

SAILING ORDERS FRS ALGOA VOYAGE 190

CRUISE: ASCLME Regional Alliance Cruise 2012
 START: 21 January 2012, Cape Town, South Africa
 STOPOVERS: 26 January: Durban; 9 February: Tulear; 15 and 27
 February: Toamasina; 5 March: Richards Bay
 END: 10 March 2012, Cape Town, South Africa

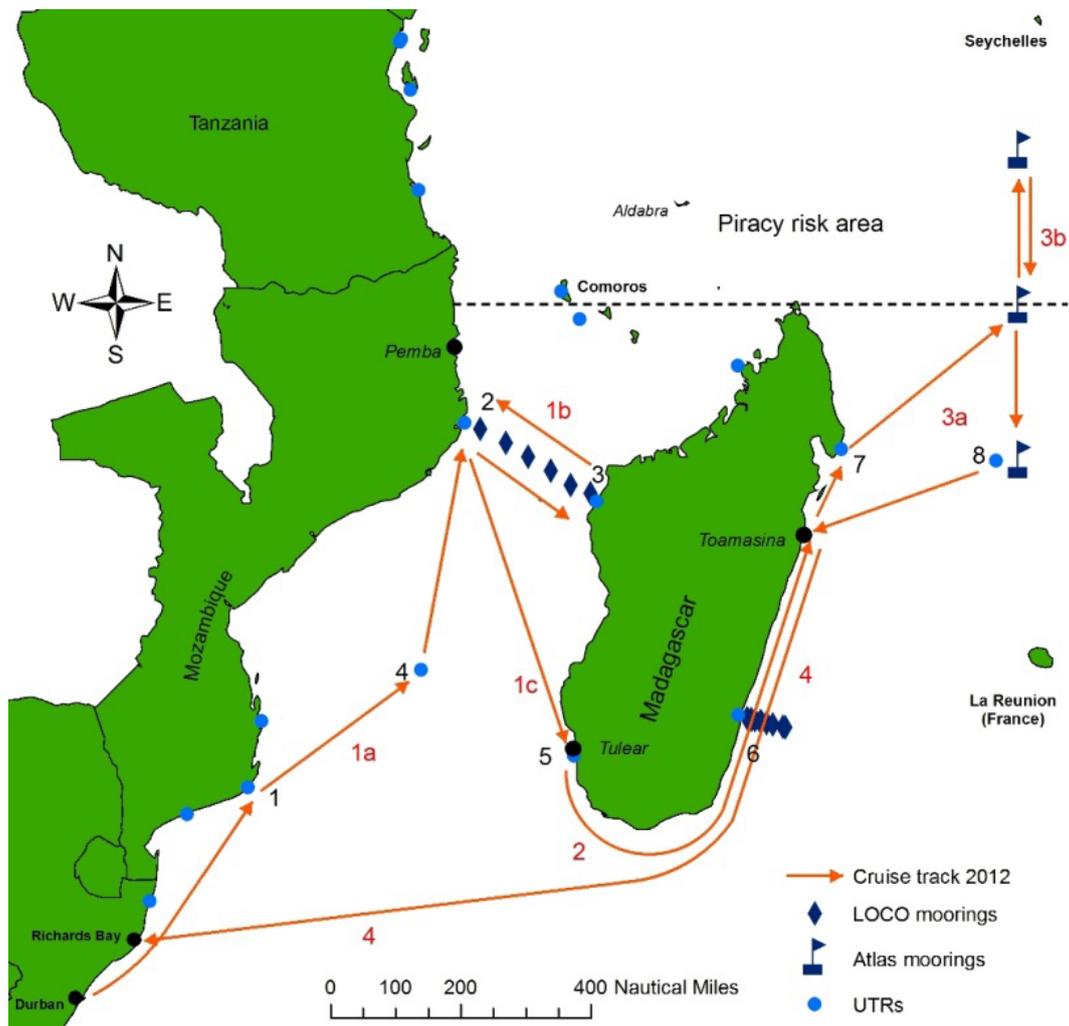


Figure 1. Proposed cruise track showing the four legs: 1) LOCO & UTR, 2) East Madagascar Retroflexion, 3) Atlas (3a outside of piracy risk area and 3b within – if feasible) and 4) East Madagascar Retroflexion. LOCO and Atlas mooring positions are indicated and UTRs are numbered 1- 8.

SCIENTIFIC PERSONNEL:

Field	Names	Affiliation	Gender
Leg 1: LOCO & UTRs			
Chief Scientist	Herman Ridderinkhof	NIOZ, Dutch	Male
Senior technician	Jack Schilling	NIOZ, Dutch	Male
Mooring technician	Theo Hillebrand	NIOZ, Dutch	Male
Mooring technician	Lorendz Boom	NIOZ, Dutch	Male
Mooring technician	Alexander Asjes	NIOZ, Dutch	Male
Mooring technician	Geertjan Brummer	NIOZ, Dutch	Male
Mooring technician	Roald van der Heide	NIOZ, Dutch	Male
Scientist	Juliane Steinhardt	NIOZ, Dutch	Male
Scientist	Juliano Dany	IHSM, Malagasy	Male
Scientist	Gildas Todinanahary	IHSM, Malagasy	Male
Scientist	Paubert Mahatante	IHSM, Malagasy	Male
Supervisor/Scientist	Rick Harding	DEA, South Africa	Male
Diver/Scientist	Marco Worship	DEA, South Africa	Male
Diver/Scientist	Tammy Morris	BCRE, South Africa	Female
Diver/Scientist	Lisa Hancke	BCRE, South Africa	Female
Leg 2: Retroflection			
Chief Scientist	Lisa Hancke	BCRE, South Africa	Female
Scientist	Juliano Dany	IHSM, Malagasy	Male
Scientist	Paubert Mahatante	IHSM, Malagasy	Male
Scientist	Andriantsilavo Rabary	IHSM, Malagasy	Male
Scientist	Tsaratsiry R.S. Estella	IHSM, Malagasy	Female
Scientist	Marcellin Roandrianasolo	IHSM, Malagasy	Male
Scientist	Eric Clayderman	IHSM, Malagasy	Male
Scientist	Rosine Kazy Hantasoa	IHSM, Malagasy	Male
Scientist	Tsimbina Rafenomananjara	IHSM, Malagasy	Female
Scientist	Ramanjehimanana Livatiana	IHSM, Malagasy	Female
Scientist	Dina Rakotonirina	IHSM, Malagasy	?
Leg 3: ATLAS & UTRs			
Chief Scientist	Linda Stratton	NOAA/PMEL, USA	Female
Mooring technician	Michael Craig	NOAA/PMEL, USA	Male
Supervisor/Scientist	Bradley Blows	BCRE, South Africa	Male
Diver/Scientist	Lisa Guastella	UCT, South Africa	Female
Diver/Scientist	Denham Parker	SAEON, South	Male
Diver/Scientist	Lisa Hancke (possibly)	BCRE, South Africa	Female
Scientist	Juliano Dany	IHSM, Madagascar	Male
Scientist	Kamlesh Ramdhony	MOI, Mauritius	Male
Leg 4: Retroflection & UTRs			
Supervisor/Scientist	Bradley Blows	BCRE, South Africa	Male
Diver/Scientist	Lisa Guastella	UCT, South Africa	Female
Diver/Scientist	Denham Parker	SAEON, South	Male

List of abbreviations

ACEP	African Coelacanth Ecosystem Programme, South Africa
ASCLME:	Agulhas & Somali Current Large Marine Ecosystems project
BCRE:	Bayworld Centre for Research & Education, South Africa
DAFF	Department of Agriculture, Forestry and Fisheries, South Africa
DEA	Department of Environmental Affairs, South Africa
DRAM	Direction Régional des Affaires Maritimes, France
IH-SM:	Institut Halieutique et des Sciences Marines, Madagascar
MOI:	Mauritius Oceanography Institute, Mauritius
NIOZ:	Royal Netherlands Institute for Sea Research
NOAA:	National Oceanic and Atmospheric Administration, USA
NWO:	Netherlands Organisation for Scientific Research
PMEL:	Pacific Marine Environmental Laboratory, NOAA, USA
SAEON	South African Environmental Observation Network, South Africa
SAIAB:	South African Institute for Aquatic Biodiversity, South Africa
SCMRT:	Seychelles Centre for Marine Research & Technology
SFRI:	Seychelles Fishing Research Institute, Seychelles
UCT	University of Cape Town, South Africa

Cruise coordination:

Task	Name	Affiliation	Contact e-mail
ASCLME cruise coordinator	Tommy Bornman	SAEON	tommy@saeon.ac.za
Scientific coordinator	Juliet Hermes	SAEON	juliet@saeon.ac.za
DAFF ships coordinator	Sharon du Plessis / Johan Rademan	DAFF	SharonDP@nda.agric.za / JohanR@nda.agric.za
Logistical coordinator	Ryan Palmer	SAIAB	r.palmer@saiab.ac.za
LOCO Moorings	Herman Ridderinkhof	NIOZ	Herman.Ridderinkhof@nioz.nl
Atlas Moorings	Michael McPhaden	NOAA	Michael.J.McPhaden@noaa.gov
UTRs	Mike Roberts / Tammy Morris	DEA BCRE	squid@metroweb.co.za / Tammy@oceanafrika.com
ASCLME Seychelles cruise coordinator	Ketsia Georges	SFA	kgeorges@sfa.sc
ASCLME Mauritius cruise coordinator	Mitrasen Bhikajee	MOI	bhikajee@moi.intnet.mu
ASCLME Madagascar cruise coordinator	Haja Razafindrainibe	DCA	hajanirina.sage@blueline.mg
ASCLME Mozambique cruise coordinator:	Emidio Andre	INIP	erandre01@hotmail.com
DRAM Reunion	Jean-Luc Hall	DRAM	Jean-luc.Hall@developpement-durable.gouv.fr
SMIT-Amandla Marine Vessel Coordinator:	Jon Klopper / Kevan Moodley	SMIT	j.klopper@smit.com / k.moodley@smit.com
SMIT-Amandla Marine FRS Algoa Coordinator:	Robert Hales	SMIT	r.hales@smit.com
Seychelles Coast Guard::	Lt Col Rosette	SCG	mamrosette@yahoo.com; +248 718 042

1. Background

The UNDP GEF Agulhas and Somali Current Large Marine Ecosystems (ASCLME) project have over a period of three and half years (2008 - 2011) completed 21 research cruises in a growing cooperation with DAFF (Department of Agriculture, Forestry and Fisheries – South Africa), ACEP (African Coelacanth Ecosystem Programme), NOAA (National Oceanic and Atmospheric Administration), NIOZ (Royal Netherlands Marine Research Institute), DEA (Department of Environmental Affairs – South Africa), SAEON (South African Environmental Observation Network) and more recently with IRD and Ifremer of France. These research cruises have identified a baseline that defines the ecosystems in the western Indian Ocean. However, the fundamental purpose and objective of this work was to create such a baseline so that long-term monitoring and observation programmes could then be set up to act as an early warning system to any changes and variability in this baseline.

