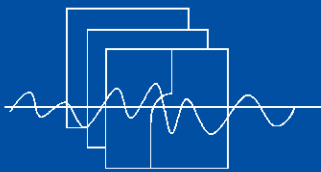


SADCO

Vol 20 No 4 - December 2009

SADSO



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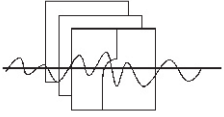
SADCO's birthday in 2010!

Next year (2010) we will have more to celebrate than the FIFA world cup...

2010 will also be SADCO's 20th birthday!

The present SADCO is actually the third and longest-running version, after "SADCO II" operated for 13 years from 1977 to 1989. The changes in the data centre's funding and constitution in 1989/1990 had major implications on its whole modus operandi as it went forward, and we will indicate in the next Newsletter how SADCO managed to overcome some of the hurdles. SADCO wasn't just surviving, it's been flying!

SADCO's celebration will coincide with the roll-out of the **new Strategy 2010** adopted by the Steering Committee. This will be another change in SADCO's role (and appearance) to ensure that it stays with the time. The tentative date for the "birthday" will be around the Steering Committee meeting in May 2010.



South African representation at the IODE-XX session

Mthuthuzeli Gulekana, Marine and Coastal Management

The International Oceanographic Data and Information Exchange (IODE) committee of the Intergovernmental Oceanographic Commission (IOC) of UNESCO was established in 1961 to “*enhance marine research, exploitation and development by facilitating the exchange of oceanographic data and information between participating Member States and by meeting the needs of users for data and information products*”.

IODE holds special biennial sessions to discuss the latest developments on oceanographic data and information exchange. Typical matters include oceanographic data formats, standards, data processing, storing, archiving, software, hardware, data corrections, etc.

The recent IODE 20th Session (IODE-XX) was held in Beijing, China (at the China People's Palace Hotel) from 4 – 8 May 2009.

As a participating Member State, South Africa was represented by two governmental delegates, **Mthuthuzeli Gulekana** and **Marcel van den Berg**, (see photograph) from the Marine and Coastal Management (MCM) Branch of the Department of Environmental Affairs and Tourism (DEA&T). They formed part of the 67 participants from 35 IOC Member States and 4 organizations. Namibia, also a member of the SADC Steering Committee, was represented by three delegates (Dr. Anja Kreiner, representative of Namibia on ODINAFRICA, Ms Lucia

Haufiku, and the Director of Resource Management, Dr Moses Maurihungirire).

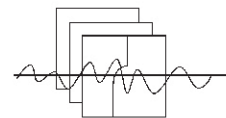
Some outcomes

- The committee re-elected the two IODE co-chairs for another term, Dr Malika Bel-Hassen Abid (Tunisia) and Mr Gregory Reed (Australia).
- Member States, including SA, were congratulated and complimented for providing oceanographic data for input to the IPCC Assessment Report no 4 (2008) - for which the IPCC was awarded a Nobel Prize.
- There could be an effect and/or impacts to long-term archival of oceanographic data and information as a result of ICSU's (International Council of Science) change from a collection of World Data Centres (WDCs) to a single World Data System (WDS).
- One of the recommendations of the IODE XX will suggest that the **thermodynamics and equation of state of seawater (TEOS-10)** in future moves from measuring salinity as Practical salinity unit (PSU) to measuring it as Absolute salinity units (ASU).
- SA government delegates played a major role in inviting and bringing confirmation of acceptance from the African Oceanic Data and Information Network (ODINAFRICA) to be a steering committee member of SADC.



Further reading at <http://www.ioode.org>

Fig. 1. Marcel vd Berg and Mthuthuzeli Gulekana represented South Africa at the IODE XX session held in China.



AFROBIS: First marine bird data loaded

AFROBIS recently loaded 3 bird data sets kindly submitted by ADU (Animal Demographic Unit, UCT). [Marius Wheeler (Marius.Wheeler@uct.ac.za) and Michael Brooks (Michael.Brooks@uct.ac.za)]

Project	Observations
Birds in Reserves Project (BIRP)	23 226
Coordinated Water Bird Counts (CWAC)	15 827
South African Bird Ringing (SAFRING)	164 366
TOTAL	203 419

This represents the largest single data submission to AFROBIS in 2 years. Apart from presenting the data here, AFROBIS would like to illustrate some of the plotting facilities available on-line.

