

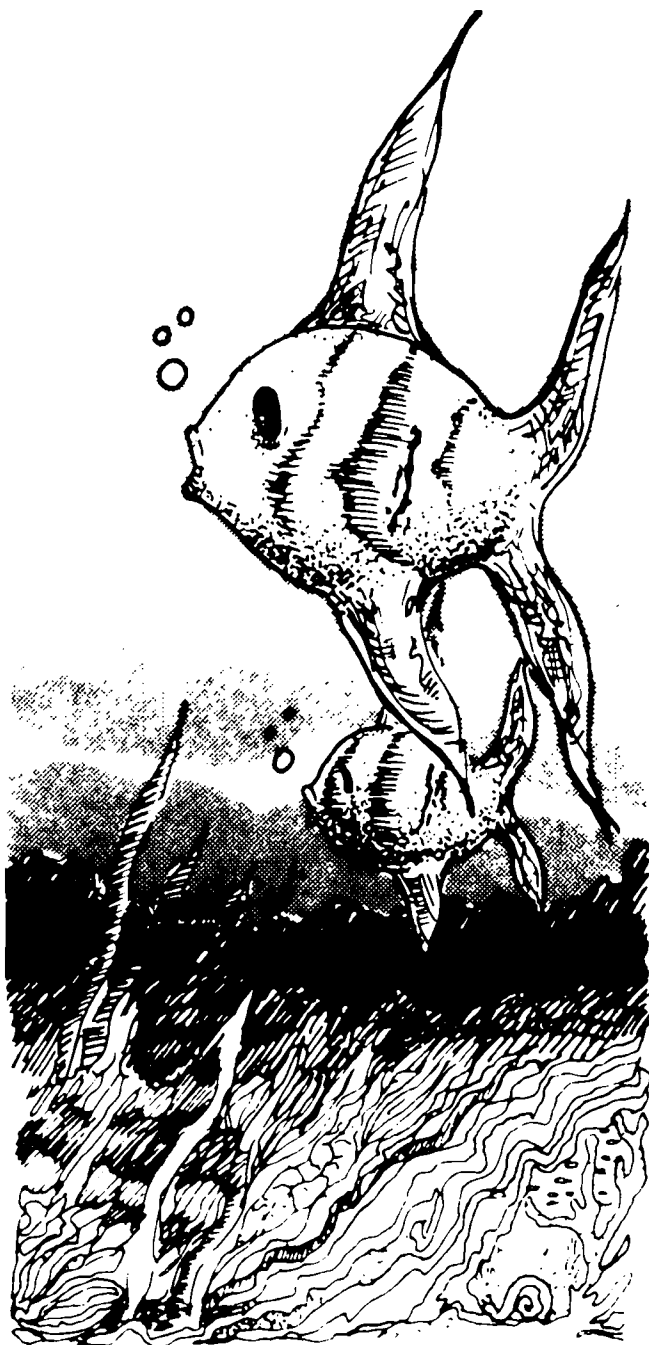
Water



# Acidity-Alkalinity (pH)

## Water Quality Standards Criteria Digest

### A Compilation of State/Federal Criteria



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Water

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# **Acidity-Alkalinity (pH)**

## **Water Quality Standards Criteria Digest A Compilation of State/Federal Criteria**

ENVIRONMENTAL PROTECTION AGENCY  
WATER QUALITY STANDARDS  
CRITERIA DIGEST - CORRECTIONS

In December 1979, EPA published four documents containing the summaries of State Water Quality Standards. In those four documents a number of errors appeared which need correction. These corrections are listed below.

ACIDITY-ALKALINITY (pH)

1. Idaho. Page 7: add as the first phrase the following general statement - Values for all waters are to be within the range of 6.5 - 9.0.
2. Mississippi. Page 11: delete the criteria and uses for agriculture, industrial, and navigation.

