Biodiversity Sampling: Exposed vs Sheltered

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01/11/2021

Hypothesis

We hypothesize that there will be greater biodiversity found in the sheltered site because it experiences less hydrodynamic stress.

Data Collection

We collected data from a wave-sheltered and a wave-exposed site at Scott's Bay, Bamfield. Within each site, we counted species richness and abundance using ten haphazardly selected 10 cm by 10 cm quadrats along two parallel transect lines.

Analysis

We compared the Shannon-Wiener diversity index values (H'), species richness, and species evenness between the exposed and sheltered sites. We ran an ANOVA statistical analysis to determine the significance of our results.

Results and Conclusions

Our analysis found that there was no significant difference between the Shannon-Wiener index values of diversity between the exposed and sheltered sites. The p-value for this ANOVA test was 0.218. Similarly, the p value of the richness and evenness ANOVA analysis were 0.43 and 0.78 respectively. In all cases, we do not reject the null hypothesis that there is no relationship between site location and diversity, richness and evenness (Table 1).

Table 1: Resulting p-values of species richness, evenness and Shannon-Wiener Diversity Index from an ANOVA statistical test comparing the exposed and sheltered sites at Scott's Bay, Bamfield, Canada.

	Value
Shannon-Wiener Diversity (H')	0.218
Species Richness	0.430
Species Evenness	0.780

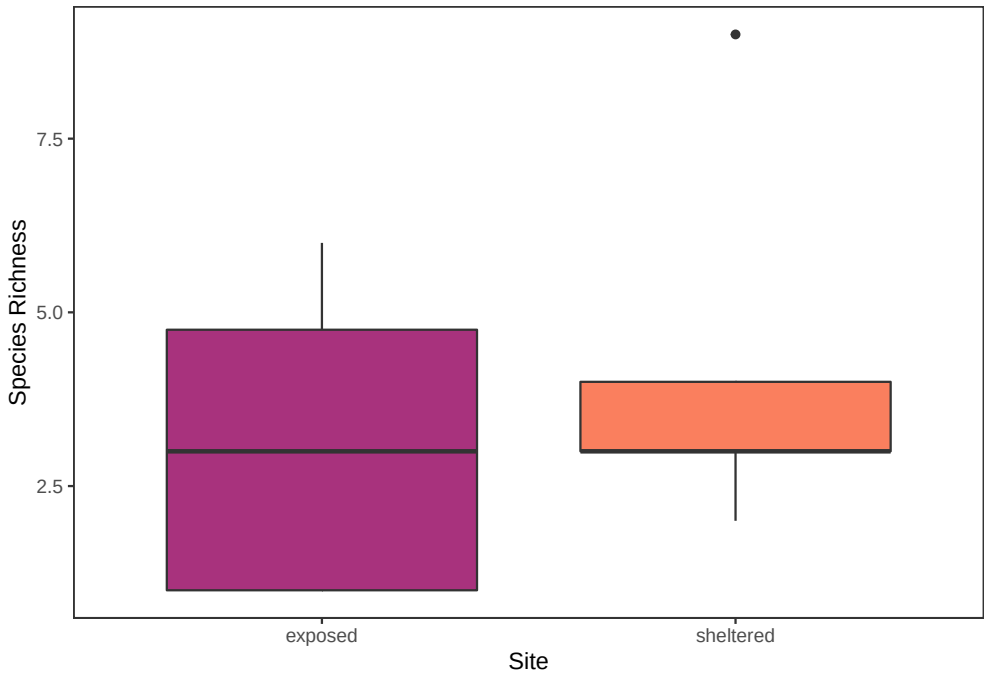

Figure 1: Species richness present at the exposed and sheltered sites at Scott's Bay, Bamfield, Canada. Determined using 10 quadrats haphazardly sampled along two parallel transect lines per site.

