

Monitoring Fish Communities at Ningaloo Reef

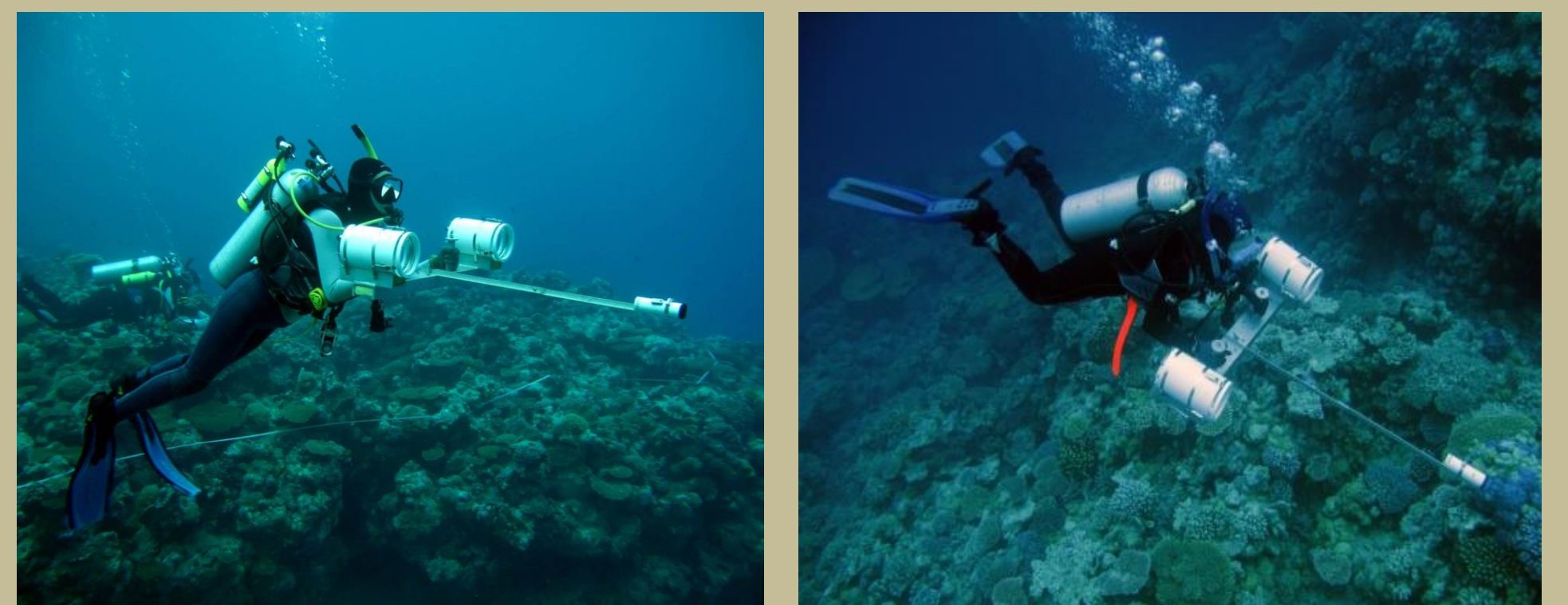
Why do we monitor?