BACTERIA

1. Alabama. Page 1: for F & WL, change the geometric mean of 100/100 to 1,000/100.
2. Florida. Page 9: for PWS change 1,000/100 fecal coliforms to 1,000/100 total fecal coliforms.
3. Nevada. Page 19: (a) second paragraph, change intrastate to interstate. (b) under the more stringent criteria, change interstate to intrastate and add Class B with Class A.
4. Tennessee. Page 29: for PWS, change total to fecal, and for F & WL replace "no criteria" with "same as Class 1."
5. Utah. Page 31: Continues as:

Utah (cont'd) Class C (PWS after treatment; recreation, excepting swimming unless natural purification action results in quality consistent with class "CR" standard and swimming is specifically approved by State board of health): Monthly arithmetic mean total coliforms not to exceed 5,000/100, except 20% of samples may exceed this if no more than 5% exceed 20,000/100, and monthly arithmetic mean coliforms shall not exceed 2,000/100.

Class CR (swimming): Monthly arithmetic mean coliforms not exceed 1,000/100; no more than 20% exceed this and no more than 5% exceed 4,000/100; and monthly arithmetic mean fecal coliforms exceed 200/100, provided no more than 10% exceed 400/100.

Class D (limited irrigation, not including lawns, rec. areas, dairy pastures, root crops or low growing crops for human consumption): Monthly arithmetic mean coliforms not exceed 5,000/100, except 20% of samples may exceed this if no more than 5% exceed 20,000/100.

Vermont

Class A (PWS with disinfection): Total coliforms not exceed 100/100. Fecal coliform: none attributable to discharge of domestic or industrial wastes.

Class B (PWS with treatment; bathing): Total coliforms not exceed 500/100. Fecal coliform not exceed 200/100.

Class C (secondary contact recreation): Fecal coliforms not to exceed 1,000/100.

Virginia

In all surface waters, except those areas where public or leased private shellfish beds are present, the fecal coliform bacteria shall not exceed a log mean of 200/100 ml with not more than 10% of total samples during any 30-day period exceeding 400/100 ml. Evaluation should be determined by either multi-tube fermentation for marine waters or membrane filtration method for freshwaters and should be based upon not less than 10% of samples taken over not more than a 30-day period.

Shellfish - In all open ocean or estuarine waters capable of propagating shellfish or in specific areas where public or leased private shellfish beds are present, and including those waters on which condemnation or restricted classifications are established by State Department of Health, the following standard will apply: the median fecal coliform value for a sampling station shall not exceed an MPN of 14/100 of samples and not more than 10% of the samples shall exceed 43 for a 5-tube, 3-dilution test or 49 for a 3-tube, 3-dilution test.

#### DISSOLVED OXYGEN

1. Idaho. Page 8: substitute the given criteria with the following:

Cold Water Fishery - exceed 6 mg/l at all times, minimum daily average will be 7 mg/l.

Warm Water Fishery - exceed 5 mg/l at all times, minimum daily average will be 6 mg/l.

Miscellaneous - Salmonid Spawning; exceed 90% of saturation or 6 mg/l, whichever is greater.

2. Mississippi. Page 13: Substitute the given criteria with the following:

Dissolved oxygen concentrations shall be maintained at a daily average of not less than 5.0 mg/l with an instantaneous minimum of not less than 4.0 mg/l in streams; shall be maintained at a daily average of not less than 5.0 mg/l with an instantaneous minimum of not less than 4.0 mg/l in estuaries and in the tidally-affected portions of streams; and shall be maintained at a daily average of not less than 5.0 mg/l with an instantaneous minimum of not less than 4.0 mg/l in the epilimnion (i.e., the surface layer of lakes and impoundments that are thermally stratified, or 5 feet from the water's surface (mid-depth if the lake or impoundment is less than 10 feet deep at the point of sampling) for lakes, and impoundments that are not stratified.

Epilimnion samples may be collected at the approximate mid-point of that zone (i.e., the mid point of the distance or if the epilimnion is more than 5 feet in depth, then at 5 feet from the water's surface.

(Applicable to all classes).

3. Oregon. Page 17: Replace the Cold Water Fishery criteria of 75% with 90% and delete the phrase "or 5-7 mg/l."

#### DISSOLVED SOLIDS

1. Arizona. Page 1: Delete the phrase for no requirements. Also, in the last sentence of paragraph change "goals" to "standards."
2. Kentucky. Page 10: Delete the use and criteria for industrial water supply.
3. North Carolina. Page 16: Replace the phrase for no requirements with Class A-II: total dissolved solids - 500 mg/l; sulfates - 250 mg/l.

