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## Seascape Discussion

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## Seascape Discussion

Email \*

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The point-counterpoint on the overlap between landscape and seascape ecology seems to center on dimension and scale. Describe how types of dimension and types of scale define key points of difference between Manderson's and Bell and Furmans' views.

Manderson's argument centers on the broad spatial, physiologic, and dimensional distinctions between marine and terrestrial environments. He argues that we must preface life in a fluid environment (and the ensuing conditions that accompany), prior to examining small-scale patch dynamics. This differs from Bell, who suggests that the same methods developed for terrestrial patch analysis can be widely applied to seascapes (as opposed to the limited coastal systems that Manderson provides as examples). In short, Manderson proposes analysis of

broad-scale spatial patterns (currents, salinity, nutrients, oxygen, etc) prior to fine-scale spatial differences, whereas Bell suggests that fine-scale spatial differences are driving response variables and generalizes broader processes surrounding fluid (air and water) dynamics.

Would subdividing seascape ecology into “demersal (seabed) seascape ecology” and “pelagic seascape ecology” resolve issues raised in the point-counterpoint?

In my opinion, subdividing seascape ecology into “demersal (seabed) seascape ecology” and “pelagic seascape ecology” would not resolve issues raised in the point-counterpoint. Regardless of depth-style binning, a three-dimensional environment requires acknowledgement of the depth dimension. Separating layers, while convenient, simply ignores environmental covariates influencing the response variables regardless of spatial scale or fluid type.

Are applications in movement ecology similar between landscapes and seascapes?

Three-dimensional applications in movement ecology are similar between environments, so long as you acknowledge differences in transport and movement costs. For example, depth in terrestrial landscapes is accompanied with very different cost/benefits from depth in seascapes, however the principles behind analysis remain similar. In two dimensions, the comparison is much harder. Without depth in a seascape, it is extremely difficult to pinpoint driving processes and vertical patterns. There is also much less variation in the maximum and minimum elevations of terrestrial organisms than marine organisms, making isoclines less biologically pronounced.

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