

8. DEA: Coast and Oceans (Key collaborators, DEA, SADCO, Elwandle)

A key focus of Egagasini has been to swiftly establish what historical data has been collected by MCM and at what stage of archiving this data is at (e.g., after cruise, quality control, validation, archiving in SADCO). It has been ascertained that there is a backlog in the data going to be archived at SADCO, however with the continuous ongoing cruises and large amount of data being produced it is difficult for DEA OC to work through this backlog. It is of great benefit to SAEON, DEA OC and SADCO to get this data into a manageable format and archived in SADCO. This will have the added benefit of preventing cruises from continuing to collect useless data due to lack of evidence of faulty non-calibrated machines, etc. The following steps are being carried out in order to determine the status of the data at MCM:

- Asses what data there is, the whereabouts and the quality.
- Support MCM in performing quality control and validation of data to date.
- Support MCM / SADCO efforts to archive this data.
- Establish the gaps in the monitoring lines with the view to improving our understanding of the science

Once this has been done, the data can be analysed and products produced.

To help facilitate this and to support other data projects, a new contract position was filled in the SAEON Egagasini Node by Fiona Cuff, as a Database Support Contractor. Fiona is working on ship CTD and bottle data from DEA, and the visualization thereof on a website. This corresponds with SAEON's mandate and their agreement with DEA for access to information.

The project begins with obtaining the relevant historical processed data from DEA. A database is being designed to hold the data and is hosted on the server at the Egagasini Node. This will be done in line with the standards that are being setup by SIMSC. GIS will then be used to extract data from the database and to create various standard products, such as metadata, station positions, statistical surface and seabed maps and anomaly maps. These products will, for now, be displayed as static images on a website (www.cfoo.co.za) which is in the process of being developed.

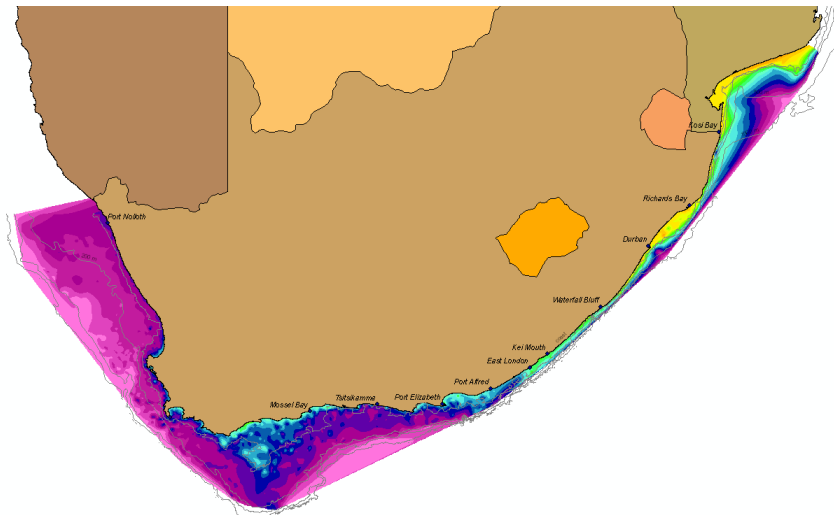


Fig. 8.1. Map of average seabed temperatures around southern Africa.

Future possibilities include a more automated process whereby the user can choose which data to query and what output products they would like to see. At present, the main aim of the project is to take the data from a format where few can access it to a more user friendly format for the

general public and scientists. To obtain the original data, requests will still need to be made via SADCO, but at least the data will now be visualized as useful products.

Behind this project are many data considerations. DEA acquires and stores the data in its own databases, SADCO stores and distributes the data on request (recently opened access) and SAEON is responsible for the dissemination and metadata (through their own portal and NCCH). To facilitate this interaction between these organizations, the Megasheet was developed by SAEON. This began as an Excel spreadsheet that details all the cruises undertaken by DEA and relevant information for each cruise. The Megasheet is now hosted as a Google document so that each organization can update it online as necessary.

The Megasheet is a very large spreadsheet with 38 columns and at present almost 400 rows. DEA is responsible for adding each cruise as a row, as the cruises are completed, along with the metadata for that cruise such as which vessel was used, what the cruise was for, the number of stations that were sampled, and what data was collected. SADCO can then determine which data still needs to be passed on to them, and they also indicate which data has been uploaded into their system. For SAEON, the Megasheet provides an overview of what data is available, what state it is in, where it can be obtained, and the metadata of each cruise. The Megasheet thus serves as a workflow document for the 3 organizations and assists in their interactions with each other.

