



# ILLUMINATING BIODIVERSITY OF NINGALOO CANYONS



## #NingalooCanyons

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Fremantle, Australia  
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## Expedition Objectives



### Biodiversity discovery

Twenty ROV dives resulted in 181 hours of footage and aided in the collection of specimens and deployment of gear. The deepest dive was 4,439 meters.



### Geological insights

Enhanced mapping of the area provided new data for Gascoyne Marine Park.



### eDNA Surveys

eDNA sampling was utilized to detect traces of animals left behind that may have not been encountered during surveys, which helped to expand the measurement of biodiversity in the region.

The deep-sea expedition was focused on discovering the biodiversity in two marine canyons in Gascoyne Marine Park off the mid-coast of Western Australia, in the eastern Indian Ocean. The main aim of the work was to better understand the biodiversity in the Cape Range and Cloates Canyons. The region is known for its extensive karst system and network of subterranean water bodies, which support an incredible diversity of evolutionarily significant fauna in the surface waters. The deeper waters were unexplored until this expedition. Investigating the deeper regions with ROV surveys yielded a stunning array of marine biodiversity.

The science completed during this expedition will allow the research team to formally describe many of the new species of animals that were found, develop ROV methodology for monitoring Marine Parks in Australia, and screen deep-water samples for environmental DNA in the Indian Ocean. The footage and specimens collected are important records within the Gascoyne Marine Park, and will aid in future management of the park.



*The discovery of the (likely) longest animal on Earth, a 45m long siphonophore, **Apolemia sp.***



**32**

*days at sea*



**20**

*ROV dives*



**1018**

*samples collected*



**1<sup>ST</sup>**

*high school student aboard Falkor*



### **+30 NEW SPECIES**

Specimen collections include the deepest fish records for Western Australia (4470m), first giant hydroids collected in Australia, and significant communities of glass sponges discovered in Cape Range Canyon. Along with new distribution and depth records of known species, this research also led to the discovery of up to 30 new species of marine animals.



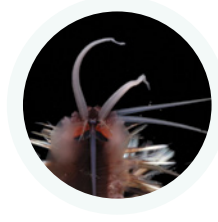
### **DEPLOYMENT OF ARMS**

The deployment of five Autonomous Reef Monitoring Structures (ARMS) in the Cape Range Canyon was noteworthy as it was the first time that the ARMS had been deployed at abyssal depths.



### **11,218 KM<sup>2</sup> OF SEAFLOOR MAPPED**

The new mapping data is necessary for continued management of the Gascoyne Marine Park.



### **UNPRECEDENTED FISH CAPTURES**

The capture of fish using nets held by the ROV arm was unprecedented and resulted in 10 significant specimens collected.