RV METEOR

Expedition M202 „ISAAC“

21.July – 07.August | Praia da Vitória – Mindelo

1. Weekly Report (19.7. - 21.7.2024)

On 21 July, expedition M202 started off the island of Terceira in the Azores archipelago. The Azores are a hotspot of biodiversity. Here, various deep-diving toothed whales share their hunting grounds and hunt for prey at different depths and distances from the coast. The aim of the expedition is to investigate the ecological niche separation of the whales by analysing the diversity and distribution of their potential prey, mainly squid and fish. This will include video transects with towed (PELAGIOS, OFOS) and CTD-mounted camera systems (PISCO). We will document deep-sea squid with autonomous low-light cameras (Nautilus cameras), catch prey species with nets, conduct oceanographic surveys and use acoustic surveys and a mooring to quantify biomass. We will also take water samples (CTD), which will be used for experimental approaches on board as well as various laboratory analyses (genetics/genomics, stable isotope analyses, fatty acid analyses) after the cruise. We are working very closely with a shore-based team of whale specialists led by the Royal Netherlands Intsitute for Sea Research (NIOZ), who are using small boats and who have been carrying out field work off Terceira for many years.

The scientific team on M202 consists of 28 scientists from 10 different institutes and 6 countries and embarked on 20 July. We immediately started preparing the laboratories and setting up the scientific equipment. We left the port of Praia da Vitória (Terceira) at 07:30 on 21 July and set off for the working area (Fig. 1). During the transit we were welcomed by three different cetacean species, humpback whales, spinner dolphins, common dolphins, and this gave us encouragement to start our scientific work soon. We reached the first station according to schedule and the scientific operations of M202 began with the deployment of a Nautilus camera system (Fig. 2, left), which was placed on the seabed. This camera can attract and observe deep-sea squid using optical lures. We then recovered a mooring with echosounders and hydrophones (Fig. 2, right), which documented the biomass of whale prey and recorded the sound of whales over the course of a full year at 1400 m. On the night of 22 July, we will carry out an ADCP transect with regular CTD stations in order to classify the physical oceanography of the working area, and to relate currents to prey distribution. At the same time, the ‘Plancton Imager with Scanning Option’ (PISCO), which is attached to the CTD, will be tested. PISCO can be used to photograph and quantify zooplankton.

Best wishes from aboard the RV Meteor on behalf of all participants.

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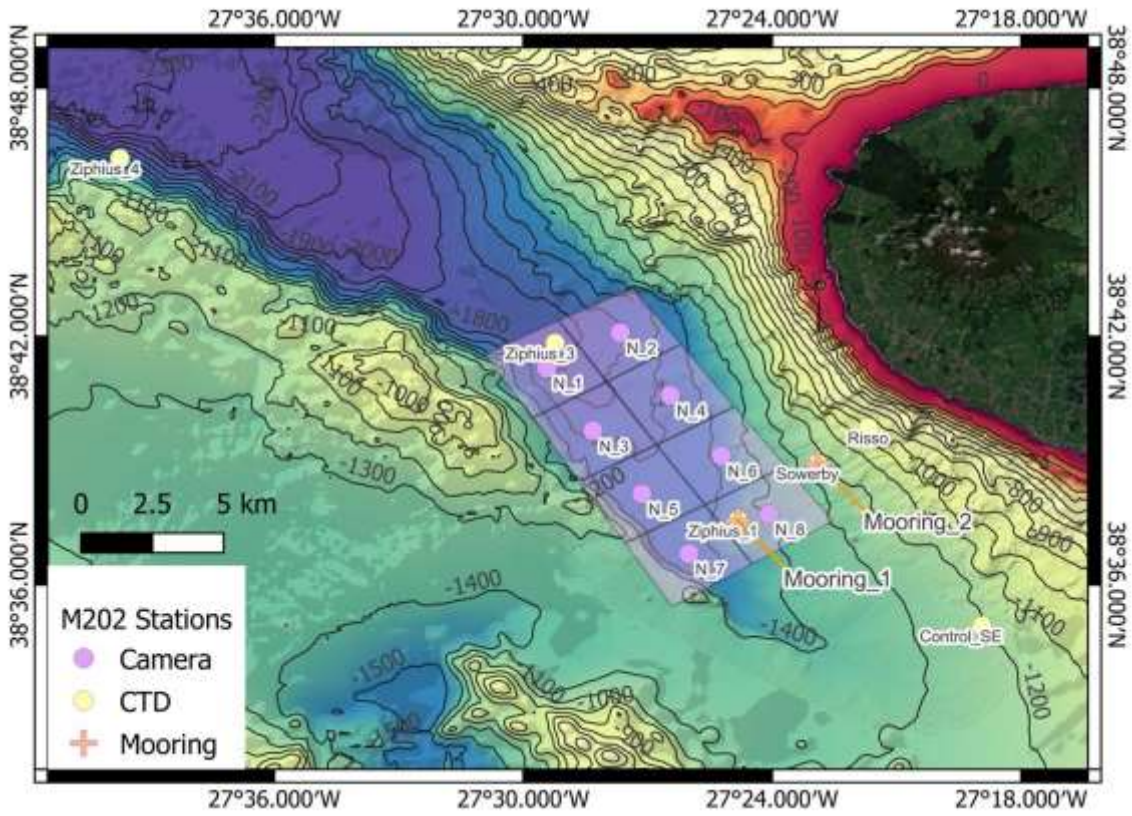

Figure 1: The working area during cruise M202 off the island of Terceira (Azores). The purple dots show the nautilus camera stations, the yellow dots the CTD and net stations and the orange cross the mooring stations.

Figure 2, left: Stationary nautilus camera system with weight during deployment. Right: Mooring buoys during retrieval.

Logo: Julia Stefanschitz
Pictures: Véronique Merten, Marie Guilpin