

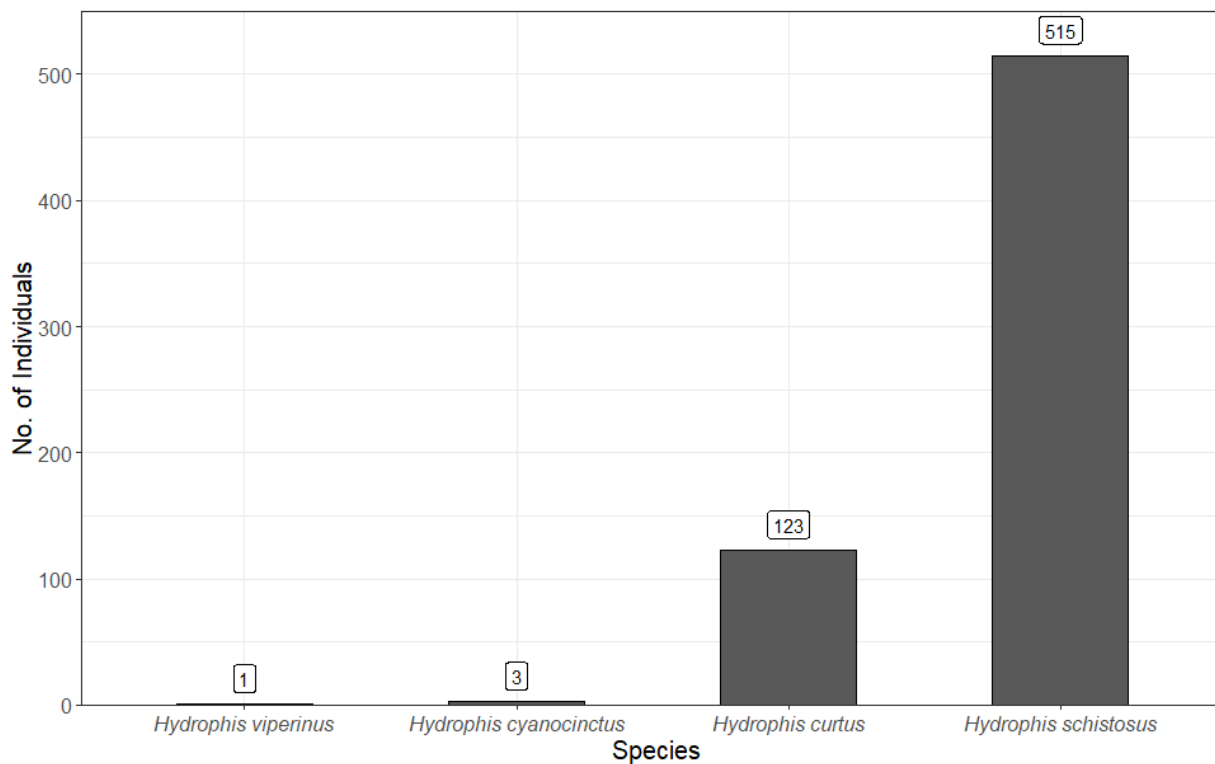
## Project Update: January 2019

### Assessing the effect of trawl fisheries on sea snake feeding ecology along Sindhudurg coast, Maharashtra

We have been working in Sindhudurg, Maharashtra since January 2018 with the aim of understanding how bycatch and fishing pressure affects the ecology of sea snakes that inhabit these waters. The project is part of Dakshin Foundation's long-term initiative to monitor bycatch in fishing gear at Malvan, Maharashtra since 2015. We finished our first season of sampling in May 2018 and resumed field work in October 2018. We conducted preliminary stable isotope analysis of tissue samples collected from sea snakes and their prey in the first season between June and September 2018. In September, we received a small grant from the Mangrove Foundation of Maharashtra to support our work. We have also expanded our team and hired a project assistant and field assistant.

### Sampling

We collected data on over 500 instances of sea snake bycatch at three landing centres in Malvan: Dandi, Devbaugh and Chivla beaches, from small scale and trawl fisheries. We have encountered four species (Fig. 1) in the past year and have collected detailed information on diet and reproduction of the beaked sea snake (*Hydrophis schistosus*) and the Shaw's sea snake (*Hydrophis curtus*).



Abundance of species encountered during sampling from January to December 2018

Due to logistical issues with operating boats, boat-based surveys for sea snakes that were planned at Tambaldeg have been impossible. We have thus shifted our sampling to Vayangani, near Vengurla, which is similar to Tambaldeg in terms of fishing pressure and topology. We have had success in developing and testing out protocols for boat-based surveys to estimate densities of sea snakes at our study sites.



Boat – based surveys for sea snakes

### **Preliminary Analysis**

We collected a total of 155 samples of scales and blood from sea snakes as well as tail clippings from gut content samples. The samples were processed for stable isotope analysis and sent to the National Facility for Stable Isotopes at University of Agricultural Sciences in Bangalore. However, issues with the mass spectrometer have slowed down the analysis considerably.

### **Outreach workshops in March and April**

As part of our project, we hope to engage with the local fishers and stakeholders on issues in fisheries such as bycatch and overexploitation. We plan on holding two workshops in the coming months. The first workshop, in March 2019, will be a platform to communicate our work over the past 3 years and raise awareness about issues related

to bycatch of marine fauna such as sea snakes. We plan to hold a follow-up workshop in April 2019 where we will implement participatory approaches to understand trends in resource use by fishers and their perceptions of sea snakes and other bycatch species. We will also use this opportunity to gauge interest in a community-based monitoring initiative for bycatch in the region.



Engaging with local stakeholders