## INTRODUCTION

This digest was compiled to provide general information to the public as well as to Federal, State, and local officials. It contains excerpts from the individual State-Federal water quality standards establishing pollutant specific criteria for navigable surface waters. The water quality standards program is implemented by the U.S. Environmental Protection Agency where responsibility for providing water quality recommendations, approving State-adopted standards for navigable waters, evaluating adherence to the standards, and overseeing enforcement of standards compliance, has been mandated by Congress.

The standards program, a nationwide strategy for surface water quality management, contains two major elements: the use (recreation, drinking water, fish and wildlife propagation, industrial, or agricultural) to be made of the navigable water; and criteria to protect these uses.

Water quality criteria (numerical or narrative specifications) for physical, chemical, temperature, and biological constituents are stated in the July 1976 U.S. Environmental Protection Agency publication Quality Criteria for Water (QCW), order # 055-001-01049-4, price \$3.50, available from the Government Printing Office, Washington, D.C. The 1976 QCW, commonly referred to as the "Red Book," is the most current compilation of scientific information used by the Agency as a basis for assessing water quality. This publication is subject to periodic updating and revisions in light of new scientific and technical information.

This digest deals with pH and its use in State water quality criteria. The pH is an indication of the degree of hydrogen ion concentration and hydrogen ion activity. In natural conditions, pH is determined by weak and strong acids and bases, and their salts. Toxicologically, pH can have certain adverse effects on the physiology and development on many aquatic life forms. It can also effect the degree of toxicity of many chemicals by altering their solubility and association with the hydrogen ions or other elements in water. The 1976 Quality Criteria for Water recommends a criteria range of pH which will provide protection from adverse effects for specific water uses.

Range

- 5 - 9 Domestic water supplies (welfare).
- 6.5-9.0 Freshwater aquatic life.
- 6.5-8.5 Marine aquatic life.

Since water quality standards are revised from time to time, following procedures set forth in the Clean Water Act, individual entries in this digest may be superseded. This digest will be updated periodically. Because this publication is intended for use only as a general information reference, the reader needs to refer to the current approved water quality standards to obtain the latest information for special purposes and applications. These can be obtained from the State water pollution control agencies or the EPA Regional Offices.

Individual State-adopted criteria follow:

KEY

PWS	Public Water Supply
Rec.	Recreation
F&WL	Fish and Wildlife
Ind.	Industrial
Agric.	Agricultural
Mg/l	Milligrams per Liter
SAR	Sodium Absorption Ratio

(For explanation of use classifications, see EPA publication,  
General Stream Use Designations.)

Acidity-Alkalinity (pH) Criteria

Alabama	PWS	Sewage, industrial waste or other
	Swimming	wastes shall not cause the pH to
	F&WL	deviate more than one unit from the
	Agr. & Ind.	normal or natural pH nor be less
	Ind. Oper.	than 6.0 nor greater than 8.5.
	Navigation	
	Swimming	For estuarine and salt waters to
	F&WL	which this classification is
	Agr. & Ind.	assigned, wastes as described
	Ind. Oper.	herein shall not cause the pH to
	Navigation	deviate more than one unit from the
		normal or natural pH nor be less
		than 6.5 or greater than 8.5.
	Shellfish	. . . not . . . deviate more than
		one unit from normal or natural pH
		nor be less than 6.5 nor greater
		than 8.5.

Note: In the State of Alabama, there are two separate classifications:

1. Agricultural & Industrial Water Supply
2. Industrial Operations

Alaska	PWS	6.5 - 8.5	
	Swimming	6.5 - 8.5	
	F&WL	6.5 - 8.5	Saltwater
		6.5 - 9.0	Freshwater
	Shellfish	6.0 - 8.5	
	Agriculture	5.0 - 9.0	Fresh
	Industrial	5.0 - 9.0	Marine
American Samoa	The pH range shall be 7.0 to 8.3, and be within 0.1 pH units of that which would occur naturally.		
Arizona	6.5 - 8.6	(no change greater than 0.5 units)	
Arkansas	6.0 - 9.0	Fluctuation not more than 1.0 pH unit.	



California

(1A) Klamath River Basin

The pH shall not be depressed below 6.5 nor raised above 8.5.