Data loading

When data submitted to AFROBIS is eventually uploaded to iOBIS at Rutgers (USA), detailed checking and indexing is done there (e.g. comparing species identifications with Species 2000 or WoRMS). By comparison, AFROBIS does only a limited number of “global” checks.

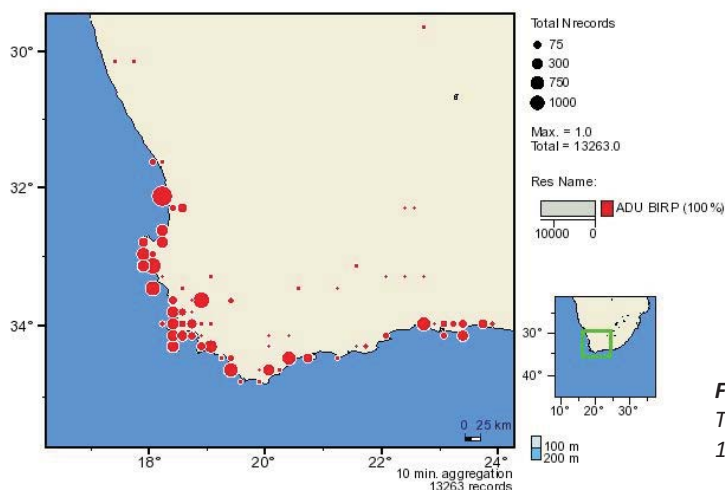
One of the things checked during the loading of (any) data is the geographical position of the observation. SADC has the advantage that physical oceanographic

observations are made during cruises, which means that there is a time-space connection between stations. However, AFROBIS positions are invariably single locations, which are very difficult to verify. For single positions, the only check that can be made is whether the measurement location is actually *in the sea*.

When the checking of the ADU data therefore revealed a significant number of the reported bird locations overland, this was queried with the data provider, and Michael Brooks provided the following response:

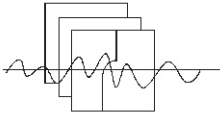
“The dataset that was submitted was a subset of species that included only marine and coastal species. The problem is some of these species were not ‘exclusively’ coastal such as the pelicans and some of the terns, cormorants. I included the terrestrial data for these species so that the distributions can be put into context, and they are not portrayed as purely coastal and marine species, and that they can occur in terrestrial environments as well.”

This was a very good motivation, and the data was loaded as submitted. The more holistic portrayal of the bird locations allows studies to see the temporal change in species distributions, which was the very reason why AFROBIS loaded large amounts of fish observations from MCM.



ADU BIRP OBIS data source as of Nov 26 2009

Fig. 2. Plot of a section of the Birds in Reserve Project data. The 13 263 observations portrayed have been aggregated in 10 minute blocks



Examples of plots

Some figures are enclosed to provide brief insight into (parts of) the data, but mostly to show aspects of the on-line plotting capabilities of ACON, the mapper available on the web site.

Fig. 2 shows the BIRP data distribution in the Western Cape, and Fig. 3 the same for the CWAC data. In both cases the data is aggregated into 10x10 minute blocks (a wide selection of aggregation areas is available). Data is downloadable in an Excel spreadsheet. All graphs are interactive and can be modified.

Fig. 4 shows a combined plot of the two data sets in more-or-less the same geographic area as Fig. 2 and 3 (the area is simply determined with a click-and-drag process, so they may not be *exactly* the same). When plotting more than one data set on the same chart (as is the case here) the location points turn into miniature pie diagrams to show the relative proportion of each set.

In Fig. 5 the area is zoomed around Saldanha Bay, and shows the actual observations (not aggregated).

Fig. 6 shows the species representation and distribution of a subset of the CWAC data.

Fig. 7 shows how separated plots of the species distribution can be obtained, while Fig. 8 shows the information of Fig. 3 but plotted according to the year of collection.

AFROBIS acknowledges, with thanks, the submission of the data by ADU.