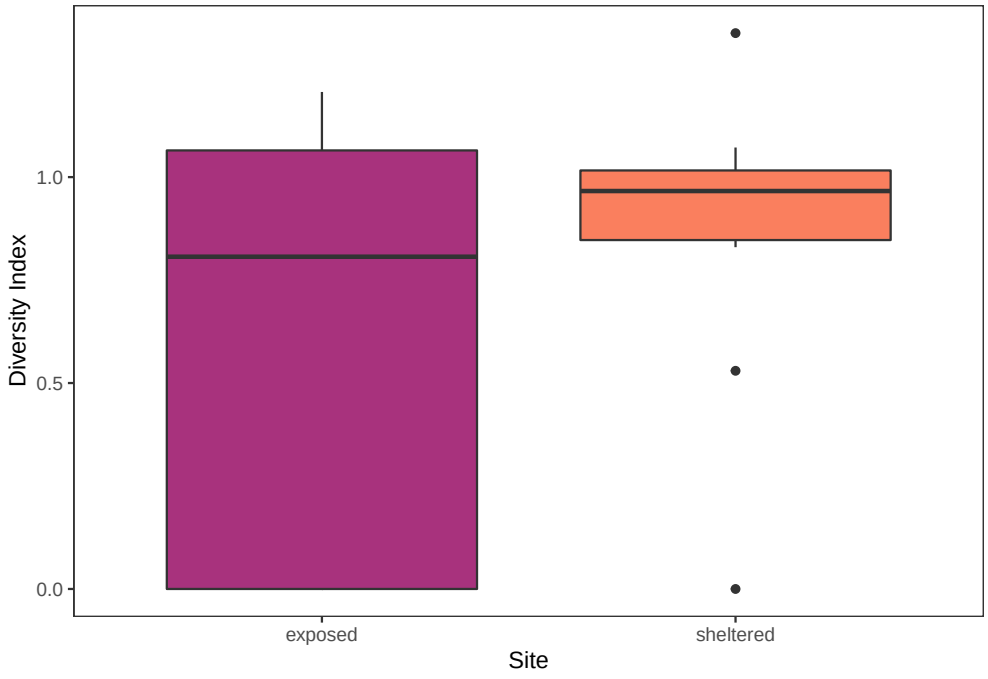

Figure 2: H' value of Shannon-Wiener Diversity Index present at the exposed and sheltered sites at Scott's Bay, Bamfield, Canada. Determined using 10 quadrats haphazardly sampled along two parallel transect lines per site.

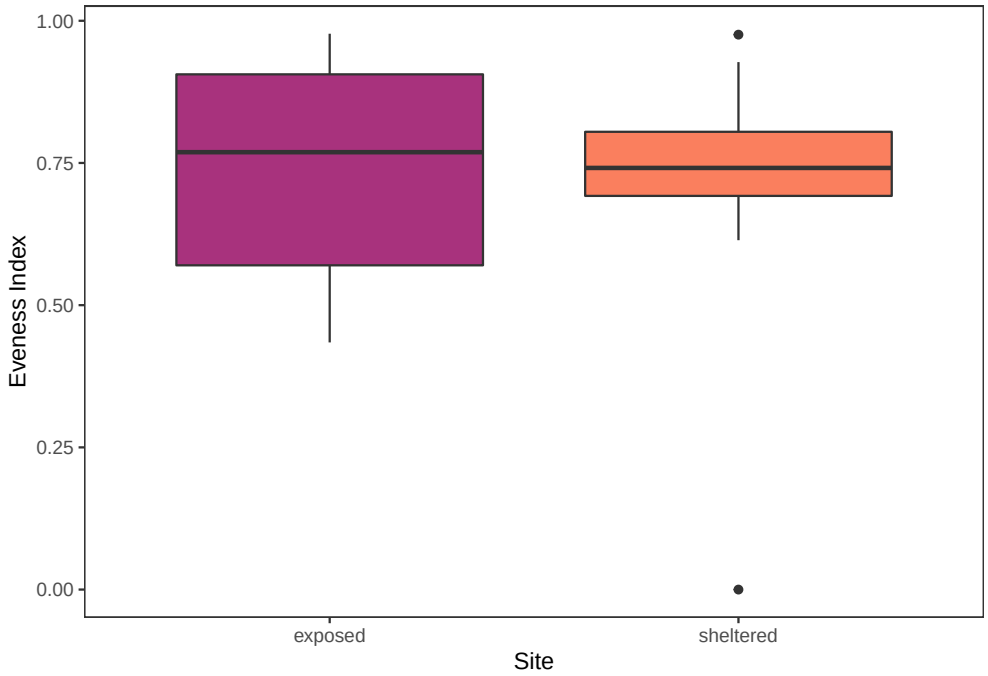

Figure 3: Diversity evenness values of the exposed and sheltered sites at Scott's Bay, Bamfield, Canada. Determined using 10 quadrats haphazardly sampled along two parallel transect lines per site.