2. Scientific rationale

Long-term offshore ecosystem monitoring in the SWIO started with the establishment of a shallow (18 m) UTR network by ACEP. The ASCLME project adopted the UTR network and together with DAFF, NOAA, NIOZ, DEA and ACEP instituted an annual mooring cruise. To date the following ecosystem cruises focusing on equipment deployment and maintenance have taken place:

1. Atlas mooring cruise; Mascarene Basin; 2008; *R/V Dr Fridtjof Nansen*
2. Pemba ADCP deployment; Mozambique Channel; 2008; *R/V Dr Fridtjof Nansen*
3. LOCO mooring maintenance, Mozambique Channel; 2009; *R/V Algoa*
4. LOCO deployment and Atlas mooring maintenance cruise; 2010; *R/V Algoa*
5. ARC OceanSITES and C-PIES mooring cruise; 2010; *R/V Algoa*

A wide range of state-of-the-art *in-situ* instruments from various international programmes and initiatives were deployed during the ASCLME cruises. ASCLME's partnership with NOAA, NIOZ, ACEP and IFREMER are helping to deploy and maintain sophisticated long-term monitoring equipment throughout the region. These multi-national, multi-institutional and multi-disciplinary cruises further enhance regional capacity through joint training

activities, access to data and information sharing. The moorings are described in more detail below.

2.1. LOCO moorings

Two Long-term Ocean Climate Observations (LOCO) arrays were established in the SWIO, i.e. an array of eight moorings in the Mozambique Channel were established in 2003 and a further five moorings along the south-east coast of Madagascar in 2010. These moorings consist of current meters, ADCPs and T-S sensors to measure the transport and variability in currents. The LOCO moorings are funded by the Netherlands Organization for Scientific Research (NWO). The moorings form part of the Indian-Atlantic exchange in present and past climate (INATEX) project. For more information on the moorings, visit: http://www.nioz.nl/nioz_nl/e56559cda63ee97ddd82c4e987f866f0.php

2.2. ATLAS moorings

The Pacific Marine Environmental Laboratory (PMEL) of the USA's National Oceanic and Atmospheric Administration (NOAA) deployed three Atlas moorings along the 55°E longitude as part of the Research Moored Array for African-Asian-Australian Monsoon Analysis and Prediction (RAMA) network. The three ATLAS (Autonomous Temperature Line Acquisition System) moorings were deployed at 8°S; 55°E, 12°S; 55°E and 16°S; 55°E (Figure 1). Standard ATLAS moorings measures surface winds, air temperature, relative humidity, sea surface temperature, and ten subsurface temperatures from a 500 m long thermistor cable. Daily-mean data are telemetered to shore in near real-time via NOAA's polar-orbiting satellites and Service Argos (see below). A small subset of hourly values (2-3 per day) coinciding with satellite passes are also transmitted in real time. Hourly values of surface data are internally recorded and available after mooring recovery. For more info on the RAMA network and the Atlas moorings, please visit the following website: http://www.pmel.noaa.gov/tao/proj_over/mooring.shtml

2.3. Underwater Temperature Recorders (UTRs)

Hugrun self-recording temperature recorders were deployed at various locations throughout the Western Indian Ocean during the first phase of the African Coelacanth Ecosystem Programme (ACEP) from 2001 to 2007. Some of these temperature recorders have been in the ocean for more than five years and need to be serviced and the data uploaded onto the

demonstration website: www.cfoo.co.za). The UTRs to be serviced during the annual WIO Alliance cruise are indicated below:

No.	Name	Coordinates	No.	Name	Coordinates
1a	Xai-Xai, Mozambique*	25° 09.876' S 33° 40.687' E	4	Basas da India, France*	21° 26.3075' S 39° 40.239' E
1b	Ponta Zavora 30 m, Mozambique	24° 28.931 S 35° 14.346 E	5	Nosy Ve, Madagascar*	23° 39.311' S 43° 35.148' E
1c	Zambia Reef, Mozambique*	22° 46.28 S 35° 35.04 E	6	Farafagana, Madagascar	22° 42' S 47° 51' E
2	Mozambique Island, Mozambique*	15° 03.87' S 40° 47.10' E	7	Cap Masoala, Madagascar	16° 00.303' S 50° 09.458' E
3	Tambohorano, Madagascar	17° 29.409' S 43° 45.995' E	8	Ile Tromelin, France	15° 53' S 54° 31' E

