Medium and small-scale habitat associations of White's seahorse (Hippocampus whitei) in New South Wales, Australia, with a focus on predators and prey

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Knowing where to find seahorses would really help us study and conserve them. We here quantify habitat characteristics that may affect where seahorses live, with a focus on predation and food. We investigated their habitats at both a medium and small scale. Along a 4-km stretch of marine estuary in Port Stephens, New South Wales, Australia, we compared the abundance and size distribution of White's seahorse (Hippocampus whitei) among seven Posidonia-dominated seagrass beds. Within these seagrasses, seahorse abundance was not correlated with differences in habitat characteristics among sites. One site, however, had a notably higher population and provided a case study for seahorse microhabitat associations. An availability-use resource selection model found that at a small-scale (80x30 m), seahorses are more likely to occur in microhabitats with higher seagrass density, more available prey types, and a greater distance from potential predator refuges. We then used geostatistical modelling to compare microhabitat association by seahorse size, sex, and reproductive status. Pinpointing how different elements of habitat correlate with seahorse populations at differing scales will better equip conservationists to inform management decisions.

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