

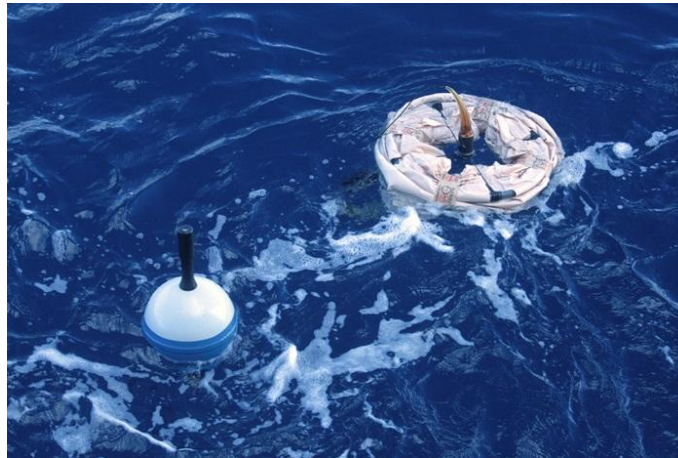
Current SAEON Monitoring Programmes

SAEON Egagasini Offshore Node
SAEON Elwandle Coastal Node

Tamaryn Morris
tammy@saeon.ac.za

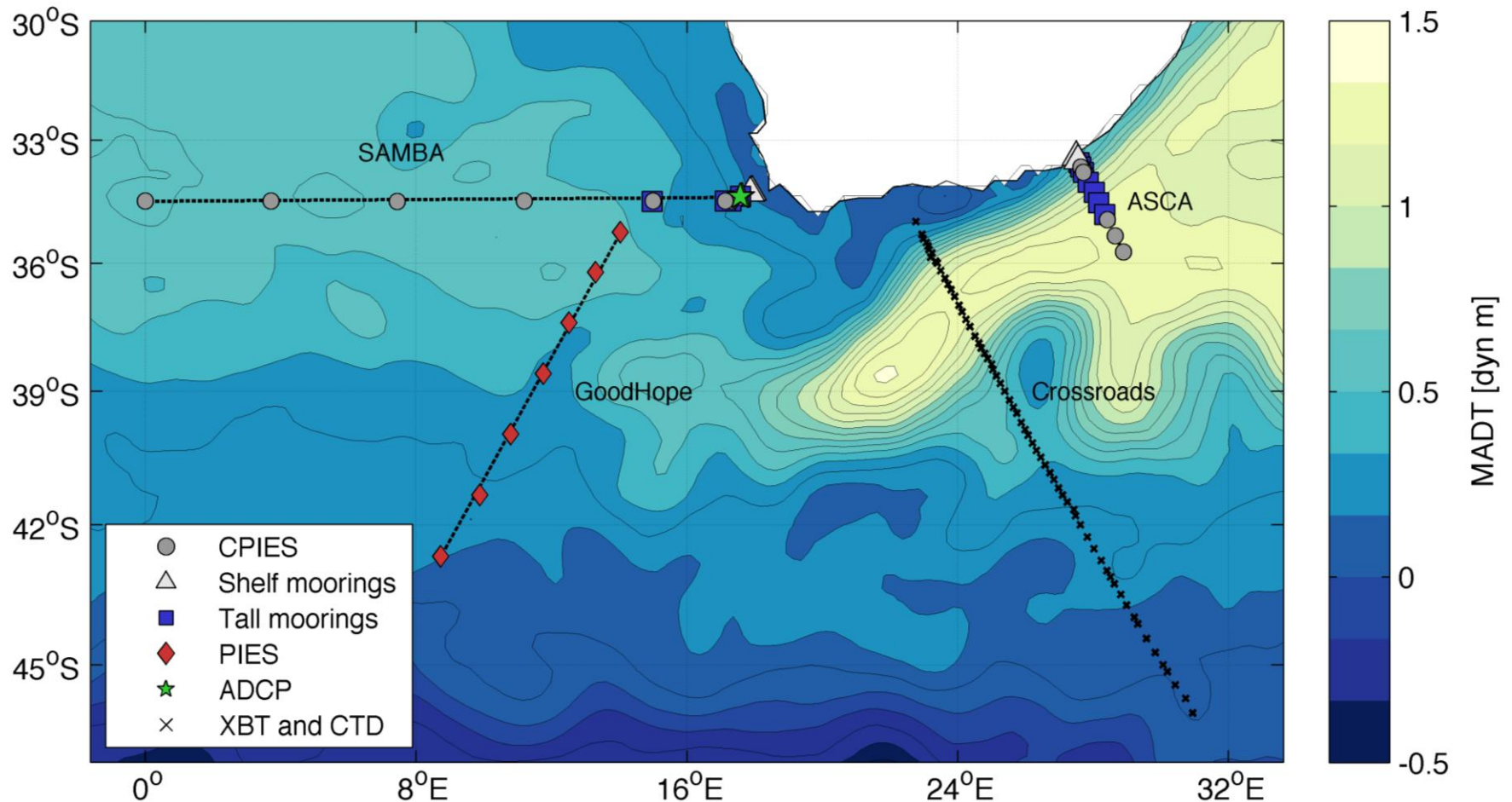
SAEON Marine Node Infrastructure: Tools in the field