Changes in normal ambient pH levels shall not exceed 0.2 units in waters with designated marine (MAR) or saline (SAL) beneficial uses nor 0.5 units within the range specified above in fresh waters with designated COLD or WARM beneficial uses.

(1B) North Coastal Basin

(Same as 1A)

(2) San Francisco Bay Basin

(Same as 1A)

(3) Central Coastal Basin

Objectives for Inland Surface Waters, Enclosed Bays and Estuaries

The pH shall neither be depressed below 6.5 nor raised above 8.3 in waters with designated REC-1, REC-2, AGR, or MUN beneficial uses. For waters with designated aquatic habitat protection, including WARM, COLD, MAR, and BIOL, and for waters not otherwise mentioned, the pH shall not be depressed below 7.0 or raised above 8.5.

Changes in normal ambient pH levels shall not exceed 0.2 in waters with designated MAR beneficial uses, nor 0.5 in fresh waters with designated COLD or WARM beneficial uses.

(4A) Santa Clara River Basin

(Same as 1A)

(4B) Los Angeles River Basin

Objectives for Inland Surface Waters, Enclosed Bays and Estuaries

(Same as 1A)



raised above 9.5 and in Lake Tahoe where the pH shall not be depressed below 7.0 nor raised above 8.4.

Changes in normal ambient pH levels shall not exceed 0.5 units in fresh waters with designated COLD or WARM beneficial uses.

(6B) South Lahontan Basin

The pH shall not be depressed below 6.5 nor raised above 8.5.

Changes in normal ambient pH levels shall not exceed 0.5 units in fresh waters with designated COLD or WARM beneficial uses.

(7A) West Colorado River Basin

Changes in normal ambient pH levels attributable to controllable water quality factors shall not exceed 0.5 units; and shall not depress the receiving water pH below 6.5 units nor raise it above 8.5 units.

(7B) East Colorado River Basin

Changes in normal ambient pH levels attributable to controllable water quality factors shall not exceed 0.5 units; and shall not depress the receiving water pH below 6.5 units nor raise it above 8.5 units.

(8) Santa Ana River Basin

(1) All bay and estuary waters:

As a result of controllable water quality factors, the pH shall not be depressed below 7.0 units nor raised above 8.6 units.

Changes in normal ambient pH levels shall not exceed 0.2 units.

(2) All inland surface waters:

(a) The pH of all water except Baldwin Lake shall not be depressed below 6.5 units nor raised above 8.5 units as a result

of controllable water quality factors.

(b) The pH of Baldwin Lake shall not be depressed below 6.5 units nor raised above 8.9 units as a result of controllable water quality factors.

(c) Changes in normal ambient pH levels shall not exceed 0.5 units in any inland surface water.

(9) San Diego Basin

Changes in normal ambient pH levels shall not exceed 0.2 units in waters with designated marine (MAR) or saline (SAL) beneficial uses nor 0.5 units in fresh waters with designated COLD or WARM beneficial uses.

In bays and estuaries the pH shall not be depressed below 7.0 nor raised above 8.5.

In inland surface waters the pH shall not be depressed below 6.5 nor raised above 8.5.

Ocean Plan

The pH shall not be changed at any time more than 0.2 units from that which occurs naturally.

Colorado

Recreational:

Class 1; Primary Contact 6.5 - 9.0 units

Aquatic Life:

Class 1; Cold Water Biota 6.5 - 9.0 units

Class 1; Warm Water Biota 6.5 - 9.0 units

Domestic Water Supply:

