Analysis of Coral Growth Lab Report

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Table 1: $Morphospecies_{A,B,C}$

M_A: No disturbance	M_B: Mid disturbance	M_C: High disturbance
7	13	3
7	9	4
2	4	4
4	4	2
11	14	10
13	14	8
4	10	8
10	7	8
4	7	6
4	7	4
6	5	5
7	6	5
7	3	5
1	5	8
11	15	9
4	9	8
21	15	14
19	14	15
9	13	10
7	14	20
8	11	17
6	10	14
15	12	18
7	11	5
12	15	10
11	14	9
23	30	13
12	7	8
13	20	12

$$n = 29$$
$$\overline{x} = \frac{x_1 + x_2 + \cdots + x_n}{n}$$
$$\sigma_x = \sqrt{\frac{|x_1 - \overline{x}|^2 + |x_2 - \overline{x}|^2 + \cdots + |x_n - \overline{x}|^2}{n - 1}}$$
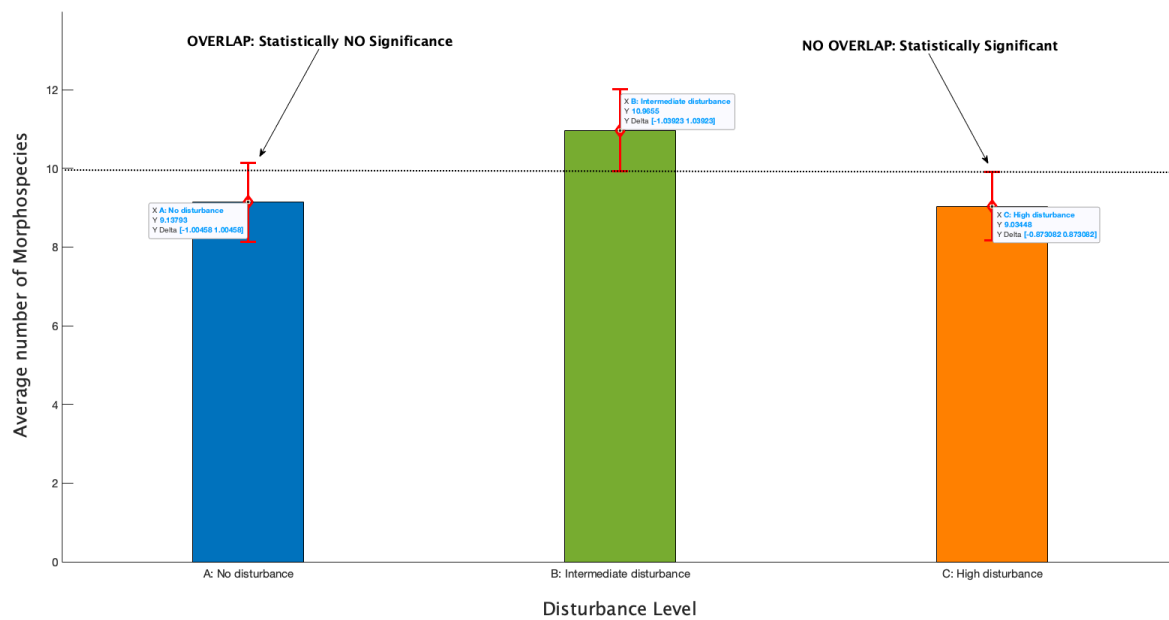$$\epsilon_x = \frac{\sigma_x}{\sqrt{n}}$$
$$\overline{A},\ \overline{B},\ \overline{C} = 9.1379, 10.9655, 9.0345$$
$$\sigma_A,\ \sigma_B,\ \sigma_C = 5.4098, 5.5964, 4.7017$$
$$\epsilon_A,\ \epsilon_B,\ \epsilon_C = 1.0046, 1.0392, 0.8731$$

(1)

Figure: Bar chart of Average number of Morphospecies versus Disturbance Level.

- OVERLAP: Statistically NO Significance
- NO OVERLAP: Statistically Significant

X A: No disturbance
Y 9.13793
Y Delta [-1.00458 1.00458]

X B: Intermediate disturbance
Y 10.9655
Y Delta [-1.03923 1.03923]

X C: High disturbance
Y 9.03448
Y Delta [-0.873082 0.873082]

1. What was the mean ± standard error of coral growth (= change mg/cm2) at each of the four temperature categories?

2. Remember that the average water temperature of the coral's natural habitat was 28 °C. What would happen if global climate change causes the average seawater temperature to increase to 30°C?