*Existing moorings

2.4. Argo Floats

To date 13 Argo floats were deployed in the Mascarene Basin in 2008 and 2010 in the vicinity of the Atlas moorings. Argo floats spend most of their life drifting at predetermined depths where they are stabilised by being neutrally buoyant. At 10-day intervals, the floats pump fluid into an external bladder and rise to the surface over about 6 hours while measuring temperature and salinity. Satellites determine the position of the floats when they surface, and receive the data transmitted by the floats. The bladder then deflates and the float returns to its original density and sinks to drift until the cycle is repeated. Floats are designed to make about 150 such cycles. As the float ascends a series of 200 pressure, temperature and salinity measurements are made and stored on board the float. These are transmitted to satellites when the float reaches the surface. For more info on the Argo floats, please visit: <http://www.argo.ucsd.edu/>

2.5. Satellite drifters

Satellite drifters supplied by NOAA are deployed during the cruises. The drifters deployed by the ASCLME project to date can be tracked on the following website:

http://www.adp.noaa.gov/track_drifting_buoys.html



Plate 1. ATLAS mooring deployed in 2008 at 8°S; 55°E



Plate 2. Argo float ready for deployment



Plate 3. LOCO mooring showing the Floatec buoy with upward looking ADCP



Plate 4. Upward looking ADCP on the LOCO moorings



Plate 5. Underwater Temperature Recorder

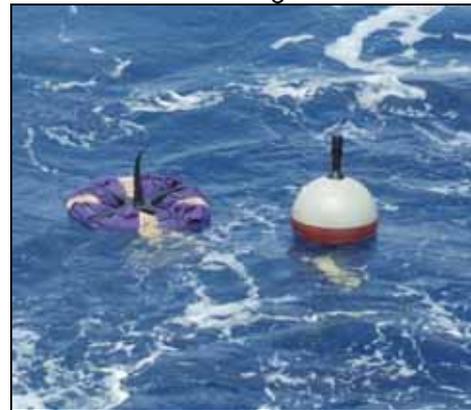


Plate 6. Satellite drifter

3. GENERAL CRUISE PLAN

3.1. Logistics

1. 21 – 26 January: Transit Cape Town to Durban
2. 26 January: Load LOCO moorings
3. 27 – 31 January: Steam to LOCO mooring line in Mozambique Channel and service UTR on the way
4. 1 – 6 February: Retrieve 8 and re-deploy 3 LOCO moorings
5. 7 – 9 February: Steam to Tulear and service Bassas da India UTR
6. 10 – 14 February: Transit Tulear to Toamasina and service UTRs and sample East Madagascar Retroflexion
7. 15 February: Load Atlas moorings in Toamasina
8. 16 – 18 February: Transit Toamasina to Atlas moorings along 55°E line
9. 19 - 20 February: Retrieve 8°South Atlas mooring with Escort (if risk assessment allows)
10. 21 – 24 February: Service 12°S and 16°S Atlas moorings
11. 25 – 27 February: Steam to Toamasina and offload NOAA crew and gear (deploying UTR at Ile Tromelin on the way)
12. 27 February – 5 March: Transit to Richards Bay and sample East Madagascar Retroflexion
13. 6 – 10 March: Transit Richards Bay to Cape Town

3.2 Research objectives

1. Retrieve eight LOCO moorings in the Mozambique Channel and re-deploy three
2. Retrieve and re-deploy existing UTRs and deploy additional UTRs (Figure 1)
3. Deploy OTN (Ocean Tracking Network) listening stations at UTR and other mooring sites
4. Return Malagasy coelacanth currently at SAIAB (South African Institute for Aquatic Biodiversity) to Institut Halieutique et des Sciences Marines (IH-SM), Tulear, Madagascar
5. Study and sample the East Madagascar Retroflexion during the north and south bound voyage
6. Retrieve and re-deploy ATLAS moorings at 16°S and 12°S; 55°E
7. Retrieve and re-deploy ATLAS mooring at 8°S; 55°E (if Hazard Identification and Risk Assessment allows)

8. Deploy Argo floats and satellite drifters in the Mozambique Channel and Mascarene Basin
9. CTD casts to 1200 m before and after each mooring deployment and at selected environmental stations
10. Capacity building of ASCLME regional scientists

3.3. Outcomes & Deliverables

Deliverables will include:

1. Successful deployment of LOCO and ATLAS moorings
2. Successful deployment of Argo floats and satellite drifters
3. Cruise report
4. Data report (including electronic inventories)
5. Training and capacity building

See Appendix A: Data management agreement of the ASCLME cruises for more detail.

3.4. Equipment required

CTD, ADCP, deep 18 kHz echosounder (to at least 6000 m), accurate onboard weather station, plankton net winches, dive chamber and at least one rigid inflatable boat. A CTD cast to 1000 m (max = 1200 m) will be conducted after deployment and in the vicinity of the LOCO and Atlas moorings. Additional CTD stations will be sampled in the vicinity of the Madagascar Retroflexion. Data from the CTD will be used to calibrate the instruments on the moorings.

4. APPROVAL

Herman Ridderinkhof

NIOZ

Date:

Linda Stratton

Date:

NOAA

A handwritten signature in black ink, appearing to read "Bornman", written over a horizontal line.

Thomas Bornman

Date: 12/01/2012

ASCLME Cruise Coordinator

A handwritten signature in blue ink, appearing to read "MR", written over a horizontal line.

