	X	X		X	X
Tuxbury Pond	B	XX	X	X	X	X	X		X	X
<u>Millers River Basin</u>										
Millers River	B,C	XX	X	X	X	X	X		X	X
Binney Hill Brook	B	XX	X	X	X	X	X		X	X
Boyce Brook	B	XX	X	X	X	X	X		X	X
E. Br. Tully River	B	XX	X	X	X	X	X		X	X
Falls Brook	B	XX	X	X	X	X	X		X	X
Kemp Brook	B	XX	X	X	X	X	X		X	X
Lake Monomac	B	XX	X	X	X	X	X		X	X
Lawrence Brook	B	XX	X	X	X	X	X		X	X
Robbins Brook	B	XX	X	X	X	X	X		X	X
Scott Brook	B	XX	X	X	X	X	X		X	X
Towne Brook	B	XX	X	X	X	X	X		X	X
Tully River	B	XX	X	X	X	X	X		X	X

WATER USES

Table 1		Adopted Classification	Public Water Supply	Recreation	Fish & Wildlife Propagation	Industrial Processing	Power	Shellfish	Agriculture	Aesthetics
Interstate Waters										
<u>Nashua River Basin</u>										
Nashua River	C**		XX	X	X	X		X	X	
Beaver Brook	B		XX	X	X	X		X	X	
Mason Brook	B		XX	X	X	X		X	X	
Mine Brook	B		XX	X	X	X		X	X	
Nissitissit River	B		XX	X	X	X		X	X	
Souhegan River, South Branch	B		XX	X	X	X		X	X	
Walker Brook	B		XX	X	X	X		X	X	
<u>Quinebaug River Basin</u>										
Quinebaug River	B,C		XX	X	X	X		X	X	
<u>Scantic River Basin</u>										
Scantic River	B		XX	X	X	X		X	X	
Watchaug Brook	B		XX	X	X	X		X	X	
<u>Taunton River Basin</u>										
Taunton River	C		X	X	X	X		X	X	
Assonet River	SB		XX	X	X	X	X		X	
Cole River	SA		XX	X	X	X	X		X	
Lee River	SA		XX	X	X	X	X		X	
Taunton River	SA		XX	X	X	X	X		X	
Matfield River	C		X	X	X	X		X	X	
Mount Hope Bay	SA,SB		XX	X	X	X	X		X	
Salisbury Plain River	C		X	X	X	X		X	X	
Three Mile River	B,C		XX	X	X	X		X	X	
<u>Ten Mile River Basin</u>										
Ten Mile River	E,C		XX	X	X	X		X	X	
Seven Mile River	A,B	X	XX	X	X	X		X	X	

**C - Criteria for bacteria (coliforms per 100 ml) for Class B waters applies for this classification. Class C criteria apply for other items.

WATER USES

Table 1		Adopted Classification	Public Water Supply	Recreation	Fish & Wildlife Propagation	Industrial Processing	Power	Shellfish	Agriculture	Aesthetics
Interstate Waters										
<u>Coastal Waters</u>										
<u>Boston Harbor Basin</u>										
Boston Harbor	SB, SC		XX	X	X	X	X	X		X
Chelsea River	SC		X	X	X	X	X	X		X
Hingham Harbor	SA		XX	X	X	X	X	X		X
Mystic River	SC		X	X	X	X	X	X		X
Neponset River	SB		XX	X	X	X	X	X		X
Quincy Bay	SA		XX	X	X	X	X	X		X
Weir River	SB		XX	X	X	X	X	X		X
Weymouth Back River	SB		XX	X	X	X	X	X		X
Weymouth Fore River	SB		XX	X	X	X	X	X		X
<u>North Coastal Waters</u>										
Annisquam River	SA, SB		XX	X	X	X	X	X		X
Bass River, Beverly	SB		XX	X	X	X	X	X		X
Beverly Harbor, Salem	SB		XX	X	X	X	X	X		X
Crane River, Danvers	SB		XX	X	X	X	X	X		X
Danvers River, Danvers, Salem, Beverly	SB		XX	X	X	X	X	X		X
Essex River	SA		XX	X	X	X	X	X		X
Gloucester Harbor	SB		XX	X	X	X	X	X		X
Ipswich River	SA		XX	X	X	X	X	X		X
Lobster Cove	SA		XX	X	X	X	X	X		X
Lynn Harbor	SB		XX	X	X	X	X	X		X
Manchester Harbor	SB		XX	X	X	X	X	X		X
Marblehead Harbor	SB		XX	X	X	X	X	X		X
Merrimack River	SB, SC		XX	X	X	X	X	X		X
Mill River	SA		XX	X	X	X	X	X		X
North River, Salem	SB		XX	X	X	X	X	X		X
Parker River	SA		XX	X	X	X	X	X		X
Plum Island River	SA		XX	X	X	X	X	X		X
Porter River, Danvers	SB		XX	X	X	X	X	X		X
Rockport Harbor	SB		XX	X	X	X	X	X		X
Salem Harbor	SB		XX	X	X	X	X	X		X
Saugus River	SB		XX	X	X	X	X	X		X
Waters River, Danvers, Peabody	SB		XX	X	X	X	X	X		X
<u>South Coastal Waters</u>										
Parnstable Harbor	SA		XX	X	X	X	X	X		X
Bass River	SA		XX	X	X	X	X	X		X
Buzzards Bay	SA		XX	X	X	X	X	X		X
Cape Cod Canal	SB		XX	X	X	X	X	X		X
Cohasset Harbor	SA		XX	X	X	X	X	X		X
Cotuit Bay	SA		XX	X	X	X	X	X		X
Duxbury Harbor	SA		XX	X	X	X	X	X		X
Eel Harbor	SA		XX	X	X	X	X	X		X

WATER USES

Table I		Adopted Classification	Public Water Supply	Recreation	Fish & Wildlife Propagation	Industrial Processing	Power	Shellfish	Agriculture	Aesthetics
Interstate Waters										
<u>South Coastal Waters (cont.)</u>										
Falmouth Harbor	SB		XX	X	X	X	X	X		X
Green Harbor	SA		XX	X	X	X	X	X		X
Jones River	SA		XX	X	X	X	X	X		X
Kingston Bay	SA		XX	X	X	X	X	X		X
Lee River	SA		XX	X	X	X	X	X		X
Lewis Bay	SA		XX	X	X	X	X	X		X
Little Harbor at Falmouth	SA		XX	X	X	X	X	X		X
New Bedford Harbor	SB		XX	X	X	X	X	X		X
North River	SA, SB		XX	X	X	X	X	X		X
Onset Bay	SA		XX	X	X	X	X	X		X
Plymouth Harbor	SA		XX	X	X	X	X	X		X
Poponneset Bay	SA		XX	X	X	X	X	X		X
Sandwich Harbor	SA		XX	X	X	X	X	X		X
Scituate Harbor	SA		XX	X	X	X	X	X		X
Wareham River	SA		XX	X	X	X	X	X		X
Welfleet Harbor	SA		XX	X	X	X	X	X		X
Westport River, East Branch	SA		XX	X	X	X	X	X		X
Westport River, West Branch	SA		XX	X	X	X	X	X		X
Coastal waters to the three-mile territorial limit		SA	XX	X	X	X	X	X		X

Fisheries

The Commonwealth of Massachusetts, Water Quality Standards, protect waters as natural fisheries by setting specific criteria for warm and cold water fisheries. The specific criteria are minimum limits for dissolved oxygen content and maximum limits for allowable temperature increases in Class B and C waters. The numerical values of these limits are given in Table 3.

The Massachusetts Division of Fisheries and Game defines a cold water stream as one which is capable of sustaining a year round trout (Salmonidae) population while a warm water stream is defined as one which is not capable of sustaining a year round trout population. A seasonal cold water stream is one which must meet the criteria of the B and/or C standards of quality, and one which is only capable of sustaining an extremely limited trout population on a year-round basis due to adverse normal water temperature conditions during the period June 30 through September 5. Trout fishing in a seasonal cold water stream must be largely provided by spring and fall plants of catchable trout.

Specific water quality criteria for Class B and C waters are thus determined by their fishery classification. These are given for interstate waters of Massachusetts in the following Table (Table 2).

TABLE 2

DRAGINAGE BASIN FISHERY CLASSIFICATIONS

NOTE: Consult complete text of Massachusetts Water Quality Standards for limits and boundaries of the classifications.

<u>Drainage Basin</u>	<u>Class of Fishery</u>
(Blackstone River Basin)	
Blackstone River	Warm water
Abbott Run Brook	Warm water
Burnt Swamp Brook	Warm water
Mill River	Seasonal cold water
Miscoe Lake	Warm water
Peters River	Cold water
Round Top Brook	Warm water
Wallum Lake	Warm water
(Connecticut River Basin)	
Connecticut River	Warm water
Falls River	Cold water
(Deerfield River Basin)	
Deerfield River	Seasonal cold water
Green River	Cold water
Mill Brook	Seasonal cold water
North River, East Branch	Cold water
North River, West Branch	Cold water
(Farmington River Basin)	
Farmington River, West Branch	Cold water
Hubbard Brook	Cold water
Pond Brook	Cold water
Taylor Brook	Seasonal cold water
Valley Brook	Cold water
(French River Basin)	
French River	Warm water
(Hoosic River Basin)	
Hoosic River, North Branch	Cold water
Hoosic River	Cold water
(Housatonic River Basin)	
Housatonic River	Cold water
Green River	Cold water
Konkapot River	Cold water
(Hudson River Basin)	
Bash Bish Brook	Cold water
Kinderhook Creek	Seasonal cold water

TABLE 2 (Continued)

<u>Drainage Basin</u>	<u>Class of Fishery</u>
(Kickamuit, Warren and Barrington River Basins)	
Barrington River	Warm water
Kickamuit River	Warm water
Palmer River	Cold water
Runnins River	Warm water
Warren River	Warm water
(Merrimack River Basin)	
Merrimack River	Warm water
Back River, Merrimac	Seasonal cold water
Back River, Amesbury	Seasonal cold water
Beaver Brook	Seasonal cold water
Black Rock Creek	Warm water
Harris Brook	Warm water
Little River	Seasonal cold water
Plum Island River	Warm water
Powwow River	Cold water
Salmon Brook	Cold water
Snows Brook	Seasonal cold water
Spickett River	Seasonal cold water
Tuxbury Pond	Warm water
(Millers River Basin)	
Millers River	Cold and seasonal cold water
Binney Hill Brook	Warm Water
Boyce Brook	Seasonal cold water
East Branch, Tully River	Cold water
Falls Brook	Warm water
Kemp Brook	Warm water
Lake Monomac	Warm water
Lawrence Brook	Cold water
Robbins Brook	Warm water
Scott Brook	Seasonal cold water
Towne Brook	Seasonal cold water
Tully River	Seasonal cold water
(Nashua River Basin)	
Nashua River	Warm water
Beaver Brook	Warm water
Mason Brook	Cold water
Mine Brook	Warm water
Nissitissit River	Cold water
Souhegan River, South Branch	Seasonal cold water
Walker Brook	Cold water
(Quinebaug River Basin)	
Quinebaug River	Seasonal cold and cold water

TABLE 2 (Continued)

<u>Drainage Basin</u>	<u>Class of Fishery</u>
(Scantic River Basin)	
Scantic River	Cold water
Watchaug Brook	Cold water
(Taunton River Basin)	
Taunton River	Warm water
Assonet River	Warm water
Cole River	Seasonal cold water
Lee River	Warm water
Three Mile River	Seasonal cold water
Matfield River	Warm water
Salisbury Plain River	Warm water
(Ten Mile River Basin)	
Ten Mile River	Seasonal cold water
Seven Mile River	Seasonal cold water

TABLE 2 (Continued)

<u>Drainage Basin</u>	<u>Class of Fishery</u>
Coastal Waters	
(Boston Harbor Basin)	
Weir River	Seasonal cold water
(North Coastal Waters)	
Ipswich River	Seasonal cold water
Saugus River	Seasonal cold water
(South Coastal Waters)	
Jones River	Cold water

Water Quality Criteria

The protection of water quality and uses requires the establishment of numerical and narrative limits on pollutants which damage these uses. The water quality criteria in this section reflect the best scientific judgment available as to the water quality requirements for the assigned uses. Numerical criteria are used wherever it is reasonable to do so. However, narrative criteria are also necessary in some cases, particularly with respect to aesthetic considerations.

Some interstate waters have a higher quality than the minimum levels assigned for protection of water uses, and the standards seek to protect this higher quality as much as possible in the face of increasing social and economic development. Scientific knowledge about the exact water quality requirements for uses is limited, and by preventing degradation of high quality waters, the standards seek to assure optimum, not marginal, conditions to protect the uses associated with clean waters.

Inasmuch as possible, the Massachusetts standards tailor water quality criteria to present quality or that quality anticipated to result from the establishment of high treatment requirements. These criteria are outlined in Table 3. The standards also contain a statement of general policy applicable to all waters of the Commonwealth, including a statement on controlling degradation of high quality waters.

Water Quality Criteria - General Policy

1. General - To achieve the objectives of the Massachusetts Clean Waters Act and to assure best use of the waters of the Commonwealth, the following standards are adopted and shall be applicable to all waters of the Commonwealth or to different segments of the same waters. The classes shall be assigned by the Division of Water Pollution Control.

In the classification of waters due consideration will be given to all factors involved, including public health, public enjoyment, propagation and protection of fish and wildlife, and economic and social development. Classifications are not intended to permit indiscriminate waste disposal or to allow minimum efforts of waste treatment under any circumstance.

When an effluent is permitted to be discharged to the receiving waters, cognizance shall be given both in time and distance to allow for mixing of effluent and stream. Such distances required for complete mixing shall not affect the water usage class adopted.

Recommendations on other waste parameters will constitute a portion of the continuing effort of the Division as improved standard methods are developed or revisions consistent with the enhancement of the waters of the Commonwealth are justified.

Water quality parameters not specifically denoted shall not exceed the recommended limits on the most sensitive and governing water class use. In areas where fisheries are the governing consideration and approved limits have not been established, bio-assays shall be performed as required by the appropriate agencies.

Antidegradation Statement

"Waters whose existing quality is better than the established standards as of the date on which such standards become effective will be maintained at such high quality unless it has been affirmatively demonstrated to the State that a change is justifiable as a result of necessary economic or social development and will not preclude uses presently possible in such waters. Any industrial, public, or private project or development which would constitute a new source of pollution or an increased source of pollution to high quality waters will be required to provide the highest and best practicable means of waste treatment to maintain high water quality. In implementing this policy, the Secretary of the Interior will be kept advised and will be provided with such information as he will need to discharge his responsibilities under the Federal Water Pollution Control Act, as amended."

TABLE 3

Water Quality StandardsFresh Waters

Class A - Waters designated for use as public water supplies in accordance with Chapter 111 of the General Laws. Character uniformly excellent.

Standards of Quality

<u>Item</u>	<u>Water Quality Criteria</u>
1. Dissolved oxygen	Not less than 75% of saturation during at least 16 hours of any 24-hour period and not less than 5 mg/l at any time.
2. Sludge deposits-solid refuse-floating solids-oil-grease-scum	None allowable.
3. Color and turbidity	None other than of natural origin.
4. Coliform bacteria per 100 ml	Not to exceed an average value of 50 during any monthly sampling period.
5. Taste and odor	None other than of natural origin.
6. pH	As naturally occurs.
7. Allowable temperature increase	None other than of natural origin.
8. Chemical constituents	None in concentrations or combinations which would be harmful or offensive to humans, or harmful to animal, or aquatic life.
9. Radioactivity	None other than that occurring from natural phenomena.

Class B - Suitable for bathing and recreational purposes including water contact sports. Acceptable for public water supply with appropriate treatment. Suitable for agricultural, and certain industrial cooling and process uses; excellent fish and wildlife habitat; excellent aesthetic value.

Standards of Quality

<u>Item</u>	<u>Water Quality Criteria</u>
1. Dissolved oxygen	Not less than 75% of saturation during at least 16 hours of any 24-hour period and not less than 5 mg/l at any time.
2. Sludge deposits-solid refuse-floating solids-oils-grease-scum	None allowable.
3. Color and turbidity	None in such concentrations that would impair any usages specifically assigned to this class.
4. Coliform bacteria per 100 ml	Not to exceed an average value of 1000 during any monthly sampling period nor 2400 in more than 20% of samples examined during such period.
5. Taste and odor	None in such concentrations that would impair any usages specifically assigned to this class and none that would cause taste and odor in edible fish.
6. pH	6.5 - 8.0
7. Allowable temperature increase	None except where the increase will not exceed the recommended limit on the most sensitive receiving water use and in no case exceed 83°F in warm water fisheries, and 68°F in cold water fisheries, or in any case raise the normal temperature of the receiving water more than 4°F.
8. Chemical constituents	None in concentrations or combinations which would be harmful or offensive to human, or harmful to animal or aquatic life or any water use specifically assigned to this class.
9. Radioactivity	None in concentrations or combinations which would be harmful to human, animal, or aquatic life for the appropriate water use. None in such concentrations which would result in radio-nuclide concentrations in aquatic life which exceed the recommended limits for consumption by humans.

- | | |
|---------------------|--|
| 10. Total phosphate | Not to exceed an average of 0.05 mg/l as P during any monthly sampling period. |
| 11. Ammonia | Not to exceed an average of 0.5 mg/l as N during any monthly sampling period. |
| 12. Phenols | Shall not exceed .001 mg/l at any time. |

Class C - Suitable for recreational boating; habitat for wildlife and common food and game fishes indigenous to the region; certain industrial cooling and process uses; under some conditions acceptable for public water supply with appropriate treatment. Suitable for irrigation of crops used for consumption after cooking. Good aesthetic value.

Standards of Quality

<u>Item</u>	<u>Water Quality Criteria</u>
1. Dissolved oxygen	Not less than 5 mg/l during at least 16 hours of any 24-hour period nor less than 3 mg/l at any time. For seasonal cold water fisheries at least 5 mg/l must be maintained.
2. Sludge deposits-solid-refuse floating solids-oils-grease-scum	None allowable except those amounts that may result from the discharge from waste treatment facilities providing appropriate treatment.
3. Color and turbidity	None allowable in such concentrations that would impair any usages specifically assigned to this class.
4. Coliform bacteria	None in such concentrations that would impair any usages specifically assigned to this class.
5. Taste and odor	None in such concentrations that would impair any usages specifically assigned to this class, and none that would cause taste and odor to edible fish.
6. pH	6.0 - 8.5
7. Allowable temperature increase	None except where the increase will not exceed the recommended limits on the most sensitive receiving water use and in no case exceed 83°F in

warm water fisheries, and 68°F in cold water fisheries, or in any case raise the normal temperature of the receiving water more than 4°F.

