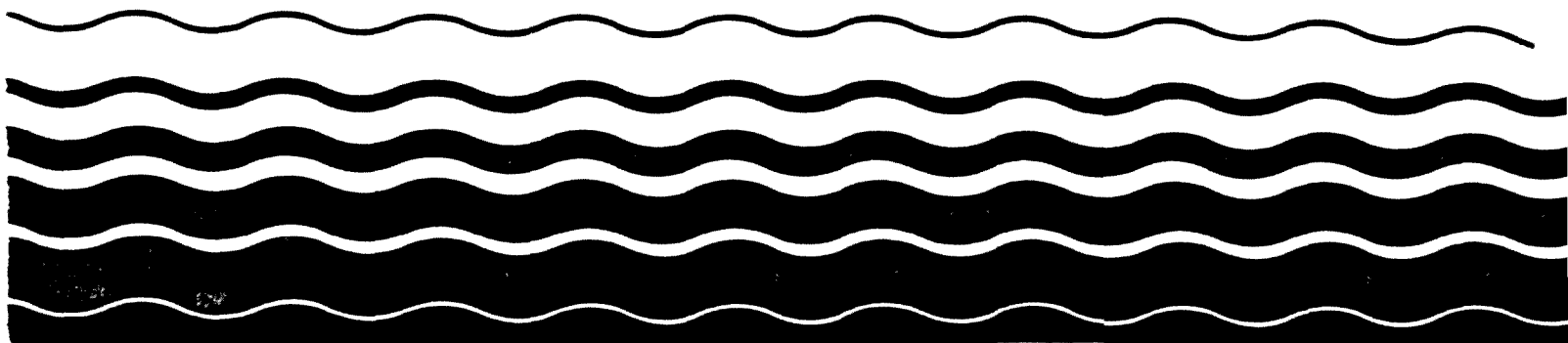




## **STATUS REPORT:**

# **State Numerical Water Quality Criteria for Toxics as of August, 1989**



## TABLE OF CONTENTS

I	INTRODUCTION.....	3
II	METHOD.....	6
III	NATIONAL FINDINGS.....	8
	What Progress Has Been Achieved?.....	8
	What is the Status of Compliance with CWA Section 303(c)(2)(B)?.....	10
	How Many Priority Pollutants?.....	12
	Which Priority Pollutants?.....	14
	What Risk Level?.....	15
	What Exposure Assumptions?.....	16
	What Option(s) Are States Choosing?.....	17
	What States are Adopting an Option 3 Translator?.....	18
	What is the Status of Criteria Adoption for Marine Waters?.....	19
IV	REGION-BY-REGION FINDINGS	
	Region I.....	21
	Region II.....	23
	Region III.....	25
	Region IV.....	27
	Region V.....	30
	Region VI.....	33
	Region VII.....	35
	Region VIII.....	37
	Region IX.....	40
	Region X.....	42
V	APPENDICES	
	Appendix 1 - CWA Section 303(c)(2)(B).....	45
	Appendix 2 - List of 126 Priority Pollutants.....	47
	Appendix 3 - Status of Compliance with CWA Section 303(c)(2)(B).....	49
	Appendix 4 - State Selected Risk Levels.....	53
	Appendix 5 - Exposure Assumptions Used by States in Setting Human Health Criteria.....	54
	Appendix 6 - State Options (from 12/88 Guidance).....	56

## I - INTRODUCTION

One of the nation's most serious environmental/public health problems is the presence of toxic pollutants in surface waters. Amendments to the Clean Water Act (CWA) adopted in 1987 recognized this problem and set forth ambitious goals for State/EPA control of toxic pollutants. The Act's requirements place emphasis on controlling the CWA Section 307(a) toxic pollutants<sup>1</sup>.

The principal objective of this report is to characterize State efforts to adopt numerical water quality criteria for CWA Section 307(a) toxics<sup>2</sup>. Such efforts are required by CWA Section 303(c)(2)(B) (see Appendix 1), which was added as part of the CWA amendments of 1987. The information presented in this report is current as of August, 1989. Since many States are still in the process of addressing this requirement, the information should be considered a "snap shot" of ongoing State activities. This report updates and replaces the report "State Adoption/Proposal of Numeric Criteria for Priority Pollutants as of August, 1988" (EPA 440/5 89-002). In preparing this report, emphasis has been placed on:

- 
1. The CWA Section 307(a) list contains 65 compounds and families of compounds. EPA has identified 126 priority pollutants from this larger group which it is using to represent the Section 307(a) list for regulatory purposes.
  2. For purposes of this report, the terms "toxics," "priority pollutants," and "307(a) pollutants" are used interchangeably and mean the list of 126 priority pollutants listed at 40 CFR 123.17.

- (1) assessing progress which has been achieved since 1986,  
and
- (2) characterizing State efforts to adopt criteria based on  
human health concerns.

This report provides preliminary information about the status of State compliance with CWA Section 303(c)(2)(B) requirements. For most States, such compliance is required by February 4, 1990. For States that were close to completing a triennial review at the time the 1987 CWA amendments were passed, such compliance may not be required until September 30, 1990.

In December 1988, EPA issued final guidance intended to help States meet the Section 303(c)(2)(B) requirements. The guidance discusses three options available to States for complying with this requirement. The three options available are as follows:

- (1) Adopt Statewide numeric water quality standards for all EPA criteria for Section 307(a) toxic pollutants regardless of whether the pollutants are known to be present;
- (2) Adopt specific numeric water quality standards for Section 307(a) toxic pollutants as necessary to support designated uses where such pollutants are discharged or are present in the affected waters and could reasonably be expected to interfere with designated uses;
- (3) Adopt a procedure to be applied to a narrative water



quality criterion. This procedure shall be used by the State in calculating derived numeric criteria, which shall be used for all purposes of water quality criteria under Section 303(c) of the CWA. Such criteria need to be developed for Section 307(a) toxic pollutants, as necessary to support designated uses, where these pollutants are discharged or present in the affected waters and could reasonably be expected to interfere with designated uses.

EPA believes that the CWA requirement can be met by any of the above scientifically and technically sound ways (or some combination thereof). For a more detailed discussion of the above options, refer to EPA's final guidance on implementing CWA Section 303(c)(2)(B). This report will present the status of State efforts under all three of the above options.

## II - METHOD

In preparing this report, EPA compiled information on the priority pollutants in each State for which numeric criteria are adopted or expected. "Expected" criteria were defined as those criteria which EPA believes will be adopted in the current round of standards revisions (most are scheduled for completion in FY 1990). In many cases, expected criteria have been included in a preliminary draft State WQS proposal. In other cases, criteria were judged by EPA to be expected (e.g., because the pollutant has been identified on the State's 304(1) short list).

Information was compiled for each of four use categories:

- Fresh water aquatic life.
- Marine aquatic life.
- Human health (water consumption or fish consumption or both).
- Other uses.

Names of pollutants and sequence of pollutants were taken from the list published in the Code of Federal Regulations (see 40 CFR 423.17(d)(1) - Appendix A). Only the pollutants on the list of 126 priority pollutants were included.

Other assumptions included the following:

- o Where a generic pollutant name was used in a criterion (e.g., DDT, endosulfan, PCBs), it was often assumed (where the State standards were not clear) that the criterion was

for a total measurement of all isomers and metabolites of that pollutant, and the State was credited with establishing criteria for all isomers and metabolites included on the list of 126 priority pollutants. For example, where "endosulfan" was listed, it was often assumed that the State has adopted a criterion for a total measurement of endosulfan including alpha-endosulfan, beta-endosulfan, and endosulfan sulfate, each of which is a priority pollutant. Therefore, the totals reflected in this report may not accurately represent the number of criteria each State has adopted, but do represent the total number of priority pollutants covered with State criteria.

- o Pollutants for which criteria have been adopted/expected for only a limited area were included.
- o Human health criteria were considered to include MCLs, EPA 304(a) recommendations, or other health-based criteria.

### III - NATIONAL FINDINGS

#### What Progress Has Been Achieved?

##### **Freshwater Aquatic Life Uses**

To measure progress, available data from April, 1986 on State toxics criteria were compared to toxics criteria adopted as of August, 1989. The data supported a comparison for freshwater aquatic life protection uses only. The comparison showed substantial progress in both the number of States and the number of parameters with criteria adopted.

- o The number of States

and Territories

that have adopted

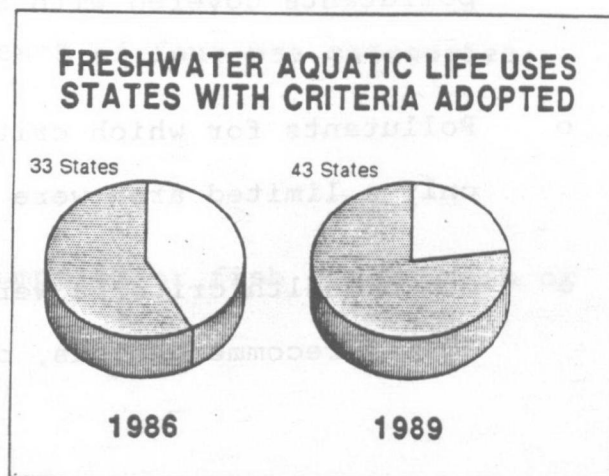
toxics criteria

**INCREASED** from 33

(in 1986) to 43 (in

1989) - see Figure 1.

**Figure 1**



- o The average number

of parameters with

criteria **INCREASED**

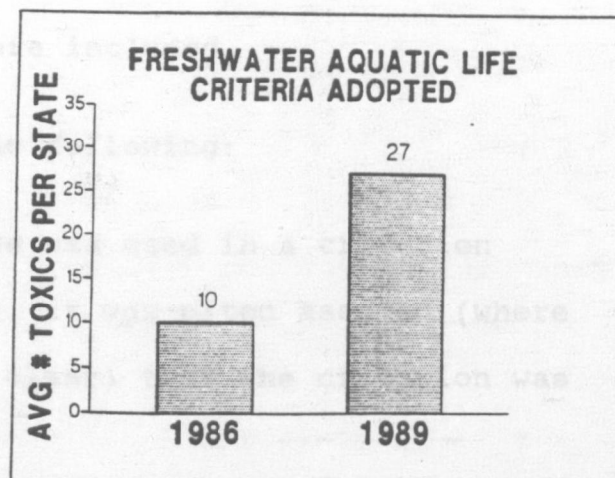
from 10 per State

(in 1986) to 27 per

State (in 1989) -

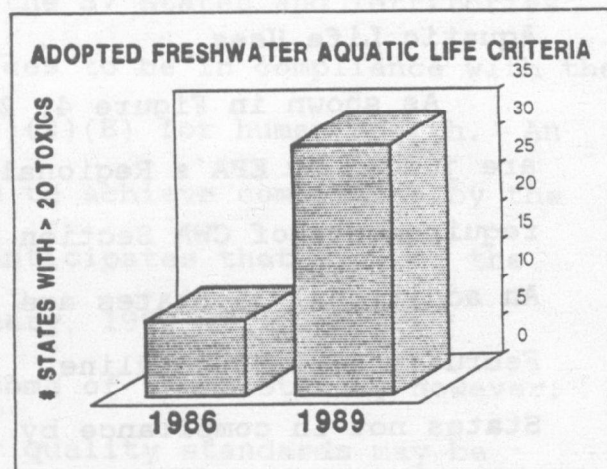
see Figure 2.

**Figure 2**



- o The number of States with criteria for more than 20 parameters INCREASED from 10 (in 1986) to 33 (in 1989) - see Figure 3.

Figure 3



### Human Health

States have also made substantial progress in adopting toxics criteria for protection of human health. Prior to 1986, human health criteria were adopted primarily for protection of public water supplies. These criteria generally did not apply in-stream, however, and the primary route of exposure considered was consumption of water.

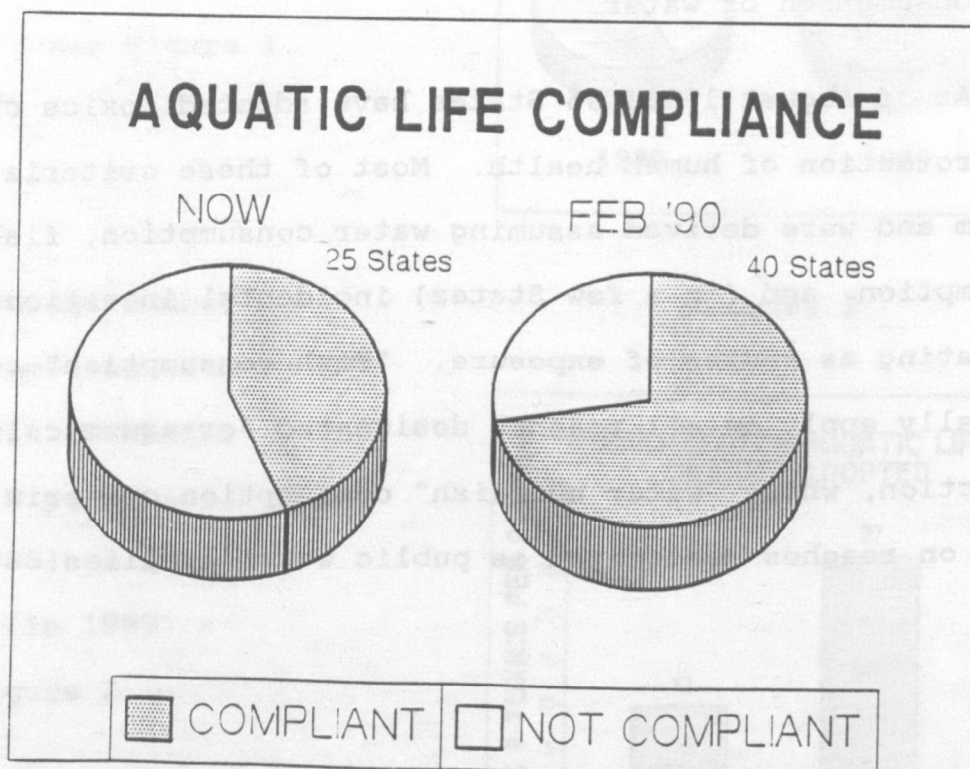
As of August 1989, 35 States have adopted toxics criteria for protection of human health. Most of these criteria apply in-stream and were derived assuming water consumption, fish consumption, and (in a few States) incidental ingestion while recreating as routes of exposure. "Fish consumption" criteria generally apply on all reaches designated for aquatic life protection, while "water and fish" consumption criteria generally apply on reaches designated as public water supplies.

What is EPA's Preliminary Assessment of Compliance with CWA Section 303(c)(2)(B)?

**Aquatic Life Uses**

As shown in Figure 4, 25 of the 57 States and Territories are judged by EPA's Regional Offices to be in compliance with the requirements of CWA Section 303(c)(2)(B) for aquatic life uses. An additional 15 States are expected to achieve compliance by the February 4, 1990 deadline. EPA anticipates that most of the States not in compliance by February, 1990 will achieve compliance during FY 1990. For some of these States, however, EPA promulgation of federal water quality standards may be necessary to achieve compliance with the Act's requirements. See Appendix 3 for a State-by-State breakdown of compliance status.

**Figure 4**

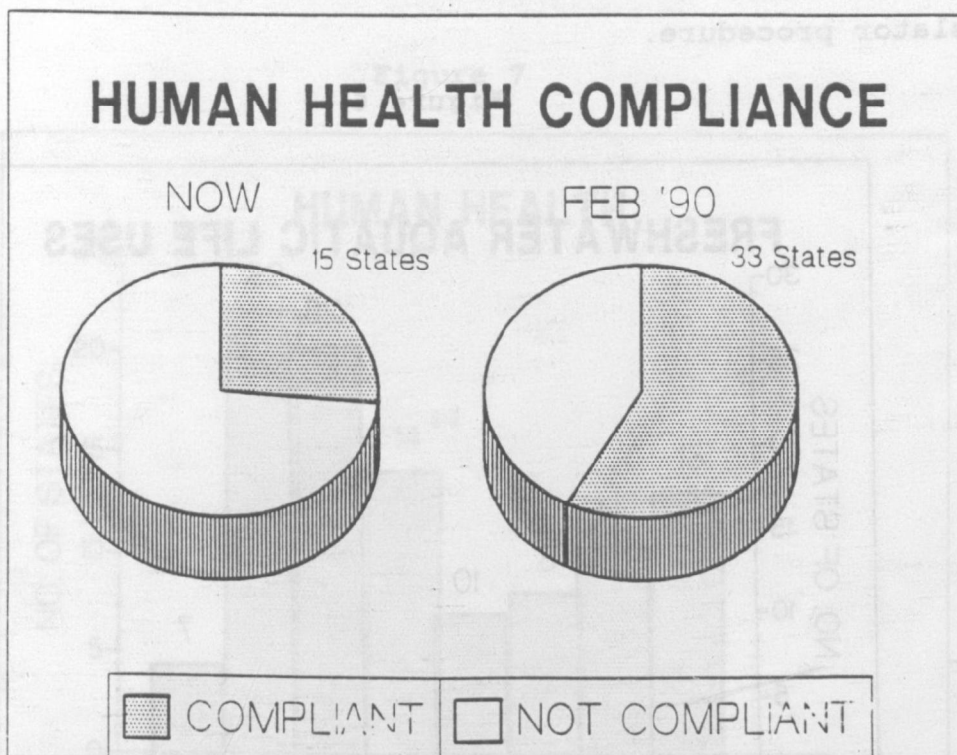




## Human Health

As shown in Figure 5, 15 of the 57 States and Territories are judged by EPA's Regional Offices to be in compliance with the requirements of CWA Section 303(c)(2)(B) for human health. An additional 18 States are expected to achieve compliance by the February 4, 1990 deadline. EPA anticipates that many of the States not in compliance by February, 1990 will achieve compliance during FY 1990. For some of these States, however, EPA promulgation of federal water quality standards may be necessary to achieve compliance with the Act's requirements. See Appendix 3 for a State-by-State breakdown of compliance status.

Figure 5

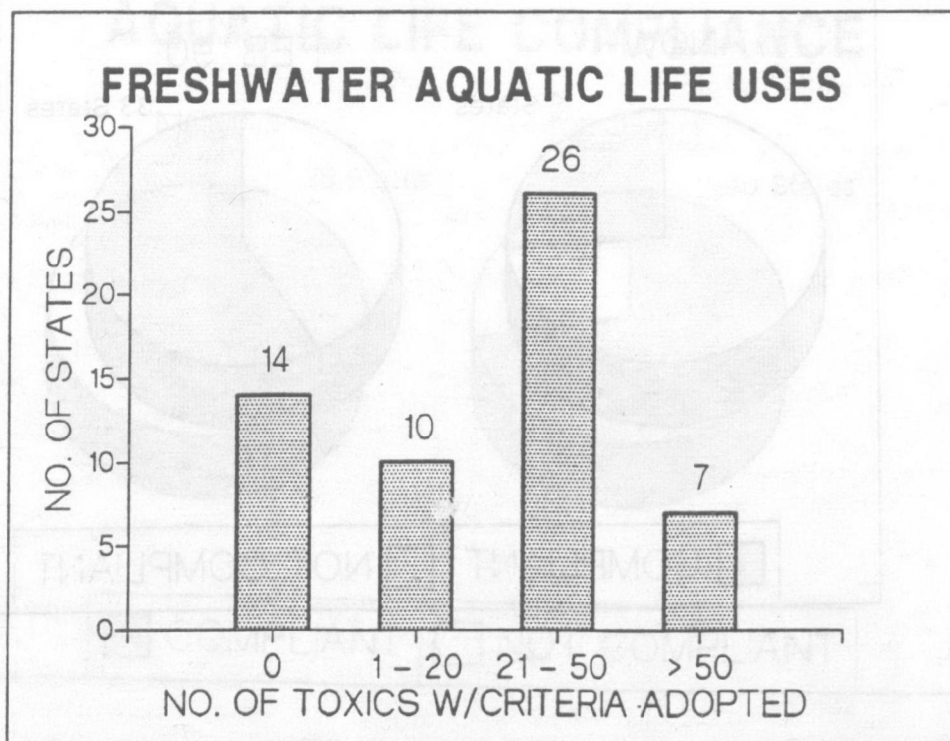


How Many Priority Pollutants Are  
Covered With Adopted State Numeric Criteria?

**Freshwater Aquatic Life Uses**

As shown in Figure 6, 43 of 57 States and Territories have adopted numerical toxics criteria for freshwater aquatic life uses. Of the 43 States, 10 have adopted criteria covering 1 to 20 pollutants, 26 have adopted criteria covering 21 to 50 pollutants, and 7 have adopted criteria covering more than 50 pollutants. A total of 14 States and Territories have not yet adopted numerical toxics criteria for freshwater aquatic life. One of these States (i.e., Virgin Islands) has demonstrated that no such criteria are required. Of the remaining thirteen, EPA currently expects at least 10 States to adopt criteria during the current review cycle. The remaining 3 States (i.e., Vermont, New Mexico and Idaho) may soon propose to adopt toxics criteria or a translator procedure.

Figure 6

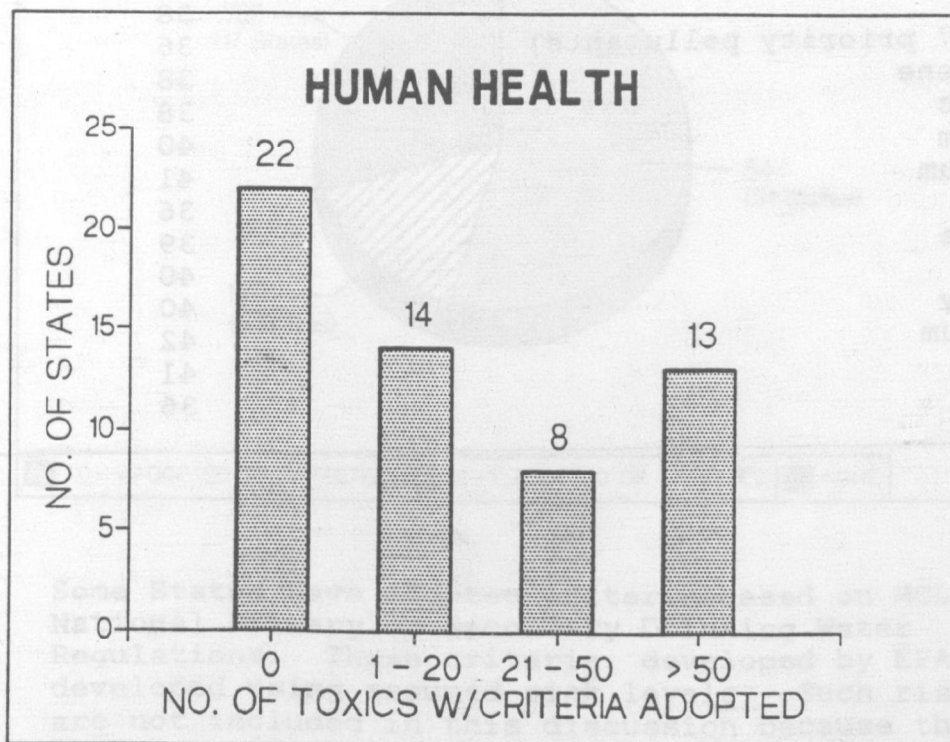




## Human Health

As shown in Figure 7, 35 of 57 States and Territories have adopted numerical toxics criteria for protection of human health. Of the 35 States, 14 have adopted criteria covering 1 to 20 pollutants, 8 have adopted criteria covering 21 to 50 pollutants, and 13 have adopted criteria covering more than 50 pollutants. A total of 22 States and Territories have not yet adopted human health numerical toxics criteria. One of these States (i.e., Virgin Islands) has demonstrated that no such criteria are required. Another State (i.e., Michigan) has adopted a translator procedure (which meets the technical requirements of Option 3 of EPA's toxics guidance) with which human health criteria may be derived. Of the remaining 20 States, EPA currently expects at least 16 States to adopt numeric criteria or a translator procedure during the current review cycle.

Figure 7



Which Priority Pollutants Are Covered  
With Adopted/Expected State Numeric Criteria?

The 126 priority pollutants are listed in Appendix 2. For each pollutant, Appendix 2 identifies the total number of States where numeric criteria have been adopted or are expected (for protection of aquatic life or human health). Below, Table 1 lists the 21 priority pollutants for which numeric criteria are adopted in 35 or more States.

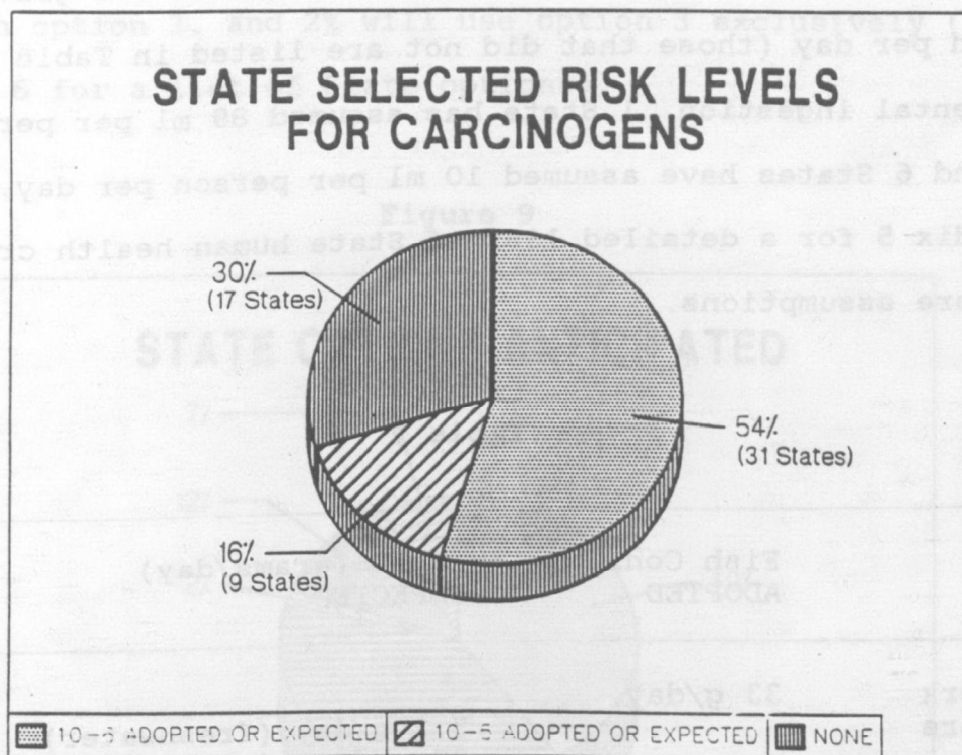
Table 1

Priority Pollutant	# States w/Criterion Adopted
Aldrin	36
Dieldrin	36
Endrin	38
PCBs (7 priority pollutants)	36
Toxaphene	38
Arsenic	38
Cadmium	40
Chromium	41
Copper	36
Cyanide	39
Lead	40
Mercury	40
Selenium	42
Silver	41
Zinc	36

### What Risk Level Are States Choosing for Carcinogens?

As shown in Figure 8, 40 States and Territories have adopted or are expected to adopt an increased cancer risk of 1 in 1,000,000 (i.e.,  $10^{-6}$ ) or 1 in 100,000 (i.e.,  $10^{-5}$ ). Seventy-five percent of these 40 States have selected (or are expected to select) a risk level of  $10^{-6}$ . At present, EPA has no information or expectations regarding the risk levels to be selected by the remaining 17 States and Territories. See Appendix 4 for a listing of State risk levels.

Figure 8



**NOTE:**

Some States have adopted criteria based on MCLs or National Primary or Secondary Drinking Water Regulations. These criteria, developed by EPA, were developed using assumed risk levels. Such risk levels are not included in this discussion because they are

What Exposure Assumptions are States Making  
in Setting Toxics Criteria for Human Health?