Mike Roberts

Date: 12/01/2012

DEA, UTRs

Johan Rademan

Vessel Coordinator, DAFF

Date:

Alan Boyd

Acting Chief Director, DEA

Date:

Kim Prochazka

Director, DAFF

Date:

Appendix A: Data Management Agreement for the ASCLME Regional Alliance Cruise 2012

The intention of this Data Management Agreement is to clarify and protect the interests of all scientists and countries participating in the ASCLME Project.

General Introduction

Participating countries in the ASCLME Project, and their designated representatives, have the mandate to develop a comprehensive document on principles and guidelines for ASCLME data and information management so that it facilitates the effective collection, use and dissemination of information in support of TDA/SAP development in the short term and the ecosystem approach in the long term. National Data and Information coordinators in particular, have a responsibility for developing mechanisms for reliable long-term storage and use of information collected under the ASCLME Project. This Agreement is intended to govern the collection, storage and access to data on the ASCLME 2012 Cruises as an interim measure prior to agreement of a more detailed MoU on data access and management which is currently under development as part of the overall ASCLME Programme.

Bearing in mind that access to new data, associated metadata, information collection **activities and resulting products funded by the ASCLME** shall be free and unrestricted;

Data collected on ASCLME cruises, associated metadata, publications and other data products are the joint responsibility of the principal investigator (in the case of a scientific investigation), their institution, participating countries, the ASCLME Project, NOAA, NIOZ, DEA, SAEON and ACEP. The primary custodians of data sets shall be the NOAA (US Department of Commerce), Royal Netherlands Institute for Sea Research (NIOZ), Oceans and Coasts (SA Department of Environmental Affairs) and the UNDP/GEF ASCLME Project and the member-countries of the ASCLME Project. The primary contact points and archive locations for the survey data shall be at NOAA, NIOZ and nationally appointed data centres as designated by the ASCLME Data and Information Working Group.

These guidelines for intellectual property assume that adequate opportunity has been given to scientists via their national ASCLME focal points to plan collaboration on research projects (data collection, processing and paper-writing), *particularly* from countries in whose territorial waters the research cruises have taken place.

Interim data management guidelines with specific reference to the 2012 ASCLME Regional Alliance cruise

The NIOZ (Leg 1), DEA (Leg 2) NOAA (Leg 3) and DEA (Leg 4) Chief Scientist will be responsible for ensuring the accurate documentation of activities and backup of electronic data.

Detailed documentation will be made of all measurements and samples collected during each cruise. Documentation will include the cruise track, timing, geo-referenced and time-referenced records of every sampling site, mooring location and station.

Timing of cruise data reports and products

A provisional cruise report and completed data report (containing documentation of all measurements and samples collected during each cruise, including the cruise track, timing, geo-referenced and time-referenced records of every sampling site and station) will be provided to the ASCLME PCU within 45 days of the end of the cruise (25 May 2012). An electronic version (in Excel) of all activity/site/station records, and video & photographic inventories will be given to the PCU. These will be checked and sent on to each of the ASCLME participating countries.

Processed data from the cruises

Data that have been processed from the 2010 ASCLME/NOAA/NIOZ cruise will be made available to the PCU within four months of the conclusion of the cruise (10 July 2012). Examples of these data will include CTD, ADCP, multibeam data sets, as well as actual mooring data. It is recognized that some data sets may not be processed by this time. In that case, any raw electronic data must be provided to the PCU together with a report on the steps (and timing) that will be taken to process the data.

Data sets that are required for publications will be safely retained offline (i.e. flagged and not made available to other scientists) until either

- a) Chief scientists agree to the dissemination of data sets OR
- b) Publications are submitted OR
- c) Eighteen months has passed since the conclusion of the cruise, whichever is the soonest.

The climatic and oceanographic data collected by the Atlas moorings and the Argo floats are freely available to the public from the following websites:

Atlas moorings: http://www.pmel.noaa.gov/tao/proj_over/mooring.shtml

Argo Global Data Assembly Centers:

- 1) Brest, France: <http://www.coriolis.eu.org/>
- 2) Monterey, USA: <http://www.usgodae.org/argo/argo.html>

As soon as data sets are checked, they will be lodged at nationally appointed data centres as designated by ASCLME National Data and Information Coordinators.

Raw OR processed data collected by scientists under the ASCLME Project shall be immediately available to the Regional Information Working Group (made up of national Data and Information Coordinators) for the sole purpose of (*internally*, not for distribution) informing the TDA/SAP, should it be necessary.

Publications

Plans for publications (including tasks and time lines) will be finalised between principal investigators and participating researchers. Publications from the 2012 cruise are expected to be submitted for publication within two calendar years of the close of the cruise schedule, by 10 March 2014.