- | | |
|--------------------------|--|
| 8. Chemical constituents | None in concentrations or combinations which would be harmful or offensive to human, or harmful to animal or aquatic life or any water use specifically assigned to this class. |
| 9. Radioactivity | None in concentrations or combinations which would be harmful to human, animal, or aquatic life for the appropriate water use. None in such concentrations which would result in radio-nuclide concentrations in aquatic life which exceed the recommended limits for consumption by humans. |
| 10. Total phosphate | Not to exceed an average of 0.05 mg/l as P during any monthly sampling period. |
| 11. Ammonia | Not to exceed an average of 1.0 mg/l as N during any monthly sampling period. |
| 12. Phenols | Not to exceed an average of 0.002 mg/l at any time. |

Class D - Suitable for aesthetic enjoyment, power, navigation, and certain industrial cooling and process uses. Class D waters will be assigned only where a higher water use class cannot be attained after all appropriate waste treatment methods are utilized.

<u>Item</u>	<u>Specifications</u>
1. Dissolved oxygen	Not less than 2 mg/l at any time.
2. Sludge deposits-solid refuse-floating solids-oils-grease-scum	None allowable except those amounts that may result from the discharge from waste treatment facilities providing appropriate treatment.
3. Color and turbidity	None in such concentrations that would impair any usages specifically assigned to this class.
4. Coliform bacteria	None in such concentrations that would impair any usages specifically assigned to this class.

- | | |
|-----------------------------------|---|
| 5. Taste and odor | None in such concentrations that would impair any usages specifically assigned to this class. |
| 6. pH | 6.0 - 9.0 |
| 7. Allowable temperature increase | None except where the increase will not exceed the recommended limits on the most sensitive receiving water use and in no case exceed 90°F. |
| 8. Chemical constituents | None in concentrations or combinations which would be harmful to human, animal, or aquatic life for the designated water use. |
| 9. Radioactivity | None in such concentrations or combinations which would be harmful to human, animal, or aquatic life for the designated water use. None in such concentrations which will result in radio-nuclide concentrations in aquatic life which exceed the recommended limits for consumption by humans. |

Notes:

1. All wastes shall receive appropriate waste treatment which is defined as secondary treatment with disinfection or its industrial waste treatment equivalent except when a higher degree of treatment is required to meet the objectives of the water quality standards, all as determined by the Division of Water Pollution Control. Disinfection from October 1 to May 1 may be discontinued at the discretion of the Division of Water Pollution Control.
2. Appropriate water supply treatment is as determined by the Massachusetts Department of Public Health.
3. These water quality standards do not apply to conditions brought about by natural causes.
4. Class B and C waters shall be substantially free of pollutants that will:
 - (1) unduly affect the composition of bottom fauna
 - (2) unduly affect the physical or chemical nature of the bottom
 - (3) interfere with the spawning of fish or their eggs
5. The average minimum consecutive 7-day flow to be expected once in ten years shall be used in the interpretation of the standards except where noted.

6. The amount of disinfection required shall be equivalent to a free and combined chlorine residual of at least 1.0 mg/l after 15 minutes contact time during peak hourly flow or maximum rate of pumpage.

Coastal and Marine Waters

Class SA - Suitable for any high quality water use including bathing and water contact sports. Suitable for approved shellfish areas.

Standards of Quality

<u>Item</u>	<u>Water Quality Criteria</u>
1. Dissolved oxygen	Not less than 6.5 mg/l at any time.
2. Sludge deposits-solid refuse-floating solids-oil-grease-scum	None allowable.
3. Color and turbidity	None in such concentrations that will impair any usages specifically assigned to this class.
4. Coliform bacteria per 100 ml	Not to exceed a median value of 70 and not more than 10% of the samples shall ordinarily exceed 230 during any monthly sampling period.
5. Taste and odor	None allowable.
6. pH	6.8 - 8.5
7. Allowable temperature increase	None except where the increase will not exceed the recommended limits on the most sensitive water use.
8. Chemical constituents	None in concentrations or combinations which would be harmful to human, animal, or aquatic life or which would make the waters unsafe or unsuitable for fish or shellfish or their propagation, impair the palatability of same, or impair the waters for any other uses.
9. Radioactivity	None in concentrations or combinations which would be harmful to human, animal, or aquatic life for the designated water use. None in such concentrations which would result in radio-nuclide concentrations in aquatic life which exceed the recommended limits for consumption by humans.

- | | |
|---------------------|--|
| 10. Total phosphate | Not to exceed an average of 0.07 mg/l as P during any monthly sampling period. |
| 11. Ammonia | Not to exceed an average of 0.2 mg/l as N during any monthly sampling period. |

Class SB - Suitable for bathing and recreational purposes including water contact sports; industrial cooling; excellent fish habitat; good aesthetic value; and suitable for certain shellfisheries with depuration.
(Restricted Shellfish Areas)

Standards of Quality

<u>Item</u>	<u>Water Quality Criteria</u>
1. Dissolved oxygen	Not less than 5.0 mg/l at any time.
2. Sludge deposits-solid refuse-floating solids-oils-grease-scum	None allowable.
3. Color and turbidity	None in such concentrations that would impair any usages specifically assigned to this class.
4. Coliform bacteria per 100 ml	Not to exceed a median value of 700 and not more than 2300 in more than 10% of the samples during any monthly sampling period.
5. Taste and odor	None in such concentrations that would impair any usages specifically assigned to this class and none that would cause taste and odor in edible fish or shellfish.
6. pH	6.8 - 8.5
7. Allowable temperature increase	None except where the increase will not exceed the recommended limits on the most sensitive water use.
8. Chemical constituents	None in concentrations or combinations which would be harmful to human, animal or aquatic life or which would make the waters unsafe or unsuitable for fish or shellfish or their propagation, impair the palatability of same, or impair the water for any other usage.

9. Radioactivity
None in concentrations or combinations which would be harmful to human, animal, or aquatic life for the appropriate water use. None in such concentrations which would result in radio-nuclide concentrations in aquatic life which exceed the recommended limits for consumption by humans.
10. Total phosphate
Not to exceed an average of 0.07 mg/l as P during any monthly sampling period.
11. Ammonia
Not to exceed an average of 0.2 mg/l as N during any monthly sampling period.

Class SC - Suitable for aesthetic enjoyment; for recreational boating; habitat for wildlife and common food and game fishes indigenous to the region; industrial cooling and process uses.

Standards of Quality

<u>Item</u>	<u>Water Quality Criteria</u>
1. Dissolved oxygen	Not less than 5 mg/l during at least 16 hours of any 24-hour period nor less than 3 mg/l at any time.
2. Sludge deposits-solid refuse-floating solids-oils-grease-scum	None except that amount that may result from the discharge from a waste treatment facility providing appropriate treatment.
3. Color and turbidity	None in such concentrations that would impair any usages specifically assigned to this class.
4. Coliform bacteria	None in such concentrations that would impair any usages specifically assigned to this class.
5. Taste and odor	None in such concentrations that would impair any usages specifically assigned to this class and none that would cause taste and odor in edible fish or shellfish.
6. pH	6.5 - 8.5

- | | |
|-----------------------------------|--|
| 7. Allowable temperature increase | None except where the increase will not exceed the recommended limits on the most sensitive water use. |
| 8. Chemical constituents | None in concentrations or combinations which would be harmful to human, animal or aquatic life or which would make the waters unsafe or unsuitable for fish or shellfish or their propagation, impair the palatability of same, or impair the water for any other usage. |
| 9. Radioactivity | None in such concentrations which would be harmful to human, animal or aquatic life for the designated water use. None in such concentrations which would result in radionuclide concentrations in aquatic life which exceed the recommended limits for consumption by humans. |
| 10. Total phosphate | Not to exceed an average of 0.07 mg/l as P during any monthly sampling period. |
| 11. Ammonia | Not to exceed an average of 1.0 mg/l as N during any monthly sampling period. |

Notes:

1. Coastal and marine waters are those subject to the rise and fall of the tide.
2. Appropriate treatment is defined as the degree of treatment with disinfection required for the receiving waters to meet their assigned state or interstate classification and to meet the objectives of the water quality standards. Disinfection from October 1 to May 1 may be discontinued at the discretion of the Division of Water Pollution Control.
3. The water quality standards do not apply to conditions brought about by natural causes.
4. The waters shall be substantially free of pollutants that will:
 - (1) unduly affect the composition of bottom fauna
 - (2) unduly affect the physical or chemical nature of the bottom
 - (3) interfere with the spawning of fish or their eggs

5. The standards shall apply at all times in coastal and marine waters.
6. The amount of disinfection required shall be equivalent to a free and combined chlorine residual of at least 1.0 mg/l after 15 minutes contact time during peak hourly flow or maximum rate of pumpage.

TABLE 4

COMMONWEALTH OF MASSACHUSETTS
WATER RESOURCES COMMISSION
DIVISION OF WATER POLLUTION CONTROL
WATER QUALITY CRITERIA
FOR FRESH WATERS

Item	CLASS A	CLASS B	CLASS C	CLASS D
1. Dissolved oxygen	Not less than 75% of saturation during at least 16 hours of any 24-hour period and not less than 5 mg/l at any time.	Not less than 75% of saturation during at least 16 hours of any 24-hour period and not less than 5 mg/l at any time.	Not less than 5 mg/l during at least 16 hours of any 24-hour period nor less than 3 mg/l at any time. For seasonal cold water fisheries at least 5 mg/l must be maintained.	Not less than 2 mg/l at any time.
2. Sludge deposits, solid refuse, floating solids, oils, grease, scum	None allowable	None allowable	None allowable except those amounts that may result from the discharge from waste treatment facilities providing appropriate treatment.	None allowable except those amounts that may result from the discharge from waste treatment facilities providing appropriate treatment.
3. Color and turbidity	None other than of natural origin.	None in such concentrations that would impair any usages specifically assigned to this class.	None allowable in such concentrations that would impair any usages specifically assigned to this class.	None in such concentrations that would impair any usages specifically assigned to this class.
4. Coliform bacteria	Not to exceed an average value of 50 during any monthly sampling period.	Not to exceed an average value of 1000 during any monthly sampling period nor 2400 in more than 20% of samples examined during such period.	None in such concentrations that would impair any usages specifically assigned to this class.	None in such concentrations that would impair any usages specifically assigned to this class.

TABLE 4 (Continued)

Item	CLASS A	CLASS B	CLASS C	CLASS D
5. Taste and odor	None other than that occurring from natural phenomena of natural origin.	None in such concentrations that would impair any usages specifically assigned to this class and none that would cause taste and odor in edible fish.	None in such concentrations that would impair any usages specifically assigned to this class, and none that would cause taste and odor to edible fish.	None in such concentrations that would impair any usages specifically assigned to this class.
6. pH	As naturally occurs.	6.5 - 8.0	6.0 - 8.5	6.0 - 9.0
7. Allowable temperature increase	None other than of natural origin.	None except where the increase will not exceed the recommended limit on the most sensitive receiving water use and in no case exceed 83°F in warm water fisheries, and 68°F in cold water fisheries, or in any case raise the normal temperature of the receiving water more than 4°F.	None except where the increase will not exceed the recommended limits on the most sensitive receiving water use and in no case exceed 83°F in warm water fisheries, and 68°F in cold water fisheries, or in any case raise the normal temperature of the receiving water more than 4°F.	None except where the increase will not exceed the recommended limits on the most sensitive receiving water use and in no case exceed 90°F.
8. Chemical constituents	None in concentrations or combinations which would be harmful or offensive to humans, or harmful to animal or aquatic life.	None in concentrations or combinations which would be harmful or offensive to human, or harmful to animal or aquatic life or any water use specifically assigned to this class.	None in concentrations or combinations which would be harmful or offensive to human, or harmful to animal or aquatic life or any water use specifically assigned to this class.	None in concentrations or combinations which would be harmful to human, animal, or aquatic life for the designated water use.

TABLE 4 (Continued)

Item	CLASS A	CLASS B	CLASS C	CLASS D
9. Radioactivity	None other than that occurring from natural phenomena.	None in concentrations or combinations which would be harmful to human, animal, or aquatic life for the appropriate water use. None in such concentrations which would result in radio-nuclide concentrations in aquatic life which exceed the recommended limits for consumption by humans.	None in concentrations or combinations which would be harmful to human, animal, or aquatic life for the appropriate water use. None in such concentrations which would result in radio-nuclide concentrations in aquatic life which exceed the recommended limits for consumption by humans.	None in such concentrations or combinations which would be harmful to human, animal, or aquatic life for the designated water use. None in such concentrations which will result in radio-nuclide concentrations in aquatic life which exceed the recommended limits for consumption by humans.
33 10. Total phosphate		Not to exceed an average of 0.05 mg/l as P during any monthly sampling period.	Not to exceed an average of 0.05 mg/l as P during any monthly sampling period.	
11. Ammonia		Not to exceed an average of 0.5 mg/l as N during any monthly sampling period.	Not to exceed an average of 1.0 mg/l as N during any monthly sampling period.	
12. Phenols		Shall not exceed .001 mg/l at any time.	Not to exceed an average of 0.002 mg/l at any time.	

TABLE 4

COMMONWEALTH OF MASSACHUSETTS
WATER RESOURCES COMMISSION
DIVISION OF WATER POLLUTION CONTROL
WATER QUALITY CRITERIA
FOR COASTAL AND MARINE WATERS

Item	SA	SB	SC
1. Dissolved oxygen	Not less than 6.5 mg/l at any time.	Not less than 5.0 mg/l at any time.	Not less than 5 mg/l during at least 16 hours of any 24-hour period nor less than 3 mg/l at any time.
2. Sludge deposits, solid refuse, floating solids, oils, grease, scum	None allowable	None allowable	None except that amount that may result from the discharge from a waste treatment facility providing appropriate treatment.
3. Color and turbidity	None in such concentrations that will impair any usages specifically assigned to this class.	None in such concentrations that would impair any usages specifically assigned to this class.	None in such concentrations that would impair any usages specifically assigned to this class.
4. Coliform bacteria per 100 ml	Not to exceed a median value of 70 and not more than 10% of the samples shall ordinarily exceed 230 during any monthly sampling period.	Not to exceed a median value of 700 and not more than 2300 in more than 10% of the samples during any monthly sampling period.	None in such concentrations that would impair any usages specifically assigned to this class.

TABLE 4 (Continued)

Item	SA	SB	SC
5. Taste and odor	None allowable	None in such concentrations that would impair any usages specifically assigned to this class and none that would cause taste and odor in edible fish or shellfish.	None in such concentrations that would impair any usages specifically assigned to this class and none that would cause taste and odor in edible fish or shellfish.
6. pH	6.8 - 8.5	6.8 - 8.5	6.5 - 8.5
7. Allowable temperature increase	None except where the increase will not exceed the recommended limits on the most sensitive water use.	None except where the increase will not exceed the recommended limits on the most sensitive water use.	None except where the increase will not exceed the recommended limits on the most sensitive water use.
35 8. Chemical constituents	None in concentrations or combinations which would be harmful to human, animal, or aquatic life or which would make the waters unsafe or unsuitable for fish or shellfish or their propagation, impair the palatability of same, or impair the waters for any other uses.	None in concentrations or combinations which would be harmful to human, animal or aquatic life or which would make the waters unsafe or unsuitable for fish or shellfish or their propagation, impair the palatability of same, or impair the water for any other usage.	None in concentrations or combinations which would be harmful to human, animal or aquatic life or which would make the waters unsafe or unsuitable for fish or shellfish or their propagation, impair the palatability of same, or impair the water for any other usage.

TABLE 4 (Continued)

Item	SA	SB	SC
9. Radioactivity	None in concentrations or combinations which would be harmful to human, animal, or aquatic life for the designated water use. None in such concentrations which would result in radio-nuclide concentrations in aquatic life which exceed the recommended limits for consumption by humans.	None in concentrations or combinations which would be harmful to human, animal, or aquatic life for the appropriate water use. None in such concentrations which would result in radio-nuclide concentrations in aquatic life which exceed the recommended limits for consumption by humans.	None in such concentrations which would be harmful to human, animal or aquatic life for the designated water use. None in such concentration which would result in radio-nuclide concentrations in aquatic life which exceed the recommended limits for consumption by humans.
10. Total phosphate	Not to exceed an average of 0.07 mg/l as P during any monthly sampling period.	Not to exceed an average of 0.07 mg/l as P during any monthly sampling period.	Not to exceed an average of 0.07 mg/l as P during any monthly sampling period.
11. Ammonia	Not to exceed an average 0.2 mg/l as N during any monthly sampling period.	Not to exceed an average of 0.2 mg/l as N during any monthly sampling period.	Not to exceed an average of 1.0 mg/l as N during any monthly sampling period.

Implementation Plan

The "action" plan of the standards is the plan of implementation and enforcement. This plan sets forth the requirements for treatment and/or control of all conventional municipal and industrial waste discharges in the State which affect interstate waters, specifies the time within which this is to be accomplished, and contains programs for dealing with other water pollution control problems. In general, the standards call for installation of secondary treatment or the equivalent, or higher, for all municipal and industrial wastes discharged to fresh waters. For discharges to coastal waters, the standards require a minimum of primary treatment plus seasonal disinfection. The required treatment is to be installed by **essentially all dischargers by December 1974**. Information concerning the requirements for any particular discharger may be obtained from the Massachusetts Division of Water Pollution Control.

SPECIAL PROBLEMS

Combined Sewer Overflows

The Commonwealth has engaged consulting engineers to study the problem of pollution from combined sewer overflows during periods of heavy runoff. The results of the study found the cost of separation of the combined sewers to be far beyond the ability of the communities to finance such projects and beyond the scope of the present State and Federal grant programs to render financial assistance. Separation for the city of Boston alone is estimated to cost \$470 million with annual operation and maintenance costs in the vicinity of \$805 thousand. As a result, the plan of implementation as developed by the Division of Water Pollution Control presently provides for alleviation of pollution from combined sewer overflows on a priority basis.