In setting human health criteria for toxic pollutants, States must make assumptions regarding pathways of human exposure. Three routes of exposure have been used by States to date (though not all States use all three): (1) exposure through water consumption, (2) exposure through consumption of contaminated aquatic organisms (i.e., fish flesh), and (3) exposure through incidental ingestion of water while recreating. For water consumption, all States which have adopted human health criteria have assumed consumption of 2 liters per person per day. For fish consumption, most States have assumed 6.5 grams per person per day (those that did not are listed in Table 2). For incidental ingestion, 1 State has assumed 89 ml per person per day and 6 States have assumed 10 ml per person per day. Refer to Appendix 5 for a detailed list of State human health criteria exposure assumptions.

Table 2

State	Fish Consumption Rate (grams/day)	
	ADOPTED	EXPECTED
New York	33 g/day.	5.2 g/day (freshwater)
Delaware		37 g/day (saltwater)
Illinois	20 g/day.	20 g/day.
Minnesota		30 g/day.
Wisconsin		20 g/day.
Louisiana		20 g/day.
Arizona		23 g/day.
California		19.9 g/day.
Hawaii		

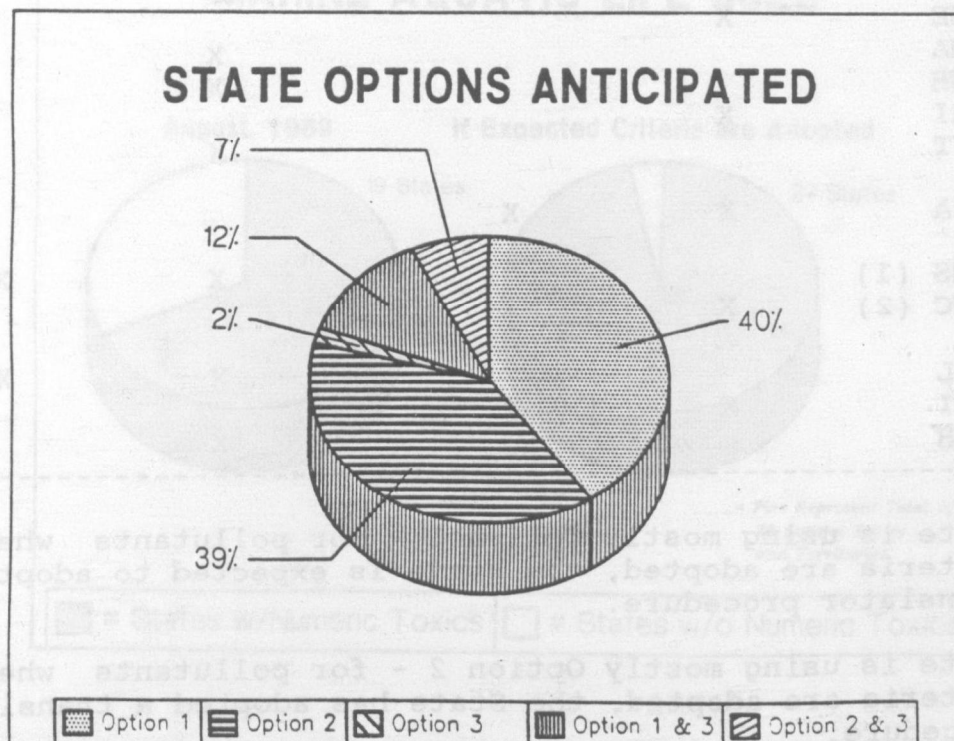
### What Option(s) Are States Choosing?

For a full discussion/description of the options available to States for complying with CWA Section 303(c)(2)(B), see EPA's December 1988 toxics guidance. Briefly, these options are:

- (1) adopt numeric criteria for all pollutants for which EPA has issued Section 304(a) criteria guidance,
- (2) adopt numeric criteria for all pollutants for which EPA has issued Section 304(a) criteria guidance and the pollutant can reasonably be expected to interfere with uses, and
- (3) adopt a translator procedure which can be used to derive numeric criteria on an "as needed" basis.

As shown in Figure 9, most States are expected to use options 1 and 2. Of the fifty-seven States and Territories, 79% will use options 1 or 2, 19% will use a combination of options 1 or 2 with option 3, and 2% will use option 3 exclusively (see Appendix 6 for a list of State options).

Figure 9





What States are Adopting Option 3  
Translator Procedures?

A total of five States (i.e., Maine, Rhode Island, Pennsylvania, North Carolina, Michigan) have adopted translator procedures for derivation of either aquatic life or human health criteria. An additional seven States are expected to adopt (i.e., Massachusetts, New Hampshire, Mississippi, Ohio and Illinois) or will be encouraged to adopt (i.e., Connecticut, Vermont) translator procedures during the current review cycle. Note that Michigan is the only State relying solely on an Option 3 translator approach (see page 17 and especially Appendix 6).

**Table 3**

**States with Translator Procedures Adopted/Expected**

REGION	STATE	ADOPTED		EXPECTED	
		Aq. Life	Human Health	Aq. Life	Human Health
I	CT			X	
	ME	X			
	MA			X	
	NH			X	
	RI	X			
	VT			X	
III	PA	X	X		
IV	MS (1)			X	X
	NC (2)	X	X		
V	IL			X	X
	MI	X	X		
	OH			X	

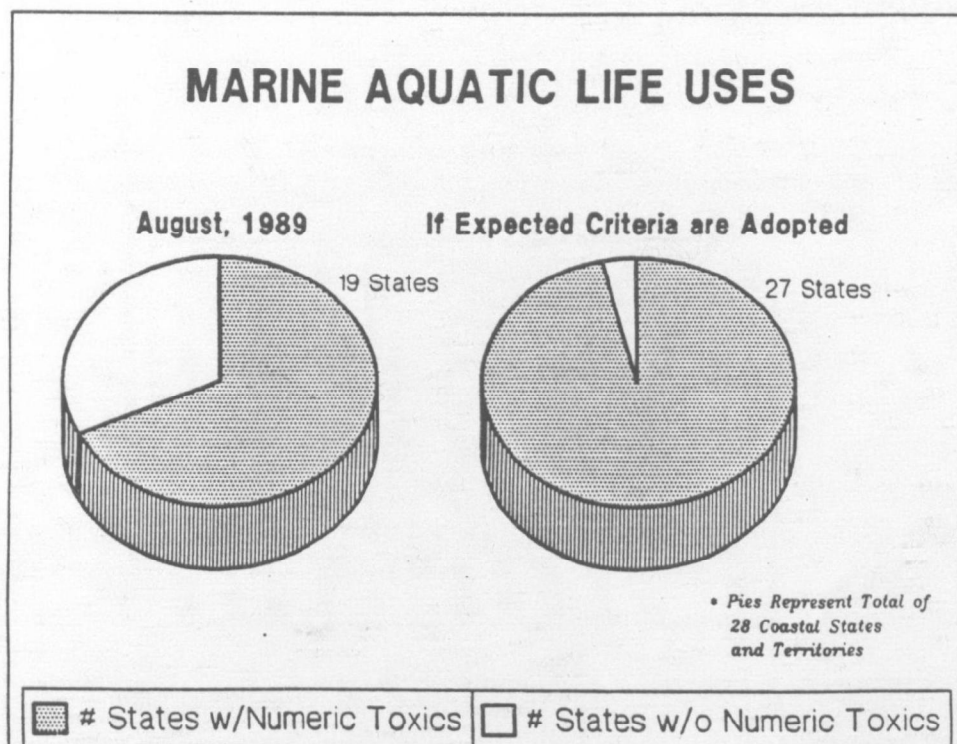
(1) State is using mostly Option 1 - for pollutants where no criteria are adopted, the State is expected to adopt a translator procedure.

(2) State is using mostly Option 2 - for pollutants where no criteria are adopted, the State has adopted a translator procedure.

### What is the Status of Criteria Adoption for Marine Waters?

For marine waters, as shown in Figure 10, 19 of the 28 coastal States and Territories have adopted numerical toxics criteria for protection of marine aquatic life. Many of these States have also adopted human health criteria assuming consumption of contaminated fish and shellfish. If expected criteria are adopted, 27 of the 28 coastal States and Territories would have numerical toxics criteria for protection of marine aquatic life. The one Territory that would not have criteria (the Virgin Islands) has demonstrated that criteria are not required based on currently available information.

Figure 10



#### **IV REGION-BY-REGION FINDINGS**

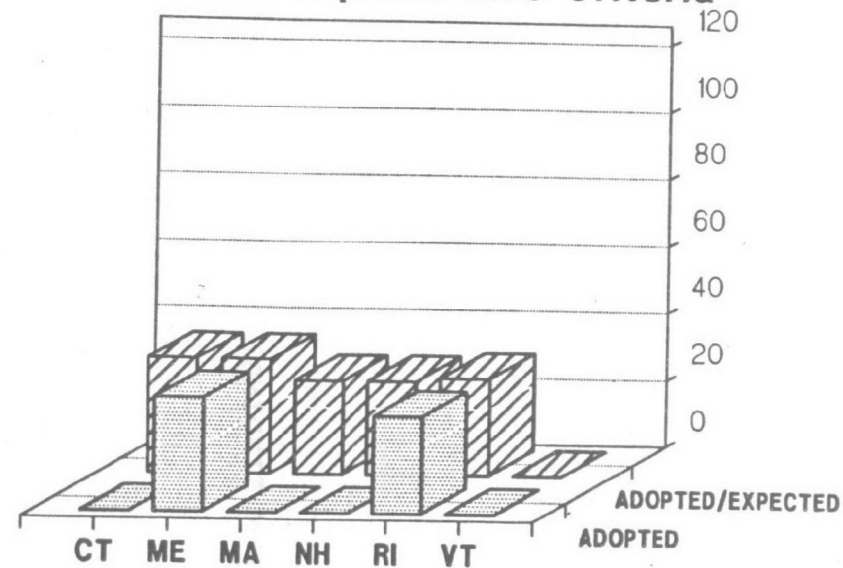


	CT	ME	MA	NH	RI	VT
	No. of 307(a) Pollutants With Criteria ADOPTED					
FRSH	0	34	0	0	29	0
MAR	0	34	0	0	29	0
HH	0	108	0	0	0	0
OTH	0	0	0	0	0	0
	No. of 307(a) Pollutants W/Criteria ADOPTED/EXPECTED					
FRSH	34	34	28	28	29	0
MAR	34	34	28	28	29	0
HH	108	108	108	108	0	0
OTH	0	0	0	0	0	0

\* All States also have translator procedures adopted or expected

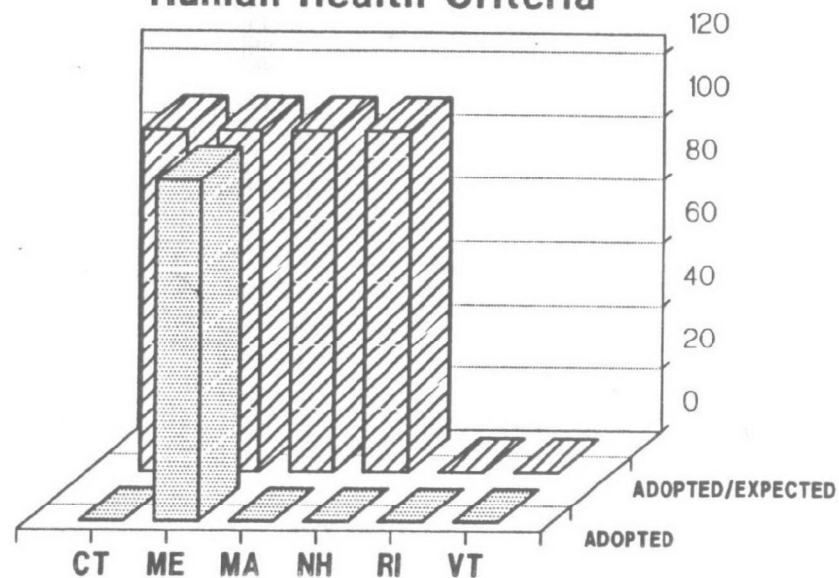
# Toxics with Criteria

## Region I Freshwater Aquatic Life Criteria



# Toxics with Criteria

## Region I Human Health Criteria



## Region I Human Health Criteria Summary

### Connecticut

No human health criteria adopted. It is expected that the State will use EPA Section 304(a) criteria and methods, though no preliminary decisions regarding risk level, exposure routes, or consumption rates have been made.

### Maine

The human health criteria are adopted directly from Section 304(a) and applied at  $10^{-6}$  risk level in permits. The criteria are applicable to all waters assuming exposure through fish consumption except in those limited cases where surface waters are used as a drinking water supply. To date there has been no modification of fish consumption rates but the Maine health department is looking into local consumption rates.

### Massachusetts

No human health criteria have been adopted. It is expected that Section 304(a) criteria and methods will be used. Massachusetts Department of Environmental Protection has established a task force looking into integrated risk management which may result in changing fish consumption rates from the national average.

### New Hampshire

The draft WQS revision incorporates Section 304(a) criteria at the  $10^{-6}$  risk level applicable to all waters based on fish and water consumption.

### Rhode Island

No human health criteria.

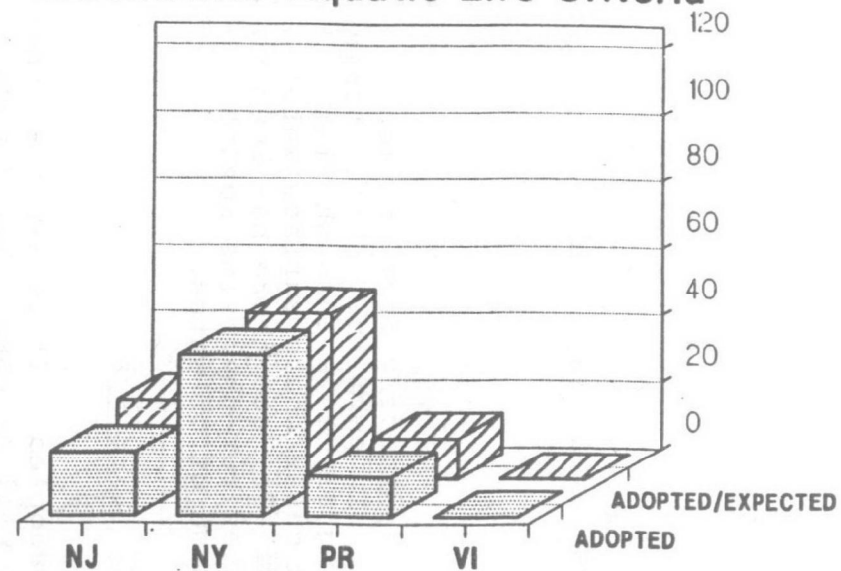
### Vermont

No human health criteria. Discussions have begun with Vermont ANR suggesting that Vermont adopt EPA Section 304(a) criteria.