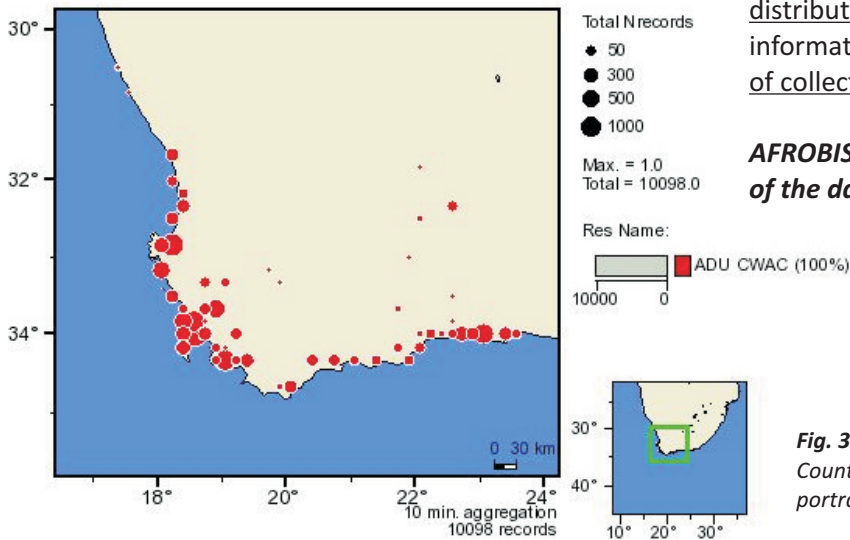


Fig. 3. Plot of a section of the Coordinated Waterbird Counts (CWAC) Project. The 10 098 observations portrayed have been aggregated in 10 minute blocks.

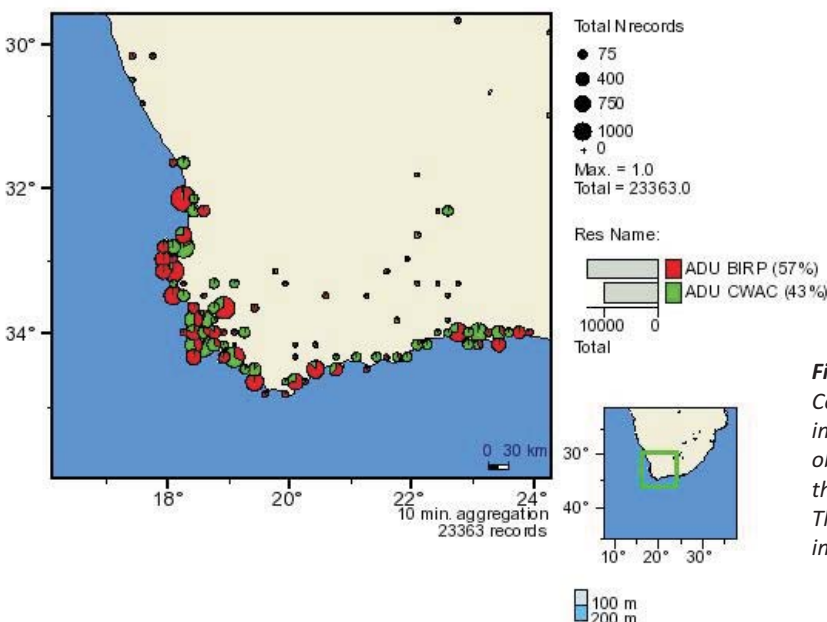


Fig. 4. Combined plot of the Coordinated Waterbird Counts (CWAC) Project and the Birds in Reserves project in the Western Cape area. The plot area contains 23 363 observations aggregated in 10 minute blocks. 57% of the observations are from BIRP) and 43% from CWAC. The proportions in each 10 minute aggregation is indicated by the pie chart.

