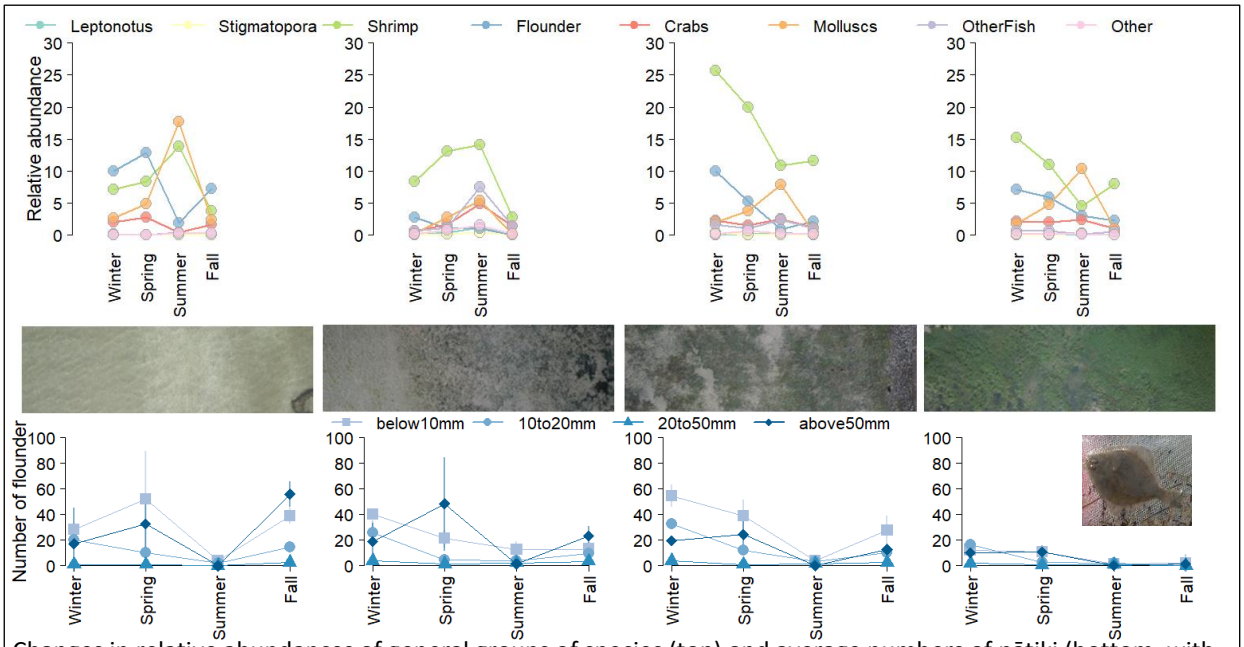
Monitoring seagrass communities at Duvauchelle Bay: Oct 2019 – Oct 2020

After one year of sampling in Duvauchelle Bay, we have learned about the animals that live in the seagrass beds and how they differ throughout the year. The animals occur in different combinations in parts of the bay with different amounts of seagrass, and their abundances differ throughout the year. Compared to other bays around New Zealand (including nearby Robinson Bay) Duvauchelle had some of the greatest variety of different animals, and had the most species of fish. The most abundant animals, regardless of season or seagrass cover, were shrimp.

The second most abundant animals were pātiki (flounder). We only found juveniles, with most less than 20mm long. Pātiki were the most common in the areas without dense seagrass, and were frequently caught, except in summer. The smallest pātiki (<10mm) were generally most common, though larger individuals became more abundant in the spring and fall.



Changes in relative abundances of general groups of species (top) and average numbers of pātiki (bottom, with standard errors) in different levels of seagrass cover (left to right: bare, sparse, patchy, dense) and over seasons.

One of my primary goals for this study was to learn about the pipefish: how many live in the seagrass, when they breed, and where they are found. We caught a total of 83 pipefish individuals from two species the wide-bodied pipefish (*Stigmatopora nigra*) [63 individuals] and the high-bodied pipefish (*Leptonotus elevatus*) [20 individuals]. We caught males, females, and juveniles of each species, but most were juveniles (31 were tagged, none recaptured). Pregnant males were only captured in spring and summer, indicating that their breeding season is limited to only part of the year. Pipefish seemed to prefer intertidal areas of the bay with either dense or patchy seagrass.

Map of adult pipefish of each species caught in Duvauchelle Bay from Oct 2019 – Oct 2020. The size of the circle reflects the number of individuals caught in a single net at each point.

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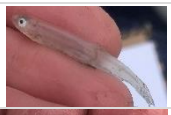
Table of total counts of the species we found in Duvauchelle in each season, showing some photos.

Group	Species	Winter	Spring	Summer	Fall
shrimp	**shrimp** 	6475	4490	2037	3329
fish	**pātiki**, flounder	921	1092	118	437
	wide-bodied pipefish (*Stigmatopora nigra*)	30	17	9	9
	Ihe ihu roa, high-body pipefish (*Leptonotus elevatus*)	0	11	7	4
	rāwaru, blue cod (*Parapercis colias*)	7	0	0	0
	kahawai (*Arripis trutta*)	0	2	18	0
	whitebait 	0	11	11	2
	smelt (*Retropinna retropinna*) 	66	0	0	0
	spotty (*Notolabrus celidotus*) 	12	8	0	8
	wrasse 	52	22	28	42
	blenny 	194	170	150	193
clams	**pipi** (*Paphies australis*)	1	0	2	0
	tuaki, cockle (*Austrovenus stutchburyi*) 	98	156	264	65
crabs	**paddle crab** (*Ovalipes catharus*) 	1	1	0	0
	pie crust crab (*Metacarcinus novaezelandiae*)	1	1	0	0
	hermit crab (*Pagurus novizealandiae*)	0	2	0	1
	mud crab	90	65	40	56
	stalk-eyed mud crab (*Macrophthalmus hirtipes*)	36	93	7	26
	pillbox crab 	234	217	132	228
snails	**cat's eye snail** (*Lunella smaragda*)	0	0	0	1
	mud whelk	35	58	7	0
	whelk	6	62	74	29
	mud snail	49	83	233	27
	pūpū, spotted top-shell (*Diloma aethiops*)	188	612	498	88
other	**seastar** 	0	0	0	1
	limpets	0	8	1	0
	bristleworm	14	12	5	3
	sea squirt 	0	19	10	0
	marine isopod 	54	96	14	29

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