	NJ	NY	PR	VI
No. of 307(a) Pollutants With Criteria ADOPTED				
FRSH	19	48	12	0
MAR	19	33	20	0
HH	8	42	8	0
OTH	0	13	0	0
No. of 307(a) Pollutants W/Criteria ADOPTED/EXPECTED				
FRSH	23	49	12	0
MAR	26	34	20	0
HH	22	43	16	0
OTH	0	13	0	0

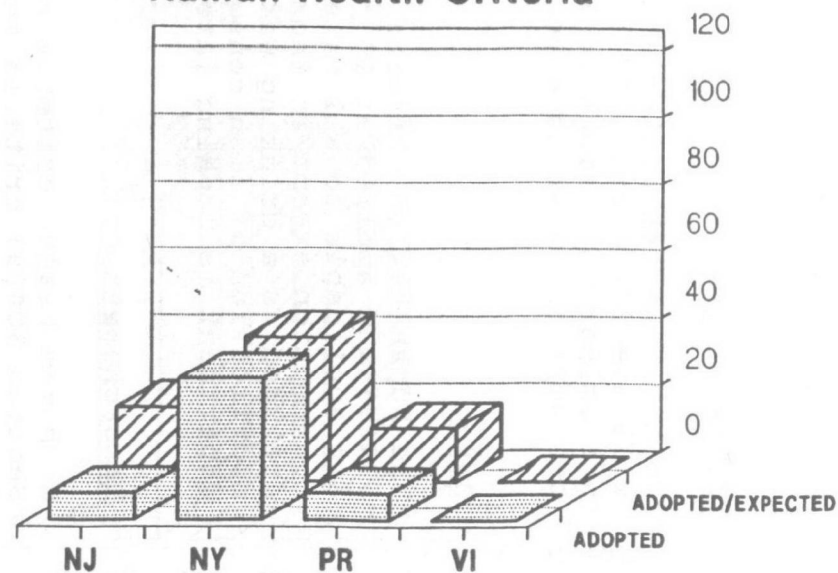
# Toxics with Criteria

## Region II Freshwater Aquatic Life Criteria



# Toxics with Criteria

## Region II Human Health Criteria



## Region II Human Health Criteria Summary

### New Jersey

Fresh water criteria for 7 priority pollutants are equal to USEPA MCLs. The State's criterion for benzidene (a carcinogen) is also reportedly human health based. The State is in the process of developing human health based criteria for an additional 14 priority pollutants. These criteria are expected to be based on drinking water ingestion, using USEPA MCL related information and may also consider the consumption of contaminated aquatic organisms. The State is in the process of developing a human health based criteria development policy, which will address a number of critical issues such as exposure assumptions and risk levels.

### New York

Water quality criteria in New York State always consider and are often based on USEPA water quality criteria recommendations. The State's procedures for deriving human health based water quality criteria are specified in the New York State Water Quality Standards Regulation. For carcinogens, the basis for the water quality criterion is the dose corresponding to an excess lifetime cancer risk of one in one million and an average 70 killogram adult consuming 2 liters of water a day for 70 years. A water quality criterion based on bioaccumulation and human consumption of fish is determined using a consumption rate of 33 grams of fish per day.

### Puerto Rico

There is little documentation readily available on the basis for adoption of human health based criteria for toxic substances. Fresh water criteria for 8 priority pollutants are generally equal to USEPA MCLs. Criteria for some pesticides specified in the Water Quality Standards Regulation applicable to fresh and marine waters are equally or more stringent than USEPA Clean Water Act Section 304(a) criteria (at the 1 in 100,000 risk level for carcinogens), although it appears that the criteria were adopted based on the protection of aquatic life.

### U.S. Virgin Islands

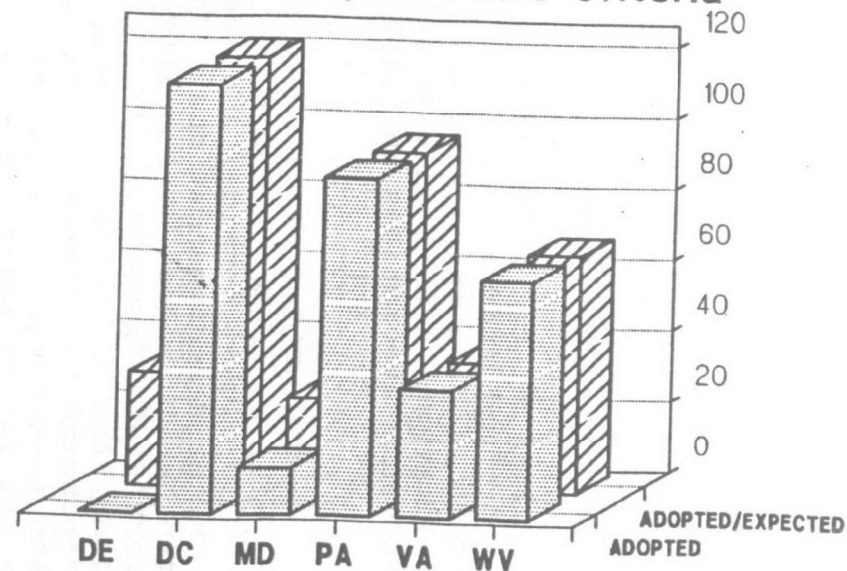
The U.S. Virgin Islands, through the Department of Planning and Natural Resources, has neither adopted human health based numeric criteria for priority pollutants to date, nor are any expected, based on the information currently available. There are no perennial streams or surface water impoundments, and relatively few point source discharges. Information collected on levels of toxic substances in the coastal waters failed to document any priority pollutant at levels of concern.

	DE	DC	MD	PA	VA	WV
No. of 307(a) Pollutants With Criteria ADOPTED						
<b>FRSH</b>	0	121	13	95	36	67
<b>MAR</b>	0	0	13	0	36	0
<b>HH</b>	0	108	13	107	13	62
<b>OTH</b>	1	0	0	0	0	17
No. of 307(a) Pollutants W/Criteria ADOPTED/EXPECTED						
<b>FRSH</b>	32	121	25	95	36	67
<b>MAR</b>	32	0	24	0	36	0
<b>HH</b>	84	108	24	107	13	62
<b>OTH</b>	6	0	0	0	0	17

\* PA has also adopted a translator procedure for Aq. Life and Human Health

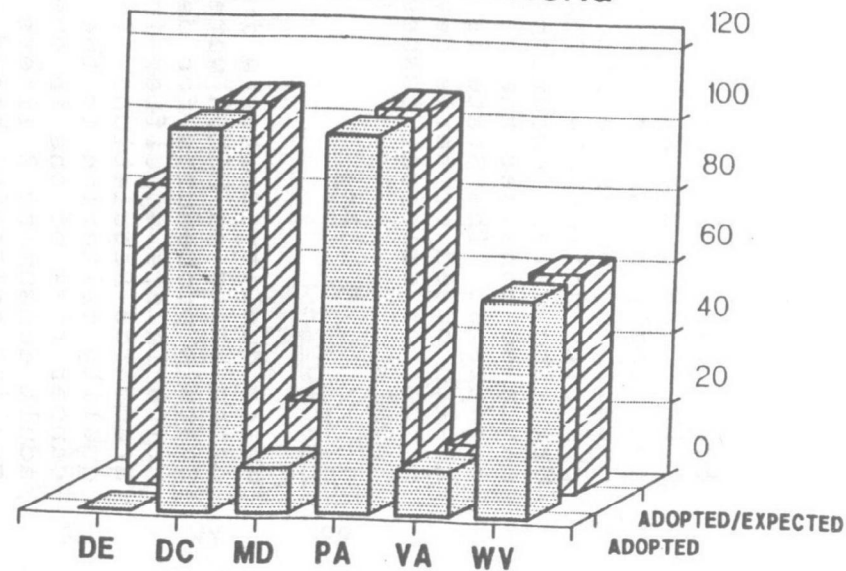
### Region III Freshwater Aquatic Life Criteria

# Toxics with Criteria



### Region III Human Health Criteria

# Toxics with Criteria



## Region III Human Health Criteria Summary

### Delaware

Delaware is expected to adopt human health criteria based on EPA 304(a) criteria and methods, information in IRIS, and MCLs. The State will use a risk level of  $10^{-6}$  and assume exposure through water and fish consumption. The fish consumption criteria will be applicable Statewide, while the water and fish consumption criteria will be applicable only on public water supplies. The State will assume fish ingestion rates of 5.2 g/day for freshwater and 37 g/day for saltwater.

### District of Columbia

The District of Columbia has adopted human health criteria based on EPA Section 304(a) criteria and methods. The District uses a risk level of  $10^{-6}$  and assumes exposure through water and fish consumption. The criteria are applicable only on public water supplies. The District is considering adoption of fish consumption criteria District-wide. The District uses EPA fish and water consumption rates.

### Maryland

Maryland has adopted human health criteria and is expected to make revisions based on MCLs. The State will assume exposure through water consumption only. The criteria will be applicable only to public water supplies. The State will use EPA water consumption rates. (Statewide fish consumption criteria are currently under consideration at  $10^{-5}$  risk).

### Pennsylvania

Pennsylvania has adopted human health criteria based on EPA Section 304(a) criteria and methods, information in IRIS, and MCLs. The State has selected a risk level of  $10^{-6}$  and assumes exposure through water and fish consumption. The criteria are applicable statewide. Pennsylvania uses EPA fish and water consumption rates.

### Virginia

The State has adopted human health criteria and is expected to make revisions. At this time, it is not known what the basis or assumptions of the revised criteria will be.

### West Virginia

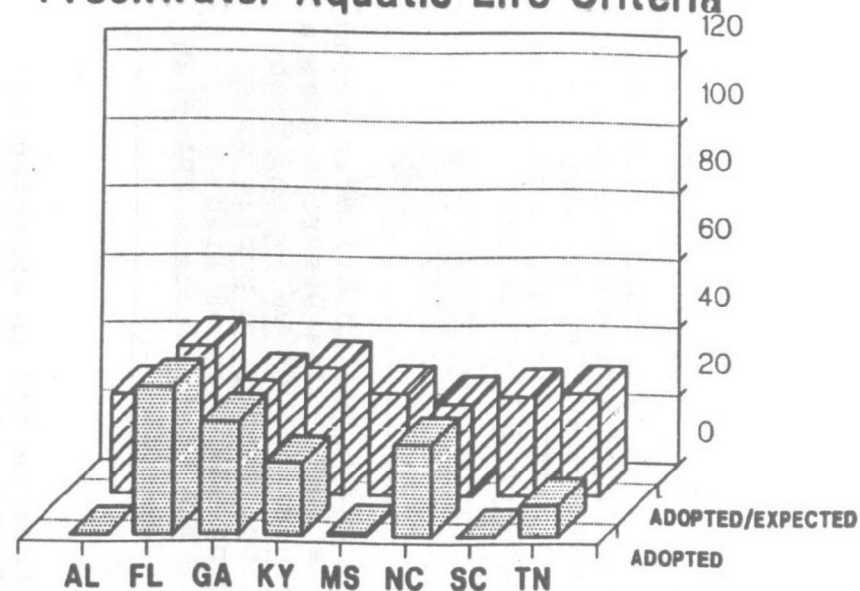
West Virginia has adopted criteria based on EPA Section 304(a) criteria and methods, information in IRIS, and MCLs. The State has selected a risk level of  $10^{-6}$  and assumes exposure through water and fish consumption. The fish consumption criteria apply to troutwater or warmwater aquatic life streams. The water consumption criteria apply on public water supplies only.



	AL	FL	GA	KY	MS	NC	SC	TN
	No. of 307(a) Pollutants With Criteria ADOPTED							
FRSH	0	43	33	21	1	27	0	9
MAR	0	35	29	0	0	25	0	0
HH	0	42	92	7	9	39	0	10
OTH	0	0	0	0	0	0	0	0
	No. of 307(a) Pollutants W/Criteria ADOPTED/EXPECTED							
FRSH	29	43	33	37	30	27	29	30
MAR	29	35	29	0	29	25	29	0
HH	103	42	92	100	30	39	3	50
OTH	0	0	0	0	0	0	0	0

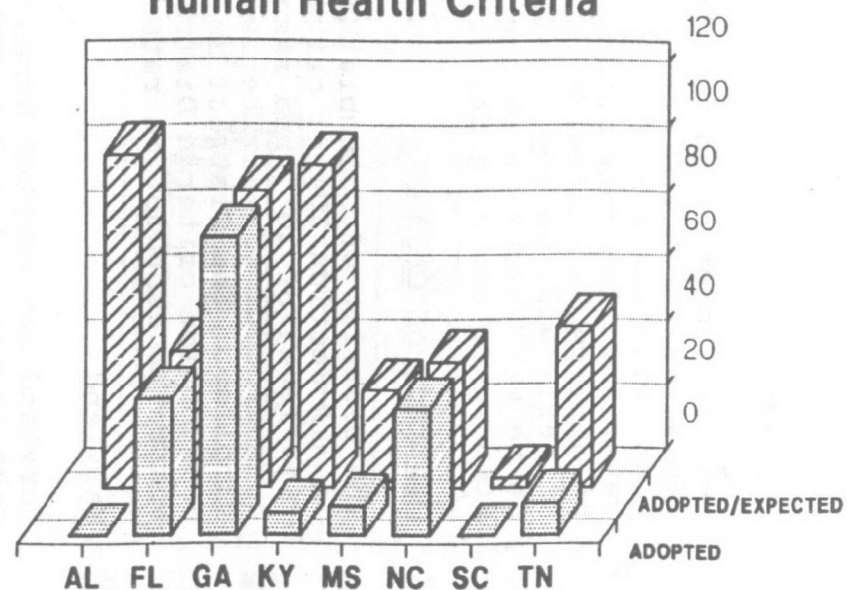
\* NC has adopted and MS is expected to adopt  
translator procedures for aq. life and human health

## Region IV Freshwater Aquatic Life Criteria



# Toxics with Criteria

## Region IV Human Health Criteria



# Toxics with Criteria

## Region IV Human Health Criteria Summary

### Alabama

Alabama is expected to adopt human health criteria based on EPA 304(a) criteria and methods. The State will use a risk level of  $10^{-6}$  and assume exposure through fish consumption. The fish consumption criteria will be applicable Statewide. The State will use EPA's fish ingestion rate of 6.5 g/day.