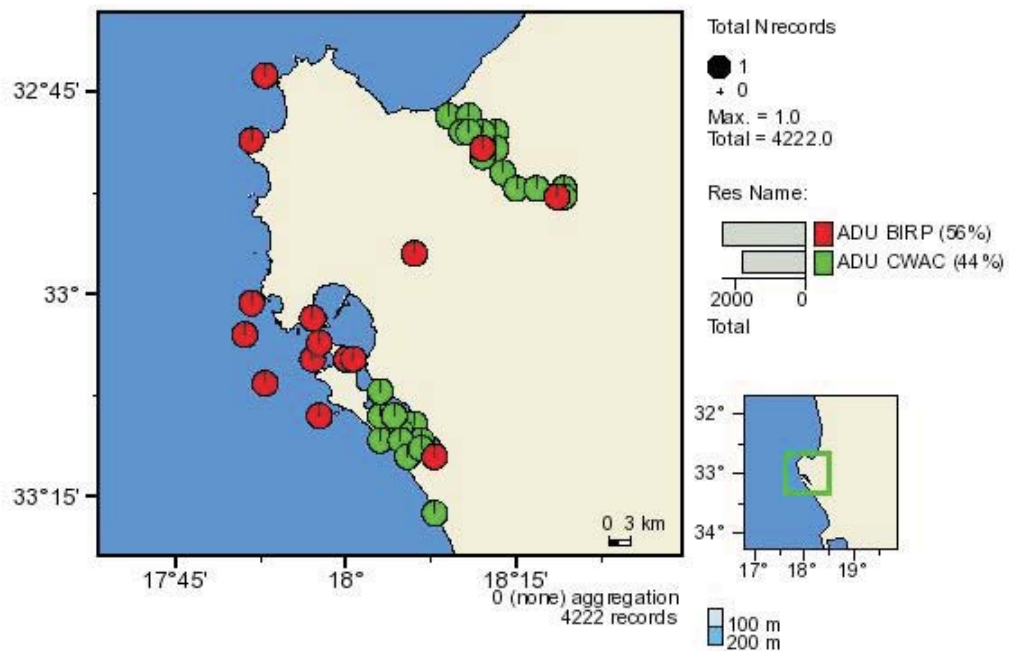
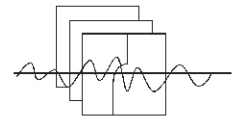


Fig. 5. Combined plot of BIRP and CWAC data zoomed to the vicinity of Saldanha Bay. Locations have not been aggregated. Although 4 222 observations are plotted, many are located in the same position and therefore appear as single observations. The overall relation between the amounts of BIRP and CWAC data is indicated under “Res name”.

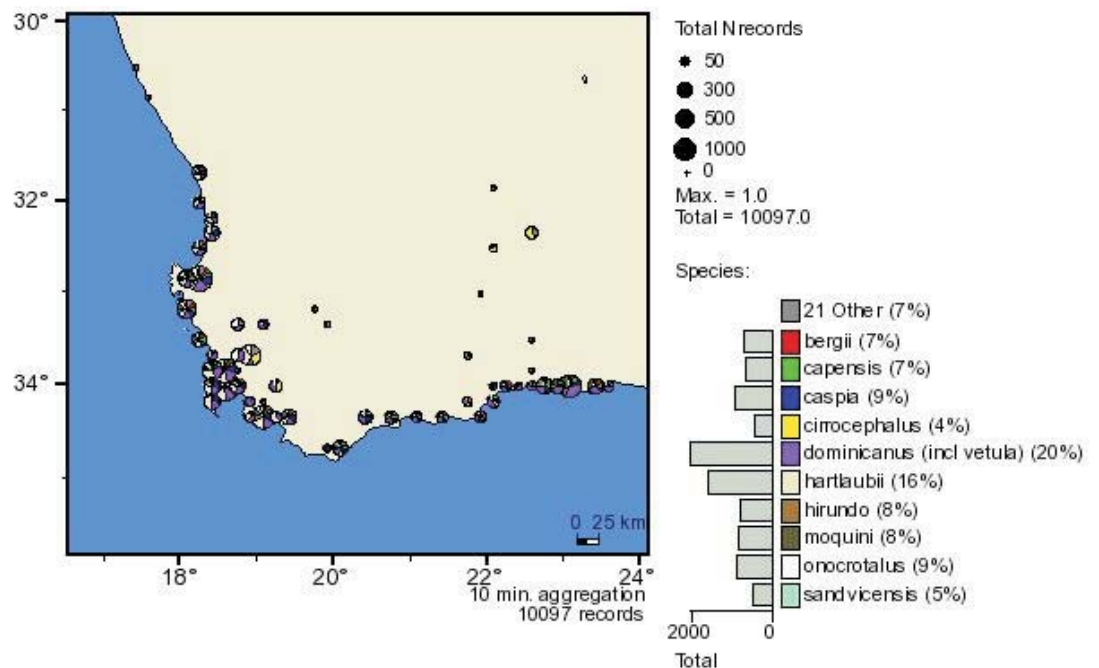


Fig. 6. Same as Fig 3, but the data is now separated into the 10 most common species (comprising 93% of the observations, the other 21 species are allocated to “Other”). Aggregation is over 10x10 minute blocks.