Acknowledgement

The use of any expedition-derived data in data products or publications must be associated with proper acknowledgement of the ASCLME Project, the Department of Agriculture, Forestry and Fisheries, South Africa, the Department of Environmental Affairs, South Africa, SAEON, ACEP, NOAA and NIOZ. As an example the following sentences could be included in the acknowledgement section of publications:

This study and data collection was undertaken as part of the Agulhas and Somali Current Large Marine Ecosystems Project and the Atlas Mooring Project of the NOAA or the LOCO mooring Project of the NIOZ. These projects are funded by the Global Environment Facility through the United Nations Development Programme and by the US Department of Commerce or by the Netherlands Organisation for Scientific Research. More details about the projects can be found at <http://www.asclme.org> and http://www.pmel.noaa.gov/tao/proj_over/mooring.shtml or http://www.nioz.nl/nioz_nl/

Appendix B:

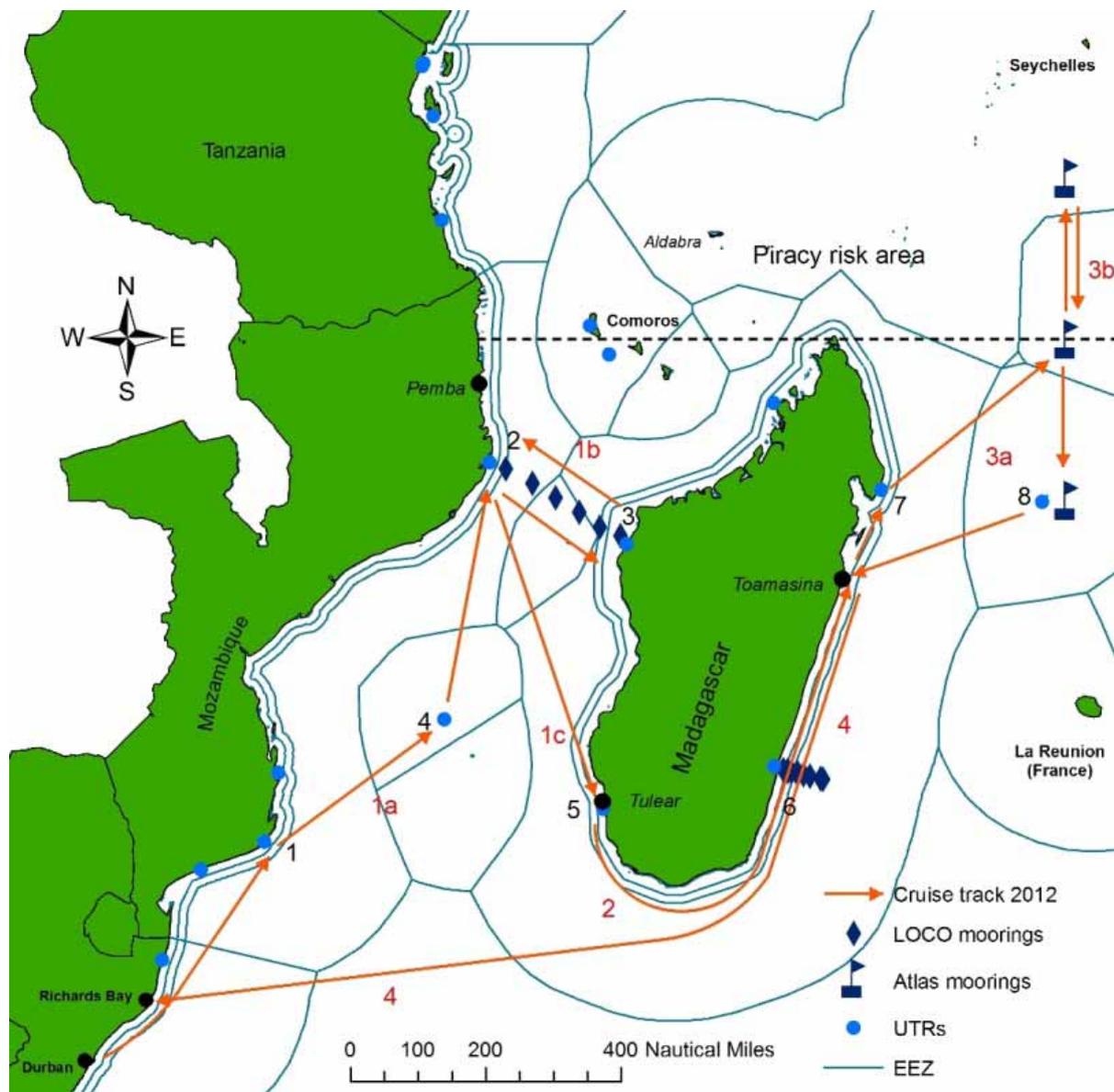


Figure 2. Map showing the position of the Exclusive Economic Zones (EEZs) of the countries that will be visited during the cruise.

Appendix C: GENERAL SAFETY AT SEA

1. When the vessel is in port you may only board it via the gangplank, jumping on or off over the side of the ship is prohibited.
2. On the R/V *Algoa* no loading or offloading of equipment is allowed over the side of the ship. All equipment must be put into the loading bins and hoisted by crane onto the vessel. Please contact the duty officer or bosun in advance to insure you have assistance when required. The hero's platform may also be used for loading at the discretion of the duty officer.
3. All equipment must be stowed away safely and securely in a place where it is not blocking access to any other places or equipment. This must be checked by the ship's safety officer (Chief Engineer or Bosun), prior to sailing.
4. Be aware that any equipment no matter how small can be a potential hazard in rough weather. Always stow away everything securely even if it is calm as weather conditions can change rapidly.
5. Scientists must present a safety data sheet for all chemicals to the Chief Scientist who will make this available to the ship's safety officer.
6. Chemicals in use must be stored safely in the laboratories. There will be chemical storage cupboards for excess bottles. Use the bottle carrier to transport the bottles safely to the laboratory.
7. Chemisorb must be used to sort out spillage's and must be provided by scientists who bring chemicals on board.
8. When using hazardous chemical substances appropriate personal safety gear must be brought on board by the scientist concerned and used.
9. Hard hats must be used in all outside work areas where overhead operations are taking place.
10. No Sandals or Slip-Slops are allowed on the trawl deck during trawling operations.
11. Correct safety boots/shoes, oilskins and hard hats must be worn as required. All visitors must provide their own safety gear.
12. Crossing of any deck while operations are in progress is strictly prohibited. This applies in particular to the trawling operations.
13. If any injury occurs an I.O.D form must be filled in and the incident reported to your supervisor.
14. If any injury occurs call the Ships Medical Officer for assistance (dial the bridge). If the situation is such that you have to assist with first aid put on protective gloves first.
15. The R/V *Algoa* is a dry ship and the consumption of alcohol is strictly forbidden.