### Florida

With two exceptions (antimony and selenium), the criteria values listed for the Potable Water Supply (PWS) classification are equal to the criteria for the freshwater classification of Recreation, Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife. An antimony criterion is not listed in the PWS class and the Selenium PWS criterion is more stringent. Although some of the remaining PWS criteria are based on aquatic life considerations, all have been counted as human health criteria. No consistent risk level is recognized in the State's standards. Water consumption is the only route of exposure considered. The State uses EPA's water consumption rate of 2 l/day.

### Georgia

The State has adopted human health criteria based on EPA Section 304(a) criteria and methods and information in IRIS (as of July 14, 1989). The State selected a risk level for carcinogens of  $10^{-6}$  and assumed exposure through fish consumption. The fish consumption criteria are applicable Statewide. The State used EPA's fish consumption rate of 6.5 g/day.

### Kentucky

Kentucky has proposed human health criteria based on MCLs and EPA Section 304(a) criteria and methods (1980 criteria documents). The State selected a risk level of  $10^{-6}$  for carcinogens and assumed exposure through water and fish consumption. The MCLs and water-fish consumption criteria apply only to waters classified as water supplies. The State's fish consumption criteria apply to all other State waters. The State used EPA's water and fish consumption rates.



### Mississippi

The State has adopted human health criteria based on MCLs and is expected to adopt additional criteria based on MCLs, EPA Section 304(a) criteria and methods, and current IRIS information. The State is expected to select a risk level of  $10^{-6}$  for carcinogens and assume exposure through water and fish consumption. The expected fish consumption criteria will apply to all State waters. The expected criteria based on water and fish consumption or MCLs will apply only to waters classified as drinking water supplies. The State is expected to use EPA's water and fish consumption rates.

### North Carolina

The State has adopted human health criteria based on EPA Section 304(a) criteria and methods and information in IRIS (as of July, 1989). The State selected a risk level of  $10^{-6}$  and assumed exposure through water and fish consumption. The fish consumption criteria apply to all State waters, while the water and fish consumption criteria apply only to waters classified as drinking water supplies. The State used EPA's water and fish consumption rates.

### South Carolina

The State is expected to adopt three human health criteria based on MCLs. Risk level was not considered. The proposed criteria will be applicable to all State waters. The route of exposure was assumed to be water consumption, and the State used EPA's water consumption rate of 2 l/day.

### Tennessee

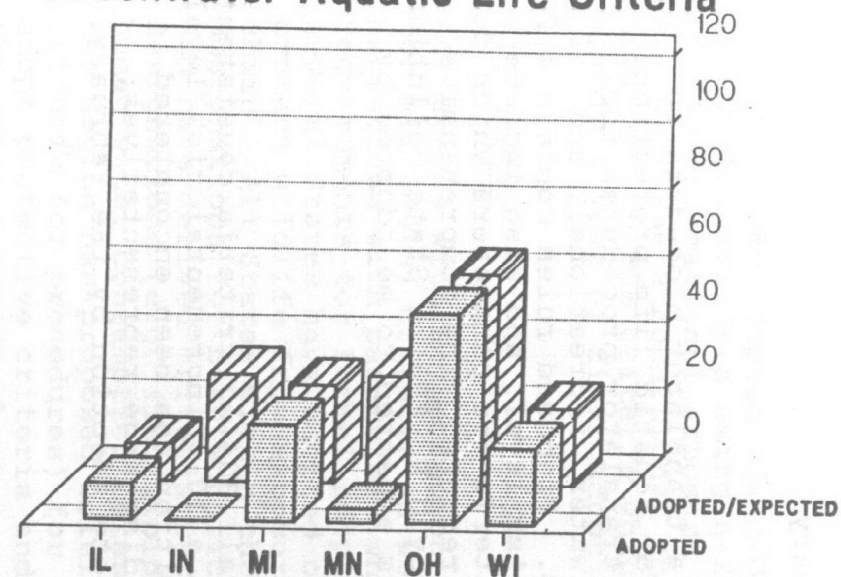
The State has adopted human health criteria (based on MCLs) and is expected to adopt additional criteria based on MCLs, EPA's Section 304(a) criteria and methods, and current IRIS information. The State is expected to select a risk level of  $10^{-6}$ . For the criteria based on MCLs, the State assumed exposure through water consumption. For the criteria based on EPA Section 304(a) guidance, the State assumed exposure through fish consumption. The MCL-based criteria apply only to drinking water supplies, while the EPA Section 304(a) criteria apply to all waters. The State is expected to use EPA's water and fish consumption rates.

	IL	IN	MI	MN	OH	WI
No. of 307(a) Pollutants With Criteria ADOPTED						
FRSH	11	0	29	4	63	23
MAR	0	0	0	0	0	0
HH	0	0	0	0	31	93
OTH	0	0	2	0	19	24
No. of 307(a) Pollutants W/Criteria ADOPTED/EXPECTED						
FRSH	11	32	29	32	63	23
MAR	0	0	0	0	0	0
HH	0	101	0	108	103	93
OTH	0	0	2	0	19	24

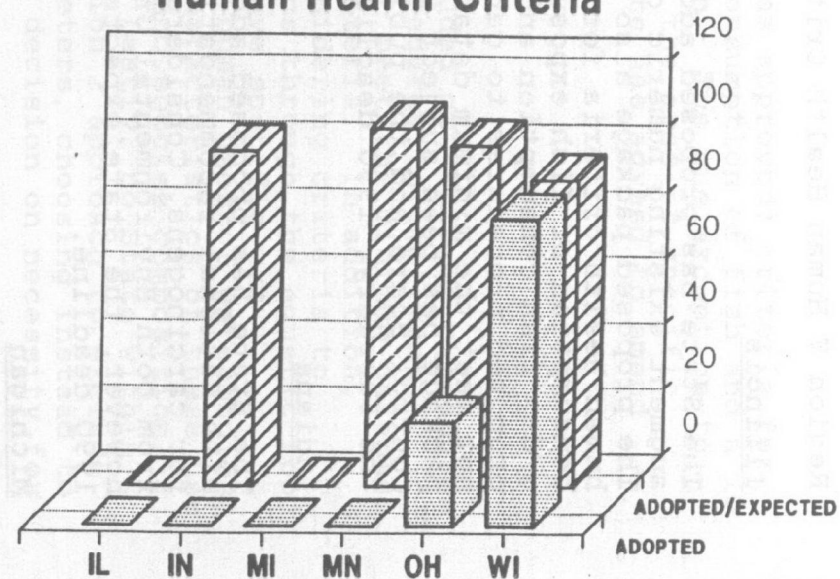
\* MI has adopted a translator procedure.  
 IL and OH are expected to adopt translators.

# Toxics with Criteria

## Region V Freshwater Aquatic Life Criteria



## Region V Human Health Criteria



## Region V Human Health Criteria Summary

### Illinois

The State has proposed adoption of a translator procedure to augment existing numeric criteria for aquatic life protection. The proposed package also includes translator procedures for human health criteria for drinking water, recreational, and consumption of fish exposure routes. Proposed rules contain a 20 g/day fish consumption and a 10-5 risk level, and also include proposed procedures to generate criteria for parameters which do not meet the minimum database requirements. The comprehensive package has been subject to review by U.S. EPA, a State Pollution Control Board and the public, and is expected to be adopted by the February, 1990 deadline.

### Indiana

The State has proposed adoption of all 304(a) criteria consistent with National recommendations, and a 10-5 incremental risk level for carcinogens. Considerable opposition has been encountered from both Environmental Groups and discharge representatives; however, the State expects to complete adoption by the February, 1990 deadline.

### Michigan

Michigan has proposed adoption of current State guidelines (originally adopted in 1985) implementing an Option 3 approach into State rules in order to satisfy the scientific and administrative requirements in National 303(c)(2)(b) guidance. Because of the State schedule for triennial review which was completed in August of 1987, the State has been granted an extension of the deadline to August of 1990.

### Minnesota

The State has proposed adoption of all 304(a) criteria recalculated based upon for example, State specific fish consumption rate (30 g/day), risk level (10-5), and recreational exposure assumptions (10 ml/day). Although just initiating the public review process, the State expects to complete adoption by the February, 1990 deadline.

### Ohio

The State has proposed adoption of criteria for 304(a) criteria based upon a 10-5 risk level, and using a recreational exposure assumption of 10 ml/day. The public participation process continues through both formal and informal routes, and the State expects to meet the February, 1990 deadline.

## Wisconsin

Wisconsin has adopted (and U.S. EPA has approved) criteria for all 304(a) criteria using a 20 g/day consumption of fish and a 10 ml/day recreational exposure assumption. The one exception to approval was a conditional approval of the aroclor-specific approach to PCB criteria which the State has agreed to amend within a year of final adoption.

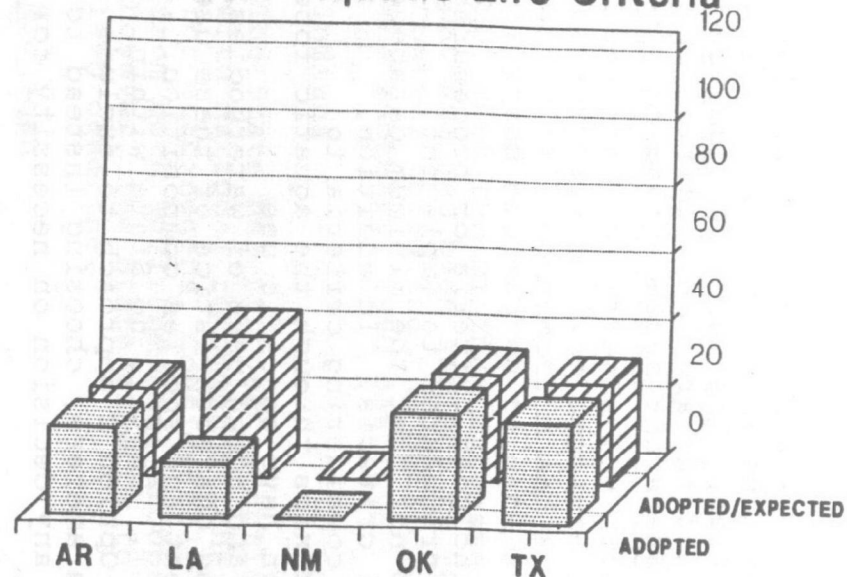
## All States

All States within the Region have included criteria or procedures for all 304(a) criteria as well as procedures to implement narratives with parameters which do not meet the minimum database requirements for formal adoption of criteria. In addition, several States have adopted or are considering criteria to protect wildlife from exposure to toxics through the aquatic food chain. All States within the Region have specific use designations for both aquatic life and human uses of waterbodies, and have derived criteria reflecting characteristics of these use designations (e.g. fish lipid content and species composition, human water consumption rates, etc.). Lastly, no State within the Region has proposed solely the Option 2 approach to exclude criteria (or procedures) for any parameters, choosing instead to adopt protective criteria and make any decision on necessity for the implementation phase.

	AR	LA	NM	OK	TX
	No. of 307(a) Pollutants With Criteria ADOPTED				
FRSH	26	16	0	32	30
MAR	0	15	0	0	30
HH	0	17	7	21	0
OTH	0	0	0	14	0
	No. of 307(a) Pollutants W/Criteria ADOPTED/EXPECTED				
FRSH	26	42	0	32	30
MAR	0	38	0	0	30
HH	0	44	7	21	0
OTH	0	0	0	14	0

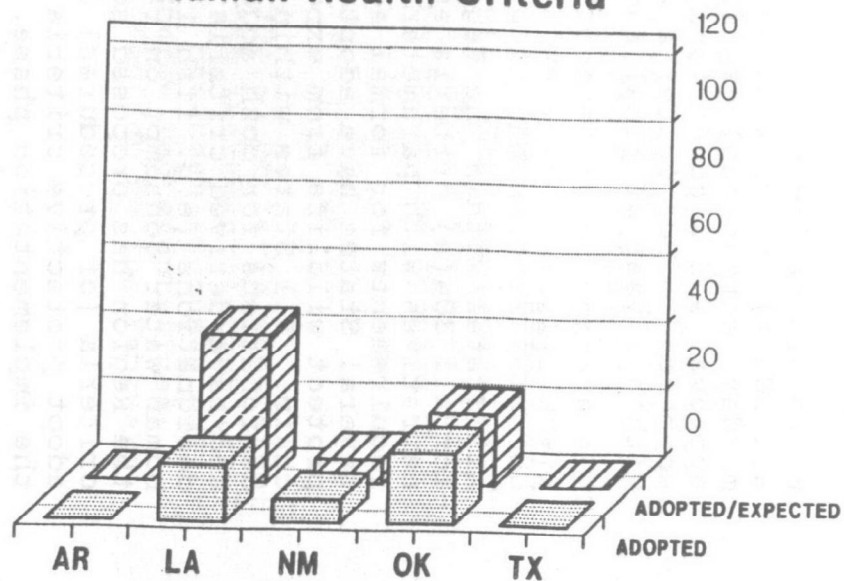
# Toxics with Criteria

### Region VI Freshwater Aquatic Life Criteria



# Toxics with Criteria

### Region VI Human Health Criteria



## Region VI Human Health Criteria Summary

### Arkansas

No human health criteria are adopted or expected at present.

### Louisiana

A few of Louisiana's criteria are based on MCLs or taste and odor considerations. The majority, however, are derived considering fish consumption, incidental ingestion and, where designated as a public water supply, water ingestion. The latest RfDs and cancer potency slopes from IRIS were used where available. Where not available, these values were extracted from water quality criteria documents and applied to the equations published in the November 1980 Federal Register notice. Louisiana has selected a risk level of  $10^{-6}$  for carcinogens. Louisiana uses a two number approach for human health criteria: (1) criteria for waters designated fishable/swimmable (this is essentially all State waters), and (2) criteria with the additional designated use of public water supply. Louisiana assumed exposure through fish consumption (20 g/day) and water consumption (2 l/ water consumption, 89 ml/day incidental ingestion).