	Cruise Info													CTD All Data - Status				
	Vessel	Survey ID	Date	ODB Code	Description	No Stns	CDS/DDS	SADCO ID	CTD Data	Raw	Conv	Proc	Cal Sal	Cal O2				
7	FRS Africana	AFR001	Jul-1982	HA001	MESOPELAGIC SURVEY	48	0	1996-0002	0									
8	FRS Africana	AFR002	Aug-1982	PA002	PHYLOSOMA AND HYDROLOGICAL	94	0		0									
9	FRS Africana	AFR003	Sep-1982	VA003	PRINCE EDWARD ISLAND AND MARIC	16	0	1996-0050	0									
10	FRS Africana	AFR004	Dec-1982	HA004	HAKE RECRUITMENT	20	0		0									
11	FRS Africana	AFR005	Jan-1983	HA005	HAKE RECRUITMENT	75	0	1983-0003	0									
12	FRS Africana	AFR006	Feb-1983	OA006	PHYSICAL OCEANOLOG	41	0	1998-0011	1									
13	FRS Africana	AFR007	Mar-1983	PA007	PLANKTON DYNAMICS	40	0	1983-0023	1									
14	FRS Africana	AFR008	Apr-1983	RA008	ANCHOVY RECRUIT			1996-0051										
15	FRS Africana	AFR009	May-1983	RA009	ANCHOVY RECRUIT	303	0	1996-0059	1									
16	FRS Africana	AFR010	Jul-1983	HA010	HAKE RECRUIT	97	0	1993-0015 & 19	1									
17	FRS Africana	AFR011	Aug-1983	PA011	PHYLOSOMA SURVEY &	63	0	1998-0012	1									
18	FRS Africana	AFR013	Nov-1983	AA013	Spawner Biomass	338	0	1993-0016 & 19	1									
19	FRS Africana	AFR014	Dec-1983	OA014	PHYSICAL OCEANOLOG	55	0	1998-0013	1									
20	FRS Africana	AFR015	Jan-1984	HA015	HAKE RECRUIT	167	0	1993-0017	1									
21	FRS Africana	AFR016	Feb-1984	OA016	PHYS OC GEAR TRIALS	13	0	1996-0052	1									
22	FRS Africana	AFR017	Mar-1984	OA017/BA01	PHYS OC Salt Fingering / Biol	33	0	1984-0025	1									
23	FRS Africana	AFR018	Apr-1984	PA018	PLANKTON SHOAL ECO	46	0	1984-0037	1									
24	FRS Africana	AFR019	May-1984	OA019 / BA01	PHYS/CHEM OC	12	0	1984-0045	1									
25	FRS Africana	AFR020	May-1984	PA020	PLANKTON SHOAL ECO	49	0	1984-0046	1									
26	FRS Africana	AFR021		JA021	TRAINING		0		0									
27	FRS Africana	AFR022	Jul-1984	HA022	HAKE RECRUIT	153	0	1993-0018	1									
28	FRS Africana	AFR023	Aug-1984	PA023	Phyllosoma Larval Survey	48	0	1984-0069	0									
29	FRS Africana	AFR025	Oct-1984	OA025	PHYS/CHEM OC	25	0	1984-0086	1									
30	FRS Africana	AFR026	Nov-1984	AA026	SPAWNER BIOMASS	416	0	1984-0088	0									
31	FRS Africana	AFR027	Dec-1984	FA027	PLANKTON FRONTAL ZONE	49	0		1									
32	FRS Africana	AFR028	Jan-1985	HA028	HAKE RECRUIT	176	0	1993-0019	1									
33	FRS Africana	AFR030	Feb-1985	VA030	SIBEX1	25	0		0									
34	FRS Africana	AFR031	Feb-1985	RA031	PELAGIC RECRUITMENT	326	0		0									

Fig. 8.2. Screenshot of a portion of the Megasheet.

Egagasini and DEA OC are also collaborating on a near real-time Underwater Temperature Recorder (UTR) prototype, which has been developed and is in the process of being deployed near Cape Point. Once this has been tested a second UTR will be deployed in Algoa Bay. The prototype consists of an above water unit that contains the data logger and transmitter. A cable extends from the unit down into the water and is attached to a UTR. The UTR measures the water temperature and sends it to the data logger via the cable. The data is then transmitted via SMS to a cell phone modem receiver, processed and then displayed on a website.

Deploying the UTR involves attaching a base plate to an appropriate rock in the area, where there is reasonable cell phone reception. This has been achieved off Cape Point (Fig. 8.3).

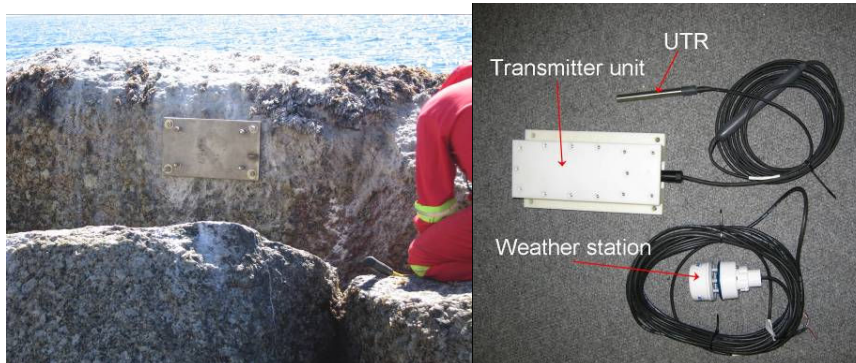


Fig. 8.3: left, base plate attached to rock; right, near real-time UTR prototype

Deployment of the unit, cable and UTR were planned for a second field trip, but this was unsuccessful due to rough sea conditions. The unit needs to be attached to the base plate, while the cable needs to be wrapped in chicken wire and cemented to the rock, both above and below water. The remainder of the cable will then be laid along the seabed with the UTR on the end. This requires very calm conditions for the divers. Future developments include the addition of a weather station

Courtesy of the ASCLME, Fiona will be attending a workshop on the ODINAFRICA Coastal and Marine Atlas in Mombasa, Kenya, at the end of July. The course focuses on each participating country's specific area of interest (AOI), and the datasets that are available for each area. The training uses SAGA (a GIS platform) and OceanTeacher exercises (http://library.oceanteacher.org/OTMediawiki/index.php/Marine_Data_Visualization_Tools) to explore and manipulate marine data. The attendees will be taught how to access the databases within the Coastal and Marine Atlas, to apply them to their own AOI's and how to write metadata for new datasets, as well as to train other people from their institutes in these skills. An outline of the workshop can be found at <http://media.iode.org/ProgDocs/HTML/Mombasa/index.htm>.