NB. Failure to comply with points 8-11 will result in you not being allowed to work.

Appendix D: FRS ALGOA GENERAL CODE OF CONDUCT & INFORMATION

- **MEAL TIMES** at sea.

Breakfast	07h30 – 08h00
Lunch	11h30 – 12h30
Dinner	17h30 – 18h30

- **Meal** times are set and no person will be served out of these times
- No jeans and T-shirts for dinner in the main mess – smart casual only.
- If not in “working” clothes i.e. overalls or dirty gear, please utilize the main mess for meals.
- “Good” drinking water and fresh water is limited. **PLEASE DO NOT WASTE WATER DURING THE VOYAGE.**
- **Officers/Scientists/ Lounge** – All glasses, mugs, etc to be removed to the duty mess after use
- Furniture to be put back into place after use
- NO movies or loud music during meal times
- Dress code for the lounge area is smart casual. Work clothes will not be allowed.
- **Bridge** is out of bounds during trawling operations unless on duty or by prior arrangement through the Chief Scientist or Officer-of-the-watch. This applies to other work areas too e.g. the engine room, sonar compartment etc, permission must be granted by the Officer-of-the-watch.
- There is a **Defect** book on the bridge, kindly make note of any breakages or missing items from work areas or accommodation in this book. Unless it is reported it cannot be rectified.
- **Laundry** – the laundry will be open twice a week unless otherwise indicated. Do not wash small bundles, if necessary combine with someone. Save fresh water!
- **Laboratories** and work areas are to be kept clean by the users and will be inspected by the Captain & Chief Scientist during weekly rounds.
- **Music** must be kept at a tolerable level in the lounge, gym and cabins.
- **Duty mess** is to be kept tidy at all times.
- Please respect the crew’s privacy - **DO NOT** use the crew’s duty mess as a thoroughfare to and from the laboratories or an entertainment area.
- **Duty** – the ship is a place of work, keep fraternizing with the crew at a professional level
- **Drink** – Smit have a policy to which all their employees must abide. Do not purchase alcohol or encourage staff to drink alcohol other than stipulated in the *drink and drug policy*. **You** could be the cause of someone’s dismissal.
- **Workplace** – the ship is a place of work and personnel onboard are expected to conduct themselves in an appropriate manner. The Chief Scientist and/or the Captain have the right to discipline any offending members of the scientific team. Should this result in you being taken ashore due to misconduct all costs incurred would be your responsibility.
- **Computers** onboard are work tools and are under no circumstances to be tampered with. In case of malfunction, contact the Electronic Technician.
- **Code of conduct** booklet in each cabin, read and familiarize yourself with the details. If there is any uncertainty, please ask for advice or guidance.
- **Safety** – check the muster list and lifejacket as soon as you board the vessel and familiarize yourself with the emergency stations. Safety drills are mandatory and will be called during the voyage - they must be taken seriously.

Appendix E: FRS Algoa Particulars

Type: Steel hulled Fisheries Research Ship
(Converted French Wetfish Stern Trawler)
Class: Bureau Veritas
Built: 1975
Builders: Atliers et Chantiers (France)
(Converted by Dorbyl Marine, Cape Town 1993)
Gross Tonnage: 759.38 t
Net Tonnage: 227.81 t
Length Overall: 52.55 m
Breadth: 10.8 m
Draft: 4.85 m
Power: 1472 kW @ 200 HP
Cruising speed: 10.0 knots
Range: 6000 nautical miles
Endurance: 20 to 30 days
Call sign: ZR 4311
Compliment: Crew 19 + Scientists 16 = TOTAL 35
Affiliation: Department of Environmental Affairs and Tourism
Directorate: Marine Research

Propulsion

Single Crepelle SN, turbo charged and intercooled 12 cylinder 4 stroke diesel engine driving an Eyscher Weiss controllable pitch propeller.