The city of Cambridge has been placed on an implementation schedule to separate the major portion of what is now a combined sewer system. The initial construction phase will be completed within 5 years (1976) with the remainder of the work to be completed during a 15-year construction program. The city of Boston will be ordered by the Division to remove several overflows within the bathing areas of the city. In addition, the city will be required to eliminate dry weather flow presently overflowing into the Reserved Channel, Fort Point Channel and the Atlantic Avenue shoreline and to eliminate all overflow from the Dorchester Interceptor, Moon Island.

The cities of Somerville and Chelsea will be ordered to renovate and rehabilitate the tide gates and other overflow structures

appurtenant to their individual systems. The Division will also require these cities to hire consultants to evaluate their sewerage systems and to prepare reports on the present condition of the systems and necessary improvements.

Eutrophication

The limitation of nutrients as a step in maintaining a proper ecological balance of Massachusetts waters has been recognized as a problem of paramount concern in recent years with even greater implications for the future. Massive programs of waste treatment will unquestionably magnify weed and algae growth problems throughout the Commonwealth because of the inability under conventional methods of waste treatment to remove algal nutrients, primarily nitrogen and phosphorus. Massachusetts has taken the first step to control this problem by including limits of phosphorus in the standards of water quality adopted by the Division of Water Pollution Control. The present plan of implementation does not provide automatically for the construction of nutrient removal facilities, but the Division does propose to make this a requirement in critical areas with the possibility of establishing research and demonstration projects to provide for new and improved methods of nutrient control and corollary programs of weed and algae harvesting.

Watercraft Waste Disposal

The Commonwealth of Massachusetts has taken cognizance of the problems of controlling the discharge of wastes from pleasure watercraft, and considers the problem significant and deserving of early definition and corrective action. The Commonwealth believes that some means of watercraft waste treatment and/or control must be developed which will either effectively eliminate the discharge of waste (no effluent device) or which will adequately treat the waste to render it acceptable for discharge to the surrounding waters (controlled effluent device). The Commonwealth further believes that because the watercraft cruise in waters of adjacent states, there should be uniform interstate requirements and regulations.

Toward control of this problem, the Commonwealth approved Chapter 693 of the Acts of 1970 which require the adoption of rules and regulations to control or prevent the discharge of wastes from watercraft and further required the licensing of marinas. (See Chapter 21, Section 27 (8) and Chapter 91, Section 59B in Appendix I).

RIVER BASIN MAPS OF WATER QUALITY STANDARDS
ADOPTED BY
MASSACHUSETTS WATER RESOURCES COMMISSION
DIVISION OF WATER POLLUTION CONTROL

NOTE: The following maps indicate by name only the larger of the interstate streams. To determine if a stream, which is not shown, is an interstate stream consult the Water Uses Table or apply the definition as given in Appendix III.

NOTE

See following page for index of waterways.

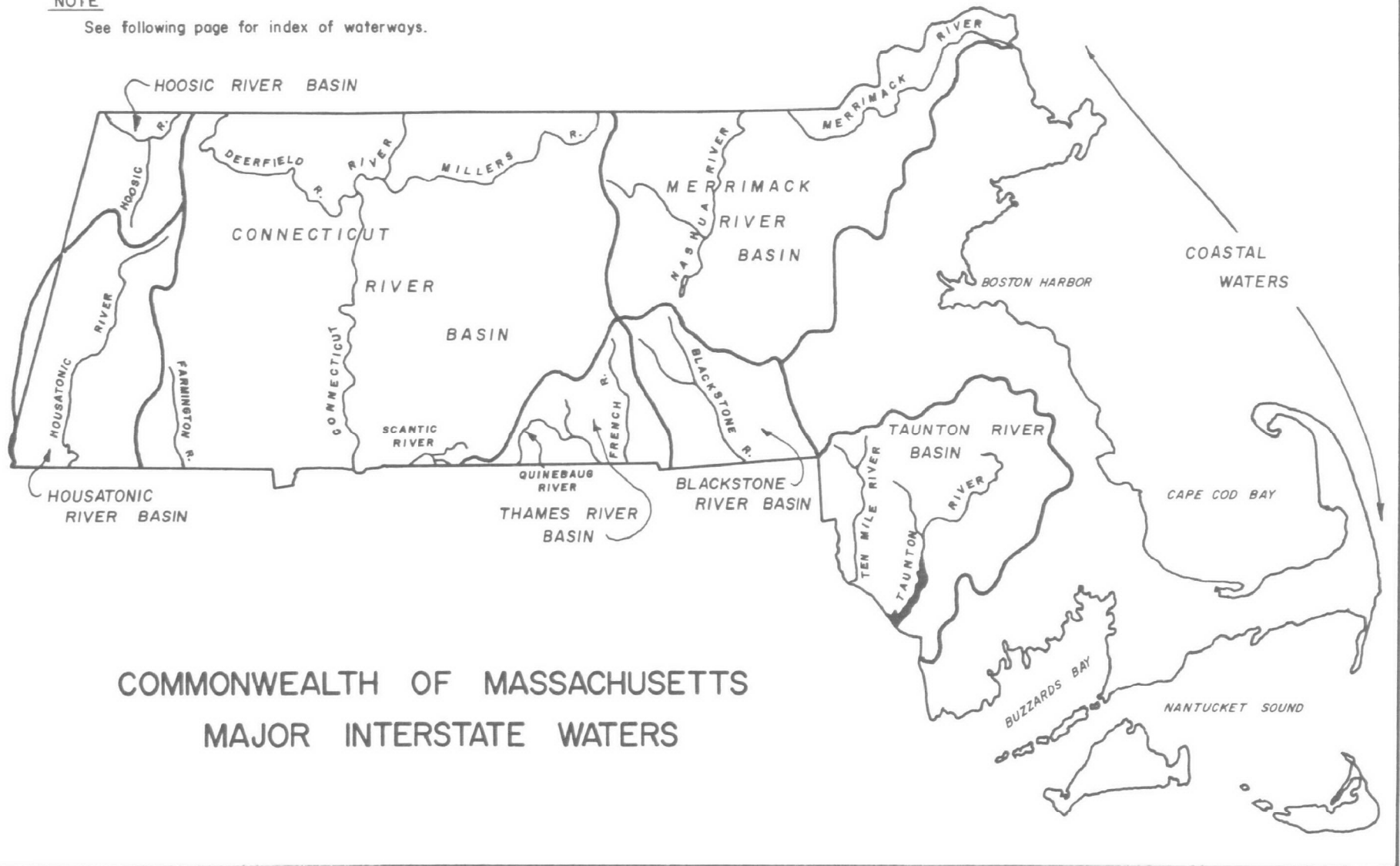


FIGURE 1

INDEX OF MAJOR INTERSTATE WATERWAYS

Blackstone River Basin	Figure 2
Boston Harbor	Figure 3
Connecticut River Basin	Figure 7
Hoosic River Basin	Figure 11
Housatonic River Basin	Figure 12
Merrimack River Basin	Figure 15
North Coastal Basin	Figure 20
South Coastal Basin	Figures 25, 26
Taunton River Basin	Figure 27
Thames River Basin	Figure 22

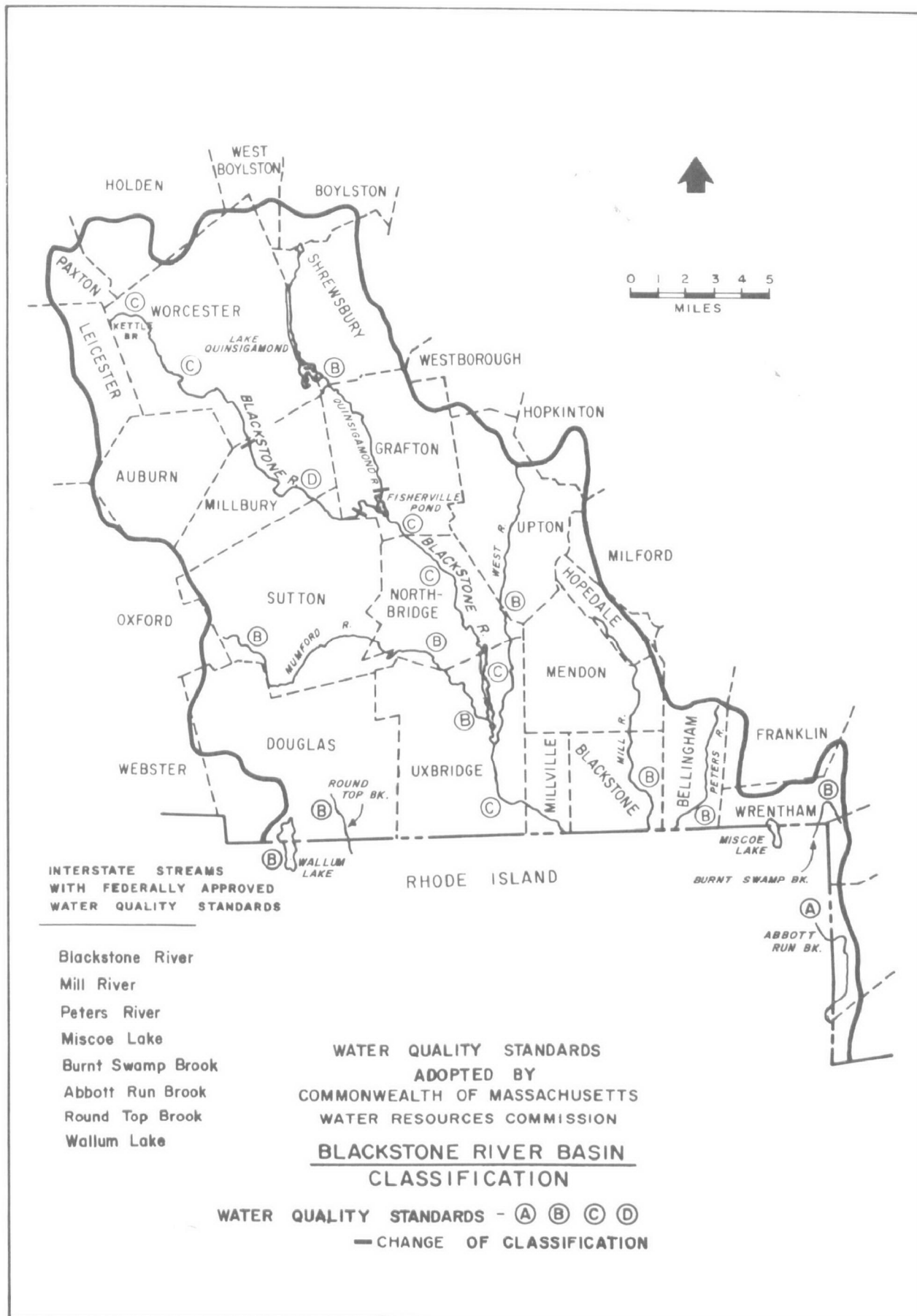


FIGURE 2

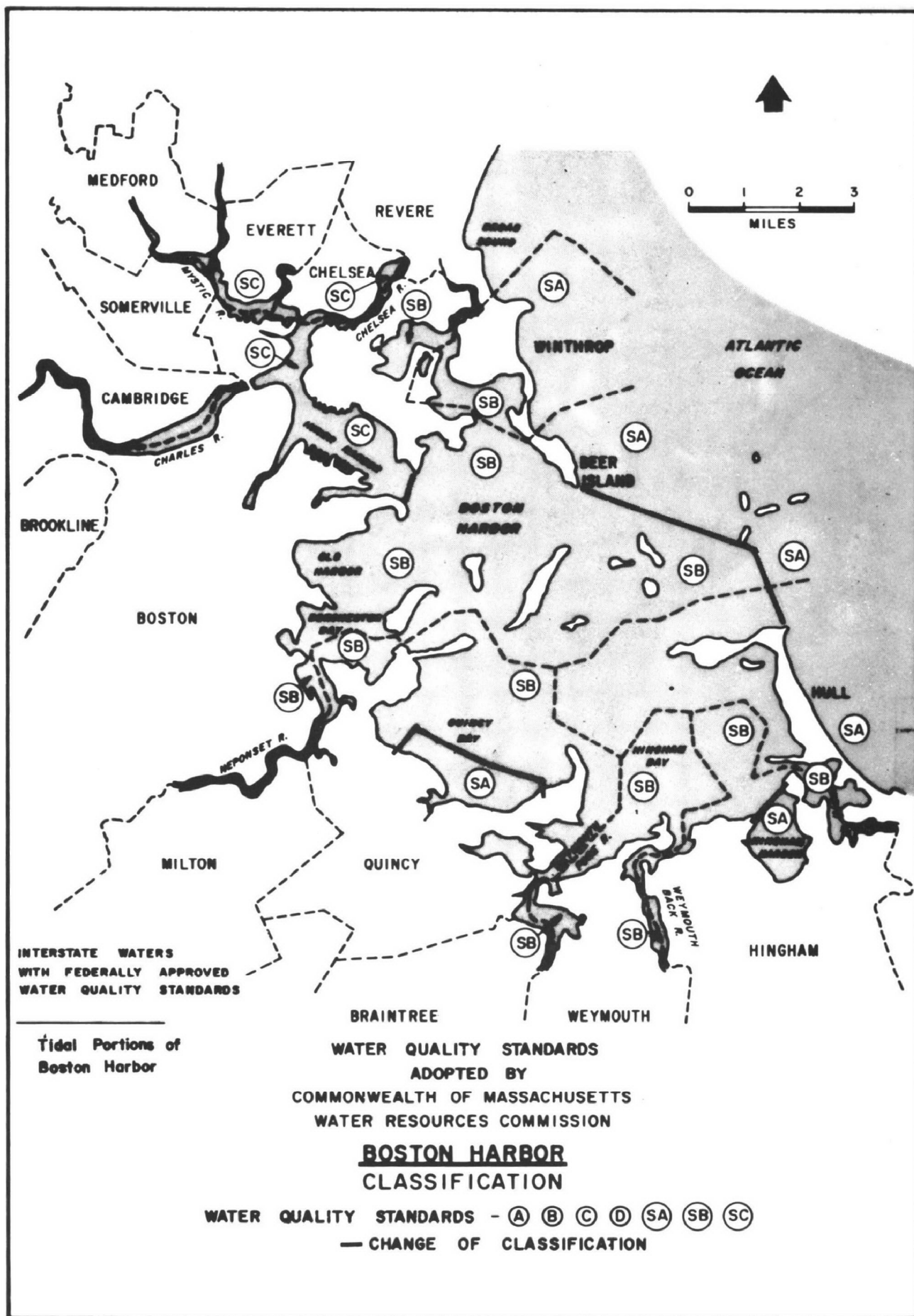
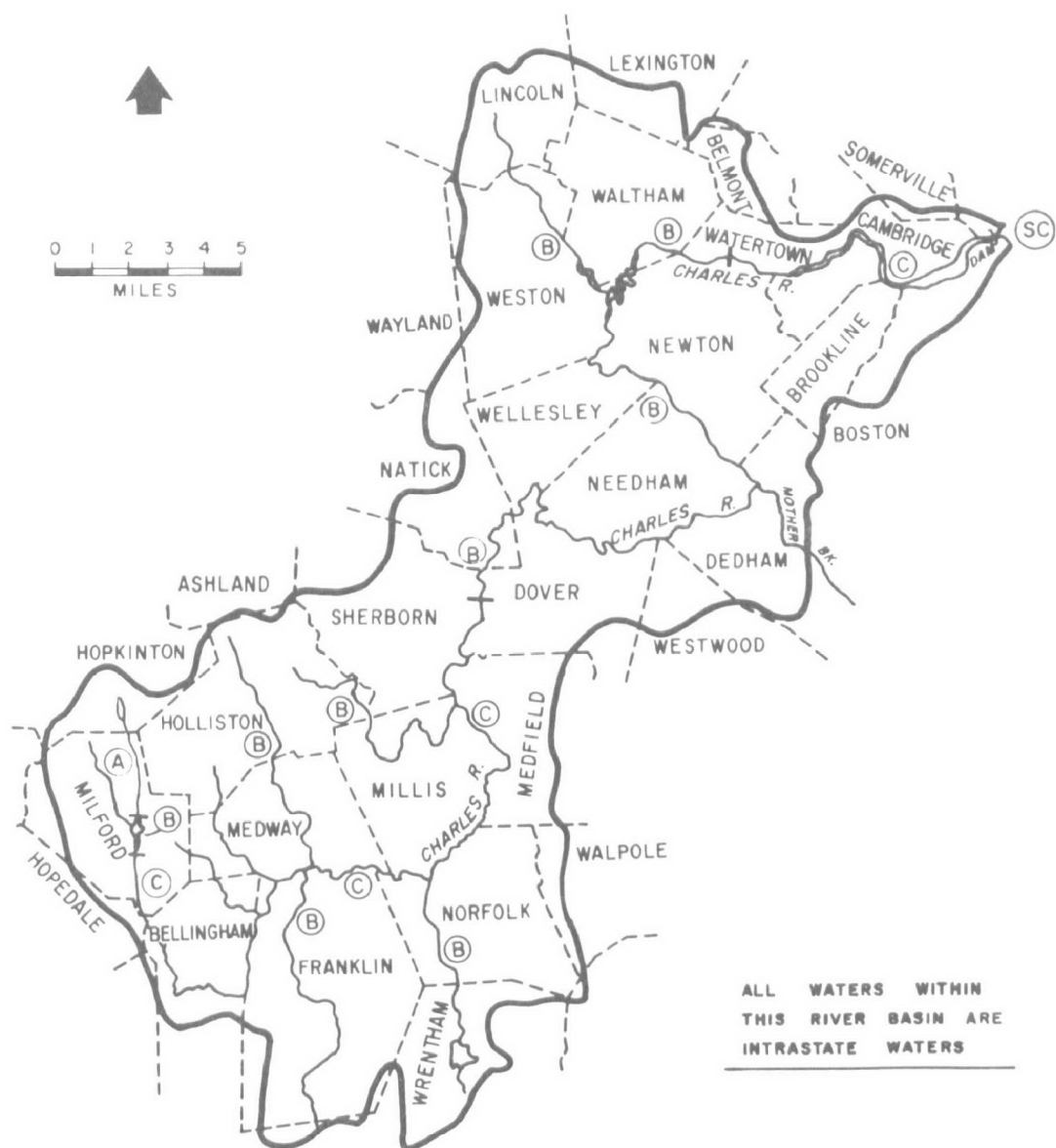