### New Mexico

New Mexico's human health criteria, only applicable to stream segments designated as public water supply, were derived using MCLs and apply to raw water. No state-selected risk level is specified. The MCLs were derived using the assumption of 2 l/day water ingestion.

### Oklahoma

The criteria are MCLs or MCL-based and FDA action levels. No risk level is specified in the WQS. The MCLs are applicable in waterbodies designated as "Public and Private Water Supply." FDA alert levels are applicable in "fishable" waterbodies. The criteria are not exposure-based. MCLs are derived using the assumption of 2 l/day water intake.

### Texas

No human health criteria are adopted or expected at present. It is anticipated that in FY 1990 Texas may adopt human health criteria.

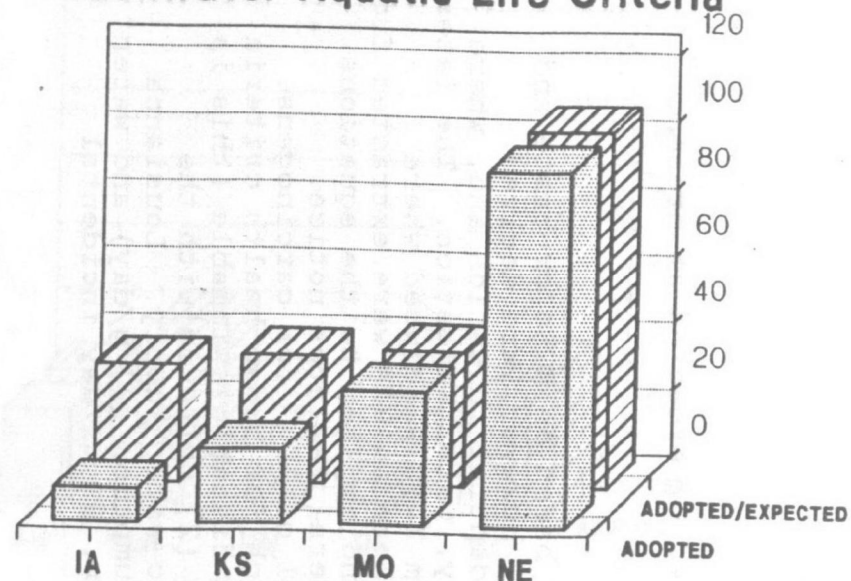


	IA	KS	MO	NE
No. of 307(a) Pollutants With Criteria ADOPTED				
FRSH	10	22	40	106
MAR	0	0	0	0
HH	11	0	57	22
OTH	0	8	6	14
No. of 307(a) Pollutants W/Criteria ADOPTED/EXPECTED				
FRSH	35	38	40	106
MAR	0	0	0	0
HH	19	12	57	22
OTH	0	10	6	0

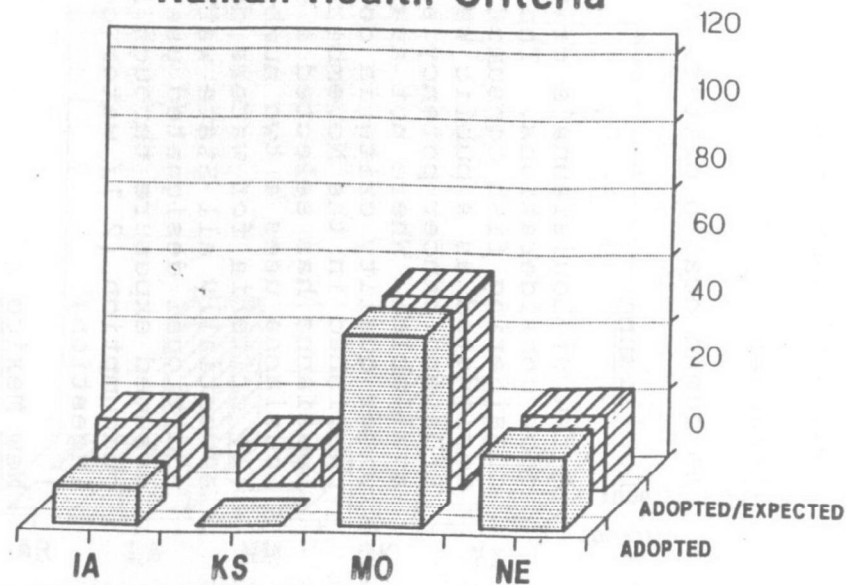
# Toxics with Criteria

# Toxics with Criteria

## Region VII Freshwater Aquatic Life Criteria



## Region VII Human Health Criteria



## Region VII Human Health Criteria Summary

### Iowa

Iowa's present human health criteria are generally based on National Interim Primary Drinking Water Regulations for inorganics and MCLs for organics and apply to the entire reach of designated water supply segments. Risk levels and exposure assumptions are those selected by EPA. Iowa will conduct additional revisions to develop human health criteria based on exposure through fish consumption in FY 1990.

### Kansas

Kansas's present numeric human health criteria which exists only for non-304(1) parameters are based on National Interim Primary and Secondary Drinking Water Regulations and apply at the point of water supply diversion. However, Kansas's narrative criteria state that carcinogenic substances are limited to levels that do not exceed a  $10^{-6}$  risk level and for bioaccumulative substances, the FDA action levels shall be used as guidelines to protect consumption. Therefore, for numeric criteria, water consumption is the exposure route while for narrative, fish consumption is the major exposure route. No special assumptions concerning exposure were made by Kansas. Additional work on fish consumption protection criteria is planned for FY 1990.

### Missouri

Missouri's human health criteria generally follows EPA's 304(a) criteria where such criteria exist and MCLs where 304(a) criteria do not exist. Risk levels of  $10^{-6}$  are used for carcinogens. Some of the criteria (VOCs) apply only at water supply withdrawal points but the other human health criteria based on MCLs apply to the entire water supply segments. Human health criteria based on EPA 304(a) guidance apply to all aquatic life segments. Fish consumption was the major exposure route for 304(a)-based criteria and no special assumptions of rates of fish/water consumption were made other than those inherent in EPA's MCL or 304(a) criteria.

### Nebraska

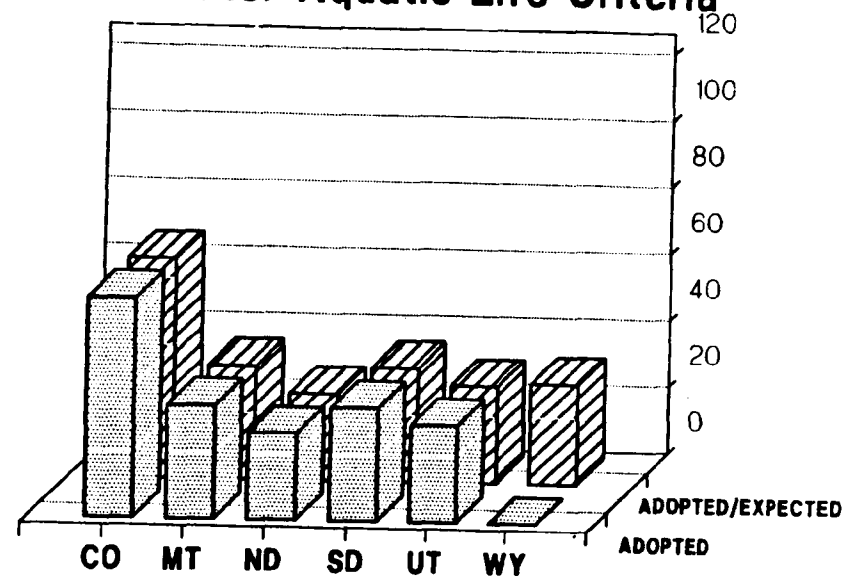
Nebraska's human health criteria generally follow National Interim Primary Drinking Water Regulation values for inorganics and for organics. Some organics are MCL-based where final MCLs exist. No explicit risk level has been chosen other than those utilized by EPA in the development of the drinking water numbers. The criteria apply to all drinking water use segments. In addition, Nebraska's narrative general criteria utilize FDA action levels as determinants of standards violations for all segments. Drinking water is the major source of exposure for the numeric criteria and fish consumption for the narrative criteria. No special assumptions were made concerning exposure factors.



	CO	MT	ND	SD	UT	WY
	No. of 307(a) Pollutants With Criteria ADOPTED					
<b>FRSH</b>	66	34	26	34	29	0
<b>MAR</b>	0	0	0	0	0	0
<b>HH</b>	58	108	3	108	10	0
<b>OTH</b>	9	0	0	0	6	0
	No. of 307(a) Pollutants W/Criteria ADOPTED/EXPECTED					
<b>FRSH</b>	66	34	26	34	29	30
<b>MAR</b>	0	0	0	0	0	0
<b>HH</b>	58	108	3	108	10	101
<b>OTH</b>	9	0	0	0	6	0

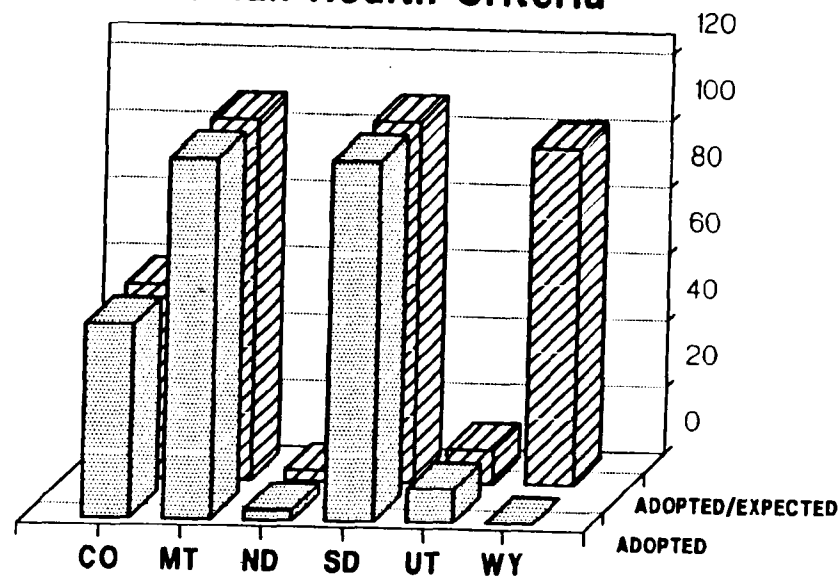
# Toxics with Criteria

### Region VIII Freshwater Aquatic Life Criteria



# Toxics with Criteria

### Region VIII Human Health Criteria



## Region VIII Human Health Criteria Summary

### Colorado

Colorado's current human health standards were adopted August 7, 1989, and have yet to be submitted for EPA review. Colorado has two categories of human health criteria - carcinogens and non-carcinogens. For carcinogens, standards are based on MCLs where EPA has developed such limits. Where there are no MCLs, values are based on a calculated  $10^{-6}$  risk level using information in IRIS. For non-carcinogens, standards are based on MCLs where EPA has adopted MCLs, or lifetime exposure levels derived from reference dose information in IRIS or water health advisories. The human health criteria apply to waters classified for water supply uses. Since data for values other than MCLs were calculated based on IRIS data, no special assumptions were made about rates of water consumption.

### Montana

Montana has adopted the Gold Book by reference. Although not specifically spelled out in their standards, the hearing record notes that the carcinogenic risk level adopted is  $10^{-6}$ . No special assumptions/applications for routes/rates of exposure were made. The Region will require, at a minimum, a simple implementation procedure which explains how these new standards are applied on a case-by-case basis. Montana also references EPA primary and secondary drinking water standards.

### North Dakota

North Dakota currently has very few specific human health standards. Their general use classifications include both water supply and aquatic life uses. The State recently adopted criteria for 25 substances for which EPA has aquatic life criteria. Where a human health MCL was more stringent than the aquatic life value, the State adopted the MCL (e.g., arsenic). Thus, there are very few specific "human health" values, but the aquatic life values adopted will also provide human health protection for those substances (e.g., metals). Where there is a specific human health value, it is a MCL. North Dakota is planning to fulfill the remaining 303(c)(2)(B) requirements by demonstrating that there are no other priority pollutants of concern in North Dakota. Preliminary data seems to support that argument. The Region, nevertheless, is attempting to make an option 1 argument.

### South Dakota

South Dakota adopted the Gold Book by reference. The Standards do not specify a risk level for carcinogens, but State staff intend to use  $10^{-6}$  in implementing the new standards. The Region will require a written implementation plan that makes that clear.

## Utah

Utah has adopted a number of MCLs and drinking water-based standards which apply to water supply segments (domestic source 1C). No special routes of exposure were assumed. They used EPA MCLs where available. Utah did not address the 303(c)(2)(B) human health requirements in their latest standards revision. To meet the February 4, 1990 deadline, it is possible that Utah might use an option 2 approach and limit the number of additional standards, but that is not clear at present.

## Wyoming

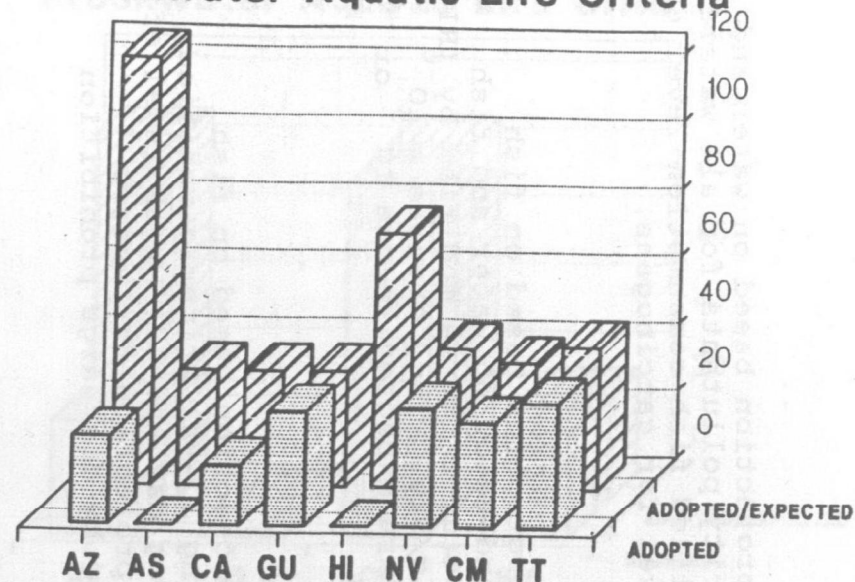
Wyoming currently has one health-based criterion for a toxicant (benzidine; no one remembers how that was selected or why it specifically was adopted). The proposed standards will rectify this situation. For health-based standards, Wyoming is proposing Gold Book values with both water and contaminated organism routes of exposure. They propose to use  $10^{-6}$  as the risk level for carcinogens. This proposal has been through two levels of public meeting with final rulemaking scheduled for mid-November.