Class 1; 5.0 - 9.0 units

Class 2; 5.0 - 9.0 units

Connecticut

Freshwater

Class AA as naturally occurs

Class A as naturally occurs

Class B 6.5 - 8.0

Class C 6.0 - 8.5

<u>Marine Water</u>	
Class SA	6.8 - 8.5
Class SB	6.8 - 8.5
Class SC	6.5 - 8.5

Delaware	Shall be between 6.5 - 8.5.	
	Total Alkalinity	Not less than 20 mg CaCO <sub>3</sub> /l at any time.
	Total Acidity	Not exceed alkalinity by 20 mg CaCO <sub>3</sub> /l at any time.
District of Columbia	6.0 - 8.5.	
Florida	PWS	Shall not vary more than 1.0 unit, 6.0 - 8.5.
	Shellfish	Shall not vary more than 1.0 unit (coastal), .2 (fresh), 6.5 - 8.5.
	Recreation/ F&WL	Shall not vary more than 1.0 unit (coastal), .2 (fresh) Marine: 6.5 - 8.5 Fresh: 6.0 - 8.5.
	Agriculture	Shall not vary more than 1.0 unit, 6.0 - 8.5.
	Navigation	5.0 - 9.5; except for certain swamp areas, 4.5 - 9.5.
Georgia	6.0 - 8.5.	
Guam	Variations of more than 0.2 pH units from natural conditions but not lower than 7.0 nor higher than 8.5 from other than natural causes shall not be allowed.	
Hawaii	<u>pH Units</u> *Class AA	Not more than 1/2 unit difference from natural conditions but not lower than 8.0 nor higher than 8.5 from other than natural causes (not lower

Classes A,B than 7.0 for fresh tidal waters).  
 Not more than 1/2 unit difference from natural conditions but not lower than 7.0 nor higher than 8.5 from other than natural causes.  
 Class B-2 Not less than 6.5 nor higher than 8.5.

\*For explanation of use classifications, see EPA publication, "General Stream Use Designations."

Idaho

Bear River, Bear Lake, Cub River, 7.0 - 8.5\*  
 Worm Creek & Malad River.

Main stem of Snake River, Palouse 7.0 - 9.0\*  
 River, North Fork Teton River,  
 Henry's River (Falls River to Snake  
 River), Raft River, Goose Creek, Salmon  
 Falls Creek, Jarbridge & Bruneau Rivers.

Kootenai, Clark Fork, Moyie, Coeur 6.5 - 8.0\*  
 D'Alene, Priest & Spokane Rivers and  
 Pend Oreille River, Pend Oreille Lake,  
 Priest Lake & Coeur D'Alene Lake.

\*Variation not more than 0.5.

Illinois

General Standards

pH (STORET number - 00400) shall be within the range of 6.5 to 9.0 except for natural causes.

Lake Michigan

pH (STORET number - 00400) shall be within the range of 7.0 to 9.0 except for natural causes.

Secondary Contact and Indigenous Aquatic Life

pH (STORET number - 00400) shall be within the range of 6.0 to 9.0 except for natural causes.

Indiana

SPC 1R-4, General Standards

Aquatic Life

(pH) No pH values below 6.0 nor above 9.0, except daily fluctuations which exceed pH 9.0 and are correlated with photosynthetic activity, shall be permitted.

SPC 4R-2, Lake Michigan and Contiguous Harbor Areas

(pH) No pH values below 7.5 nor above 8.5,

except daily fluctuations which exceed pH 8.5 and are correlated with photosynthetic activity, may be tolerated.

SPC 7R-3, Grand Calumet River and  
Indiana Harbor Ship Canal

(pH) No pH values below 6.0 nor above 9.0, except daily fluctuations which exceed pH 9.0 and are correlated with photosynthetic activity, shall be permitted.

SPC 10R-2, Wolf Lake

(pH) No pH values below 6.5 nor above 8.5, except daily fluctuations which exceed pH 8.5 and are correlated with photosynthetic activity, may be tolerated.

SPC 12R, Salmonid Fishes  
Rearing or Imprinting Areas

1. Trail Creek and tributaries upstream of U.S. Highway 35.
2. Little Calumet River and tributaries upstream (easterly) of the Wagner Road Bridge. The Wagner Road Bridge is located downstream of Chesterton at the southeast corner of the southwest quarter, Section 26, T 37 N, R 6 W, Porter County, Indiana.
3. Kintzele Ditch (Black Ditch) from Beverly Drive downstream to Lake Michigan.
4. Salt Creek above its confluence with the Little Calumet River.

pH: No values below 6.0 or above 8.5, except daily fluctuations which exceed pH 8.5 and are correlated with photosynthetic activity, may be tolerated. However, any drop below 6.0 or sudden rise above 8.5 not related to photosynthesis indicates abnormal conditions.

