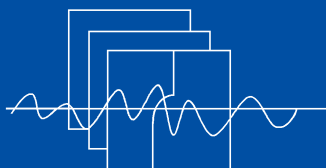


COASTAL CONDITIONS OFF SOUTH AFRICA



Southern African Data Centre for
Oceanography
P O Box 320, Stellenbosch 7599
South Africa

Email: mgrundli@csir.co.za

Website: <http://sadco.csir.co.za/>

SADCO is sponsored by ...

Department of Environmental Affairs
& Tourism
SA Navy
CSIR
NRF (SA Universities)
Namibian Ministry for Fisheries & Marine
Resources

SADCO at times receives requests for information on currents or winds, often originating from people organising coastal events on a larger scale, or yacht races. While SADCO has a fair amount of data that could provide some insight into oceanic conditions, the data would need some analysis to aggregate conditions over larger areas.

A publication that is very useful (and generally accessible) for this type of application is the new edition of the **South African Sailing Directions, Volume I** General Information, published by the Hydrographer of the South African Navy, Private Bag XI, Tokai 7966.

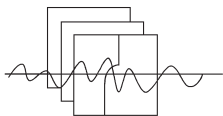


The Sailing Directions provide a wealth of information, on much more than just coastal (marine) conditions. While the section on currents in Volume I is largely descriptive, the section on marine meteorology is quite detailed. Of particular usefulness are the seasonal wind

roses over the whole zonal band between 10° W to 50° E. Tables are also provided on the average meteorological conditions at coastal locations, including monthly temperature ranges, rainfall, cloud cover, wind etc.

For further information consult www.sanho.co.za.





Polarstern data from Alfred Wegener Institut für Polar und Meeresforschung loaded

For many years the Alfred Wegener Institute (AWI, Bremerhaven) has been conducting cruises with the *Polarstern* in the region to the south and west of southern Africa. The main thrust of its research was (is) located between South Africa (Cape Town) and Antarctica, and takes the form of CTD and XBT lines extending in a mainly southwesterly direction from Cape Town.

A request submitted to AWI resulted in data from 33 cruises made available to SADC. The contact persons in Germany were Dr Eberhardt Fahrbach and Dr. Gerd Rohardt. The received data included some *Polarstern* sections in the equatorial Atlantic.

The provided data comprised some 806 CTD and 3207 XBT stations.

This data has now been reformatted and loaded by Louise Watt and Ursula von St Ange (Fig. 1). The table below with cruises and stations indicates the size of the whole data set, and Fig. 3 shows the spatial distribution of all the data.

To search for this data, access the SADC Inventory (sadco.csr.co.za, select "Cruise Inventory"), click on the "Institutes" search box, and enter the first few characters of the institute, such as "Alfred" to get a drop-down menu with a list of organisations (select the right one). From the table that will then appear, select the first year, and it will reveal the cruises and other information. Clicking on the cruise SurveyID will produce a track chart with more information (see e.g. Fig. 2).



Fig. 1 Louise Watt (left) and Ursula von St Ange

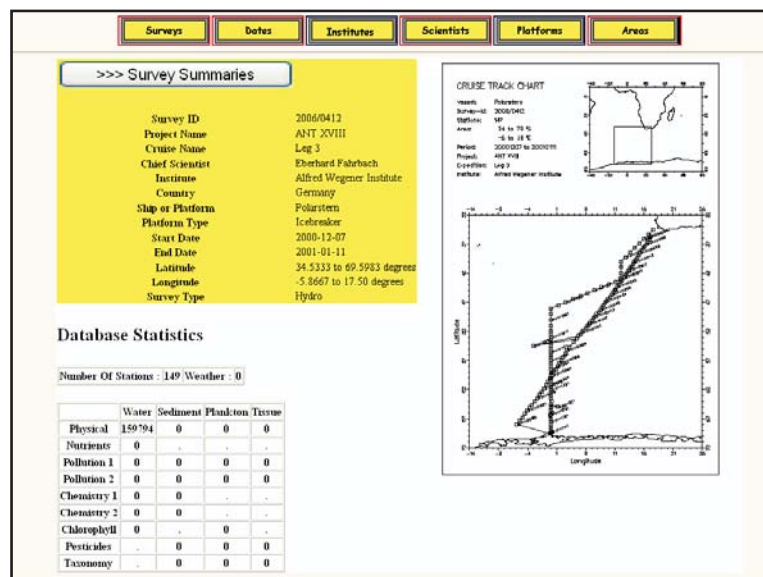


Fig. 2 Example of a track chart and station information of the data received from AWI (ANT XVIII Leg 3 cruise, December 2000).

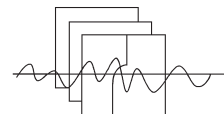


Table: Polarstern cruise data received from AWI

SurveyID	Cruise	Date Range	XBT	CTD
2006/0387	ANT III Leg 1	1984-10-24 to 1984-10-31	23	
2006/0385	ANT III Leg 3	1985-02-25 to 1985-02-28	43	4
2006/0389	ANT IV Leg 1	1985-10-15 to 1985-10-28	13	
1995/0076	ANT V Leg 2	1986-07-07 to 1986-07-22	148	151
2006/0413	ANT V Leg 3	1986-10-04 to 1986-12-06		19
2006/0395	ANT VI Leg 1	1987-10-08 to 1987-10-09	6	
2006/0396	ANT VII Leg 1	1988-10-02 to 1988-10-06	27	
2006/0414	ANT VII Leg 4	1989-02-28 to 1989-02-28		1
2006/0397	ANT VIII Leg 1	1989-08-20 to 1989-08-28	25	
1995/0058	ANT VIII Leg 2	1989-09-27 to 1989-10-28	33	48
2006/0394	ANT VIII Leg 3	1989-11-03 to 1989-11-22	74	11
2006/0393	ANT M11 Leg 5	1990-02-11 to 1990-03-07	74	52
2006/0390	ANT IX Leg 1	1990-10-30 to 1990-11-03	19	
2006/0391	ANT IX Leg 2	1990-12-20 to 1990-12-29	105	37
2006/0392	ANT IX Leg 3	1991-01-04 to 1991-03-27	439	24
2006/0398	ANT X Leg 1	1991-11-26 to 1991-11-30	22	
2006/0415	ANT X Leg 4	1992-05-22 to 1992-07-11		81
2006/0399	ANT X Leg 2	1992-08-22 to 1992-08-27	13	
2006/0399	ANT X Leg 5	1992-08-22 to 1992-09-07		14
2006/0400	ANT X Leg 7	1992-12-03 to 1993-01-14	125	22
2006/0401	ANT X Leg 8	1993-02-04 to 1993-02-09	37	
2006/0402	ANT XI Leg 1	1993-10-29 to 1993-11-20	62	
2006/0403	ANT XI Leg 2	1993-12-13 to 1994-01-01	93	15
2006/0404	ANT XI Leg 4	1994-03-30 to 1994-05-18	144	46
2006/0405	ANT XII Leg 1	1994-10-29 to 1994-11-05	24	
2006/0406	ANT XII Leg 2	1994-12-23 to 1995-01-02	54	5
2006/0407	ANT XII Leg 3	1995-01-06 to 1995-01-14	100	1
2006/0416	ANT XIII Leg 2	1995-12-06 to 1996-01-20		56
2006/0408	ANT XIII Leg 4	1996-03-18 to 1996-04-12	307	100
2006/0410	ANT XV Leg 4	1998-04-25 to 1998-05-22	237	26
2006/0411	ANT XVI Leg 2	1999-01-10 to 1999-03-15	237	26
2006/0412	ANT XVIII Leg 3	2000-12-07 to 2000-12-14	83	67
2006/0409	ANT XIX Leg 2	2001-12-05 to 2001-12-07	5	
TOTAL			3207	806

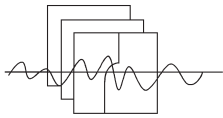
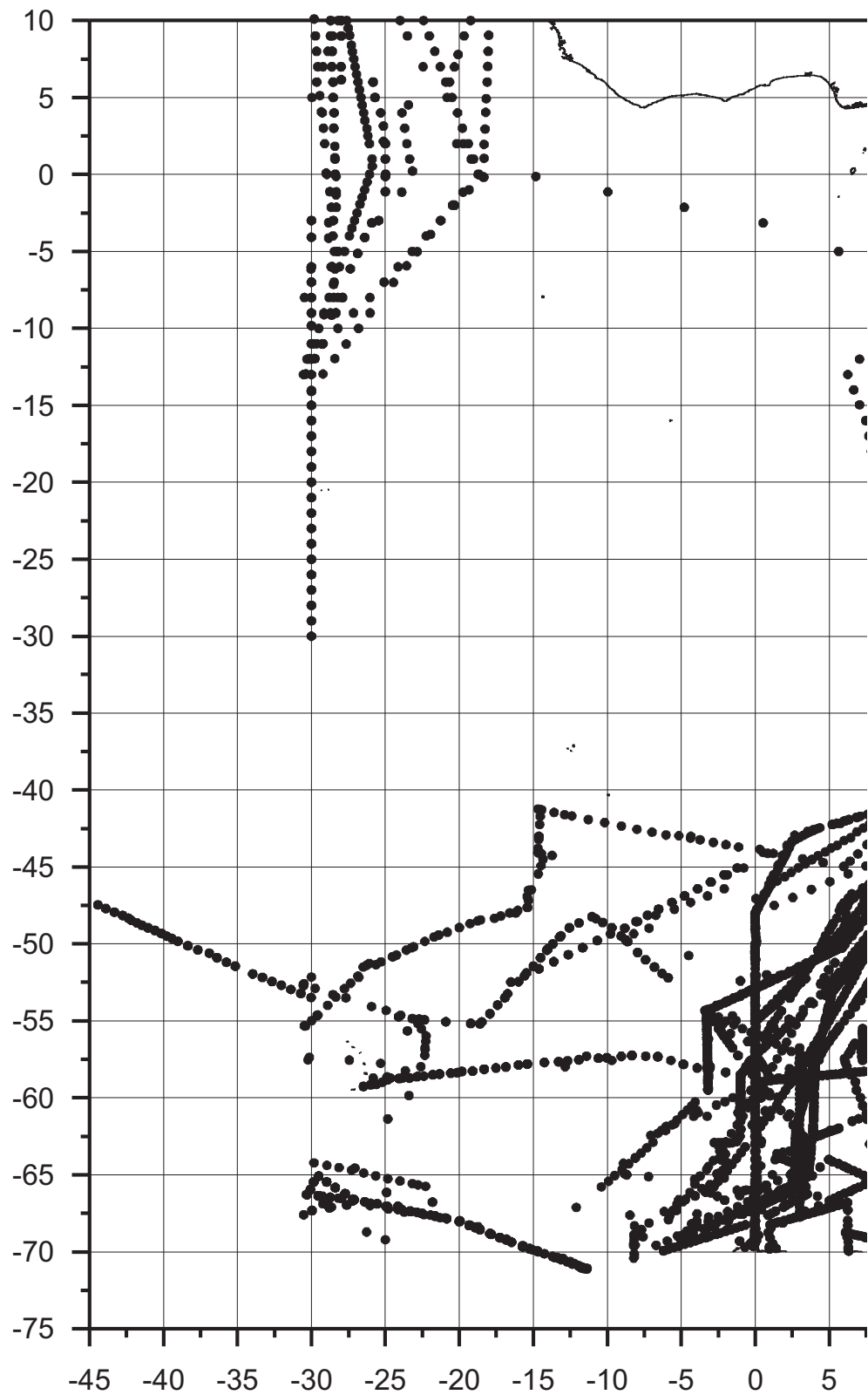
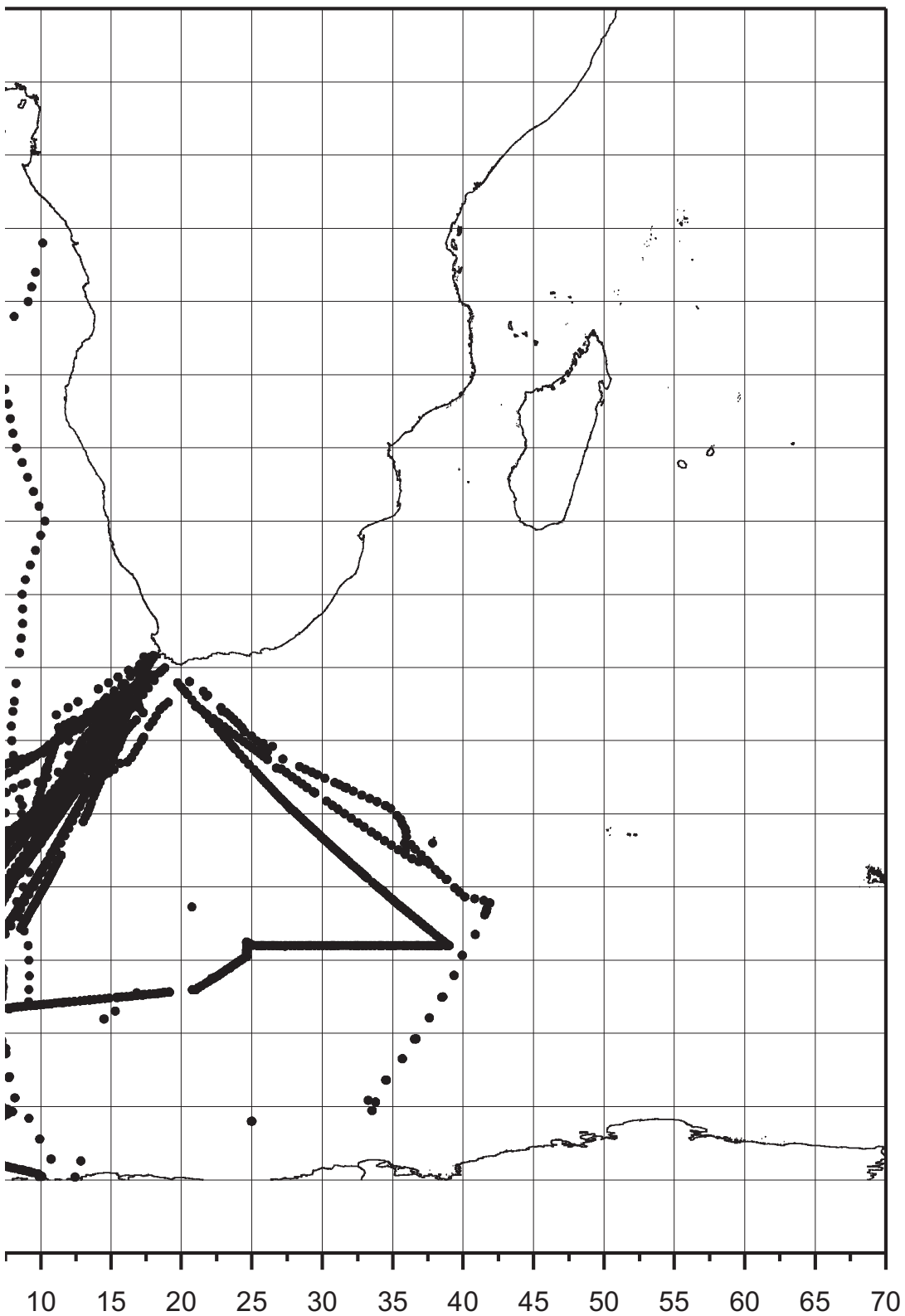
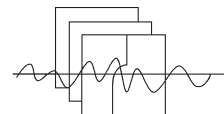
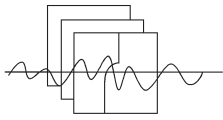


Fig. 3 Track plot of all Polarstern cruises received from AWI







AfrOBIS Visit to Brazil

Most of the time data management is largely an in-house, computer-based activity. Scouting for data is done via e-mail, as is communication with users. It is rare that data management staff get the opportunity to visit data centres in other countries. AfrOBIS (Sub-Saharan node of the Ocean Biogeographic Information System) was privileged to experience two such occasions in 2006.

The IBSA (India-Brazilia-South Africa) Trilateral Partnership includes science initiatives between the countries. AfrOBIS was kindly funded by the Department of Science and Technology, under the IBSA umbrella, to visit India and Brazil, to explore the possibility of interaction within the marine biogeographic domain with scientists from these countries.

The visit to Brazil took place in December 2006, and followed an earlier visit to India in September 2006 (reported in the SADCO Newsletter of September 2006).

OBIS structure in Brazil

While Africa has essentially only one regional OBIS Node, namely AfrOBIS, South America has three nodes in each of Argentina, Brazil and Chile. Between these three nodes all South American countries are scouted for data.

The focus point of our (Marten Grundlingh, Ursula von St Ange) visit to Brazil was the University of Sao Paulo (USP), where the Brazilian node is managed by Prof. Fabio Lang da Silveira (Department of Zoology, Institute of Biosciences) and co-managed by Dr Rubens Lopez (Department of Oceanography). There was also opportunity to meet the director of the Department of Oceanography, Dr. Ana Maria Setubal Pires Vanin. The South African visitors gave two presentations to the members of the Department and postgraduate students, on the activities and achievements of AfrOBIS.

The University of Sao Paulo is huge, has altogether 9 campuses (4 in Sao Paulo), covering a total area of 76 km². The number of students total almost 80 000 (of which 12 000 are PhD), with 5 000 lecturers and 15 000 support

staff. The campus in Sao Paulo we visited is roughly 2 km x 2 km and would by itself probably dwarf South African Universities.

Data handling and access

The actual data handling (checking, cleaning, reformatting and loading onto OBIS) is not done at USP but by CRIA (*Centro de Referência em Informação Ambiental*), located in Campinas, 100 km northwest of Sao Paulo. This arrangement where the management of the node on the one hand and data handling on the other, are handled by separate entities is probably different to all other OBIS nodes. At short notice, before the visit, it was tried to arrange that Alexandre Marino from CRIA come to Sao Paulo to participate in discussions and elucidate the activities of CRIA, but this was unsuccessful.

Some impressions

♦ *Data base design, programming, portal*

The Brazilian OBIS web site (<http://obissa.cria.org.br>, located at CRIA, Campinas) resembles that of AfrOBIS (see Fig. 4). CRIA has other data management experience in terms of biodiversity data (apart from OBIS), and has a range of programmes to assist with the “cleaning” of data.

♦ *Digitisation methodology and costs*

The data loaded by the Brazilians amounted to about 36 000 records in December 2006 (e.g. Fig. 5). Dr Lopez has hired two students to assist with the digitising of data, and they are responsible for entering the data into Excel spreadsheets and transmitting these to CRIA for loading. At the same time, CRIA staff have been able to convert and load datasets available in SinBiota (an on-line database, sinbiota.cria.org.br, for the biodiversity of the state of Sao Paulo and which contains about 16 600 marine records).

♦ *Quality control methodology*

The Brazilian quality control methodology is significantly different that of AfrOBIS. While AfrOBIS focuses on data

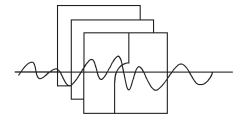


Fig. 4 Portal of BROBIS, the Brazilian OBIS Node.

from providers where the data originates from samples collected/kept by the provider, Brazil focuses on already published data, i.e. gleaned from publications in peer-reviewed journals. By implication, this ensures good quality control of its data. In addition, the data cleaning tools implemented by CRIA ensure that errors introduced during the digitisation process are minimised.

♦ Data visualisation

Brazil has not undertaken the development of visualisation tools (same as AfrOBIS), and makes use of OBIS products. The *SinBiota* service has some mapping tools of its own.

♦ Data beneficiation

The Brazilian equivalent of SADCO is hosted by the Brazilian Navy. We were informed that some parameters (e.g. station IDs) originating from the same cruises are retained in both databases so that eventual co-extraction of the data may be possible. Links between the biogeographic

data in *SinBiota* and the physical data exist for each record of this species.

♦ Target area

Brazil scans publications from the South Atlantic for information on biogeographic data. As such, it is very similar to IndOBIS, which has selected the Indian Ocean as a target area.

Conclusion

The visit to Sao Paulo was quite informative, and provided insight into how OBIS data is handled in the third component of the IBSA partnership. It is now planned to consolidate the outcomes and impressions of the two visits (India, Brazil), and consider how the partnership can benefit from further interaction.

The support of the Department of Science and Technology is gratefully acknowledged.



Fig. 5 Location plot of 1 888 records (from a total of about 6 000) of pelagic and demersal fish data of the REVIZEE programme.

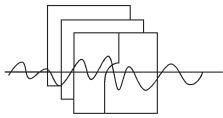


Fig. 6 Ursula von St Ange and Marten Grundlingh during presentations at the Department of Oceanography.



Fig. 7 Department of Oceanography with 60-year birthday celebration banner.



Fig. 8 Prof Fabio da Silveira with Ursula von St Ange at the historic centre of Sao Paulo.



Fig. 9 A park in the city of Sao Paulo.