FIGURE 3



ALL WATERS WITHIN
THIS RIVER BASIN ARE
INTRASTATE WATERS

WATER QUALITY STANDARDS
ADOPTED BY
COMMONWEALTH OF MASSACHUSETTS
WATER RESOURCES COMMISSION
CHARLES RIVER BASIN
CLASSIFICATION

WATER QUALITY STANDARDS - (A) (B) (C) (D) (SC)
— CHANGE OF CLASSIFICATION

FIGURE 4



WATER QUALITY STANDARDS
ADOPTED BY
COMMONWEALTH OF MASSACHUSETTS
WATER RESOURCES COMMISSION
CHICOPEE RIVER BASIN
CLASSIFICATION

WATER QUALITY STANDARDS - (A) (B) (C) (D)
— CHANGE OF CLASSIFICATION

FIGURE 5

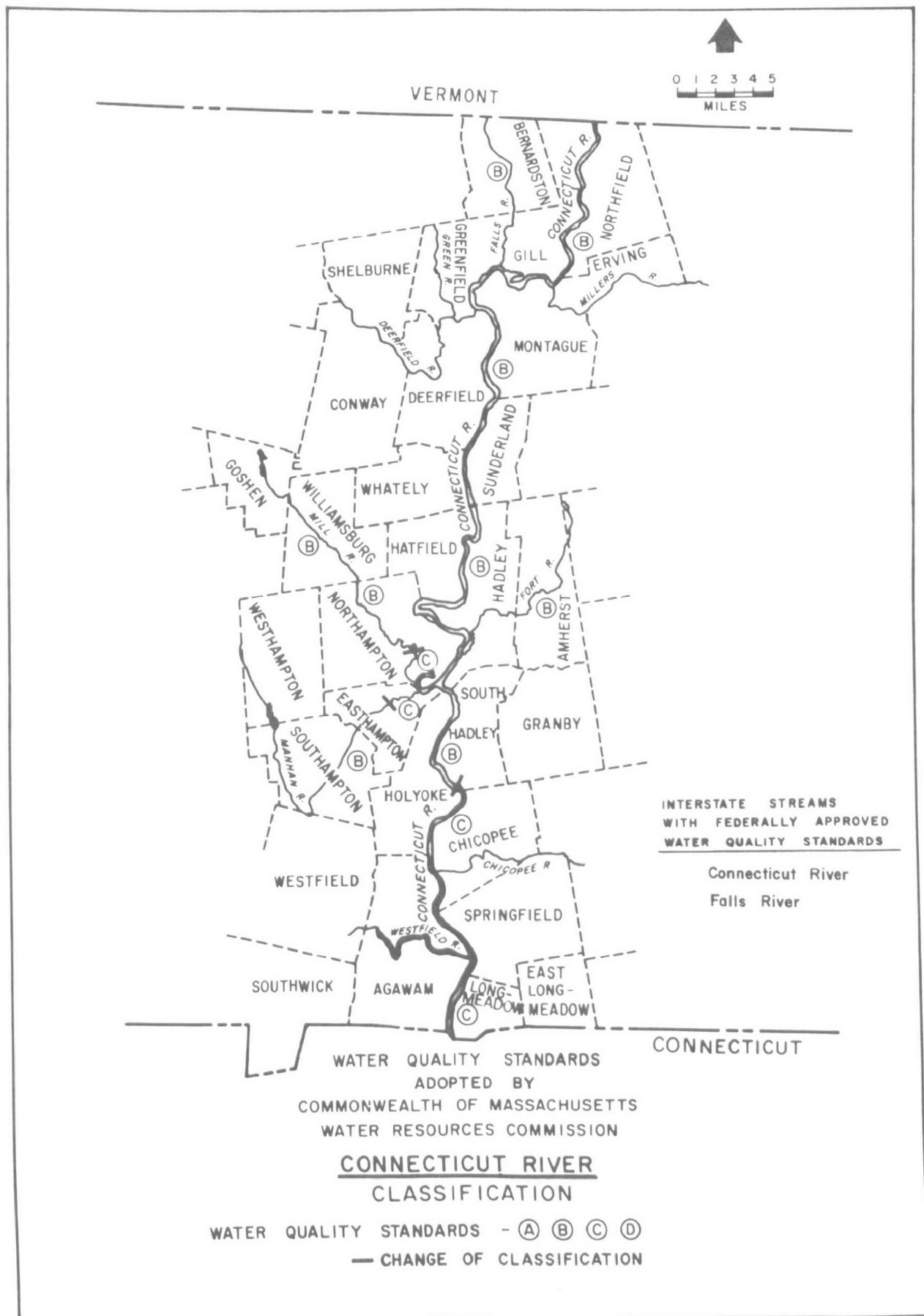


FIGURE 7

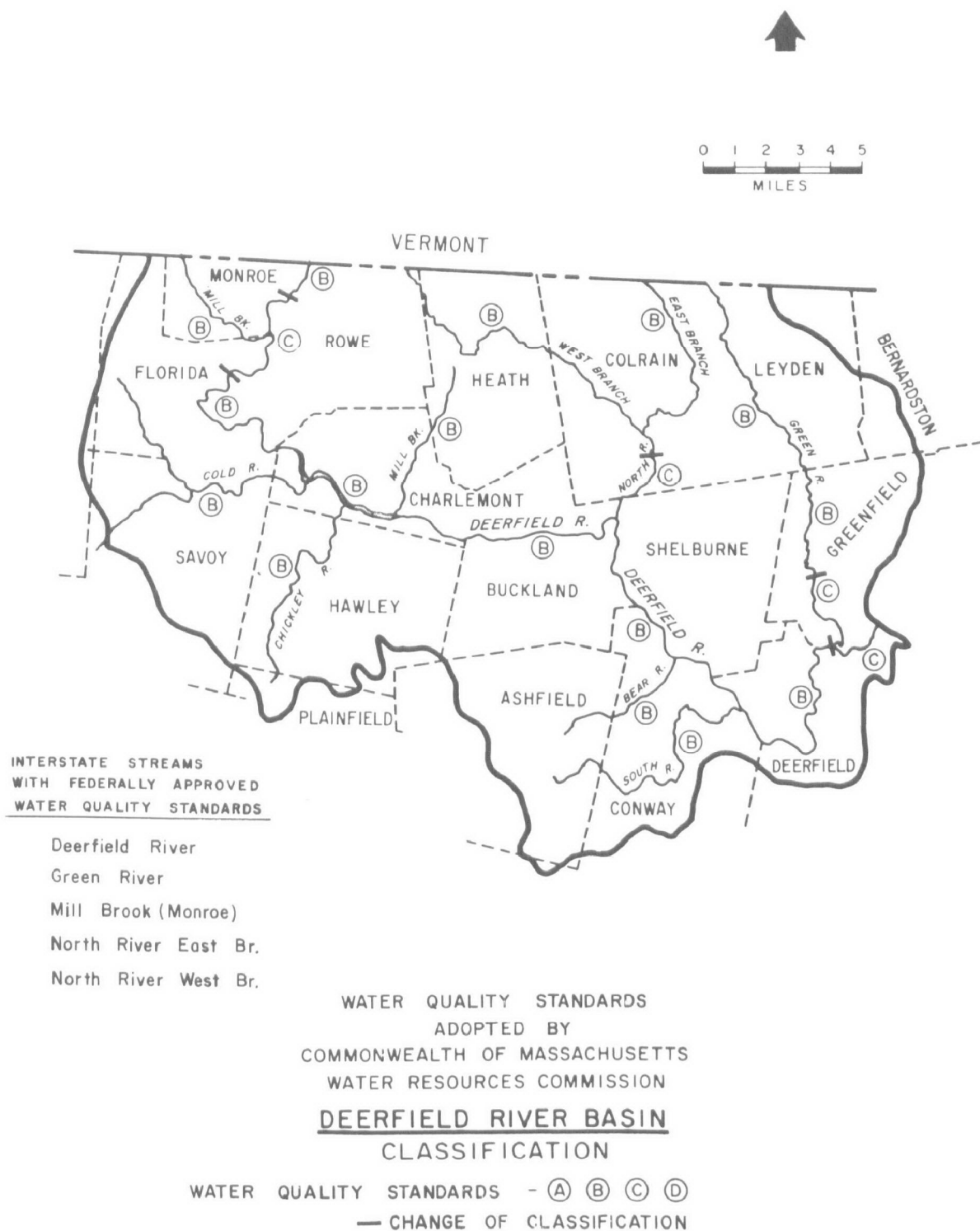


FIGURE 8



WATER QUALITY STANDARDS
ADOPTED BY
COMMONWEALTH OF MASSACHUSETTS
WATER RESOURCES COMMISSION

FARMINGTON RIVER BASIN
CLASSIFICATION

WATER QUALITY STANDARDS - (A) (B) (C) (D)
— CHANGE OF CLASSIFICATION

FIGURE 9



FIGURE 10

INTERSTATE STREAMS
WITH FEDERALLY APPROVED
WATER QUALITY STANDARDS

Hoosic River, North Br.
Hoosic River



WATER QUALITY STANDARDS
ADOPTED BY
COMMONWEALTH OF MASSACHUSETTS
WATER RESOURCES COMMISSION
HOOSIC RIVER BASIN
CLASSIFICATION

