

REPORT ON EXPEDITION / PROJECT / CONFERENCE

Expedition/Project/Conference Title:	Assessing the reef fish assemblage on reef flat and reef crest zones in Koh Phangan, Thailand	
Travel Dates:	28/05/2024 - 07/08/2024	
Location:	Chaloklum, Koh Phangan, Thailand	
Group member(s):	Sophie Coxon	
Aims:	To compare the assemblage of herbivorous and piscivorous reef fish associated with the reef crest and reef flat zones of reefs on the northern shores of Koh Phangan.	
Photography consent form attached: <i>(please refer to your award letter)</i>	Yes	
OUTCOME (a minimum of 500 words):-		

At the end of May 2024, I arrived on the junglish island of Koh Phangan, in the flat green sea of the Gulf of Thailand. I took an open-truck taxi to the north side of the island, where I was to meet the team at the COREsea research station i would be staying at. Packed in the with my few pieces of luggage, I had no idea what to expect of the coming months, but a spark of excitement was growing in the pit of my stomach, and I knew it was going to be an unforgettable experience.

Arriving in the fishing village of Chaloklum, I fell instantly in love with the quaint charm of the place. There were few tourists here, mostly locals and fisherpeople, the sandy curve of the bay quiet in the day and quieter still at night. The COREsea team were an eccentric mix of passionate students and researchers from across the globe, many of whom were conducting research projects similar to me. I integrated quickly into the team and life on the island was easy, natural, and rewarding. The research station was traditionally rustic, a large wooden Thai building with no air conditioning, huge flagstone floors and a rusty tin roof which thundered and roared under the pelt of monsoon rains. I could see the looming sweep of green mountains from my bunk, and could here waves on the shore through the open windows.

COREsea runs ongoing monitoring and research on the reefs of northern Koh Phangan, collecting important data on the understudied ecosystems fringing the island. The reefs in this region are naturally turbid, characterized by high sedimentation, low coral diversity and high algal cover, though are vibrant with life and support a huge array of marine biodiversity. Unlike the clear-water reefs on the neighbouring island of Koh Tao, the turbid reef systems around Koh Phangan have received little research interest and are relatively unstudied. This is largely due to the lower visibility on these reefs, caused by excessive amounts of suspended sediment and plankton, though is also partially due to a lack of funding interest garnered from the lower aesthetic appeal of these reefs. Yes, they may be a little murkier and muddier, but they are no less important than any other reef.

I contributed to the ongoing monitoring and data collection as well as conducting my own research, which was a transformative experience and equipped me with a plethora of new skills. As a team, we monitored giant clam abundance and size, fish species abundance, coral predator invasions, coral bleaching cover and reef substrate composition, all of which was compiled with previous observations in a decade-long dataset. My own research focused on assessing the assemblage of herbivorous and corallivorous fish found on the reef flats versus the reef crests, different zones of the reef which exhibit different conditions and coral communities.

I collected the data via underwater SCUBA survey along three 50m transects laid at different sites around the northern bays of the island. Data collection was extremely fun, and my fish ID skills improved exponentially, though it became challenging when visibility was low and I could barely see my hand in front of me, nevermind identify the different species of butterflyfish flitting in and out of the corals. Quite early on in my research period, a global heatwave swept the oceans and the Gulf of Thailand felt the impacts; sea surface temperatures soared to above 35 degrees Celsius, and the reefs began to bleach, rapidly, before our eyes. Every day there was more glowing white visible through the murk, and less of the healthy ochre, orange and brown shades that should have painted the reef. This prolonged heatwave also caused a huge algal bloom, thickening the water with green phytoplankton and reducing the visibility to less than 2m on some days. Still, we would dive, as the data collection had to go on. We wore colourful head bands and neon socks in our fins to help our dive buddies see us, and became extremely stringent about staying close to the other team members, and not too close to the delicate and fragile corals beneath us.

My experience collecting data on the reefs of Koh Phangan was life changing. I am now in the process of writing up my research as a scientific paper, but besides the knowledge and skills I gained surrounding turbid reef diving, southeast Asian tropical fish ID, and conducting data collection on sensitive ecosystems, I also gained invaluable friendships, cultural understanding and a new confidence in myself and my ability as a researcher to make a difference. I hope that this research can contribute to the small, yet growing, body of knowledge we have about turbid reef ecosystems in aid of protecting them in the future, and can inspire others to pursue similar work.