SAEON Egagasini Offshore Node & Agulhas System Climate Array (ASCA)



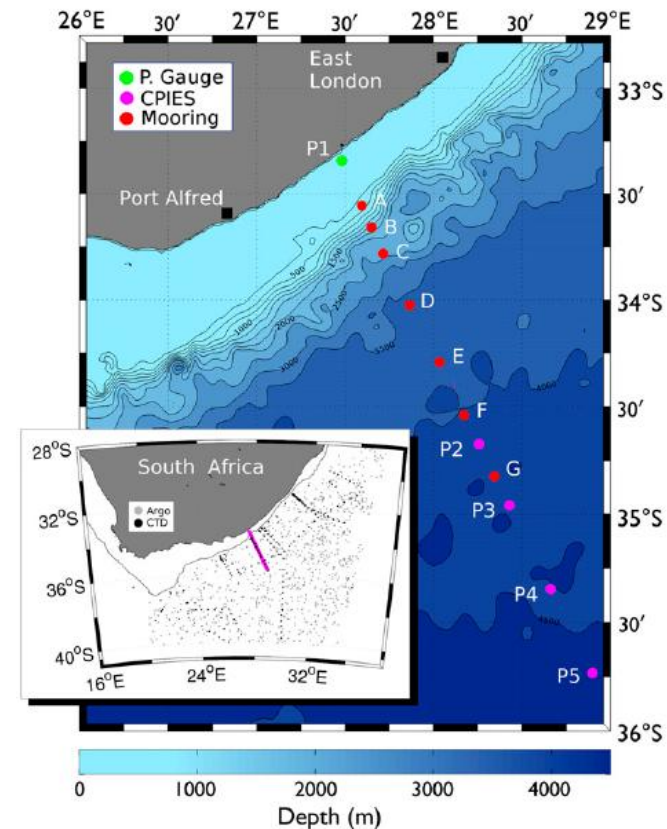
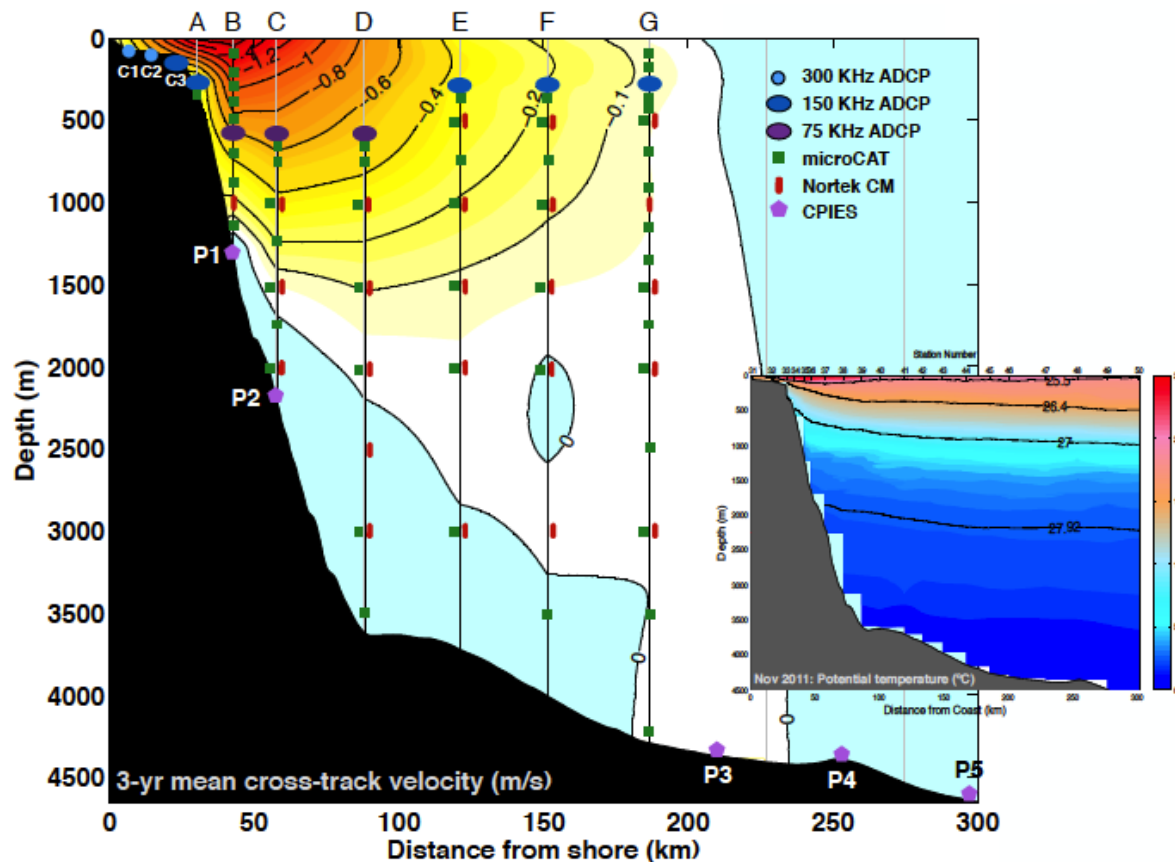
Large Mooring Arrays

