Project Updates

Assessing the Presence and Abundance of Endangered Sharks and Rays in Raja Ampat, Southwest Papua

Raja Ampat, West Papua, Indonesia, Asia
Biodiversity | Fishes | Habitats | Marine

Raja Ampat, Indonesia is widely known as a sanctuary for shark and ray and many other marine megafauna. Using low-impact, standardised baited remote underwater video (BRUV) and environmental DNA analysis, we conducted a survey to assess the biodiversity and relative abundance of priority shark and ray species.

While most BRUV surveys targeted shallow waters where biodiversity is higher, we aimed to pilot a deepwater (> 30 meters) demersal and pelagic BRUV in Raja Ampat, using methods rarely used in standard BRUV surveys to look for sharks and rays across different ecological conditions. Due to the archipelago's geography, we also aim to develop portable BRUV structures that are not only light and easily transported but also strong enough to withstand the elements (Figure 1). Our research focused on piloting a deepwater (> 30 meters) demersal and pelagic BRUV in Raja Ampat. Unlike most BRUV surveys that target shallow, biodiverse waters, our approach utilized methods rarely employed in standard BRUV surveys, specifically to observe sharks and rays in varying ecological conditions. Given the archipelago's unique geography, we also aimed to create a portable BRUV structure that is lightweight and easily transportable, yet robust enough to withstand the elements (Figure 1).

Figure 1. Laudy assembling demersal BRUV structure being assembled. Photo by Rofi Farhandaya

We are based in the beautiful small Island of Arborek, a small village in the heart of Dampier Strait Marine Conservation Area (Figure 2). From here, we survey several areas, including the waters near Kri Cape, Manta Sandy, Arborek and Mansuar Island for demersal BRUV and the deeper open water area of Dampier Strait for pelagic BRUV (Figure 3). In total, we deployed 17 Demersal and 17 pelagic BRUVs during a few weeks of our fieldwork. We also collected eDNA samples for almost all deployments (Figure 4).

Figure 2. The beautiful village of Arborek in the heart of Raja Ampat. Photo by Muhammad Ichsan.

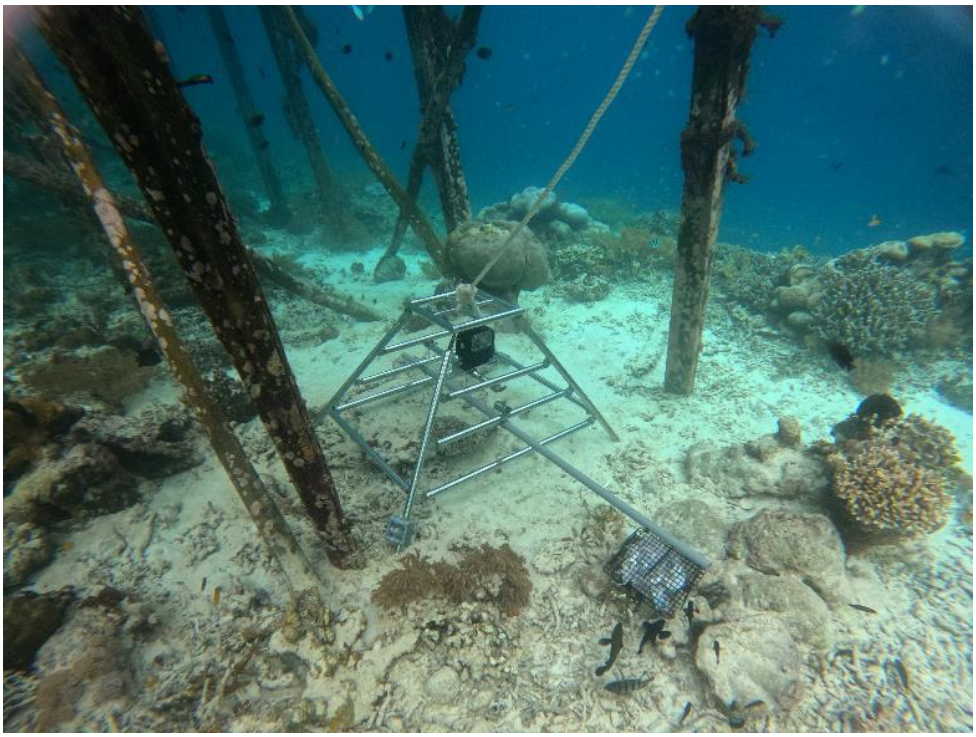

Figure 3. BRUV structure underwater. Photo by Muhammad Ichsan

Figure 4. Rofi preparing eDNA sampling tools. Photo by Laudy Zufar Makarim

As part of our early research and conservation program in the region, we are highly keen to share the beauty and the importance of the ocean to the next generation. We visited state' primary school (SD INPRES 04) on the island and have a brief introduction to the students about sharks and rays in general and learn from them about what they have seen around their island (Figure 5). After fieldwork, we will review our structure design, analyse the footage and eDNA samples from the survey and prepare our dissemination materials. The results from this study will be a huge initial step in assessing the presence and abundance of sharks and rays in the region.

Figure 5. Muthya shares her sharky knowledge to the enthusiastic audience. Photo by Muhammad Ichsan. Consent given by school principal and teachers.