## Migration Routes

The criteria listed below are for evaluation of the following streams used by salmonid fishes to migrate to and from natural spawning or rearing or imprinting areas. In those waters within migration routes where put-and-take trout fishing exists, the requirements of SPC 1R-4 shall apply.

## Existing Migration Routes

Trail Creek from Highway 35 downstream to Lake Michigan. Little Calumet River from Wagner Road Bridge downstream to Lake Michigan via Burns Ditch.

pH: No values below 6.0 or above 9.5, except daily fluctuations which exceed pH 8.5 and are correlated with photosynthetic activity, may be tolerated. However, any drop below 6.0 or sudden rise above 8.5 not related to photosynthesis indicates abnormal conditions.

Iowa	6.5 - 9.0 with a maximum change of 0.5 units as a result of a waste discharge
Kansas	6.5 - 8.5 Arkansas River - 6.5 - 9.0.
Kentucky	Ind. 5.0 - 9.0 Aquatic Life 6.0 - 9.0
Louisiana	By Segment 6.0 - 8.5 or 6.5 - 9.0
Maine	Class A None which would be in a range that would be harmful to humans or aquatic life Class B-1 6.0 - 8.5 Class B-2 6.0 - 8.5 Class C 6.0 - 8.5



Class D No range that would impair uses  
GP-B (Great Pond-B) 5.5 - 8.5

Class SA 6.7 - 8.5  
Class SB<sub>1</sub> 6.7 - 8.5  
Class SB<sub>2</sub> 6.7 - 8.5  
Class SC 6.7 - 8.5  
Class SD No range that would impair uses

Maryland 6.5 - 8.5.

Massachusetts Class A as naturally occurs  
Class B 6.5 - 8.0; not more than 0.2 units  
outside naturally occurring range  
Class C 6.5 - 8.5; not more than 0.2 units  
outside naturally occurring range  
Class SA 6.5 - 8.5; not more than 0.2 units  
outside naturally occurring range  
Class SB Same as SA  
Class SC Same as SA

Michigan R 323.1053. Hydrogen ion concentration.

Rule 1053. The hydrogen ion concentration expressed as pH shall be maintained within the range of 6.5 to 8.8 in all waters of the State except as otherwise prescribed by Rule 1080. Any artificially induced variation in the natural pH shall remain within this range and shall not exceed 0.5 units of pH.

R 323.1080. Special conditions

Rule 1080. To be consistent with the agreement between the United States of America and Canada on Great Lakes water quality effective April 15, 1972, the following conditions shall apply to the Michigan waters of the Great Lakes and their connecting waterways:

(a) Values of pH shall not be outside the range of 6.7 to 8.5.

Minnesota

Fisheries and Recreation

Class A	pH	6.5 - 8.5
Class B	pH	6.5 - 9.0
Class C	pH	6.5 - 9.0

Industrial Consumption

Class A	pH	6.5 - 8.5
Class B	pH	6.0 - 9.0
Class C	pH	6.0 - 9.0

Agriculture and Wildlife

Class A	pH	6.0 - 8.5
Class B	pH	6.0 - 9.0

Navigation and Waste Disposal

pH	6.0 - 9.0
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Mississippi

PWS	6.0 - 8.5	±1.0
Recreation	6.0 - 8.5	±1.0
F&WL	6.0 - 8.5	±1.0
Agriculture	6.0 - 8.5	±1.0
Industrial	6.0 - 8.5	±1.0
Shellfish	6.5 - 8.5	±1.0
Navigation	5.0 - 9.5	1.5

Missouri

6.5 - 9.0.

Montana

A-Open-D<sub>1</sub> Classification: 6.5 - 8.5, variation less than 0.5 pH unit

B-D<sub>1</sub> Classification: 6.5 - 8.5, variation <0.5 pH unit

B-D<sub>2</sub> Classification: 6.5 - 9.0, variation <0.5 pH unit

B-D<sub>3</sub> Classification: 6.5 - 9.0, variation <0.5 pH unit

In all cases: Natural pH above 7.0 shall be maintained above 7.0.

Nebraska

6.5 - 8.5 with a maximum change of 0.5 unit.

Nevada

6.5 - 8.5 as a single value. Annual median range differs for each basin.