WATER QUALITY STANDARDS - (A) (B) (C) (D)
— CHANGE OF CLASSIFICATION

FIGURE 11

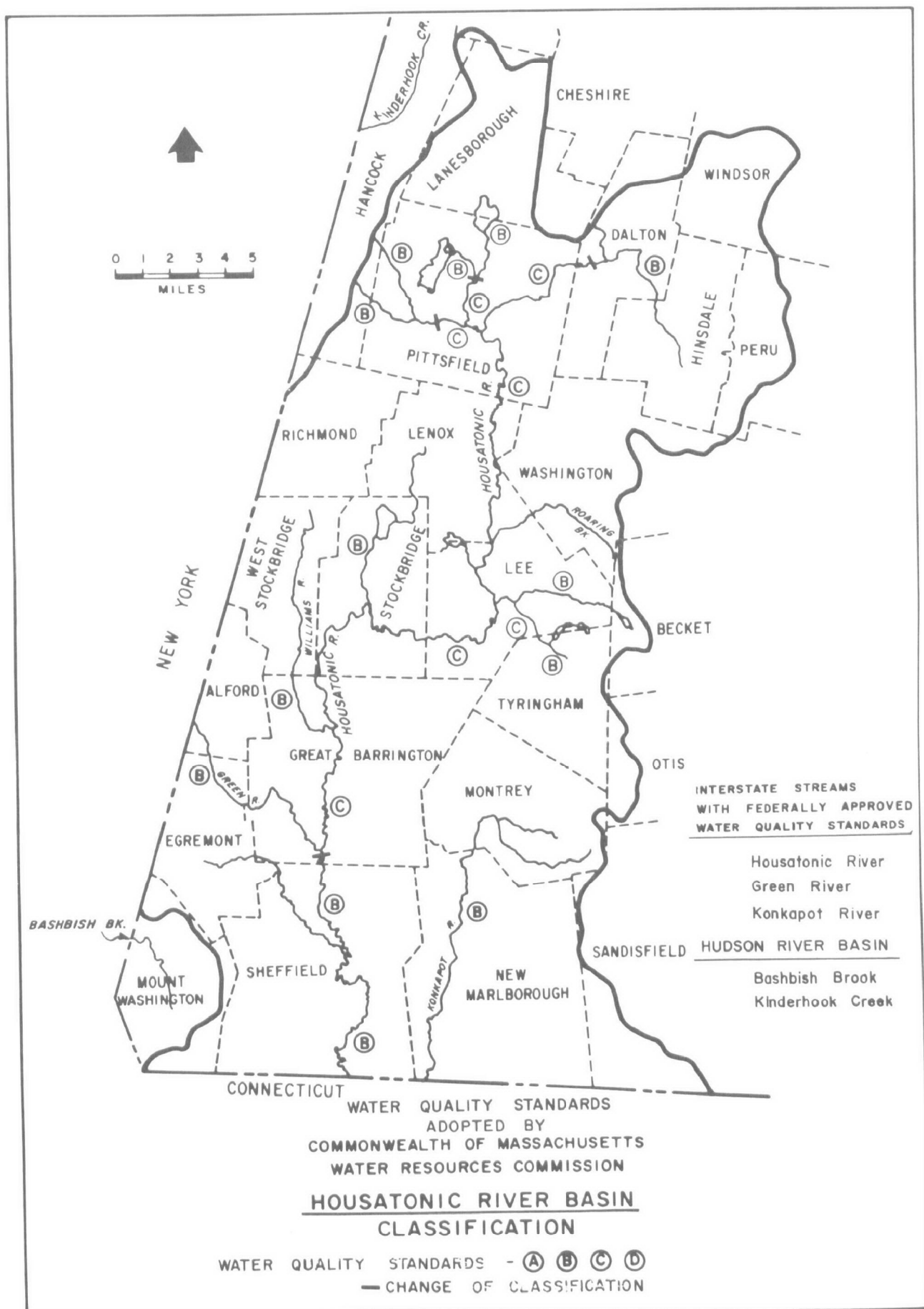


FIGURE 12

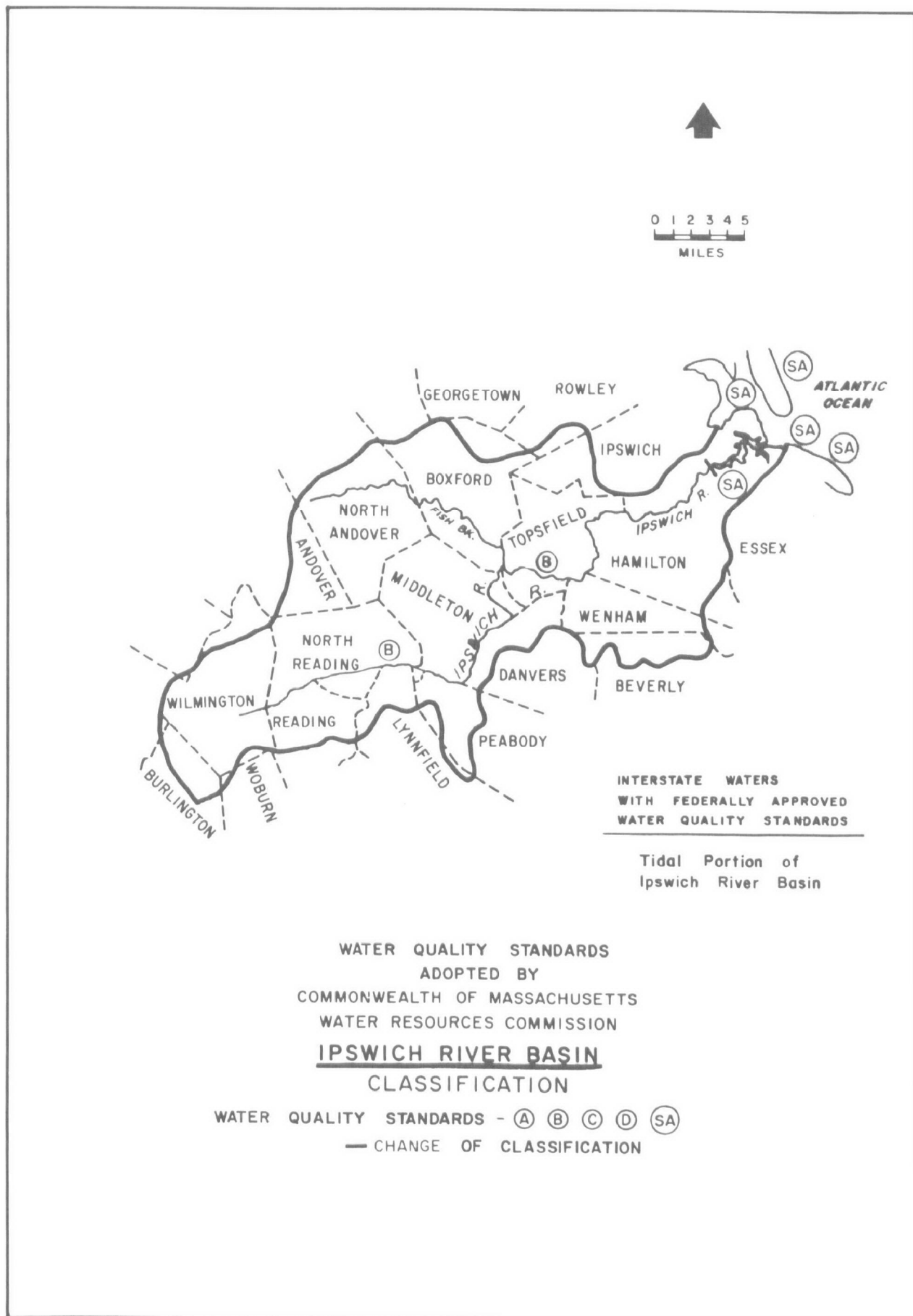


FIGURE 13

INTERSTATE STREAMS
WITH FEDERALLY APPROVED
WATER QUALITY STANDARDS

Barrington River
Kickamuit River
Palmer River
Runnins River
Warren River

WATER QUALITY STANDARDS
ADOPTED BY
COMMONWEALTH OF MASSACHUSETTS
WATER RESOURCES COMMISSION

KICKAMUIT, WARREN & BARRINGTON RIVER BASINS
CLASSIFICATION

WATER QUALITY STANDARDS - (A) (B) (C) (D) (SA)
— CHANGE OF CLASSIFICATION



FIGURE 14

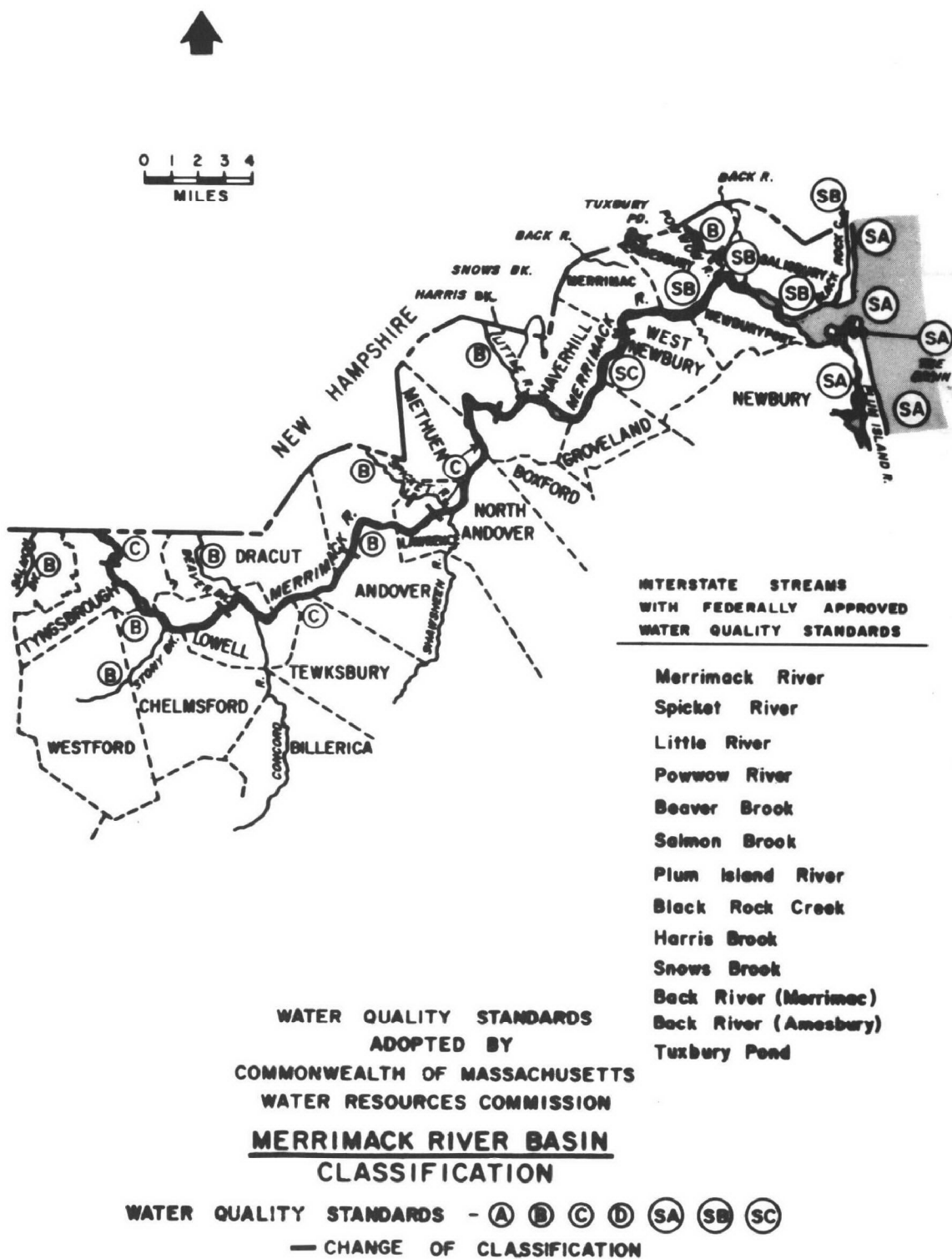


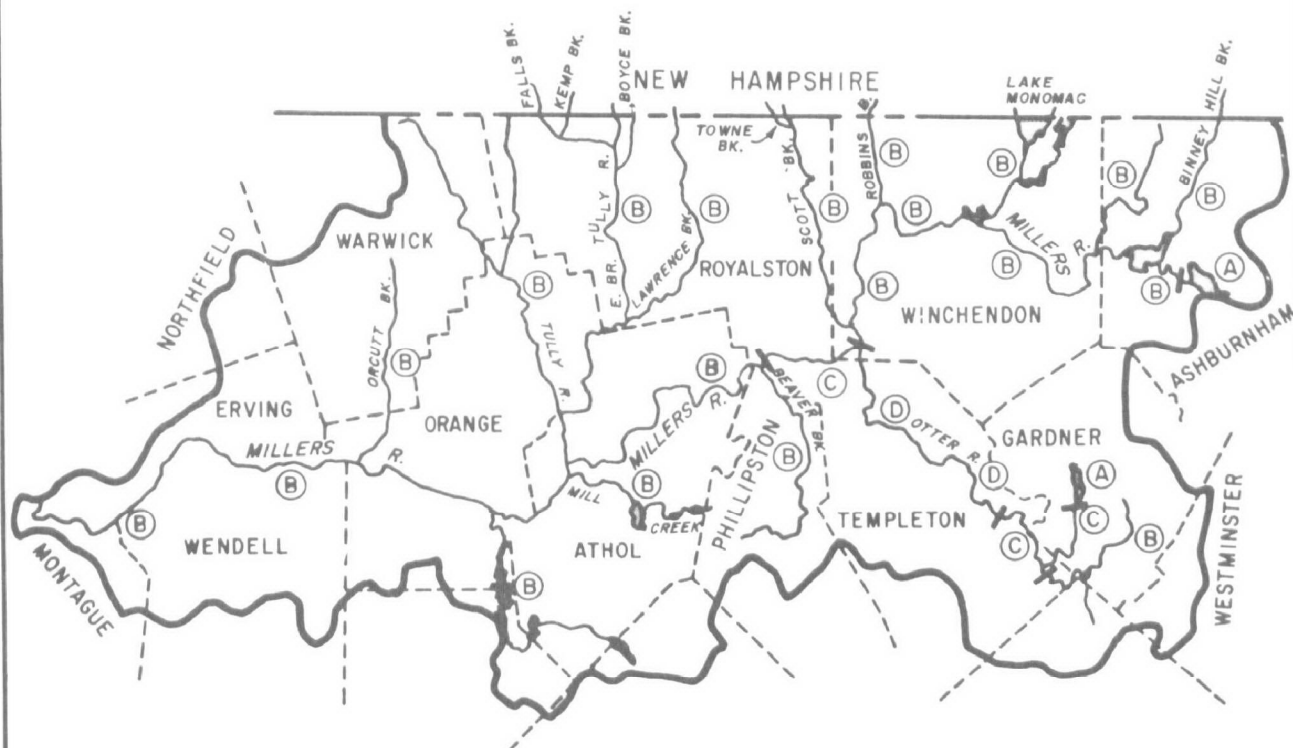
FIGURE 15

INTERSTATE STREAMS
WITH FEDERALLY APPROVED
WATER QUALITY STANDARDS

Binney Hill Brook	Millers River
Boyce Brook	Robbins Brook
Falls Brook	Scott Brook
Kemp Brook	Towne Brook
Lake Monomac	Tully River
Lawrence Brook	E. Br. Tully River



0 1 2 3 4 5
MILES



WATER QUALITY STANDARDS
ADOPTED BY
COMMONWEALTH OF MASSACHUSETTS
WATER RESOURCES COMMISSION

MILLERS RIVER BASIN
CLASSIFICATION

WATER QUALITY STANDARDS - (A) (B) (C) (D)
— CHANGE OF CLASSIFICATION

FIGURE 16

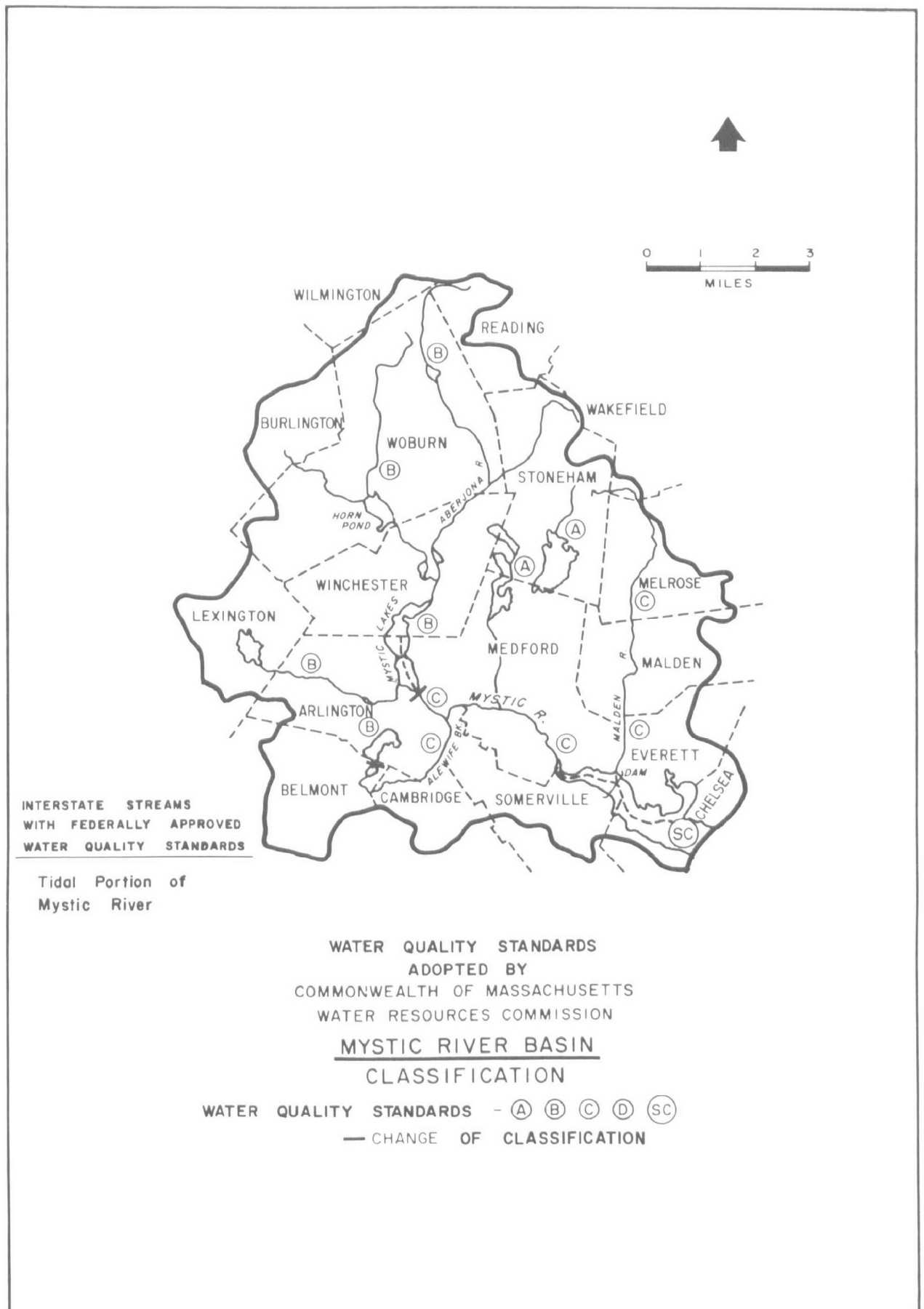


FIGURE 17

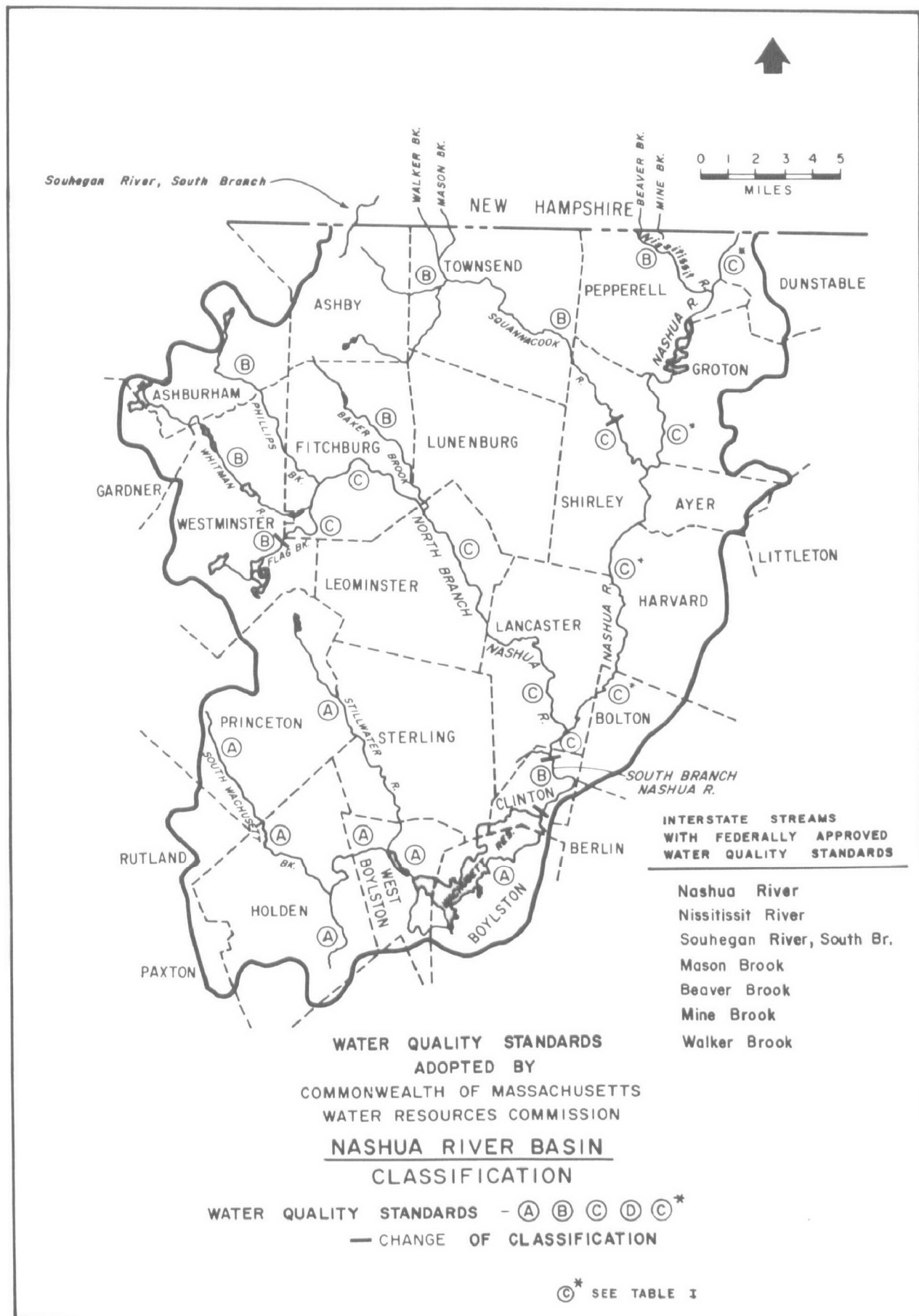


FIGURE 18



0 1 2 3 4 5
MILES



WATER QUALITY STANDARDS
ADOPTED BY
COMMONWEALTH OF MASSACHUSETTS
WATER RESOURCES COMMISSION
NEPONSET RIVER BASIN
CLASSIFICATION

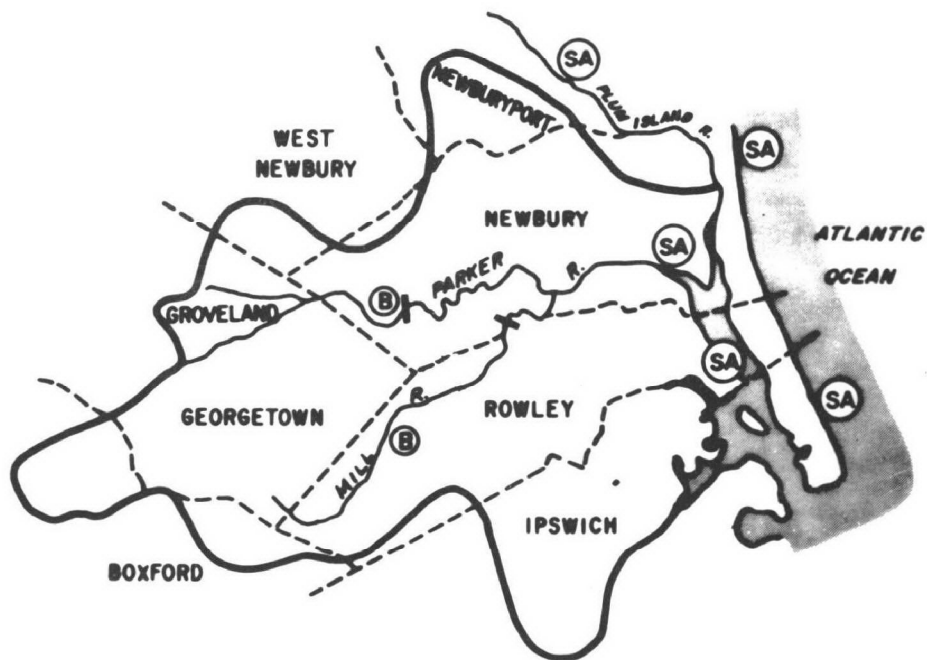
WATER QUALITY STANDARDS - (A) (B) (C) (D) (SB)
— CHANGE OF CLASSIFICATION

FIGURE 19

**INTERSTATE STREAMS
WITH FEDERALLY APPROVED
WATER QUALITY STANDARDS**

**Tidal Portion of
Parker River Basin**

Plum Island River (Tidal)



