

## Surveying the Falklands' Intertidal

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As part of my PhD I am looking at seasonal and spatial changes in the invertebrate communities that inhabit the rocky shores of the Falkland Islands. In order to assess these changes, I completed intertidal surveys at various locations around the Islands. I know, it's a hard life. This blog tells a brief story of my experiences working in the field.

For looking at the temporal changes, two sites were picked which I would survey every season. Hookers Point, just outside of Stanley, was an obvious choice as it was easily accessible and just a short drive from SAERI. The second site was going to be somewhere as far West as we could manage. As the Falkland Sound divides the East and West into two different climates (the saying "West is best" definitely holds true weather-wise), it would be interesting to find out if the climates would result in different communities on the shore. Originally, New Island had been chosen for the West seasonal site. New Island is the most westerly island in the archipelago and is now a National Nature Reserve, so it seemed like the perfect site for my surveys. So in November 2016, a trip was planned for myself and a field assistant to go out to the island to begin my intertidal surveys. Due to the remoteness of the island and the location of its airstrip, there was a very narrow window of weather conditions - particularly wind direction- in which the little red FIGAS planes could land. Unfortunately, the plane wasn't able to fly out on this trip. Or the next trip. Or the one after that. In fact, it took until April 2017 for me to get out to New Island for a week-long trip. By this point it was decided that it would be too difficult to go out regularly for surveys, and so I went to complete 'one-off' surveys around the island which would contribute to another chapter of my thesis, an assessment of how spatial scales affect littoral communities. The trip was well worth the wait. Five days, five shores surveyed and breath-taking views everywhere you look.



Eastern temporal site at Hookers Point and the settlement at New Island

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As New Island had been ruled out as a site for my seasonal surveys, I had to find another. Eventually I managed to secure Saunders Island as my second regular site. By this time, it was already June 2017 and I hadn't managed to start my temporal surveys. After a bit of tweaking to my methodology, I was ready and started my surveys at Hookers Point in July for my winter survey. The Hookers Point survey was a piece of cake. Albeit a very *cold* piece of cake. The survey on Saunders, however, was not quite so straight forward...

From a previous trip, in February of the same year, I knew that Saunders Island was home to a number of striated caracara (*Phalacrocorax australis*), locally known as Johnny rooks. Johnny rooks are very intelligent birds and are curious about anything left alone for more than five minutes (I learnt this the hard way when paddling at The Neck and seeing these birds try to hop away with my shoes). While Johnny rooks are very beautiful and funny to watch when they are taking off with your possessions, I am also terrified of them. So when you are laying a 20-odd metre long tape measure along a rocky shore, they are not the easiest birds to work around. As a result, my first survey at Saunders was equal parts fun – finding various critters under rocks that I hadn't seen on the East, and watching the birds attempt to fly away with the transect- and stressful- worrying about what to do if they actually succeeded in flying away with it. Eventually we discovered we could keep them at bay by distracting them with food, so would kick up limpets from the rocks and throw them further along the shore.

As my surveys involve collecting all the inverts I can find in a quadrat in 5 minutes, I would go back to the self-catering house with many tubs of critters. And then began the not-so-fun task of sifting through all the critters in the tub. I would set up a make-shift lab in the dining room and spend the evening (and also sometimes the following morning) tallying all the whelks, anemones, isopods, many many worms, and any other critters I could find. Any invertebrates I hadn't seen before or didn't have an ID for, would be preserved to be housed in my intertidal reference collection or sent to an expert for identification.



Site at Saunders Islands and counting the collections back at the house



And so, this continued through November, February and April to complete the spring, summer and autumn surveys at Hookers Point and Saunders. For my spring surveys,

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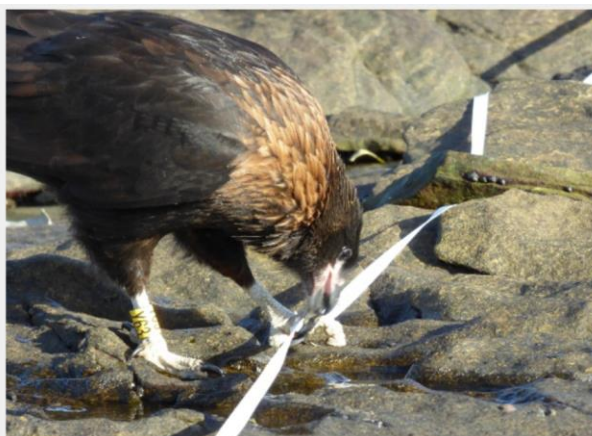
I had the bonus of being accompanied by two assistants to Saunders, one to help with the surveys plus a designated rook wrangler to entertain the birds while we worked. This season's survey also brought me my second mystery flatworm, the first of which was found during my New Island trip, and both have been sent to the Universidad de la República in Montevideo to be identified.

The summer survey, for which I was assisted by SAERI assistant Amy, at Hookers Point brought lots of beautiful red and tiger-lily anemones (*Bunodactis octoradiata* and *Anthopleura hermaphroditca*) and lots of sunburn (the back of my neck is still a shade darker than the rest of my pasty Scottish self).

The autumn surveys proved to be the most stressful of all. With the flight booked for my return to Aberdeen, I was quickly running out of time to get the surveys completed and the weather was not making matters any easier. Stormy weather caused the survey at Hookers Point to be aborted, with extreme winds, hail and slippery seaweed on rocks making the site far too dangerous to work on. Nearly two weeks passed before the storm broke and we were able to finish the survey. As for the survey at Saunders, my love-hate relationship with the rooks continued. Only by this time, I was alone on the shore and the birds had gotten a lot more organised. At the last minute, my volunteer had to back out of the trip and I struggled to find someone who could give up their time at such short notice. Fortunately, a visiting PhD student, Graham, was able to come out for a day and I was to complete the second part of the survey by myself. This was not an ideal situation, and I would never have considered going out unless someone came with me. But with time quickly running out, it was the only option and someone from the settlement agreed to keep an eye out for me while I was on the shore to make sure I was alright (I did also keep an InReach on me at all times in case anything were to go wrong). It was the most stressful day of my surveys, I had three Johnny rooks diving at my head while another five pulled up my neatly placed tape measure. I now know how Tippi Hedron's character in *The Birds* felt and I probably provided some entertainment to anyone in the settlement who saw a terrified PhD student screaming at these birds, while holding a plastic quadrat in the air to stop the birds from diving at her head.



The curious Johnny rooks at Saunders Island



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Though stressful at the time, the Johnny rooks definitely made the surveys more interesting and I feel very lucky to have been able to travel around the Falklands to work on many stunning beaches. As part of this work I have found many amazing critters along the way. Two of my favourite inverts were the leaden whelks (*Pareuthria fuscata*) and shell-less limpets (*Onchidella* sp.) which were present on almost every survey and always exciting to find. Soft-backed crabs (*Halicarcinus planatus*) made sifting through all that leafy green algae worth the time and backache, and I am happy to have found three of the sea urchin species *Autrocidaris canaliculata*, *Trypaster philippii* and *Pseudechinus magellanicus*. A lot of work still needs to be done on this chapter, with hundreds of quadrat photos to be worked through before the analysis of the data begins.



*Pareuthria fuscata*, *Anthopleura hermaphroditica* and *Pseudechinus magellanicus*

Little did I know as a child, armed with a bandy net looking for creatures in a rock pool and under rocks, that I would still be doing it twenty years later but calling it research.