New Hampshire                    Class A    as naturally occurs  
Class B    6.5 - 8.0  
Class C    6.0 - 8.5

New Jersey                        Class FW-1, CW-1, CW-2 - Natural Conditions  
FW-2, FW-3, TW-1, TW-2, TW-3 - 6.5 - 8.5

New Jersey - Delaware River  
Zone 1 (non-tidal) - 6.0 - 8.5  
Total alkalinity not less than 20 below  
Mile 183.66 (Lehigh River)  
Zone 2 (tidal-PWS) - 6.5 - 8.5  
Total alkalinity between 20 and 100 mg/l  
as CaCO<sub>3</sub>  
Zones 3, 4, 5 & 6 - 6.5 - 8.5  
Total alkalinity between 20 and 120 mg/l  
as CaCO<sub>3</sub>

New Jersey - Central Pine Barrens (Naturally soft and acid)  
Class FW-Central Pine Barrens - 3.5 - 5.5  
Total alkalinity not to exceed 10 mg/l  
as CaCO<sub>3</sub>  
Class Lower Mullica and Wading Rivers -  
4.5 - 6.0

New Mexico                        By Segment        6.6 - 8.8, 6 - 9, 6.6 - 9.0, or  
6.6 - 8.6.

New York                            Class N - Natural conditions  
AA, A, B, C - 6.5 - 8.5  
D                - 6.0 - 9.5  
  
SA, SB, SC, SD, I - normal range shall not  
be extended by more  
than one-tenth (0.1)  
pH unit  
  
A - Special (Great Lakes) - 6.7 - 8.5  
  
AA - Special - Natural conditions

North Carolina                    Shall be normal for the waters in the area,  
which generally shall range between 6.0 - 8.5  
except that swamp waters may have a low of 4.3.  
Shellfish (Class SA)            6.8 - 8.5.

North Dakota

Class I Streams: pH of 7.0 - 8.5  
Class IA Streams: Same as above  
Class II Streams: Same as Class I  
Class III Streams: Same as Class II.

Ohio

Warmwater Habitat - pH 6.5 to 9.0.

Exceptional Warmwater Habitat and Coldwater Habitat - pH 6.5 to 9.0 with no change within that range attributable to man-induced conditions.

Seasonal Warmwater Habitat - pH 6.5 to 9.0 (Not approved by USEPA for designated waters).

Limited Warmwater Habitat - Same as warmwater habitat except for specific lower limits assigned on a case by case basis. (Not approved by USEPA for designated waters).

Lake Erie Outside Excepted Areas - pH 6.5 to 9.0 with no change within that range attributable to man-induced conditions.

Lake Erie Within Excepted Areas - pH 6.5 to 9.0.

Ohio River - No pH value below 6.0 nor above 9.0; high pH values due to photosynthetic activity may be tolerated. (Not approved by USEPA).

Mahoning River Basin -

For Aquatic Life (Warmwater Fishery)

- pH a) No value below 6.0 nor above 8.5
- b) Daily fluctuations which exceed the range of pH 6.0 to 8.5 and are correlated with photosynthetic activity may be tolerated.

For Public Water Supply

- pH to be within the range
- for PWS0 6.0 - 9.5
- for PWS1 5.0 - 10.0

For Industrial Water Supply

- pH not less than 6.0 nor greater than 8.5.

Lower Cuyahoga River - pH shall not be less than 6.0 and shall not be more than 9.0 at any time except that it may be less than 6.0 or more than 9.0 if there is no contribution of acidic or alkaline pollution attributable to human activities.

Oklahoma

6.5 - 8.5.

Oregon

6.5 - 8.5 All waters except Klamath River  
(7.0 - 9.0)

Main stem of Columbia River (7.0 - 8.5)

Snake River (7.0 - 9.0)

Marine and Estuarine Waters (7.0 - 8.5)

Pennsylvania

Depending on stream use. 6.0 - 8.5  
(See Pennsylvania Federal-State 6.5 - 8.5  
standards) 7.0 - 9.0

Puerto Rico

Class SA - 7.3 - 8.5  
SB, SC (Marine) - 7.3 - 8.5. Normal range  
not to be extended by more than 0.1 pH unit.  
SD (PWS) - 6.0 - 9.0