Maximum Power: 1472 kW @ 200 HP
Bowthruster: Schottel SRP 170 LSV, 280 kW retractable
Bunker Capacity: 138 tonnes

Electrical Power

Two M.A.N. diesel gensets, each 280 kVA, 380/220 v, 3 phase, 50 Hz at 0.8 PF.
Shaft generator
Stabilised Supply

Navigational Equipment

Gyro Compass: SIMRAD RGC 50
Magnetic Compass: Cassens and Plath
Autopilot: SIMRAD AP-50
Radars: FURUNO FR-2125 3cm
Furuno NAVNET 10cm
Speed Log: Furuno DS-70
Echo Sounders: SKIPPER GDS 101 – 50 kHz transducer (1000m depth)
SIMRAD EK60 – 38 kHz transducer (5000m depth)

GPS: 2 x Leica MX-412 DGPS
Navtex: Furuno NX-500
Anemometer: SIMRAD IS-12
Young Wind Tracker
Sea surface temperature: Seacat Thermosalinograph
Electronic Charts: MAXSEA Charts
AIS: Furuno FA-100

Meteorological Equipment

Weatherpak by Coastal Environmental System, giving wind direction and speed (relative and true), air temperature, relative humidity, barometric pressure and biospherical QSR2100 PAR sensor for underway light data. All meteorological data is networked over the NDS as well as, the Seabird SBE 45 Thermosalinograph with SBE 38 remote temperature probe, water depth and vessel navigation information.

Communications and GMDSS

Sailor VHF (RT 2048)
Sailor VHF DSC (RM 2042)
Sailor SSB (RE 2100)
Sailor HF SSB Receiver (RM 2125)
Sailor Sat C Msg Terminal (H 2098)
Sailor Sat C Transceiver (H 2095)
Sailor Sat C Printer (H1252B)
Sailor HF SSB Telex/DSC (RM 2151)
Thrane and Thrane Fleet 77 Satellite connection (Voice and Data)

Contact Information

e-Mail Address: algoa@andrapido.com
Cellular Telephone: +27(0)83 639 3966
Satellite Voice Telephone: +870 763914435
Satellite Facsimile Telephone: +870 763914436
Sat C Number: 460101055

Winches and Davits

Anchor Windlass: GHM Marine, Guindeau 24, electric.
Mooring winches: 1 x port aft, 1 x starboard aft, electric. (SWL = 0.5 t)
Deck Crane: PETREL, hydraulic knuckle boom crane KC-40-8.4-3.6.
(SWL: at 6.5 m = 6.0 t; at 8.4 m = 3.6 t)
Winch capacity 40 m x 20 mm IWRC galvanised rope,
with a 7.5 t SWL sling hook.

Rescue Davit:	Rescue boat davit, manual slew, electric hoist.(SWL=1t) Winch capacity 20m x 10mm IWRC galvanized rope, with a 1.0 t SWL off load quick release hook.
Main trawl winch:	Brissoneau and Lotz, electric. (SWL = 5.0 t) Warp capacity 3500 m x 26 mm. 4 auxiliary drums.
Net Drum Winch:	Gear driven from main trawl winch. (SWL = 5.0 tonnes)
Net Sonde Winch:	Atlas, electric.
Hydrographic Winch:	LEBUS, medium pressure, hydraulic. (SWL = 1.0 t) Drum capacity 2000m x 9,5mm, 4-core conductor cable, via accumulator system to hydraulic A-frame, midships
Vertical Plankton Winch:	LEBUS, medium pressure, hydraulic. (SWL = 1.0 t) Drum capacity 1500m x 9,5mm, 4-core conductor cable, via accumulator system to hydraulic A-frame, midships.
Large Towing Winch:	PETREL, medium pressure, hydraulic. Drum capacity 500m x 11,76mm, 10-core conductor cable. Fair lead direct to main gantry aft. (Not Onboard)
Small Towing Winch:	PETREL, medium pressure, hydraulic. (SWL = 1.0 t) Drum capacity 1000m x 9,5mm, four core conductor cable. Cable lead to hydraulically slewed davit and accumulator on starboard aft gantry platform

Laboratories and Scientific Spaces

Bridge deck, starboard aft:	Acoustics laboratory
Main deck, port side, midships:	Operations room
Main deck starboard:	Wet laboratory – General purpose
Main deck, port:	Dry laboratory – Chemical
Lower deck, aft:	Wet fish laboratory
Lower deck, aft:	Dry fish laboratory
Tank top, midships:	Computer room
Tank top, forward of computer room:	Sonar compartment

Scientific Working Areas

Forecastle deck and main trawl deck.
Trawl ramp can be decked or open ramp, provided ample request time is given.

On Board Scientific Systems

The windows based underway data acquisition and distribution system on the NDS is interfaced to a variety of navigational, meteorological and winch systems, displaying these data on terminals housed in all scientific spaces.

The LAN facilitates interaction between the various spaces and the NDS, and permits the storing and processing of time and historical data at each work station.

Seabird 911 plus CTD, with 12 litre rosette and 3rd party sensors.

Seabird SBE 45 Thermosalinograph with SBE 38 remote temperature probe.

Ocean Surveyor ADCP 75 kHz by RD Instruments.

MCM Universal Underwater Unit

MCM Electronic Fish measuring boards

Habitability

The officers, fishing master, bosun, chief steward and chef are accommodated in single berth cabins and there are six double berth crew cabins.

Scientists are accommodated in four three berth cabins and two double berth cabins.

Officers & crew = 19 berths Scientists = 16 berths

Meals are served in a saloon area. The vessel carries bottled water for all to enjoy.

For further information kindly contact Robert Hales (Vessel Technical Superintendent)
of SMIT Amandla Marine in South Africa on

Tel: +27 (0)21 507 5777 or Cell: +27 (0)72 624 3645 or e-mail: r.hales@smit.com