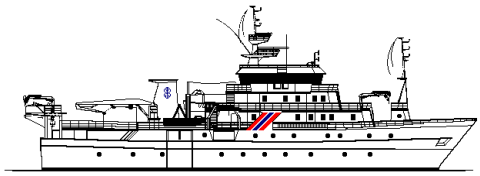
NANSEN PROJECT



Country: South Africa, Namibia

Research vessel: R/V DR. FRIDTJOF NANSEN

Survey number: 2007401

Number of days: 27

General objectives: TRANSBOUNDARY SURVEY BETWEEN NAMIBIA AND SOUTH AFRICA WITH FOCUS ON SHARED STOCKS OF HAKE

	Port	Date	Coverage	Specific objectives
Departure	Cape Town, South Africa	10 January 2007	South Africa, Namibia	• To plan and conduct a transboundary survey from Cape Agulhas to Orange River to produce distribution maps and abundance estimates of the two species of hake to be later merged with similar data from a co-occurring Namibian national demersal survey, to enable complete mapping and assessment of shared stocks, thus providing a measure of the degree of sharing of the stocks at the time of the survey. • To do plankton sampling at transects along the coast in the southern region to check if there would be eggs and larvae of the two hake species present in the sea at the time of the survey as evidence of spawning activity • To collect data on the maturity stages of the hakes to check for possible spawning activity. To collect other relevant data to better understand the environment impact on the distribution of hakes, and the fish community structure in the distribution areas of the hake. The environment data will be analysed later.
Arrival	Cape Town, South Africa	5 February 2007		

Cruise leader: Tore Stromme

Participants:

From MCM, South Africa: Marek Lipinski (teamleader), Clifford Hart, Larry Hutchings, Sakhile Tsotsobe, Tebello Mainoane,
Other affiliations, South Africa: Lara Atkinson (UCT), Samuel Mafwila (UCT), Kerry Sink (UCT), Bronwyn O'Connel (Rhodes Univ),
Interns, South Africa: Lucinda Fairhurst, Pierre Joubert, Michelle Malan
From Univ. of Bremen, Germany:Britta Grote
From IMR, Norway: Tore Strømme (cruise leader), Erling Kåre Stenevik, Oddgeir Alvheim, Tore Mørk, Terje Hovland and Åsmund Skålevik.

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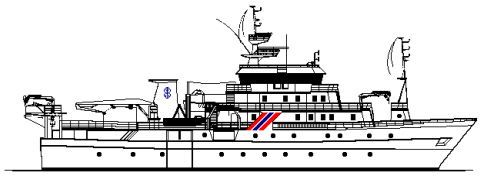

Summary of the results:

-**Hydrography**
Shows the surface temperature in the survey area. Due to manpower and resources constraints there could be no further analysis of the hydrographical data for this report. All data are stored and are awaiting later analysis.

-Ichthyoplankton
Since the results from the genetic analyses were not available when the report was written it was impossible to distinguish between the two species of hake when the distributions of eggs and larvae are presented.

-Horisontal distribution
During the survey, 42 Multinet stations were taken from the Western Agulhas Bank to around 31oS. Hake eggs and larvae were scarce. Hake eggs were found on only two stations in the southern part of the sampling area, while hake larvae were found farther north, and between Cape Town and Cape Columbine. The distribution of larvae farther north than the eggs indicated a northward transport from the spawning areas

-Biology
Documentation shows the complete record of the fishing stations and in table form the catch rates of the two hake species grouped by juveniles (<21 cm) and bigger fish. Study on the distribution of deep water hake (M. paradoxus) in the survey area. Dense concentrations of adult fish are found on the slope between Cape Agulhas and north to 31°N. Dense concentrations of juvenile fish are found mid-shelf between St. Helena Bay and Hondeklip Bay, suggesting a 'gate' to the slope off St. Helena Bay. In contrast to earlier years the high densities of young fish does not seem to spill over the Orange Banks and into Namibia. The distribution of shallow water hake (M. capensis) is more uniform and at low level. One concentration was found on the shelf between Cape Agulhas and False Bay. It should be noted that usually one finds the highest densities of shallow water hake in the shallow waters between St. Helena Bay and Doring Bay and off Port Nolloth and north into Namibia. Due to time constraints these areas had to be omitted during the survey thus not giving the complete distribution of the shallow water hake. This limitation does nor apply to the deep water hake as is has a deeper distribution. The density estimates from the point samples have been converted into biomass estimates by length classes. The similar data from the Namibian trawl survey that was running at the same have been processed following the same procedures. The joint estimates on deep water hake are shown also combining the Namibian and South African data. A graphical representation of the estimates by numbers of deep water hake is shown, with the Namibian estimates stacked on top of the South African. The study shows the % share of the biomass of the respective countries in numbers by length.

Considerations of the survey results, *M. paradoxus*

The findings from the survey 10 January-5 February combined with similar findings from the Namibian survey in the period 11 January-15 February confirms some the general features as regards the distribution of *M. paradoxus.*

Report: status: final References:

T. Strømme, M. Lipinski, E. Kåre Stenevik and O. Alvheim (2007). NORAD - FAO PROJECT GCP/INT/003/NOR CRUISE REPORTS "DR. FRIDTJOF NANSEN", EAF - N2007/1, BENEFIT SURVEY NO. 1, **TRANSBOUNDARY SURVEY BETWEEN NAMIBIA AND SOUTH AFRICA WITH FOCUS ON SHARED STOCKS OF HAKE,** Cruise report No 1/2007, 10 January – 5 February 2007.Institute of Marine Research Bergen, Norway, Marine and Coastal Management, Cape Town, South Africa. Bergen May

Constraints/Comments: