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SADCO SADSO

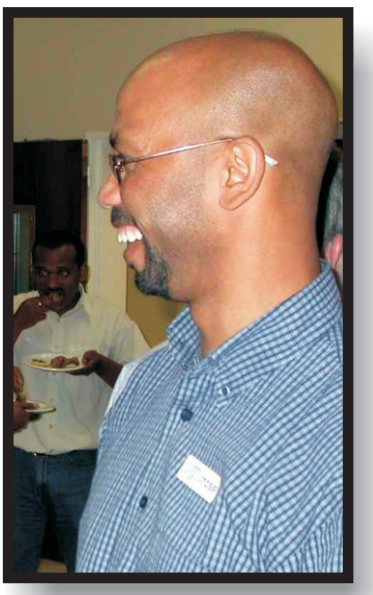
New Chairman for SADCO Steering Committee appointed

Raymond Roman, previously vice chairman of the SADCO Steering Committee, has been elected as Chairman at the meeting of the Steering Committee in November 2006.

Raymond is finishing his PhD (oceanography) at the University of Cape Town, and has been a member of the Steering Committee for a number of years (the past 3 years as Vice Chairman). He manifests the continued involvement of UCT in the activities of SADCO.

SADCO congratulates Raymond, and wishes him everything of the best in this important new role!

At the same time, the role played by the previous chairman, **Carl Wainman** of the Institute for Maritime Technology, is gratefully acknowledged. Carl has been and remains a staunch supporter of SADCO, and his wise counsel has contributed to the increased role of the data centre in South Africa, southern Africa and Africa as a whole. Thanks, Carl!



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Free, open access to local and international marine biogeographic data

Summary

AfrOBIS, the sub-Saharan Node of OBIS (Ocean Biogeographic Information System) has been successfully established and commissioned. After setting up the portal and software for data handling and communication, more than 3 million records of 17 500 species have been loaded. This contributed to the 13 million records presently in OBIS (international). Apart from representing a significant storage and data handling platform, AfrOBIS/OBIS allows ***free, open access to all data,*** *to support investigations into species distributions. The integration of AfrOBIS data into the global pool of data held at the Rutgers University enables a variety of useful reports and graphs to be generated on-line.*

Brief quantification of some characteristics

Data published

▪ Number of records published to date	3 193 343
▪ Number of species	17 527

Short term plans for more records

▪ Records awaiting loading before March 2007 (crustaceans, molluscs, cephalopods, seaweeds)	52 000
▪ Scouting for data in central and north Africa	

Presentations and promotion

- 13 presentations given at 11 workshops/symposia
- >100 individual e-mails to data providers in Africa
- Articles in 9 newsletters
- Helped train 20 data managers from Africa

Accessibility

- Free, open accessibility to all users

1. Introduction

SADCO was requested to establish AfrOBIS as one of the 7 regional nodes of OBIS (Ocean Biogeographic Information System), and to populate the node with as much data from Sub-Saharan Africa as possible. This initial period was from July 2005 to December 2006, but AfrOBIS will now move into a stage of routine operation.

2. System development

The development of the system (portal, data structure, load/extraction routines, communication software) was the first activity to be tackled, since this presented the foundation upon which all other processes followed. The portal is shown in Fig. 1. Data loaded into AfrOBIS is uploaded ("crawled") to the global data base at the Rutgers University, USA and integrated into the global data set (to enable universal searches on taxonomy, distributions, etc).

Fig. 1 Screen of the AfrOBIS portal, showing the total number of data records and the number of species

3. Data handling

The strategic plan for data scouting balanced the access to smaller, under-represented ("exotic"?) data sets with access to large data sets of a more repetitive nature.

a. Scouting in South Africa

Data scouting was very successful in **South Africa**, with a total number of 3 344 359 records scouted, or 99.6% of the overall total (see Table 1 and examples in Fig. 2 and 3). The reason for the success could be ascribed to the following factors:

- Personal knowledge of the data providers, their organisations and *modus operandi*. Ability to visit them personally, and engage with the management structures at a suitable level.
- The large amount of data located at one particular organisation, namely Marine and Coastal Management, and willingness of that organisation to share the data.
- Willingness of some data providers to digitise data where this was required.

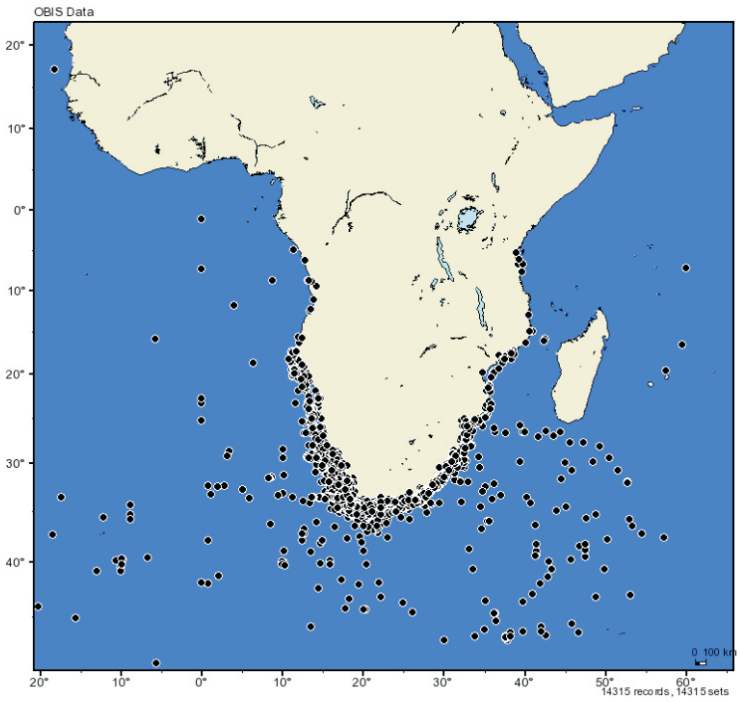


Fig. 2 Plot of 14 315 of the locations of the fish data supplied by Iziko Museum, Cape Town

b. Scouting in central and north Africa

The scouting of data from countries **outside South Africa** was less successful. Scouting was extended from Namibia and Mozambique northwards into central and north Africa and a number of scientists in 20 countries (excluding South Africa) were contacted (Fig. 4).

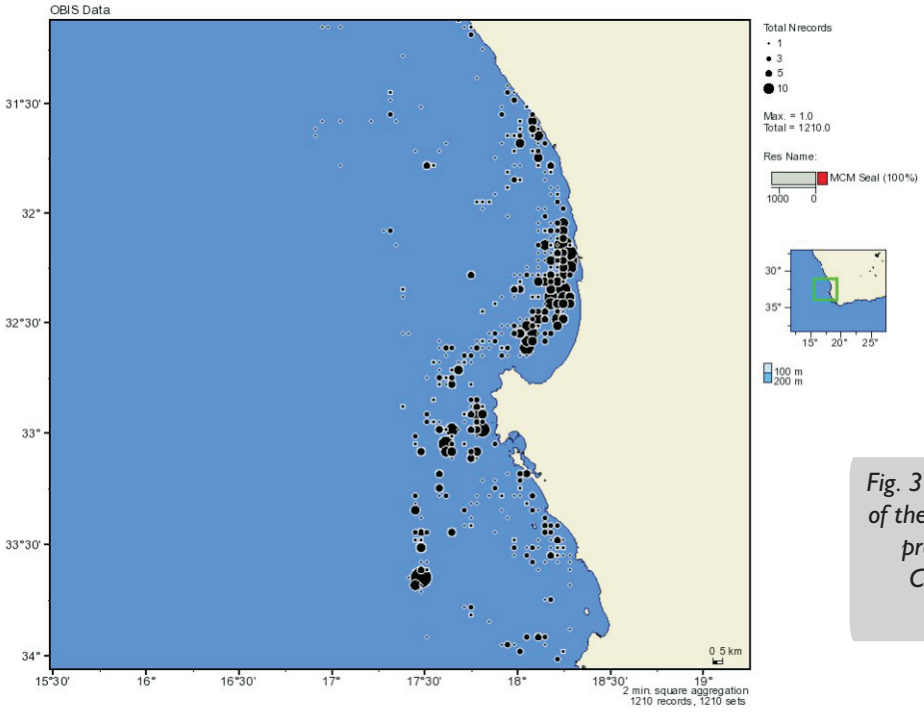


Fig. 3 Density plot of a subset of the 2 440 seal observations provided by Marine and Coastal Management, Cape Town

c. *Data digitising*

The amount of data that has resulted from **direct support for digitising** was only 2.6% of the total data published. The digitisation process was very time consuming, largely because of the effort required to convert descriptive localities (e.g. "20 km east of Durban") to latitudes and longitudes.

The **overall amount of data** collated by AfrOBIS (3 193 343 records of 17 527 species) outstripped initial expectations by an order of magnitude. Approximately 52 000 fully digitised records will still be loaded before March 2007.

4. Power supply problems

Along with establishing and operating an "international" data base comes the responsibility for sustainable accessibility. Access and operations were interrupted occasionally early in 2006 due to power outages from Koeberg. To address this problem a backup power generator was installed on the CSIR, Stellenbosch site, as well as a UPS (uninterrupted power supply) in the computer room to bridge small fluctuations. Finally, the database administrator was automatically alerted by mobile phone to initiate a manual intervention if the system needed to reboot but failed. Power supply has stabilised now, and no further interruptions have been experienced.

Table 1 Status of data submission to AfrOBIS, 30 November 2006

Source	Type	Contact person	Records	Digitised	Years	Records submitted	Records loaded
SAIAB	Fish	Coetzer	56 390	Yes	1858 - 2005	56 390	56 390
Natal Museum	Molluscs	Herbert	63 610	Partially	1894 - 2005	63 610	27 345
Iziko Museum, Cape Town	Fish	Robertson	16 007	Yes	1829 - 2005	16 007	15 048
	Molluscs	Robertson	22 371	Partially	1834 - 2001	22 371	6 078
	Mammals	Ohland	1 399	Yes	1880– 1998	1 399	1 184
	Cephalopods	Robertson	4 452	Partially		Nil	
	Sharks	Compagno	14 761	Yes	1817 - 2003	14 761	14 484
	Crustaceans	Robertson	17 000	Partially	1898 - 1999	15 546	Not yet
	Cnidaria	Robertson	4 000	Partially		Nil	
Marine and Coastal Management (MCM)	Copepods	Verheije	91 705	Yes	1988 - 2000	91 705	91 705
	Seals	Kirkland	2 440	Yes	1874 - 2001	2 442	2 440
	Pelagic fish	vdWesth'n	13 000	Yes	1984 - 2005	13 000	Not yet
	Demersal fish	Cooper/Drapeau	201 741	Yes	1983 - 2006	201 741	201 741
	Line fish	Wilke	2 759 599	Yes	1985 - 2005	2 759 599	2 759 599
E London Museum	Molluscs	Bursey	16 000	Partially	1905 - 2006	8 190	Not yet
Schonland Herb	Seaweeds	Dold	32 000	No		Nil	
Bolus Herbarium,	Seaweeds	Bolton	9 884	Yes	1857 - 2003	9 884	9 665
Madagascar	Fish	Bemiasa	893	Partially	2001	893	
	Mammals		936	Partially	2001	936	
	Invertebrates		310	Partially	2001	310	
	Corals		2380	Partially	2001	2380	
Tunisia	General	Bel Hassen	7672	Yes	1999-2005	7672	7 664
TOTAL			3 356 550			3 288 836	3 193 343

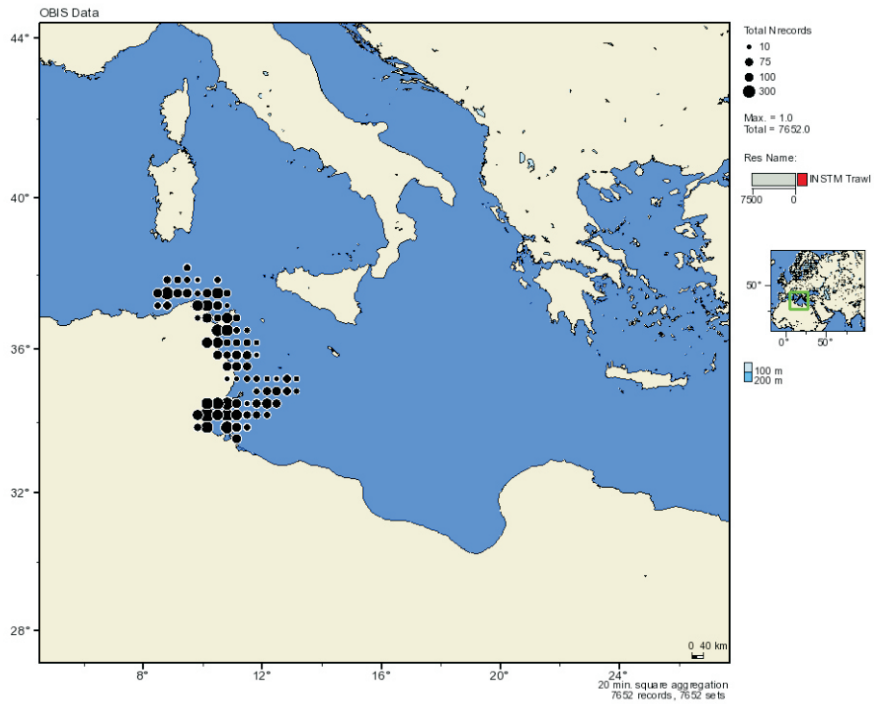


Fig. 4 Density plot of 7 664 observations of trawl data supplied by the National Institute of Marine Sciences and Technologies, Tunisia

4. Liaison with other data centres

- Regular meetings of the managers of OBIS regional data centres were attended in Halifax, Ostende, Frankfurt and Manilla.
- A visit was made by Marten Grundlingh and Ursula von St Ange to India from 20 – 26 September. The running costs involved with this visit were kindly covered by the South African **Department of Science and Technology** under the auspices of the Indian-Brazil-South African trilateral partnership. The visits were specifically to the National Chemical Laboratory of the CSIR in Pune, the "home" of the Indian counterpart of AfrOBIS, and to a workshop on *Biogeographic Information System for the Indian Ocean*, held at the National Institute for Oceanography Regional Centre in Kochi.
- A visit was also made to the OBIS regional data centre in Sao Paulo in December, to become acquainted with the Brazilian component of the South American OBIS node at the University of Sao Paulo.

5. Examples of use of OBIS

a. The AfrOBIS portal can be accessed at **afrobis.csir.co.za:8000**

b. Whenever a request for data extraction is submitted via the AfrOBIS portal, the request is uploaded to OBIS (Rutgers) and the extraction done directly from the global database. This ensures immediate access to the global, integrated data set, as well as to the plotting facilities.

c. There are just too many options to extract and plot data to be listed here, but most selections are intuitive. A number of global plots of taxonomic distributions have been pre-prepared. Click on "Browse by taxonomic groups" (see Fig. 1). If you are interested in other options, or need more guidance, please drop an e-mail to mgrundli@csir.co.za . Only one example will be shown here:

- On the portal front page, click on **Advanced search**.

- A screen will open up (see Fig. 5) with criteria that can be entered (taxonomic classification, report date, depth, geographic region, and data sources). The latter is a list of the almost 200 data sets held by OBIS. (Criteria fields can be left empty and only those that are completed, are used during the extraction.)
- Move down the list of data sets (they are listed alphabetically), to the data set "Marine and Coastal Management – Seal surveys (AfrOBIS)". Toggle the tick-box.
- Move to the top of the page (or bottom) and click on "Advanced search". The data will now be extracted.
- A plot will automatically appear on screen. To download the full data set, click on "View and download OBIS data…" a bit lower on the screen.
- To obtain a more versatile plot, with high-resolution coastline, click on "ACON". The data will be replotted, as indicated in part in Fig. 3. The plot shows the data density, and is interactive (*note the lat/long vary as the cursor is moved across the plot*).
- You will notice that a few areas on the plot have red rectangles. These indicate configurations that can be modified. If, e.g., a plot of the **actual observation points** is desired, click on the rectangle at the bottom right hand corner of the graph, where the degree of aggregation can be set. Choose "none". The map will be replotted.
- To **select a sub-area**: Move the cursor to the top left hand position of the rectangle you want to create, and click on the screen. A drop-down menu appears, click on "Create rectangle" and simply move (not drag) the cursor to create the right rectangle. Clicking once again will "fix" the rectangle. Select "Zoom to rectangle" on the menu and the graph will be replotted. Note that the number of observations within the graph is updated each time (top right corner).
- **Get the data**. Click on the screen, and in the dropdown menu select Edit > Show data in Excel (this will be only the data shown in the graph)

To cite the data used, read the note: "*How to cite OBIS data*". The conditions of use of the data are given in "*OBIS Data Use agreement*".

Conclusion

The project to establish AfrOBIS as the Sub-Saharan Node of OBIS has been very successful, and achieved more than the quantifiable goals. Marine scientists now have access to a free, versatile and powerful global data base with which to study species locations and distributions.

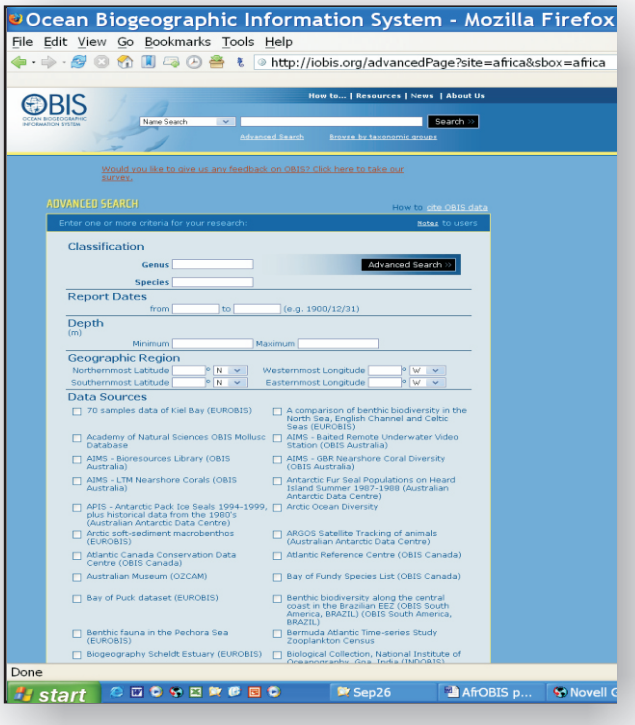


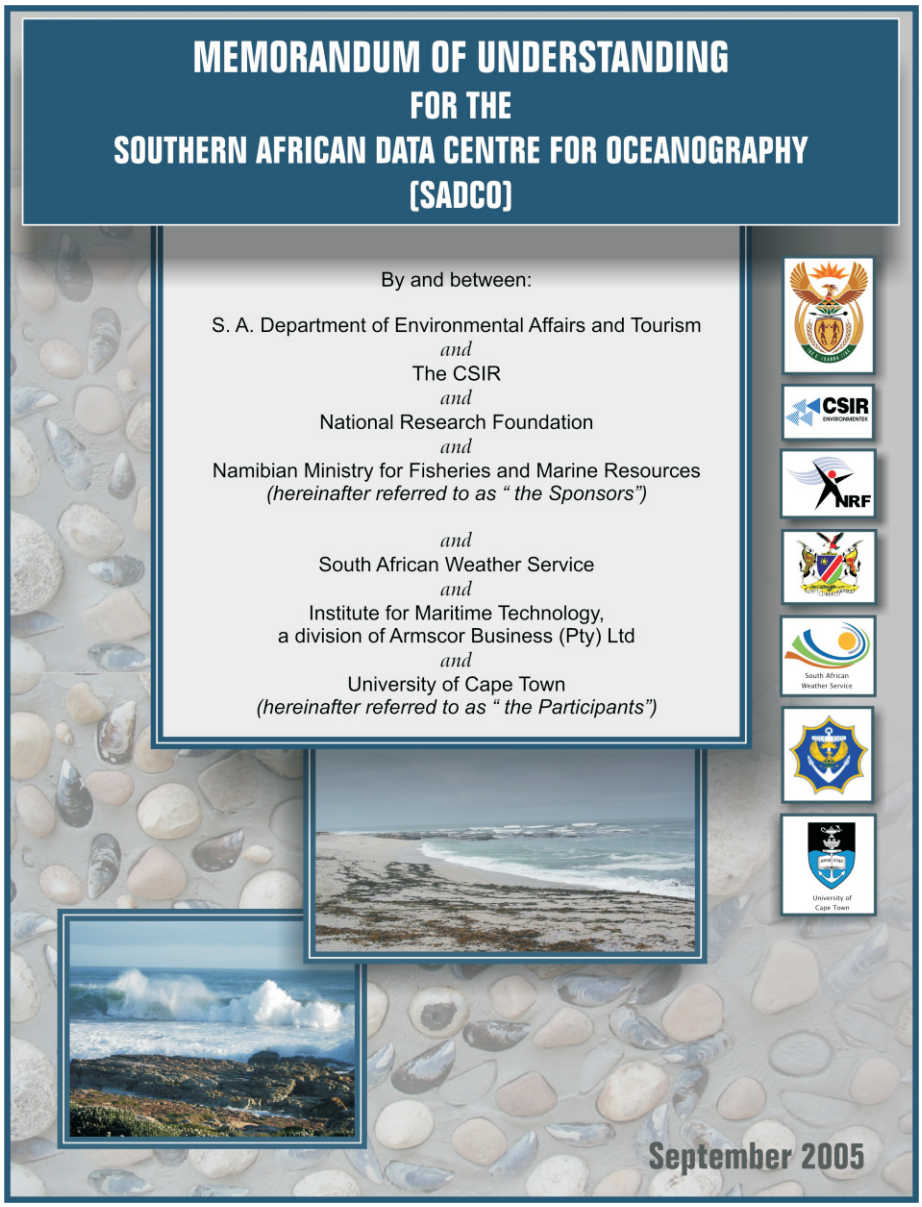
Fig. 5 Advanced search" screen showing the search criteria (top) and the alphabetical list of "Data sources" (there are approximately 200 data sources).

Status of SADCO MoU

In 2004 the SADCO Steering Committee decided that an MoU between the **sponsoring organisations** (those organisations that contribute toward the operating costs of the Data centre), and the **participating organisations** (those organisations that do not contribute but have a significant stake in the data Centre) was called for.

Apart from manifesting the support that these organisations feel toward SADCO the MoU can also play a role to record the financial commitment of the sponsoring organisations (in accordance with state financial regulations, such as the Public Finance Management Act). For this reason, it is foreseen that the MoU will contain an Appendix that will itemise the agreed financial contributions, updated and approved annually.

The MoU has been circulating the various organisations since June 2005 for signatures, and is now at the final organisations.



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