**WATER QUALITY STANDARDS
ADOPTED BY
COMMONWEALTH OF MASSACHUSETTS
WATER RESOURCES COMMISSION**

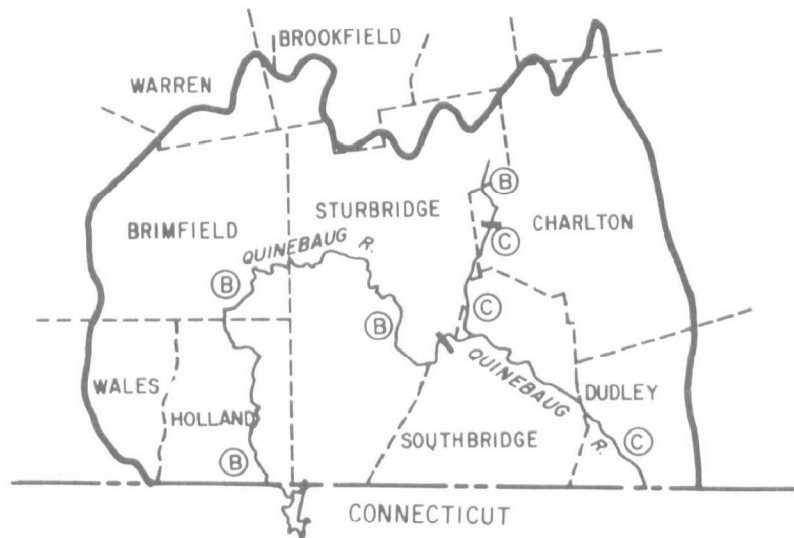
**PARKER RIVER BASIN
CLASSIFICATION**

WATER QUALITY STANDARDS - (A) (B) (C) (D) (SA)
— CHANGE OF CLASSIFICATION

FIGURE 21



0 1 2 3 4 5
MILES



INTERSTATE STREAMS
WITH FEDERALLY APPROVED
WATER QUALITY STANDARDS

Quinebaug River

WATER QUALITY STANDARDS
ADOPTED BY
COMMONWEALTH OF MASSACHUSETTS
WATER RESOURCES COMMISSION
QUINEBAUG RIVER BASIN
CLASSIFICATION

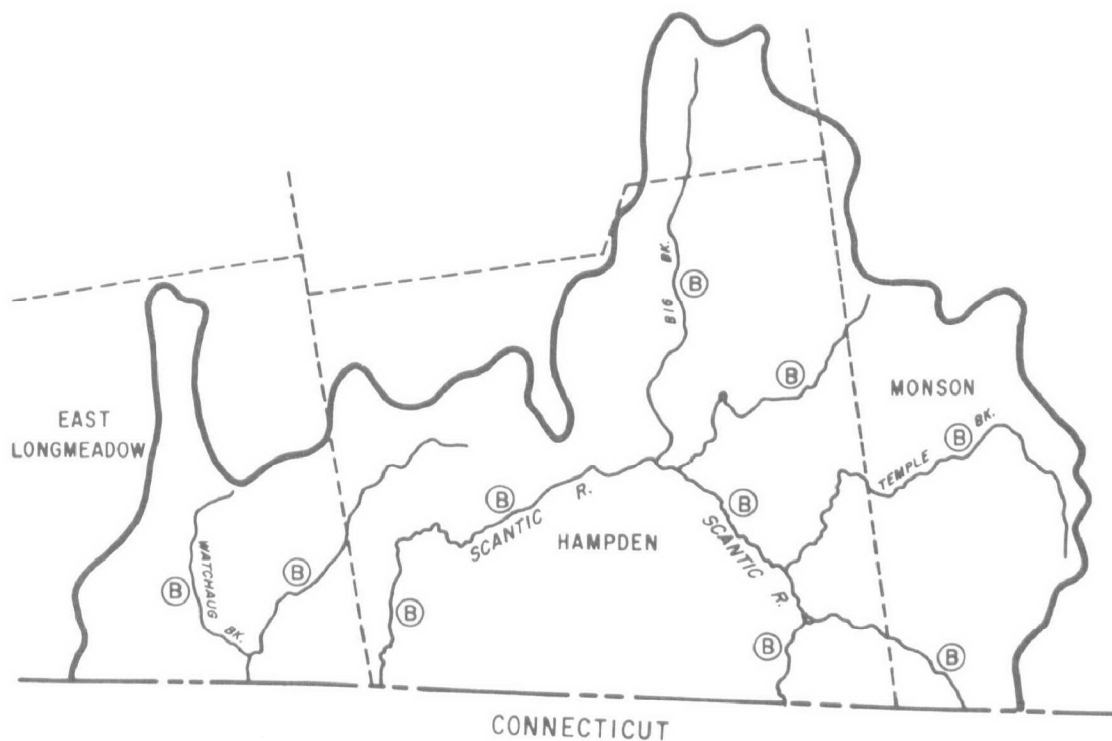
WATER QUALITY STANDARDS - (A) (B) (C) (D)
— CHANGE OF CLASSIFICATION

FIGURE 22

INTERSTATE STREAMS
WITH FEDERALLY APPROVED
WATER QUALITY STANDARDS

Scantic River
Watchaug Brook

0 1 2
MILES



WATER QUALITY STANDARDS
ADOPTED BY
COMMONWEALTH OF MASSACHUSETTS
WATER RESOURCES COMMISSION

SCANTIC RIVER BASIN
CLASSIFICATION

WATER QUALITY STANDARDS - (A) (B) (C) (D)
— CHANGE OF CLASSIFICATION

FIGURE 23



ALL WATERS WITHIN
THIS RIVER BASIN
ARE INTRASTATE WATERS

WATER QUALITY STANDARDS
ADOPTED BY
COMMONWEALTH OF MASSACHUSETTS
WATER RESOURCES COMMISSION

SHAWSHEEN RIVER BASIN
CLASSIFICATION

WATER QUALITY STANDARDS - (A) (B) (C) (D)
— CHANGE OF CLASSIFICATION

FIGURE 24

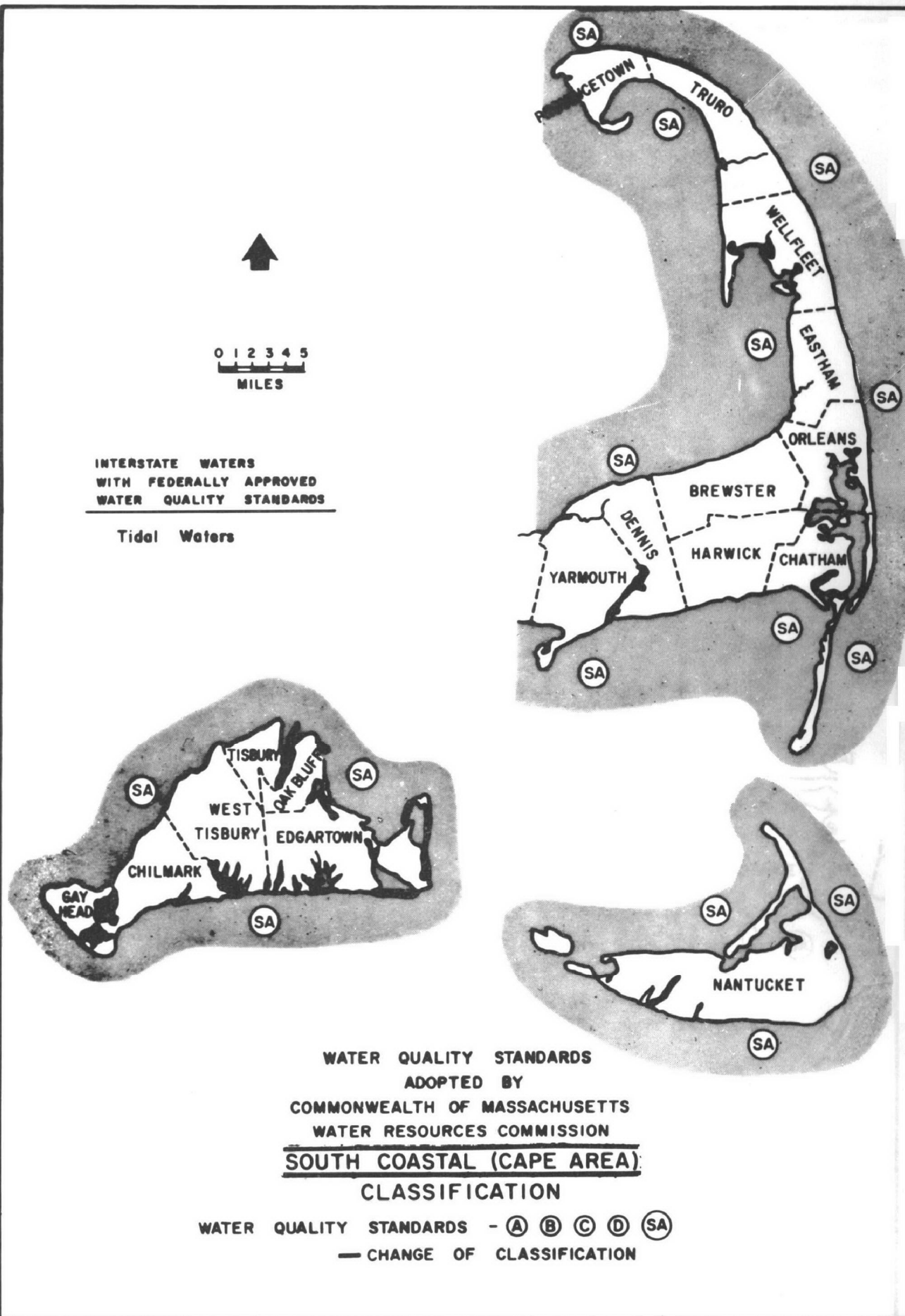


FIGURE 25

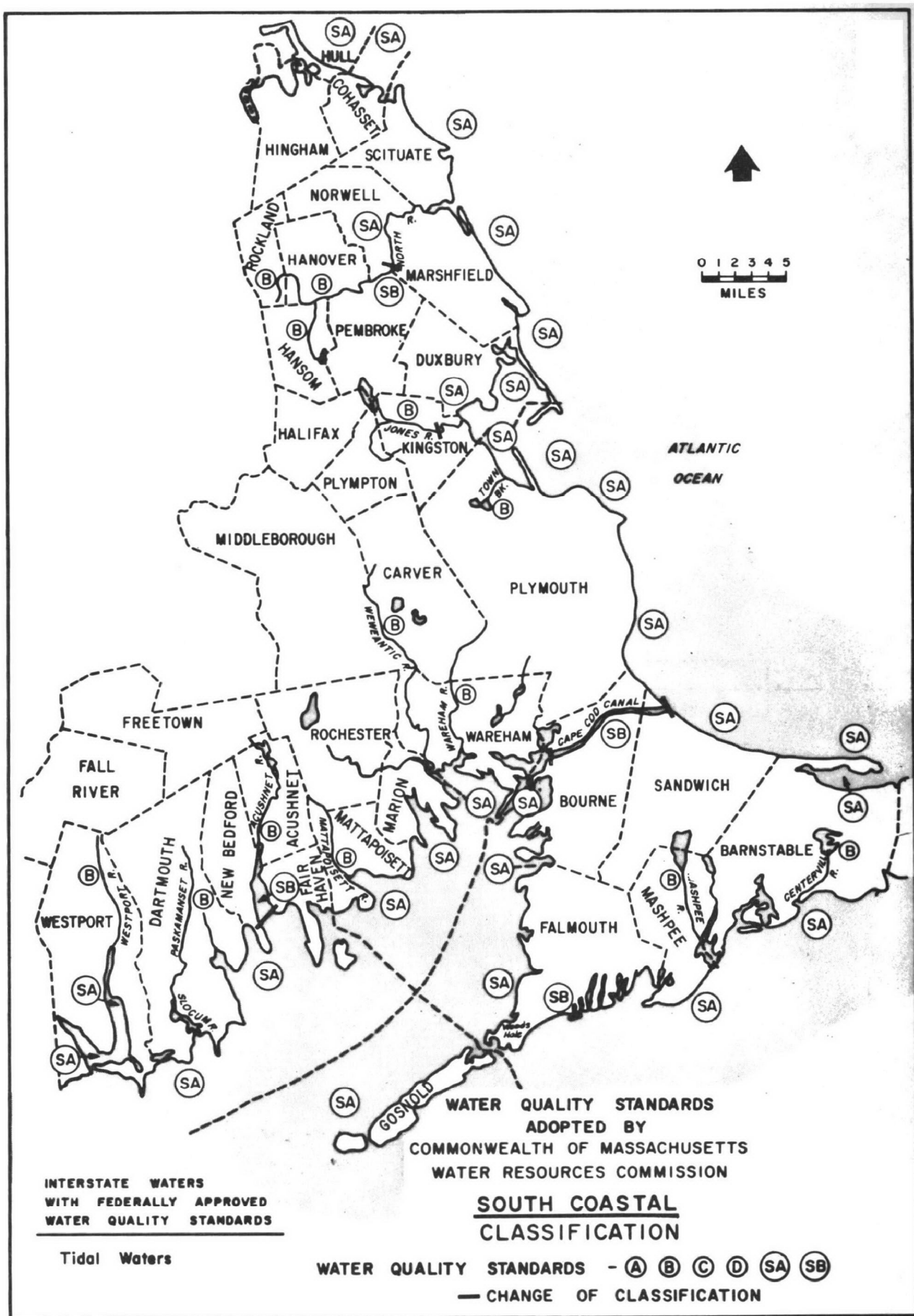


FIGURE 26

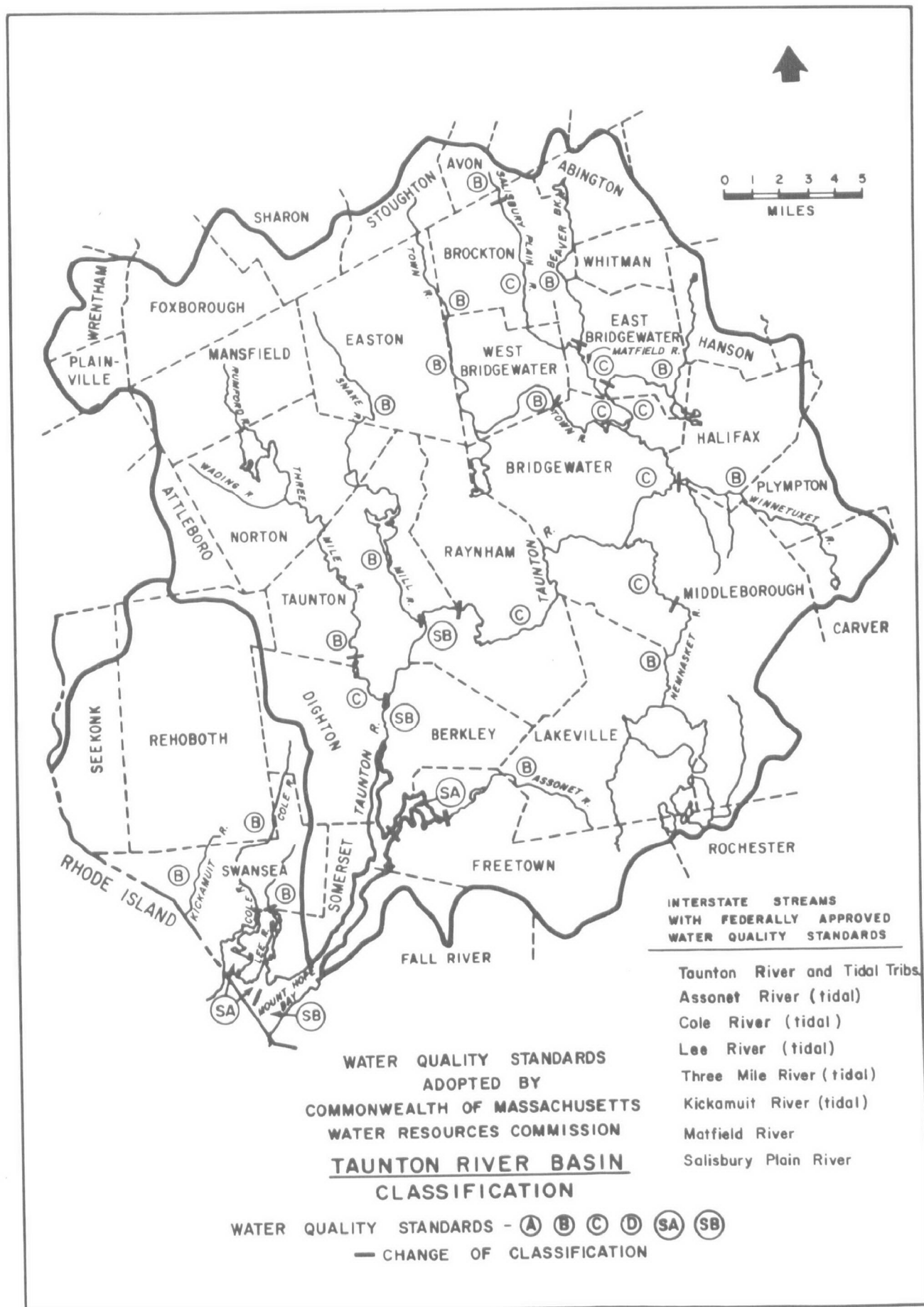
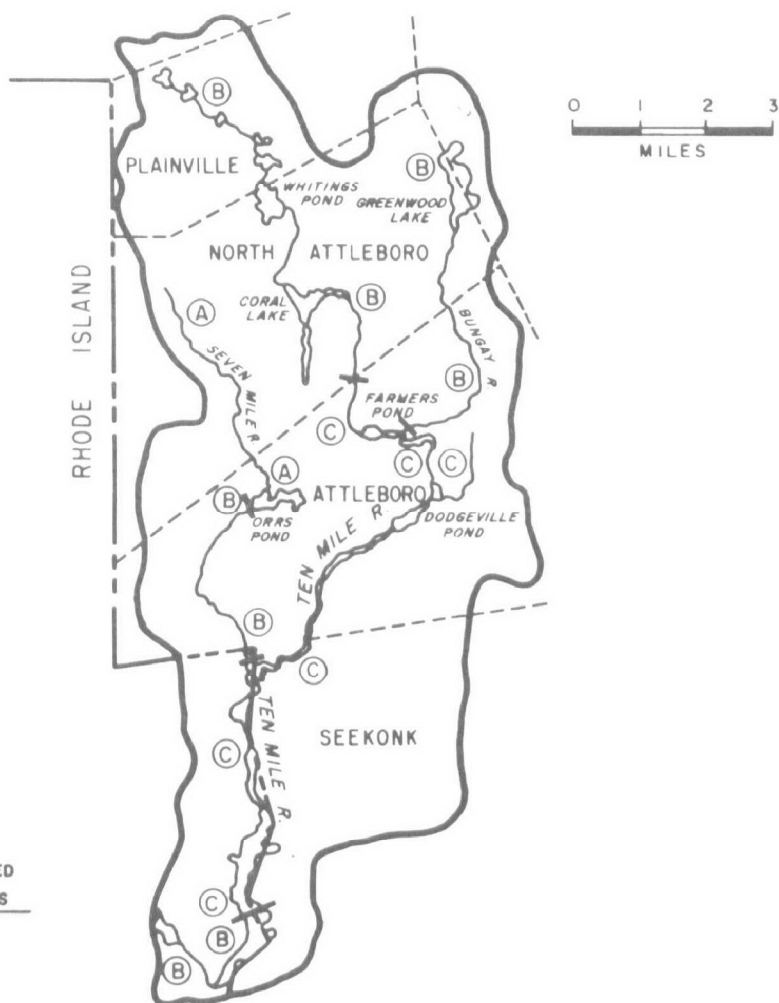