Rhode Island

Class A as naturally occurs  
Class B 6.5 - 8.0  
Class C 6.0 - 8.5  
Class D 6.0 - 9.0

Class SA 6.8 - 8.5  
Class SB 6.8 - 8.5  
Class SC 6.5 - 8.5

South Carolina

Fresh Water

A - 6.0 - 8.0 except for swamp waters (5.0 - 8.0)

B - 6.0 - 8.5 except for swamp waters (5.0 - 8.5)

Salt Water

SAA - Not outside of normally occurring values

- (SA) Shellfish                      Shall not vary more than 3/10 of pH unit above or below that of effluent - free waters in the same geographical area having a similar total salinity, alkalinity, and temperature.
- (SB) Bathing                         Same as above except variance limited to 1/2 a pH unit; but between 6.75 and 8.5.
- (SC) Fishing                         Same as SB - variance 1 pH unit.

South Dakota

	<u>pH</u>	
1) Domestic water supply	>6.0 and <9.0	units
2) Cold water permanent fish	>6.6 and <8.6	
3) Cold water marginal fish		
4) Warm water permanent fish	>6.5 and <9.0	
5) Warm water semipermanent fish	>6.3 and <9.0	
6) Warm water marginal fish	>6.0 and <9.0	
7) Immersion recreation waters	>6.5 and <8.3	
8) Limited contact recreation	>6.0 and <9.0	
9) Wildlife propagation and stock	>6.0 and <9.5	
10) Irrigation waters	Not Available	
11) Commerce and Industry	>6.0 and <9.5	

Tennessee

Fish and Aquatic Life - 6.5 - 8.5  
 Other classes (except navigation) = 6.0 - 9.0  
 (pH) (all classes) . . . and shall not fluctuate more than 1.0 unit in this range over a period of 24 hours.

Texas

By Segment                              6.5 - 8.5  
    6.0 - 9.0

Trust Territories

pH shall be within 0.1 pH units of that natural to the water (PWS).  
 The pH range shall be 7.0 to 8.3 (REC).  
 pH shall be within 0.1 pH unit of the natural value (FWL).  
 pH shall not be less than 7.0 nor more than 8.5 nor shall the influence of these

waters, where they connect with waters of other uses, cause a change in the natural pH of more than 0.1 pH unit (NAV).

Utah	Domestic Source (1A, 1B, 1C)	6.5 - 9.0
	Recreation & Aesthetics (2A, 2B)	6.5 - 9.0
	Aquatic Wildlife (3A, 3B, 3C, 3D)	6.5 - 9.0
	Agriculture (4)	6.5 - 9.0

Vermont	Class A	as naturally occurs
	Class B	6.5 - 8.0
	Class C	6.0 - 8.5

Virginia	All areas	6.0 - 8.5
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Virgin Islands	Class A	- Natural conditions
	Class B	- 7.0 - 8.3. Normal range not to be extended by more than 0.1 pH unit.
	Class C	- Same as Class B except 6.7 - 8.5.

Washington	Fresh	6.5 - 8.5
	Marine	7.0 - 8.5

West Virginia	Generally, not less than 6.0 or greater than 8.5, or pH values normal for waters in the area of question.
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North Branch of Potomac	6 - 8.5
South Branch of Potomac	6 - 8.5
Potomac River	6 - 8.5
All trout streams	6 - 8.5

Wisconsin	<u>Standards for Fish and Aquatic Life</u>
	The pH shall be within the range of 6.0 to 9.0, with no change greater than 0.5 units outside the estimated natural seasonal maximum and minimum.

	<u>Intermediate Aquatic Life</u>
	The pH shall be within the range 6.0 to 9.0.

	<u>Marginal Surface Waters</u>
	The pH shall be within the range 6.0 to 9.0.

Wyoming

For all Wyoming surface waters, wastes attributable to or influenced by the activities of man shall not be present in amounts which will cause the pH to be less than 6.5 or greater than 9.0 standard units.

North Platte River Stretch I	- 6.5 - 8.5
North Platte River Stretch II	- 7.0 - 8.0
North Platte River Stretch III	- 7.5 - 8.5
Tongue River	7.0 - 8.5
Wind Bighorn River	7.0 - 8.5
Green River	6.5 - 8.5