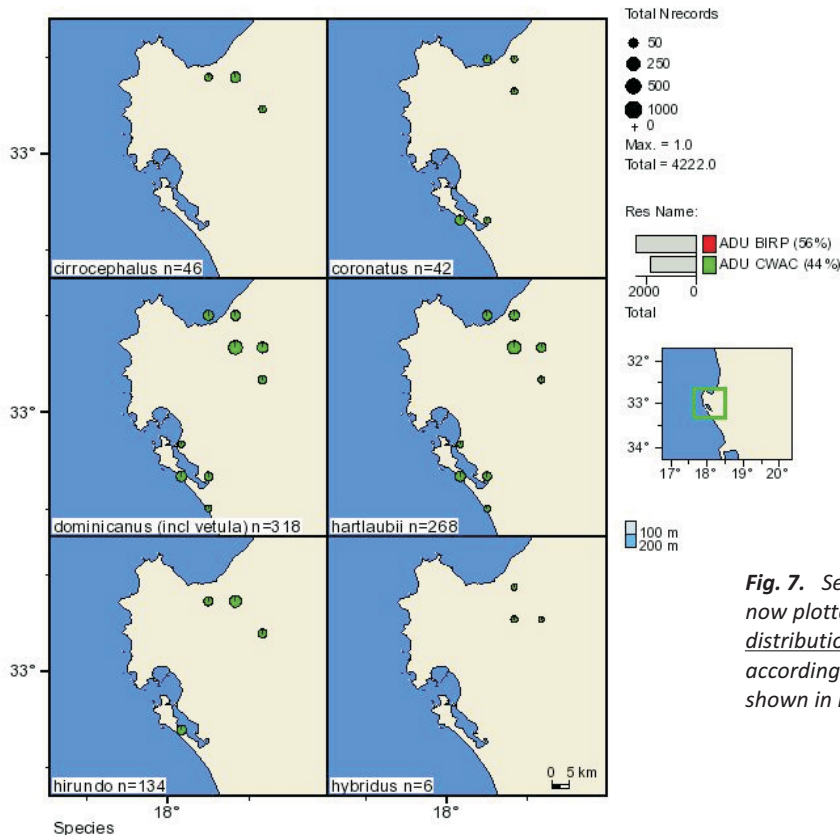
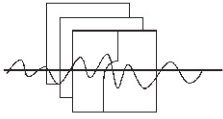


Fig. 7. Selection of the data plotted in Fig. 6, but now plotted according to the species distribution. Such plots are also available according to the year of collection (see example shown in Fig. 8), or other taxonomic parameters.

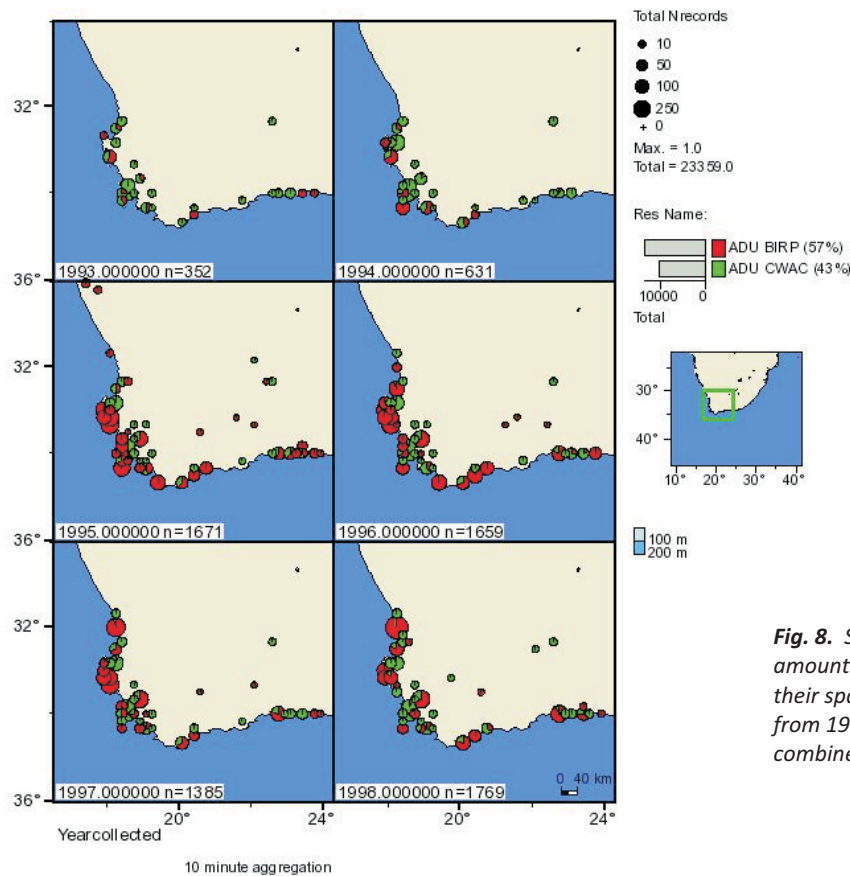
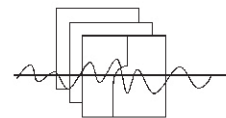


