

NZ IPY-CAML Voyage 2008

11-13 FEB In the Ross Sea

Now we are in open waters of the Inner Ross Sea, the extensive sampling program can start in earnest. In typical style of all marine surveys some of the gear gave us problems on the first deployment but once teething problems were sorted everything worked as we wanted.

The weather as expected has already had an impact. From a relatively calm sea we suddenly experienced a 3-4m swell coming from the south but no significant wind. The assumption, “it must be blowing very hard to the south of the ship”. Half an hour later the wind arrived and blew at 50 knots for over 12 hours with up to 8m swells causing the cessation of all over-the-side activities.



Fig. 1. Recovering the rough bottom trawl
(Photos 1-4 John Mitchell)

Fig. 2. The excitement of the first trawl

Once the first station was completed, with ten successful different gear deployments, the ship headed to the next station near to Terra Nova Bay. This was the first and possibly the last chance to see views of the Antarctic mainland on this trip, along with the 24nm long iceberg (B15J) possibly grounded off the coast. A sunny day also helped after a week of grey skies and regular falls of snow.



Fig. 3. Mt Melbourne (2733m) backdrop
to Terra Nova Bay

Fig. 4. A small part of iceberg B15J

SCIENCE REPORT

The first deployment of NIWA's deep water camera system (DTIS) in the Ross Sea in 300 m revealed a diverse seabed fauna characterised by high biomass of sessile suspension-feeding organisms. The assemblage was dominated by sponges, bryozoans (lace 'corals'), gorgonian corals, and hydroids (relatives of jellyfish and corals) with large numbers of holothurian (sea cucumber) and crinoid (feather star) echinoderms (Fig. 5). Sampling by trawl, multicorer, and epibenthic sled yielded large volumes of the larger organisms visible in the DTIS images, notably sponges which accounted for by far the largest part of the total biomass. It is likely that new species will have been collected. Post-voyage studies will include taxonomy, trophic connections, molecular biology, and biogeography.



Fig. 5. Conspicuous fauna are the large hexactinellid sponge *Rosella* sp. (left) and feather stars (centre & lower right). Image width is 1.1 m. (Photo Dave Bowden)



Fig. 6. Antarctic Toothfish (Photo John Mitchell)

A small benthic invertebrate trawl (Little BIT) has been deployed with the rough bottom trawl at some stations and has proved very successful with some good additional benthic samples coming from it.

Fig. 6. Rough bottom trawl with two Little BIT benthic nets (Photo Malcolm Clark)

We have now completed three trawls with the rough bottom trawl. The fish catches were very small with each weighing less than about 50 kg but have caught a diverse range of notothenioid (Antarctic bottom dwelling) fish. The catches were dominated by several species of icefish and ice cods (*Trematomus* spp.). It is the first time that several of these species have been caught by New Zealand scientists in the Ross Sea. In addition, a large Antarctic toothfish measuring 130 cm long and weighing 34 kg was caught at one of the stations in only 280 m depth. Fish of this size are more typically caught by longliners working in depths of over 1000 m.