FIGURE 27

INTERSTATE STREAMS
WITH FEDERALLY APPROVED
WATER QUALITY STANDARDS

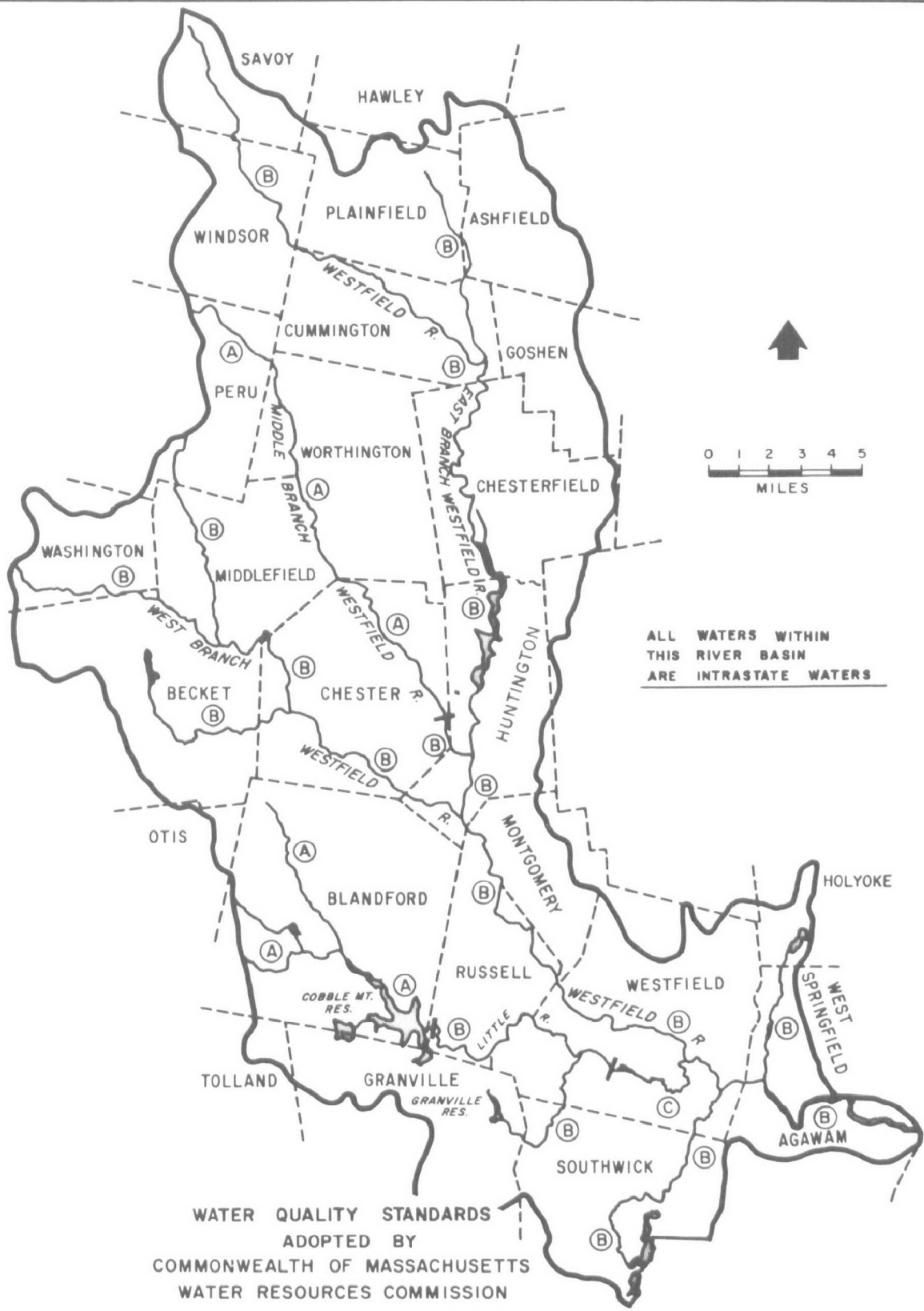
Ten Mile River
Seven Mile River



WATER QUALITY STANDARDS
ADOPTED BY
COMMONWEALTH OF MASSACHUSETTS
WATER RESOURCES COMMISSION
TEN MILE RIVER BASIN
CLASSIFICATION

WATER QUALITY STANDARDS - (A) (B) (C) (D)
— CHANGE OF CLASSIFICATION

FIGURE 28



WATER QUALITY STANDARDS
ADOPTED BY
COMMONWEALTH OF MASSACHUSETTS
WATER RESOURCES COMMISSION

WESTFIELD RIVER BASIN
CLASSIFICATION

WATER QUALITY STANDARDS - (A) (B) (C) (D)
— CHANGE OF CLASSIFICATION

FIGURE 29

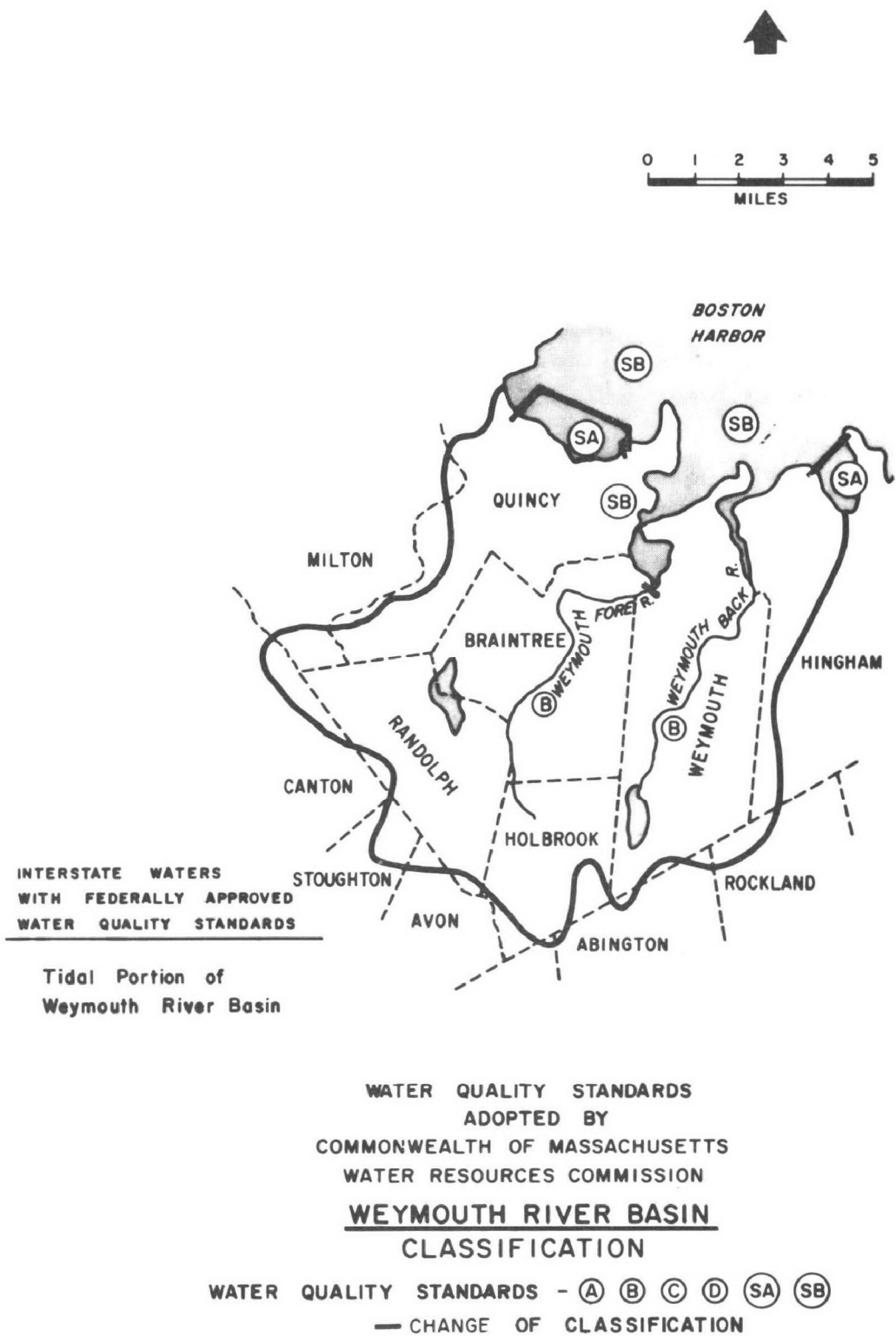


FIGURE 30

APPENDIX I

EXCERPTS FROM
MASSACHUSETTS CLEAN WATERS ACT

AUTHORIZING THE ESTABLISHMENT AND ENFORCEMENT
OF WATER QUALITY STANDARDS

(As Amended Through the Acts of 1971)

MASSACHUSETTS CLEAN WATERS ACT

Chapter 21 of the General Laws as amended

AND RELATED WATER POLLUTION CONTROL LAWS



Commonwealth of Massachusetts
Water Resources Commission
Division of Water Pollution Control

CHAPTER 685
THE COMMONWEALTH OF MASSACHUSETTS
IN THE YEAR ONE THOUSAND NINE HUNDRED AND SIXTY-SIX

An Act Establishing A Water Pollution Control Division In The Department Of Natural Resources

Whereas, The deferred operation of this act would tend to defeat its purpose, which is, in part, to provide funds immediately for a water pollution control program for the commonwealth, therefore it is hereby declared to be an emergency law, necessary for the immediate preservation of the public convenience and public health.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:—

SECTION 1. Chapter 21 of the General Laws is hereby amended by adding after section 25, under the caption DIVISION OF WATER POLLUTION CONTROL, the following sections:—

SECTIONS 26 through 58: See Massachusetts Clean Waters Act

SECTION 2. The classification of the various waters of the commonwealth and the standards of water quality established therefor, as appearing in rules and regulations adopted by the department of public health, to prevent pollution and to secure a sanitary protection of such waters and all orders, actions, suits and injunctions relating to pollution abatement shall continue in full force and effect as if adopted by the division of water pollution control under the appropriate provisions of chapter twenty-one of the General Laws, as appearing in section one of this act, and shall remain in effect until amended, modified or repealed by said division of water pollution control.

SECTION 3. Wherever in any general or special law reference is made to the authority to administer water pollution abatement or control laws, such authority shall, on the effective date of this act, be vested in the division of water pollution control

§ 27. Powers and duties of division

It shall be the duty and responsibility of the division to enhance the quality and value of water resources and to establish a program for the prevention, control, and abatement of water pollution. Said division shall:

(1) Encourage the adoption and execution by cities and towns, industries and other users of the waters of the commonwealth, and by co-operative groups of municipalities and industries, of plans for the prevention, control and abatement of water pollution.

(2) Co-operate with appropriate federal agencies or the agencies of other states, or with interstate agencies in matters related to water quality control, and shall receive and dispense such funds from any such agencies as may be available for the prevention, control and abatement of water pollution. Said division shall also co-operate with and assist departments, boards, officials and institutions of the commonwealth or its political subdivisions that may be concerned in any way with problems of water pollution.

(3) Conduct a program of study and research and demonstration, by itself or in co-operation with other governmental agencies, relating to new and improved methods of pollution abatement or more efficient methods of water quality control, including the treatment, neutralization and stabilization of sewage and industrial waste and the disposal thereof by treatment or disposal plant, sewer systems, pumping stations, or acceleration flow or by other methods, facilities or equipment so as to insure cleaner waters in the coastal waters, rivers, streams, lakes and ponds of the commonwealth.

(4) Adopt standards of water quality which shall be applicable to the various waters or portions of waters of the commonwealth, and a plan for the implementation and enforcement of the standards so adopted for the various waters. Said standards of water quality shall be established to protect the public health, enhance the quality of water, and carry out the provisions of sections twenty-six to fifty, inclusive. Such standards as shall relate to the public health shall not be adopted without the written approval of the commissioner of public health.

(5) Examine periodically the water quality of the various coastal waters, rivers, streams, lakes and ponds of the commonwealth, or separate portions of such waters, and publish the results of such examinations together with the standard of water quality established for the various waters or portions thereof.

(6) Prepare and keep current a comprehensive plan, which shall be approved by the water resources commission, for the abatement of existing pollution and the prevention of further pollution in the waters of the commonwealth, by the installation, use and operation of practical facilities and methods for controlling water pollution, recognizing different requirements for different waters and for different segments of the same waters.

(7) Arrange for personnel engaged in the work of water pollution prevention and abatement to take courses designed to instruct employees of water pollution control facilities, including sewage treatment and disposal systems, in the latest and most efficient methods of water pollution control and the latest developments in the operation and maintenance of plants and facilities for the prevention or abatement of water pollution.

(8) Adopt, amend, or repeal after hearing from time to time, with the approval of the water resources commission, rules and regulations which it deems necessary for the proper administration of the laws relative to water pollution control and to the protection of the quality and value of water resources, including regulations to control or prevent the discharge of sewage, garbage or other waste material from watercraft of any type, including houseboats; provided, however, that no such regulation which requires the installation of equipment on any such watercraft shall take effect prior to May the fifteenth, nineteen hundred and seventy-one. Such rules and regulations as shall relate to the public health shall not be adopted without the written approval of the commissioner of public health. Except as otherwise provided in this chapter, any person violating any rule or regulation issued under the authority of sections twenty-six to fifty-three, inclusive, shall be punished by a fine of not more than one thousand dollars.

(9) Require submissions for approval of reports and plans of abatement facilities or any part thereof, and inspect the construction thereof for compliance with the approved plans.

DEPARTMENT OF NATURAL RESOURCES

(10) Undertake immediately, whenever there is spillage, seepage or other discharge of oil into any of the waters of the commonwealth or into any offshore waters which may result in damage to the waters, shores or natural resources utilized or enjoyed by citizens of the commonwealth to cause said spillage, seepage or discharge to be contained and removed by whatever method it considers best. Chemicals shall not be used in the clean-up operation of oil spills unless their use has been authorized by the division, and if a public water supply or shellfish beds may be affected, by the department of public health.

In this clause, the word "oil" shall mean insoluble or partially soluble oils of any kind or origin or in any form including, but not limited to, crude or fuel oils, lube oil or sludge, asphalt, insoluble or partially insoluble derivatives of mineral, animal or vegetable oils.

The division shall determine the person responsible for causing such spillage, seepage or discharge and the names of all persons who owned or controlled the oil or who owned or controlled or leased the vessel, tank, pipe, hose or other container in which the oil was located when the spillage, seepage or discharge occurred. Said persons shall be jointly and severally liable to the commonwealth for all costs and expenses incurred by the division in making such investigation, and in containing and removing the oil, and shall be jointly and severally liable to the commonwealth for all damages done to natural and recreational resources, including all costs of restoring damaged areas to their original condition, and to any other person for any damages to his real and personal property. The person responsible for causing such spillage, seepage or discharge shall be punished by a fine of not more than ten thousand dollars for each day such spillage, seepage or discharge continues, or by imprisonment for not more than two years or both.

Upon request of the director, the attorney general shall bring an action to recover all costs and expenses incurred for such investigation, containment, removal and restoration.

Such costs and expenses shall be recovered in an action of tort, and shall be credited to the account from which said sums of money had been advanced and may, subject to appropriation, be expended by the division for the purposes set forth in this clause. In any such action the commonwealth may also seek recovery for all loss and damage to the natural and recreational resources of the commonwealth.

Any owner or operator of a vessel, vehicle, railroad car or facility used for the production, processing, transportation, transfer or storage of oil shall, as soon as he has knowledge of any such spillage, seepage or discharge of oil into or adjacent to waters of the commonwealth, promptly notify the director of the division or his representative of such discharge. Any person who fails so to notify the director or his representative of such discharge shall be punished by a fine of not more than five thousand dollars.

SECTION 42. Discharge into Water in Contravention of Established Standards; Penalty

Whoever directly or indirectly throws, drains, runs or discharges or permits the discharge into the waters of the commonwealth organic or inorganic matter which shall cause, or contribute to, a condition in contravention of the standards adopted by the division shall be punished by a fine of not more than one thousand dollars. Each day such violation continues shall be a separate offense, punishable by a like fine. For the purpose of this section and sections forty-three to forty-six, inclusive, the words "whoever" and "person" shall include political subdivisions of the commonwealth and public corporations.

SECTION 43. Discharge of Sewage or Industrial Wastes; Permit; Injunction

No person shall make or permit a outlet for the discharge of sewage or industrial waste or wastes, or the effluent therefrom, into any of the waters of the commonwealth nor shall he construct or operate a disposal system for the discharge of sewage or industrial or other wastes or the effluent therefrom into the waters of the commonwealth without first obtaining a permit, which the director is hereby authorized to issue, subject to such conditions as he may deem necessary to insure compliance with the standards established for the waters affected. Whoever violates this section may be enjoined from continuing such violation, as provided in section forty-four.

§ 44. Notice of contravention of water quality standards; order to correct; hearing

Whenever it appears to the director that there is a discharge of sewage or industrial, commercial or other wastes into the waters of the commonwealth or that oil, debris or other material has been deposited in or adjacent to the waters of the commonwealth which is causing or contributing to, or is likely to cause or contribute to, a condition in contravention of the standards of water quality adopted for said waters, or which is not in accordance with the plan adopted by the division for the implementation and enforcement of said standards for said waters, or which is in contravention of any rule or regulation of the division, the director shall notify the person making or permitting such discharge or deposit in writing of said discharge or deposit and shall, in this or in a subsequent written notice, order that said person correct the condition complained of in accordance with a schedule set forth therein. Said order shall inform the alleged violator of his right to request, within thirty days, a hearing under the provisions of chapter thirty A, but if no such request is made within thirty days, said person shall be deemed to have consented to the order. If said person requests a hearing, the director or his designee shall within a reasonable time hold a hearing under the provisions of said chapter thirty A. The director may reissue such order as is warranted.

§ 45. Regulation of sewerage systems and water pollution abatement facilities to insure adequate treatment of waste; submission of records

The division may require by order a city, town, district, person or any other entity maintaining a sewerage system or water pollution abatement facility to provide and operate such facility in such a manner as is in its opinion necessary to insure adequate treatment prior to discharge to the waters of the commonwealth. The division may adopt rules and regulations governing the operation and maintenance of waste treatment facilities and may require the periodic submission of records to it.

§ 46. Judicial review; jurisdiction; injunction; findings of director as prima facie evidence

All orders, permits or other determinations of the director, except those consented thereto, shall be subject to judicial review as provided in chapter thirty A. The superior court shall have jurisdiction in equity to enforce any such order, permit or determination, and the provisions of sections twenty-six to fifty-three, inclusive, and any rule or regulation issued thereunder. The superior court may, if the public health, safety and interest so requires, enjoin any action or remedy any pollution prior to the final determination of any administrative proceeding or appeal therefrom. In any action so brought, any findings of the director shall be prima facie evidence of the facts found therein.

§ 50. Terminals; licenses; inspection; rules and regulations; fees; penalty

The division shall have the power to license all terminals in the commonwealth for the loading or discharge of petroleum products from vessels, and may issue reasonable rules and regulations in connection therewith for the purposes of protecting the public safety and for preventing the spilling of the liquids into the waters of the commonwealth.

The division shall inspect periodically hoses, gaskets, tanks, pipelines and other equipment to make certain that they are in good operating condition, and may order the renewal of any of such equipment found unfit for further use.

The division may require by rules and regulations that suitable equipment be readily available to remove from the waters of the commonwealth any petroleum or chemical liquids spilled or discharged therein.

The division may require the payment of reasonable fees, designed to cover the costs incurred by the above inspections and its other duties.

Whoever operates such a terminal without a license from the division shall be punished by a fine of one hundred dollars per day during such period of unauthorized operation.

SECTION 50A. Oil Terminals, Pollution Prevention, Penalty

Notwithstanding the provisions of section fifty, every owner or operator of an oil terminal or wharf shall employ a trained crew and have a plastic or wooden boom which is capable of encircling any ship or vessel depositing oil into tanks or other receptacles at such terminal or wharf, and which is designed to prevent seepage, overflow or excess oil from polluting or contaminating any lake, river, harbor, tidal water or flats. If the director finds that because of the negligence of such owner, operator or one of his agents or servants repeated seepage, overflow or excess oil has contaminated any lake, river, harbor, tidal waters or flats he shall require every such owner or operator to encircle every ship or vessel depositing oil at his wharf or terminal with such a boom. The authority granted to the director under the preceding sentence shall not be construed to diminish his powers to regulate and control oil spillage, including his power to require the use of booms, granted by section fifty. The owner or operator of any such wharf or terminal shall remove any oil held within such boom prior to a ship or vessel leaving the same. Whoever violates the provisions of this section shall be punished by a fine of not more than one thousand dollars. A license issued under section fifty to operate a terminal may be revoked for violation of any of the provisions of this section.

SECTION 50B. Oil Vessel; Posting of Bond, and Financial Responsibility

Any vessel, whether or not self-propelled, in or entering upon the waters of the commonwealth for the purpose of discharging or receiving a cargo of any bulk petroleum product in the commonwealth shall post a bond with the division of at least twenty-five thousand dollars payable to the commonwealth. Said bond shall be in a form approved by the division and may be obtained individually or jointly by the vessel, its owner or agent, its charterer, or by the owner or operator of the terminal at which the vessel discharges or receives said petroleum products. If the division determines that oil, as defined in clause (10) of section twenty seven, has been discharged into the waters of the commonwealth from said vessel, the bond shall be forfeited to the extent of the costs incurred by the division in containing and removing said oil, to the extent of damage caused to the natural and recreational resources of the commonwealth, and to the extent of any otherwise uncollectable fines levied against the operators of said vessel for violation of any laws relating to water pollution abatement. The remedies provided in this section shall be in addition to all other remedies available. No bond shall be released without certification by the division that the vessel has not been a source of oil pollution. Other evidence of financial responsibility which is satisfactory to the division may be accepted by the division in lieu of bonding. Any vessel in the waters of the commonwealth for the purpose of discharging, or which receives, cargo of bulk petroleum products in the commonwealth without being bonded as provided in this section, or without having submitted other evidence of financial responsibility acceptable to the division, and the owner, agent and charterer of said vessel, and the operator of any terminal which receives or discharges such cargo from or to a vessel not so bonded, shall be punished by a fine of not more than five thousand dollars.

The superior court in equity shall have jurisdiction to enforce the provisions of this section.

SECTION 52. Waste Oil Disposal; Permits

No one shall engage in the business of collecting waste oil or shall dispose of waste oil in any waters of the commonwealth, without a permit from the division. Said permit shall not be granted unless the division is satisfied that such disposition will not result in further pollution.

The division shall consult with and advise persons engaged or intending to engage in the business of disposing of waste oil as to the most appropriate and best method of disposal. It shall conduct a program of study and research and demonstration, relating to new and improved methods of waste oil disposal.

DEPARTMENT OF NATURAL RESOURCES

SECTION 57. Chemical and Other Hazardous Wastes; Handling and Disposal of

The members of the water resources commission individually and the commissioner of the department of public safety shall sit as a board for the purpose of insuring that certain chemical and other hazardous wastes are safely and properly handled and disposed of. Said board shall investigate the handling and disposal of said wastes and shall coordinate the activities of the agencies represented by the members of said board.

Where said board finds that the powers delegated to said agency are insufficient, it shall have the power to adopt such rules and regulations as may be necessary to protect the public and its environment from the effects of unregulated handling and disposal of said wastes. The board shall delegate to the most appropriate agency represented by its members responsibility for the administration of its regulations. Nothing in this section or section fifty-eight shall diminish or interfere with the responsibilities of any other agency.

Said board shall, after a public hearing, adopt rules and regulations —

1. identifying substances which, because of their chemical, radioactive, flammable, explosive or other characteristics, constitute or may reasonably be expected to constitute a danger to the public health, safety or welfare or to the environment and which should be handled and disposed of only by licensed hazardous waste disposers. Mercury, beryllium, compounds thereof, and such other elements and compounds as may be listed from time to time by said board, shall not be dumped in any of the waters of the commonwealth;

2. specifying in what manner said wastes may be handled or disposed of, requiring that various types of said wastes be segregated from one another, be neutralized or otherwise rendered harmless prior to disposal and be suitably contained;

3. specifying the location at which said substances may be disposed of both within or without the commonwealth in order to prevent damage to any natural resource utilized or enjoyed by the public, or to the environment;

4. establishing reasonable exceptions when competent scientific evidence satisfies the board that the substances and quantities involved do not constitute a threat to the public and its environment;

5. setting reasonable license and inspection fees; and

6. such other rules and regulations as may be necessary to carry out the purposes of this section and section fifty-eight.

SECTION 58. Handling and Disposal of Hazardous Wastes; Licensing of

No person including the originator thereof shall handle or dispose of such hazardous wastes as are specified by said board without a license from the division of water pollution control. Said license shall be subject to such terms and conditions as the division deems advisable in accordance with the regulations adopted by said board, including the condition that such handling or disposal receive the specific approval of one or more of the agencies represented by the members of said board.

A violation of this section or of section 57 or any regulation adopted thereunder shall be punished by a fine of not more than five thousand dollars, or by imprisonment in a jail or house of correction for not more than six months, or both. The superior court shall have jurisdiction in equity to enforce the provisions of said sections and to remedy any violations thereof, including injunctive relief.

§ 59. Discharge of petroleum products into or on lakes, rivers or tidal waters

Whoever pumps, discharges or deposits, or causes to be pumped, discharged or deposited, into or on the waters of any lake or river or into or on tidal waters and flats, any crude petroleum or any of its products or any other oils or any bilge water or water from and receptacle containing any of the said substances, in such manner and to such extent as to be a pollution or contamination of said waters or flats or a nuisance or be injurious to the public health, shall be punished by a fine of not more than one thousand dollars; but this section shall not be construed to prohibit the use of oil for the extermination of mosquitoes or other insects. The provisions of this section shall be enforced by the department of public safety and by all other officers authorized to make arrests.

§ 59A. Tort liability for discharge or deposit of crude petroleum or products; double damages

Whoever, by himself or his agent, so negligently pumps, discharges or deposits any crude petroleum or any of its products or any other oils or any bilge water or water from any receptacle containing any of the said substances into or on the waters of any lake or river or into or on tidal waters or flats in such manner as to cause damage to the property of another shall be liable in tort to the person whose property is so damaged in double the amount of the damages sustained by him. The use of oil for the extermination of mosquitoes or other insects on the waters of any lake or river or on tidal waters or flats declared to be a breeding place of mosquitoes or other insects, by a town, city or mosquito control project acting under chapter two hundred and fifty-two or any special law, shall not be deemed to be a violation of the provisions of this section, provided such use of oil conforms to the rules and regulations promulgated by the pesticide board.

§ 59B. Marinas; licensing by division of water pollution control; restrictions; term; renewal; fees

Effective May 15, 1972.

No marina shall be operated without a license issued by the division of water pollution control. Said division shall not issue any such license unless such marina provides (1) adequate facilities for the collection, treatment and disposal of sewage or other sanitary waste, as said division may specify, including facilities for the purging out and cleaning of holding tanks, the contents of which shall be then disposed of in such manner as not to be discharged into or near any waters of the commonwealth, unless such discharge is to a municipal sewerage system or to an adequate sewage treatment or disposal facility approved by the division of water pollution control; (2) adequate and conveniently located dockside toilet facilities for the use of the occupants of watercraft; and (3) adequate and conveniently located trash receptacles or similar devices designed for the disposal of litter and refuse.

Any license issued under this section shall be for a term of one year and may be renewed annually. The fee for such annual license shall be fifty dollars and the fee for a renewal of such license shall be ten dollars.

§ 16. Disposal of rubbish, etc. on or near highways and coastal or inland waters; penalties; applicability to dumping grounds; enforcement

Whoever places, throws, deposits or discharges, or causes to be placed, thrown, deposited or discharged, any trash, refuse, rubbish or debris on a public highway or within twenty yards thereof, or in or upon coastal or inland waters, as defined in section one of chapter one hundred and thirty-one, respectively, or within twenty yards of any such water, or on property of another without permission of the owner thereof, shall be punished by a fine of not more than two hundred dollars. If a motor vehicle is used in committing such nuisance a conviction under this section shall forthwith be reported by the court to the registrar of motor vehicles, and the registrar may suspend the license of the operator of such vehicle for not more than thirty days, and if it appears from the records of the registrar of motor vehicles that the person so convicted is the owner of the motor vehicle so used, the registrar may suspend the certificate of registration of said vehicle for thirty days.

The provisions of this section shall not be applicable to any dumping ground approved under section one hundred and fifty A of chapter one hundred and eleven or by other appropriate public authority.

This section shall be enforced by natural resources officers, by the director of the division of motorboats or his authorized agents, by harbor masters and assistant harbor masters, by members of the state police and inspectors of the registry of motor vehicles and by city, town and metropolitan district commission police officers.

APPENDIX II

INTERSTATE WATERS TO WHICH WATER QUALITY STANDARDS APPLY

UNDER

WATER POLLUTION CONTROL ACT

as amended by the Federal Water Pollution Control Act Amendments of 1961—(Public Law 87-88), the Water Quality Act of 1965—(Public Law 89-234), the Clean Water Restoration Act of 1966—(Public Law 89-753), and the Water Quality Improvement Act of 1970—(Public Law 91-224).
Appendices:

Water quality standards, under Section 10 (c) (1) of the Act are to be established for, and made applicable to, interstate waters or portions thereof within the State.

1. The term "interstate waters," as defined in Section 23 (e) of the Act, means all rivers, lakes, and other waters that flow across or form a part of State boundaries, including coastal waters.

2. Within this definition, waters that flow across or form a part of State boundaries are subject to the provisions of Section 10 (c) (1) of the Act.

3. Waters that flow across or form a part of the international boundary between a State and foreign country are interstate waters within the meaning of the definition provided in Section 23 (e) of the Act and similarly subject to the provisions of Section 10 (c) (1) of the Act.

4. Coastal waters subject to the provisions of Section 10 (c) (1) of the Act are the ocean waters along straight coasts, the waters along indented coasts which are subject to the ebb and flow of the tides, and the waters of the Great Lakes.

5. As noted above, the definition of "interstate waters" is in terms of water bodies—"rivers," "lakes" and "other waters"—and is not limited to only those portions of these water bodies at the point at which they flow across or form a part of State boundaries. In effect, therefore, water quality standards are to be established for and made applicable to the entire stretch of the interstate waters within a State.

6. Tributaries of interstate waters, which are not in themselves interstate waters, are not subject to the requirements of subsection 10 (c) (1) of the Act. However, it is important to note that the discharge of any matter into such tributaries which reaches interstate waters and reduces the quality of such interstate waters below the established water quality standards is subject to abatement under Section 10 (c) (5) of the Act.

APPENDIX III

Glossary of Terms

Coliform Bacteria - for many years the best indicator of the sanitary quality of water has been an estimate of the density of coliform bacteria. More recently, tests have been developed for the determination of fecal coliform and fecal streptococci, which give a better indication of the concentration of bacteria in waters which may be harmful to human health. Bacterial concentrations originate primarily from municipal waste treatment plants, sanitary sewers, storm drains, vessels and agricultural wastes.

Biochemical Oxygen Demand (B.O.D.) - The quantity of oxygen utilized in the biochemical oxidation of organic matter in a specified time and at a specified temperature. Waste discharges containing high levels of B.O.D. will deplete oxygen supplies in receiving waters.

Disinfection - the killing of the larger portion (but not necessarily all) of the harmful and objectional microorganisms in, or on, a medium by means of chemicals heat, ultraviolet light, etc. Chlorination is the method commonly employed in sewage treatment processes.

Dissolved Oxygen (D.O.) - the oxygen dissolved as a gas in sewage, water or other liquid usually expressed in milligrams per liter (mg/l), parts per million (ppm) or percent saturation. Adequate dissolved oxygen levels are necessary in waters to protect fish and other aquatic life and to prevent offensive odors. Low dissolved oxygen concentrations are generally due to excessive organic solids discharged as a result of inadequately treated waste (having high B.O.D.); excessive algal growths may cause vastly fluctuating dissolved oxygen levels, and other factors such as temperature and water movement have an impact on dissolved oxygen levels.

Interstate Waters - Under the Federal Water Pollution Control Act, interstate waters are defined as:

1. rivers, lakes and other waters which flow across or form a part of State or international boundaries;
2. waters of the Great Lakes;
3. coastal waters--whose scope has been defined to include ocean waters seaward to the territorial limits and waters along the coastline (including inland streams) that are influenced by the rise and fall of the tide.

pH - the index of hydrogen ion activity, used as an indication of acidity or alkalinity in water. The pH of most waters ranges from 6.5 to 8.5, and most uses of water, such as aquatic life propagation, prosper at these levels. In most cases, a pH outside this range is due to discharge of industrial wastes or decaying organic vegetation.

Pollution - the addition of sewage harmful or objectionable material to water at a concentration or in sufficient quantity to result in measurable degradation of water quality.

Primary and Secondary Contact Recreation - also called Whole-body Contact Recreation, Primary Contact Recreation includes uses of water such as swimming, water skiing and skin diving. Secondary Contact Recreation, also called Partial-body Contact Recreation, includes such recreational uses as boating and fishing.

Primary Treatment - may be defined as that process or group of processes capable of removing a high percentage of floating and settleable solids. This is the first major treatment in a sewage treatment works and generally removes from 30 to 65 percent of the suspended solids and 30 to 40 percent of the 5-day biochemical oxygen demand.

Secondary Treatment - may be defined as that process or group of processes capable of removing virtually all floating and settleable solids, generally from 85 to 95 percent of the 5 day biochemical oxygen demand, and a similar level of removal of suspended solids in untreated waste. The equivalent treatment may generally be defined as that process or group of processes achieving maximum practicable removal of solids, oils, grease, acids, alkalis, toxic materials, bacteria, taste and odor causing materials, color and any other objectionable constituents contained in untreated waste to produce an effluent equivalent to that obtained from secondary treatment of sewage or the effluent from the most efficient treatment facilities in current use for any specific category of industrial waste.

Sewage - (1) the water supply of a community after it has been used and discharged into a sewer, (2) wastewater from the sanitary conveniences of dwellings, business buildings, factories and other institutions.

Sewage, Combined - a sewer which carries both sanitary sewage and surface or storm water with or without industrial wastes.

Sewer, Combined - a sewer which carries both sanitary sewage and storm drainage. At times of heavy rainfall, the capacity of combined sewers may be exceeded and sewers will overflow. The overflow will bypass the sewage treatment plant and the combined wastewaters will be discharged directly into stream without treatment of any kind. This is a problem in many older cities in the United States, and there are various programs to deal with it.

Solids, Settleable - suspended solids which will subside in quiescent water, sewage or other liquid in a reasonable period.

Solids, Suspended - solids that either float on the surface of, or are in suspension in, water, sewage or other liquids and which are largely removable by laboratory filtering.

Temperature - extreme temperatures primarily affect the aquatic life use of waters. While temperature is affected by natural conditions, man has a significant effect by the construction and operation of

dams and the discharge of cooling waters from industrial processes, particularly power generation.

Toxic Materials - these may include hundreds of compounds present in waters due to industrial wastes, runoff from farm lands where pesticides have been applied and other causes which are harmful to human, plant, animal and aquatic life.

Warm--and Cold-water Fish - warm-water fish include black bass, sunfish, catfish, gar and others; cold-water fish include salmon and trout, whitefish, miller's thumb and blackfish. The temperature factor determining distribution is set by adaptation of the eggs to warm or cold water.

APPENDIX IV

Addresses

Environmental Protection Agency
John Fitzgerald Kennedy Federal Building
Boston, Massachusetts 02203

Massachusetts Water Resources Commission
Division of Water Pollution Control
100 Cambridge Street
Boston, Massachusetts 02202

Executive Secretary
New England Interstate Water
Pollution Control Commission
607 Boylston Street
Boston, Massachusetts 02116