

# Information on pH Amounts & Water Quality

## 1. What is pH?

- A. pH is the symbol standing for the amount or percentage of hydrogen ions.
- B. Hydrogen ions determine the amount of acid or base in a solution of liquid.
- C. If a liquid has a lot of H<sup>+</sup> ions then it is considered an **acid**, but if there are very few H<sup>+</sup> ions and many HO<sup>-</sup> (hydroxyal) ions, then it is considered a **base**.
- D. The ions (H<sup>+</sup> or HO<sup>-</sup>) get into the water from carbon dioxide as it bubbles up to the surface from the decay bacteria on the bottom.
- E. High amounts of carbon dioxide will produce an acid condition in the water.
- F. In like terms, much decay by bacteria will produce a lot of carbon dioxide. Therefore a lot of decay will produce an acid conditioned lake.



## 2. What is the pH scale?

- A. The pH scale tells us how much **H+ ions** are in the water.
- B. The scale runs from 1 to 14, with 1 being a very acid condition and 14 a very basic condition.



#### 3. How does pH affect a body of water?

A. When a lake is young, it is usually slightly alkaline; as the lake ages, the decaying in the lake causes it to become slightly acidic.

Young lake - pH 8 to 9 Medium Aged Lake - pH 7 Old Lake - pH 7 to 6 Swamp or pond - pH 6 to 5

#### 4. How does pH affect fish in the lake?

- A. Fish types are limited by the amount of acid or base in a lake.
- B. Most fish live between a 5 pH to a 9 pH value.
- C. The chart below shows specific pH limits for different organisms.

t	2	3	4	5	6	7	8	9	10	ll	12	13	14
_		Acids				Neutro	al Bases						
				Largest	6 Variotv	.5 ' of anima	7.5 als trou	t. bass n	navely, sto	ne fly			
				24.3001		7.0 - Snai	ils and Cla	9.0 ams	-0.0101				
				Bass	6 s, crappi	. <del>5</del> es, sunfi	<b>8.0</b> ish, perch	, walleye	s, northeri	1S			
				Carp	- 6 <b>.0</b> 9, sucker	s, catfis	sh, bullhea	<b>9.0</b> ads and s	ome insec	ts			
				Pla	G Ints, phy	.5 toplankt	on, zoopla	ankton, <b>n</b>	nost algae		12		
3.0 IZ Largest Variety of animals trout, bass mayfly, stone fly													
pH A Page	mounts #2	Minifact	& Analy	sis Sheet	t		Sprin © Jan	g Harbor nes E. Ko	Environn otoski	nental M	agnet Mid	dle Schoo	ol