Fig. 8. Same as Fig. 4, but showing the data amounts within the boundary of the plot, and their spatial distribution, by year of collection from 1993 (top left) to 1998 (bottom right). The combined data set ran from 1964 to 2007.



ARGO delayed-mode data loaded

ARGO floats have started producing a constant flow of new data.

The data is essentially available in two modes:

- Real-time mode, unverified data
- Delayed mode, corrected data.

Because of the novelty of the data, and to ensure that we started coming to grips with the float data, SADC0 loaded approx 21 000 stations (= profiles) of the real-time data in January 2008. The plan was to download delayed-mode data as these became available, and replace the real-time data station by station.

This “replacing” turned out to be very problematic if

handled on a station-by-station basis.

It was therefore decided that it would be simpler to work on a buoy-by-buoy basis and delete all float data for which delayed mode data existed. This removed all but approx 5% of the real-time data (so there is some old float data that has not been verified yet).

The removed real-time data was then replaced with delayed-mode stations, to which was added additional data collected since the previous load.

The total number of ARGO stations in SADC0's target area now number approx. 31 600.

Fig. 9 shows the tracks of two floats, as examples, in the SW Indian Ocean.

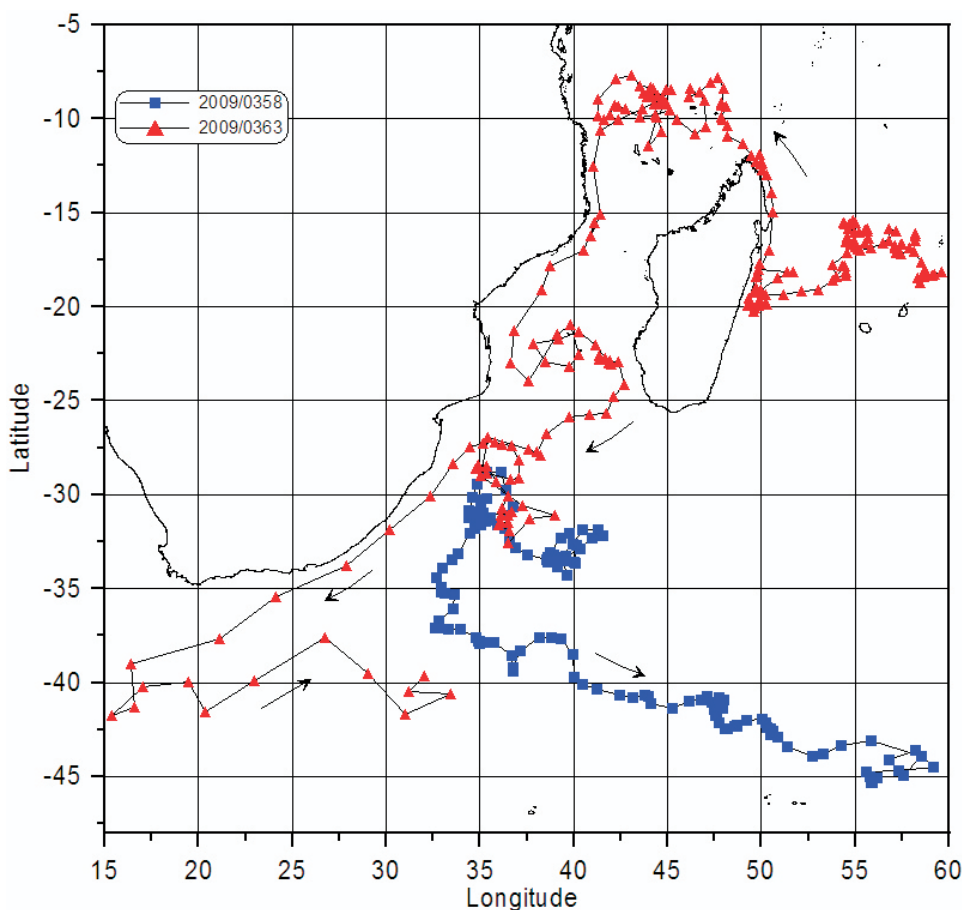
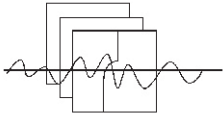