	AZ	AS	CA	GU	HI	NV	CM	TT
	No. of 307(a) Pollutants With Criteria ADOPTED							
FRSH	26	0	18	34	0	35	31	37
MAR	0	0	30	34	0	0	31	37
HH	26	0	19	108	0	30	0	0
OTH	0	0	0	0	6	1	0	0
	No. of 307(a) Pollutants W/Criteria ADOPTED/EXPECTED							
FRSH	126	34	34	34	75	41	37	42
MAR	0	34	39	34	61	0	37	42
HH	126	108	108	108	77	108	108	108
OTH	0	0	0	0	0	1	0	0

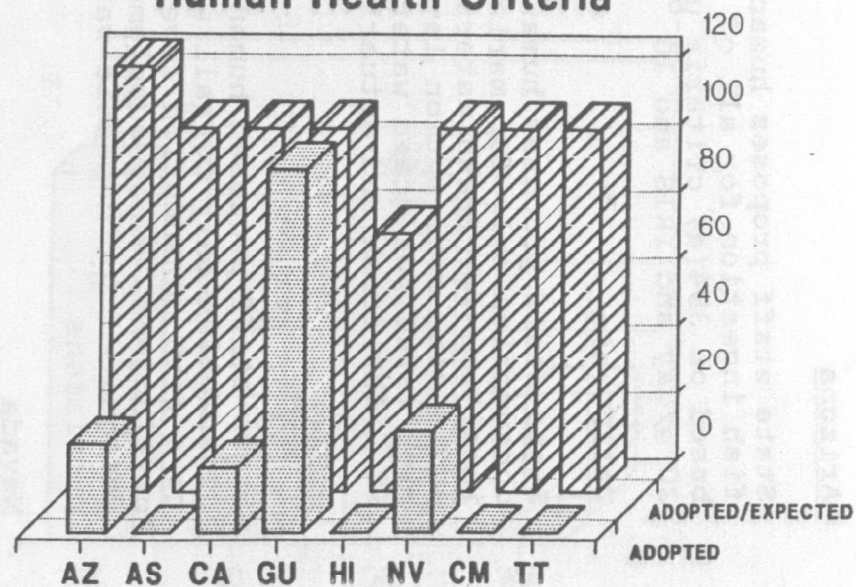
# Toxics with Criteria

# Toxics with Criteria

## Region IX Freshwater Aquatic Life Criteria



## Region IX Human Health Criteria



## Region IX Human Health Criteria Summary

### Arizona

State staff proposes human health protection based on water and fish ingestion for all of the priority pollutants for all waters based on 304(a) criteria using modified fish consumption level of 20 g/day and IRIS and  $10^{-6}$  risk level for carcinogens.

### California

State staff proposes human health protection based on fish consumption only for marine water and based on water and fish ingestion for fresh waters using 304(a) criteria modified by IRIS and a fish consumption level of 23 g/day. They propose a  $10^{-6}$  risk level for ocean waters. They are expected to use  $10^{-5}$  or  $10^{-6}$  for fresh and estuarine waters.

### Hawaii

State staff proposed human health protection based on fish consumption only for all waters using 304(a) criteria modified to a fish consumption level of 19.9 g/day and  $10^{-6}$  risk level of carcinogens. They supplement this protection for waters designated for domestic water supply by discharge prohibition provisions.

### Nevada

State staff proposed human health protection based on water and fish ingestion using 304(a) criteria directly for all waters except approximately 15 reaches not designated for contact recreation. They utilized a  $10^{-6}$  risk level.

### American Samoa, Commonwealth of the Northern Marianas Islands, and Trust Territories (Palau)

Staff proposes human health protection based on water and fish ingestion in fresh waters and fish consumption only for marine waters using 304(a) criteria and  $10^{-6}$  risk level for carcinogens.

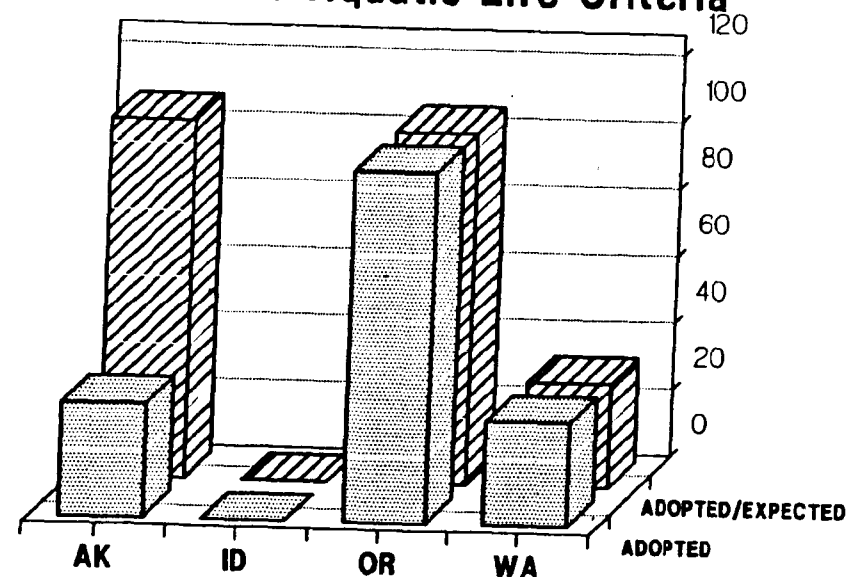
### Guam

Guam adopted standards very similar to what the other Territories have proposed.

	AK	ID	OR	WA
No. of 307(a) Pollutants With Criteria ADOPTED				
FRSH	34	0	105	31
MAR	34	0	102	31
HH	108	15	100	0
OTH	0	0	0	0
No. of 307(a) Pollutants W/Criteria ADOPTED/EXPECTED				
FRSH	107	0	105	31
MAR	104	0	102	31
HH	108	15	100	31
OTH	0	0	0	0

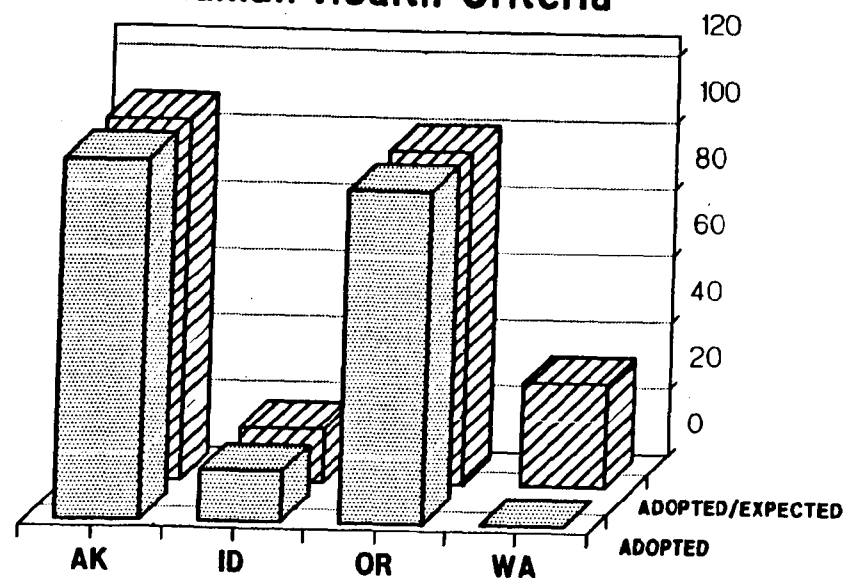
# Toxics with Criteria

### Region X Freshwater Aquatic Life Criteria



# Toxics with Criteria

### Region X Human Health Criteria





## Region X Human Health Criteria Summary

### Alaska

Alaska has adopted all EPA 304(a) water and fish consumption criteria by reference. Such criteria are applicable to waters designated for water supply, water recreation, and aquatic life protection (all State waters). The human health criteria for carcinogens are based on a risk level of  $10^{-6}$ .

### Idaho

Idaho has adopted drinking water MCLs for selected parameters and is expected to adopt dioxin criteria for the Clearwater/Snake Rivers. The adopted criteria are applicable only to domestic water supplies. The Snake/Clearwater River dioxin criteria are expected to be based on EPA 304(a) guidance and a risk level of  $10^{-6}$ .

### Oregon

Oregon has adopted most of the EPA 304(a) water and fish consumption criteria, as well as drinking water MCLs. Such criteria are applicable to all basins. The human health criteria for carcinogens (which are based on EPA 304(a) guidance) are based on a risk level of  $10^{-6}$ .

### Washington

Washington has not yet adopted any human health based criteria for priority pollutants, but is expected to adopt EPA 304(a) water and fish consumption criteria for the same 31 pollutants for which aquatic life criteria are adopted. The criteria for carcinogens are expected to be based on a risk level of  $10^{-6}$ .

## V - APPENDICES

## Appendix 1

### CWA Section 303(c)(2)(B)

"Whenever a State reviews water quality standards pursuant to paragraph (1) of this subsection, or revises or adopts new standards pursuant to this paragraph, such State shall adopt criteria for all toxic pollutants listed pursuant to section 307(a)(1) of this Act for which criteria have been published under section 304(a), the discharge or presence of which in the affected waters could reasonably be expected to interfere with those designated uses adopted by the State, as necessary to support such designated uses. Such criteria shall be specific numerical criteria for such toxic pollutants. Where such numerical criteria are not available, whenever a State reviews water quality standards pursuant to paragraph (1), or revises or adopts new standards pursuant to this paragraph, such State shall adopt criteria based on biological monitoring or assessment methods consistent with information published pursuant to section 304(a)(8). Nothing in this section shall be construed to limit or delay the use of effluent limitations or other permit conditions based upon or involving biological monitoring or assessment methods or previously adopted numerical criteria."

## Appendix 2

### List of 126 Priority Pollutants

Priority Pollutant	No. States <sub>1</sub> w/Criteria <sub>1</sub> Adopted	No. States <sub>1</sub> w/Criteria <sub>1</sub> Adopted/Expected
Acenaphthene	13	27
Acrolein	15	32
Acrylonitrile	13	30
Benzene	18	41
Benzidene	19	35
Carbon Tetrachloride	16	37
Cholorbenzene	17	34
1,2,4-trichlorobenzene	7	11
Hexachlorobenzene	16	33
1,2-dichloroethane	16	37
1,1,1-trichloroethane	15	38
Hexachlorethane	13	30
1,1-dichlorethane	2	3
1,1,2-trichlorethane	14	32
1,1,2,2-tetrachlorethane	15	32
chloroethane	1	2
Bis (2-chloroethyl) ether	13	30
2-chloroethyl vinyl ether	5	7
2-chloronapthalene	4	6
2,4,6-trichlorophenol	16	32
Parachlorometa cresol	14	26
Chloroform	17	35
2-chlorophenol	18	32
1,2-dichlorobenzene	16	33
1,3-dichlorobenzene	15	32
1,4-dichlorobenzene	15	34
3,3-dichlorobenzidene	12	28
1,1-dichloroethylene	15	37
1,2-trans-dichloroethylene	7	12
2,4-dichlorophenol	18	33
1,2-dichloropropane	6	10
1,2-dichloropropylene	12	29
2,4-dimethylphenol	11	25
2,4-dinitrotoluene	12	29
2,6-dinitrotoluene	5	8
1,2-diphenylhydrazine	12	29
Ethylbenzene	15	33
Fluoranthene	14	30
4-chlorophenyl phenyl ether	3	5
4-bromophenyl phenyl ether	4	6
Bis (2-chloroisopropyl) ether	12	28
Bis (2-chloroethoxy) methane	3	8
Methylene chloride	12	31
Methyl chloride	13	29

Appendix 2  
(continued)

List of 126 Priority Pollutants

Priority Pollutant	No. States <sub>1</sub> w/Criteria Adopted	No. States <sub>1</sub> w/Criteria <sub>1</sub> Adopted/Expected
Methyl bromide	12	27
Bromoform	15	32
Dichlorobromomethane	14	32
Chlorodibromomethane	14	32
Hexachlorobutadiene	15	33
Hexachlorocyclopentadiene	15	32
Isophorone	14	30
Napthalene	6	10
Nitrobenzene	15	31
2-nitrophenol	5	8
4-nitrophenol	5	8
2,4-dinitrophenol	14	31
4,6-dinitro-o-cresol	12	28
N-nitrosodimethylamine	12	29
N-nitrosodiphenylamine	12	28
N-nitrosodi-n-propylamine	5	10
Pentachlorophenol	23	43
Phenol	28	39
Bis (2-ethylhexyl) phthalate	20	34
Butyl benzyl phthalate	11	13
Di-n-butyl phthalate	19	33
Di-n-octyl phthalate	10	12
Diethyl phthalate	18	31
Dimethyl phthalate	19	32
1,2-benzanthracene	12	29
Benzo (a) pyrene	12	31
3,4-benzofluoranthene	12	29
11,12-benzofluoranthene	12	29
Chrysene	12	29
Acenaphthylene	12	28
Anthracene	12	28
1,12 benzopyrylene	12	29
Fluorene	12	29
Phenanthrene	12	29
1,2,5,6-dibenzanthracene	12	30
Indeno (1,2,3-cd) pyrene	12	29
Pyrene	12	29
Tetrachloroethylene	16	36
Toluene	17	37
Trichloroethylene	17	40
Vinyl chloride	13	35
Aldrin	36	50

Appendix 2  
(continued)

List of 126 Priority Pollutants

Priority Pollutant	No. States <sub>1</sub> w/Criteria Adopted	No. States <sub>1</sub> w/Criteria Adopted/Expected
Dieldrin	36	50
Chlordane	34	49
4,4-DDT	34	49
4,4-DDE	16	29
4,4-DDD	16	29
Alpha-endosulfan	31	48
Beta-endosulfan	31	48
Endosulfan sulfate	24	38
Endrin	38	52
Endrin aldehyde	5	15
Heptachlor	33	49
Heptachlor epoxide	10	20
Alpha-BHC	14	32
Beta-BHC	14	32
Gamma-BHC (lindane)	33	50
Delta-BHC	7	12
PCB-1242	36	50
PCB-1254	36	50
PCB-1221	36	50
PCB-1232	36	50
PCB-1248	36	50
PCB-1260	36	50
PCB-1016	36	50
Toxaphene	38	52
Antimony	16	32
Arsenic	38	52
Asbestos	7	22
Beryllium	21	36
Cadmium	40	53
Chromium	41	54
Copper	36	50
Cyanide	39	51
Lead	40	53
Mercury	40	53
Nickel	31	49
Selenium	42	54
Silver	41	53
Thallium	16	32
Zinc	36	51
Dioxin (2,3,7,8-TCDD)	14	33

(1) State has numeric criteria for one or more uses.



### Appendix 3

#### Status of State Compliance with CWA Section 303(c)(2)(B)

Region	State	Compliance NOW with Section 303(c)(2)(B)?		Compliance Expected by Feb 4, 1990?	
		Aq. Life	Hum Health	Aq. Life	H Health
I	CT	NO	NO	MAYBE	MAYBE
	ME	YES	YES	YES	YES
	MA	NO	NO	YES	MAYBE
	NH	NO	NO	NO (1)	NO (1)
	RI	YES	NO	YES	NO
	VT	NO	NO	MAYBE	MAYBE
II	NJ (2)	NO	NO	NO	NO
	NY (2)	NO	NO	NO	NO
	PR (2)	NO	NO	NO	NO
	VI	YES	YES	YES	YES
III	DE	NO	NO	YES	YES
	DC	NO	NO	YES	YES
	MD	NO	NO	YES	YES
	PA	YES	YES	YES	YES
	VA	NO	NO	NO (3)	NO (3)
	WV	YES	YES	YES	YES
IV	AL (4)	NO	NO	NO	NO
	FL (4)	YES	NO	YES	NO
	GA	YES	YES	YES	YES
	KY (4)	NO	NO	NO	NO
	MS (4)	NO	NO	NO	NO
	NC	YES	YES	YES	YES
	SC (4)	NO	NO	NO	NO
V	TN (4)	NO	NO	NO	NO
	IL	NO	NO	YES	YES
	IN	NO	NO	YES	YES
	MI	NO	NO	NO (5)	NO (5)
	MN	NO	NO	YES	YES
	OH	NO	NO	YES	YES
VI	WI	YES	YES	YES	YES
	AR	YES (6)	NO	YES	NO
	LA	YES	YES	YES	YES
	NM	NO	YES	NO (7)	YES
	OK	YES	NO	YES	NO
	TX	YES	NO	YES	NO (8)

### Appendix 3

#### Status of State Compliance with CWA Section 303(c)(2)(B) (continued)

Region	State	Compliance NOW with Section 303(c)(2)(B)?		Compliance Expected by Feb 4, 1990?	
		Aq. Life	Hum Health	Aq. Life	H Health
VII	IA	NO	NO	YES	NO (9)
	KS	NO	NO	NO (9)	NO (9)
	MO	YES	YES	YES	YES
	NE	YES	NO	YES	NO (9)
VIII	CO	YES	NO (10)	YES	NO (10)
	MT (11)	YES	YES	YES	YES
	ND	YES	NO	YES	MAYBE (12)
	SD (11)	YES	YES	YES	YES
	UT	YES	NO	YES	MAYBE (12)
	WY	NO	NO	YES	YES
IX	AZ (13)	NO	NO	NO	NO
	AS	NO	NO	YES	YES
	CA (13)	NO	NO	NO	NO
	GU	YES	YES	YES	YES
	HI	NO	NO	YES	YES
	NV	NO	NO	YES	YES
	CM	YES	NO	YES	YES
	TT	YES	NO	YES	YES
X	AK	YES	YES	YES	YES
	ID	NO	NO	NO	NO
	OR	YES	YES	YES	YES
	WA	NO	NO	NO	NO

KEY:

YES = REGIONAL COORDINATOR BELIEVES STATE HAS OR WILL ACHIEVE COMPLIANCE BY FEBRUARY 4, 1990

NO = REGIONAL COORDINATOR DOES NOT BELIEVE STATE HAS OR WILL ACHIEVE COMPLIANCE BY FEBRUARY 4, 1990

MAYBE = REGIONAL COORDINATOR BELIEVES STATE MAY ACHIEVE COMPLIANCE BY FEBRUARY 4, 1990

### Appendix 3

#### Status of State Compliance with CWA Section 303(c)(2)(B) (continued)

##### NOTES:

- (1) Adoption in New Hampshire is expected in March of 1990.
- (2) New York, New Jersey, and Puerto Rico are expected to achieve compliance for aquatic life and human health by the end of FY 1990.
- (3) Virginia will adopt final criteria in September of 1990. 1987 Triennial review fell close to the Act.
- (4) Region IV States of Alabama, Kentucky, Mississippi, South Carolina, and Tennessee are expected to achieve compliance during FY 1990 for aquatic life and human health. Florida has already achieved compliance for aquatic life and is expected to achieve compliance for human health during FY 1990.
- (5) Michigan Rule 57 meets the technical requirements but not administrative requirements. State has drafted changes but at this time compliance is not expected by 2/90. The State has been granted an extension to August, 1990 based upon completion of the previous triennial review in August of 1987.
- (6) Does not include metals.
- (7) New Mexico is expected to adopt aquatic life criteria during FY 1990, but no details are available.
- (8) It is anticipated that Texas may adopt human health criteria during FY 1990, but no details are available.
- (9) Iowa and Kansas are expected to adopt needed criteria in the 3rd quarter of FY 1990. Nebraska is expected to adopt needed criteria in late 2nd quarter or early 3rd quarter of FY 1990.
- (10) Colorado has adopted an extensive list of human health values, but all are based on a drinking water route of exposure. Although Region VIII has explained that this effort is incomplete, it is unlikely that Colorado will adopt additional standards by February 4, 1990. They have hinted at an option 2 approach for the "contaminate organism" exposure route, i.e., they intend to make some demonstration that fish consumption (on a lifetime basis) is not an important exposure route in Colorado.

### Appendix 3

#### Status of State Compliance with CWA Section 303(c)(2)(B) (continued)

- (11) Montana and South Dakota have satisfied the requirement by referencing the Gold Book as their standards; they have not explained satisfactorily how the standards will be implemented on a case by case basis.
- (12) Region VIII will attempt to convince both North Dakota and Utah to use an option 1 approach to satisfy the 303(c)(2)(B) requirement. It is unclear at this point how successful that might be. At present, these States are leaning toward an option 2 approach which will likely mean few, if any, new criteria for North Dakota and a few additional criteria for Utah. If they both select option 2, Region VIII expects completion of that process by February 4, 1990. If they agree to an option 1 approach, that may take longer to complete.
- (13) Arizona and California are on schedule to adopt criteria by April, 1990.

# Appendix 4

## Risk Levels For Carcinogens Selected by States

Region	State	Risk Level Adopted	Risk Level Expected	Region	State	Risk Level Adopted	Risk Level Expected
I	CT	$10^{-6}$	$10^{-6}$	VI	AR	$10^{-6}$	
	ME				LA		
	MA				NM		
	NH				OK		
	RI				TX		
II	VT	$10^{-6}$	$10^{-5}$	VII	IA	$10^{-6}$	
	NJ				KS		
	NY				MO		
	PR				NE		
	VI						
III	DE	$10^{-6}$	$10^{-5}$	VIII	CO	$10^{-6}$	(1)
	DC				MT		
	MD				ND		
	PA				SD		
	VA				UT		
	WV				WY		
IV		$10^{-6}$	$10^{-6}$	IX	AZ	$10^{-6}$	$10^{-6}$
	AL				AS		
	FL				CA		
	GA				GU		
	KY				HI		
	MS				NV		
	NC				CM		
	SC				TT		
	TN						
V	IL	$10^{-5}$	$10^{-5}$	X	AK	$10^{-6}$	$10^{-6}$
	IN				ID		
	MI				OR		
	MN				WA		
	OH						
	WI						

### NOTES:

- (1) Although not specifically identified in the State WQS, the hearing record<sub>6</sub> notes that the carcinogenic risk level adopted is  $10^{-6}$ .
- (2) WQS<sub>6</sub> do not identify risk level; State staff intend to use  $10^{-6}$ .

# Appendix 5

## Exposure Assumptions Used by States in Setting Human Health Criteria

Region	State	ARE WQS EXPECTED OR ADOPTED?	WATER CONSUMPTION RATE	ORGANISM CONSUMPTION RATE
I	ME	ADOPTED	2 l/day	6.5 g/day
	NH	EXPECTED	2 l/day	6.5 g/day
II	NJ	ADOPTED	2 l/day	33 g/day
	NY	ADOPTED	2 l/day	
	PR	ADOPTED	2 l/day	
III	DE	EXPECTED	2 l/day	Freshwater = 5.2 g/day Saltwater = 37 g/day
	DC	ADOPTED	2 l/day	6.5 g/day
	MD	EXPECTED	2 l/day	6.5 g/day
	PA	ADOPTED	2 l/day	6.5 g/day
	VA	EXPECTED	UNKNOWN	UNKNOWN
	WV	ADOPTED	2 l/day	6.5 g/day
IV	AL	EXPECTED	2 l/day	6.5 g/day
	FL	ADOPTED	2 l/day	
	GA	ADOPTED		6.5 g/day
	KY	EXPECTED	2 l/day	6.5 g/day
	MS	EXPECTED	2 l/day	6.5 g/day
	NC	ADOPTED	2 l/day	6.5 g/day
	SC	ADOPTED	2 l/day	6.5 g/day
	TN	EXPECTED	2 l/day	6.5 g/day
V	IL	EXPECTED	2.01 l/day <sup>2</sup>	20 g/day <sup>1</sup>
	IN	EXPECTED	2.01 l/day <sup>2</sup>	6.5 g/day <sup>1</sup>
	MI	ADOPTED	2.01 l/day <sup>2</sup>	6.5 g/day <sup>1</sup>
	MN	EXPECTED	2.01 l/day <sup>2</sup>	30 g/day <sup>1</sup>
	OH	EXPECTED	2.01 l/day <sup>2</sup>	6.5 g/day <sup>1</sup>
	WI	ADOPTED	2.01 l/day <sup>2</sup>	20 g/day
VI	LA	EXPECTED	2.089 l/day <sup>2</sup>	20 g/day
	NM	ADOPTED	2 l/day	
	OK	ADOPTED	2 l/day	



## Appendix 5

### Exposure Assumptions Used by States in Setting Human Health Criteria (continued)

Region	State	ARE WQS EXPECTED OR ADOPTED?	WATER CONSUMPTION RATE	ORGANISM CONSUMPTION RATE
VII	IA	ADOPTED	2 l/day <sup>3</sup>	
	KS	ADOPTED	2 l/day	
	MO	ADOPTED	2 l/day	6.5 g/day
	NE	ADOPTED	2 l/day	
VIII	CO	ADOPTED	2 l/day	
	MT	ADOPTED	2 l/day	6.5 g/day
	SD	ADOPTED	2 l/day	6.5 g/day
	UT	ADOPTED	2 l/day	
	WY	EXPECTED	2 l/day	6.5 g/day
IX	AZ	EXPECTED	2 l/day	20 g/day
	AS	EXPECTED	2 l/day	6.5 g/day
	CA	EXPECTED	2 l/day	23 g/day
	GU	ADOPTED	2 l/day	6.5 g/day
	HI	EXPECTED	2 l/day	19.9 g/day
	NV	EXPECTED	2 l/day	6.5 g/day
	CM	EXPECTED	2 l/day	6.5 g/day
	TT	EXPECTED	2 l/day	6.5 g/day
X	AK	ADOPTED	2 l/day	6.5 g/day
	ID	ADOPTED	2 l/day	
	OR	ADOPTED	2 l/day	6.5 g/day
	WA	EXPECTED	2 l/day	6.5 g/day

#### NOTES:

- (1) Region 5 has advised or will advise State that 6.5 g/day is an inappropriately low assumption.
- (2) State has assumed exposure via incidental consumption of water resulting from recreational activities. For Louisiana, this assumption was an additional 89 ml/day. For Region 5 States, this assumption was an additional 10 ml/day.
- (3) Kansas criteria are for non-307(a) pollutants.

# Appendix 6

State Selected Options<sup>1</sup> to Comply with CWA Section 303(c)(2)(B)

Region State Option			Region State Option		
I	CT	1 & 3	VI	AR	2
	ME	1 & 3		LA	2
	MA	1 & 3		NM	2
	NH	1 & 3		OK	2
	RI	1 & 3		TX	2
	VT	2 & 3			
II	NJ	2	VII	IA	2
	NY	2		KS	2
	PR	2		MO	2
	VI	2		NE	2
III	DE	2	VIII	CO	2
	DC	1		MT	1
	MD	2		ND	2
	PA	1 & 3		SD	1
	VA	2		UT	2
	WV	2		WY	1
IV	AL	1	IX	AZ	1
	FL	2		AS	1
	GA	1		CA	1
	KY	1		GU	1
	MS	2 & 3		HI	1
	NC	2 & 3		NV	1
	SC	2		CM	1
	TN	2		TT	1
V	IL	2 & 3	X	AK	1
	IN	1		ID	2
	MI	3		OR	1
	MN	1		WA	2
	OH	2 & 3			
	WI	1			

## Notes:

(1) As described in December 1988 EPA Toxics Guidance