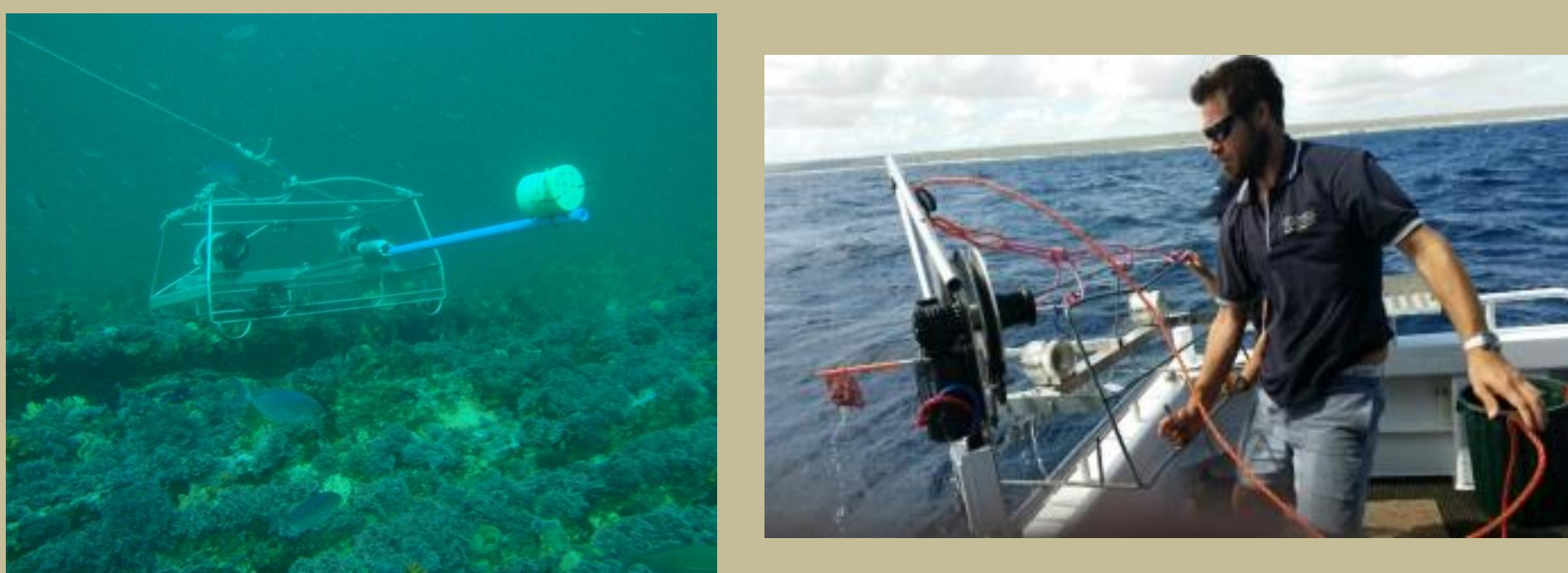
- Monitoring biological communities allows us to understand how they vary under natural conditions and respond to human pressures
- It is important to monitor both the **condition** of the fish community and the **pressures** acting on them in order to make informed management decisions
- The key pressures acting on fish communities within the Ningaloo Marine Park are **recreational fishing pressure** and **habitat degradation** (e.g. coral bleaching, cyclones)

Shallow water communities

- Ningaloo Marine Park has a shallow lagoon and reef slope that is easily accessible by SCUBA divers
- In these areas, we use a method known as **Diver Operated stereo-Video (stereo-DOV)** that enables us to rapidly survey fish communities within a given area
- The stereo-DOV units consist of two cameras set side by side on a bar, enabling precise measurements of fish size
- Video is collected underwater by divers using the stereo-DOV unit, and analysed later on a



Deep water communities



- Much of the Ningaloo Marine Park actually comprises of waters too deep for SCUBA divers to safely access
- In these areas we use a method known as **Baited Remote Underwater stereo-Video (stereo-BRUV)** that enable us to survey in areas rarely seen by the human eye
- The stereo-BRUV units consist of two cameras set side by side in a weighted frame with a bag of bait attached to the front to help bring fish in the area into the camera frame
- The units are dropped overboard with a mooring line attached, and retrieved an hour later
- The videos are analysed later on a computer

What do we monitor?

- **Species Richness**: a measurement of the number of fish species within the community. Healthy coral reefs generally support a high species richness
- **Community Composition**: an assessment of the number/biomass of fishes within specific groupings based on feeding preferences. A certain balance is usually required to maintain a healthy reef ecosystem
- **Abundance/Biomass of Targeted Species**: an assessment of the number of fishes that are targeted by recreational fishing activity.



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