## Shannon-Wiener Biological Diversity Index (H') Worksheet

H'= -  $\sum_{i=1}^{\infty}$  Pi ln Pi OR = - sum of [(P<sub>i</sub>)(Natural Log)(P<sub>i</sub>)] for each species present

Where Pi is the relative abundance of each species = ni/N ni = number of individuals in species i N = total number of individuals in all species S = number of species

- 1. Circle type of monitoring: Box Survey, Colonizing plates, D-Net, and Seine
- 2. Habitat type (i.e. oyster reef, salt marsh):
- 3. Calculate the diversity index for your sample by completing the worksheet below. (An example of how to complete the worksheet is provided on the following page).

Α	В	С	D	E	F
Species	# Individuals	Total Number of	Relative Abundance	Natural log of	Relative Abundances
	of Each Species	Individuals in all Species	Of Each Species	Relative Abundances	Times Their Natural log
(i)	(ni)	(N)	(Pi)	(In Pi)	(Pi ln Pi)
		= sum Column A	= Column B/C	= In Column D	= Column (D)(E)

Sum of Column F = \_\_\_\_ Multiply by -1 to make positive = Shannon-Wiener Index Diversity Index = \_

**Diversity Scale** 

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Where Pi is the relative abundance of each species = ni/N ni = number of individuals in species i N = total number of individuals in all species S = number of species

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Species	# Individuals	Total Number of	Relative Abundance	Natural log of	Relative Abundances
	of all Species	Individuals of all Species	Of Each Species	Relative Abundances	Times Their Natural log
(i)	(ni)	(N)	(Pi)	(ln Pi)	(Pi ln Pi)
		= sum Column A	= Column B/C	= ln Column D	= Column (D)(E)
Mud Crab	2	39	0.05	-2.99	-0.15
Worn	3	39	0.08	-2.53	-0.20
Periwinkle	10	39	0.25	-1.39	-0.35
Blue Crab	23	39	0.59	-0.53	-0.31
Whelk	1	39	0.02	-3.91	-0.08

Sum of or Column F = -1.09 Multiply by -1 to make positive = **Shannon-Wiener Index Diversity Index** = 1.09

**Diversity Scale** 

**Community Not Diverse**