Fig. 9. Drift track of two ARGO floats in the SW Indian Ocean. Each location represents a hydrographic profile. One buoy (surveyID 2009/0363, Serial number D1900052, University of Washington) followed the flow around Madagascar, the Mozambique Channel and into the Agulhas and Retroflexion, in the period from 7 December 2002 to 15 April 2009. The buoy with surveyID 2009/0358, Serial Number ID D1900090 of the UK Met Office, started offshore of the Agulhas Current and then moved south eastwards over the period 21 March 2002 to 29 January 2006.



MCM CTD data loaded

In July SADCO received a large batch of **41 cruises** with CTD data from Kevin Tutt of Marine and Coastal Management (MCM). Three of the cruises were of the *Ellen Kuzwayo* and 38 of the *Africana*. The data covers the period 2002 – 2008 (see Table below). In the previous Newsletter, attention was drawn to the fluorometer data contained in this submission, which was the first of this data type loaded by SADCO.

This should not detract from the importance of the CTD data itself. The enclosed figure indicates examples of the track charts from two cruises, one from each vessel. MCM remains the largest collector of oceanographic data in the country and on the African continent. The CTD cruises are augmented by data from current meters and other moored equipment. And this does not even include the large amounts of biological data that are not submitted to SADCO.

Table 1 Cruises recently submitted to SADCO

Year	<i>Africana</i>	<i>Algoa</i>	<i>Ellen Kuzwayo</i>
2003	12	0	0
2004	11	0	0
2005	0	0	0
2006	0	0	0
2007	8	0	1
2008	6	0	2

Note: an *Africana* cruise from 2002 was also included in the batch

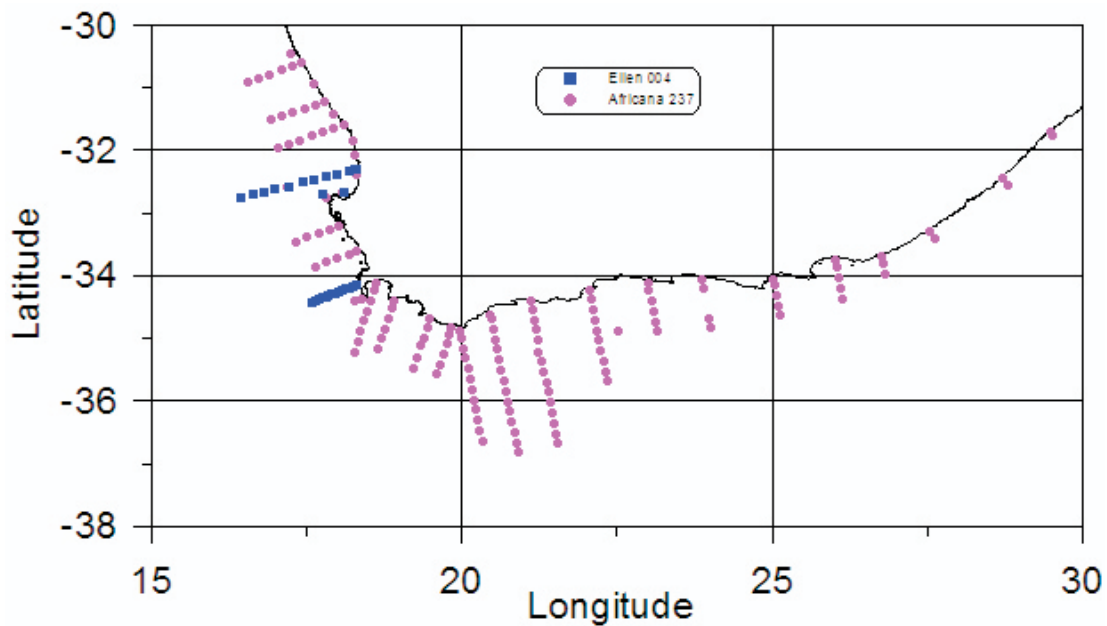


Fig. 10. Station positions of a cruise of the *Africana* (cruise 237) and *Ellen Kuzwayo* (cruise 004)