Offshore Observations around South Africa



Agulhas System Climate Array (ASCA)

Moored observations



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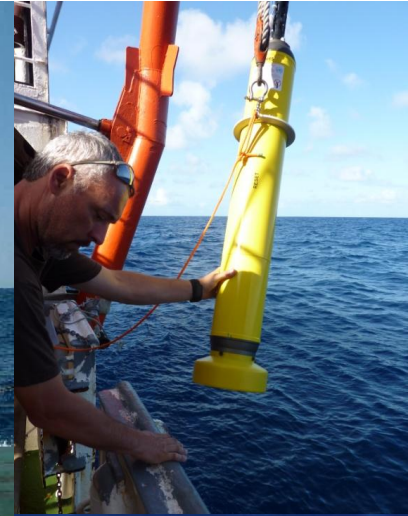
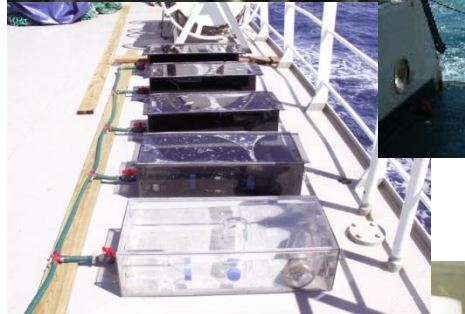
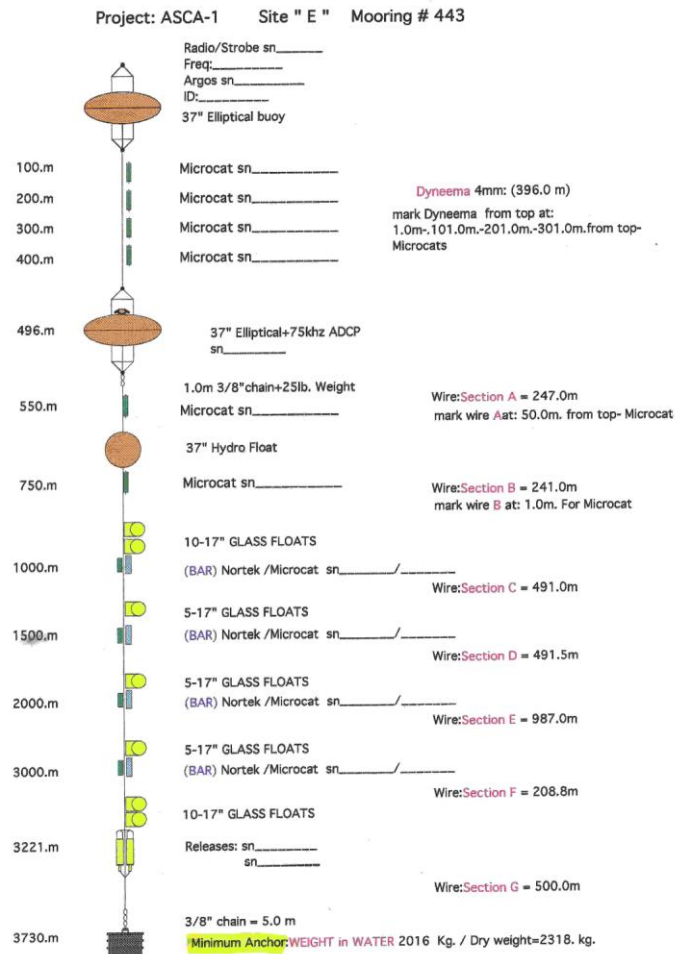
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SAEON
South African Environmental
Observation Network

Agulhas System Climate Array (ASCA)

Multi-disciplinary observations

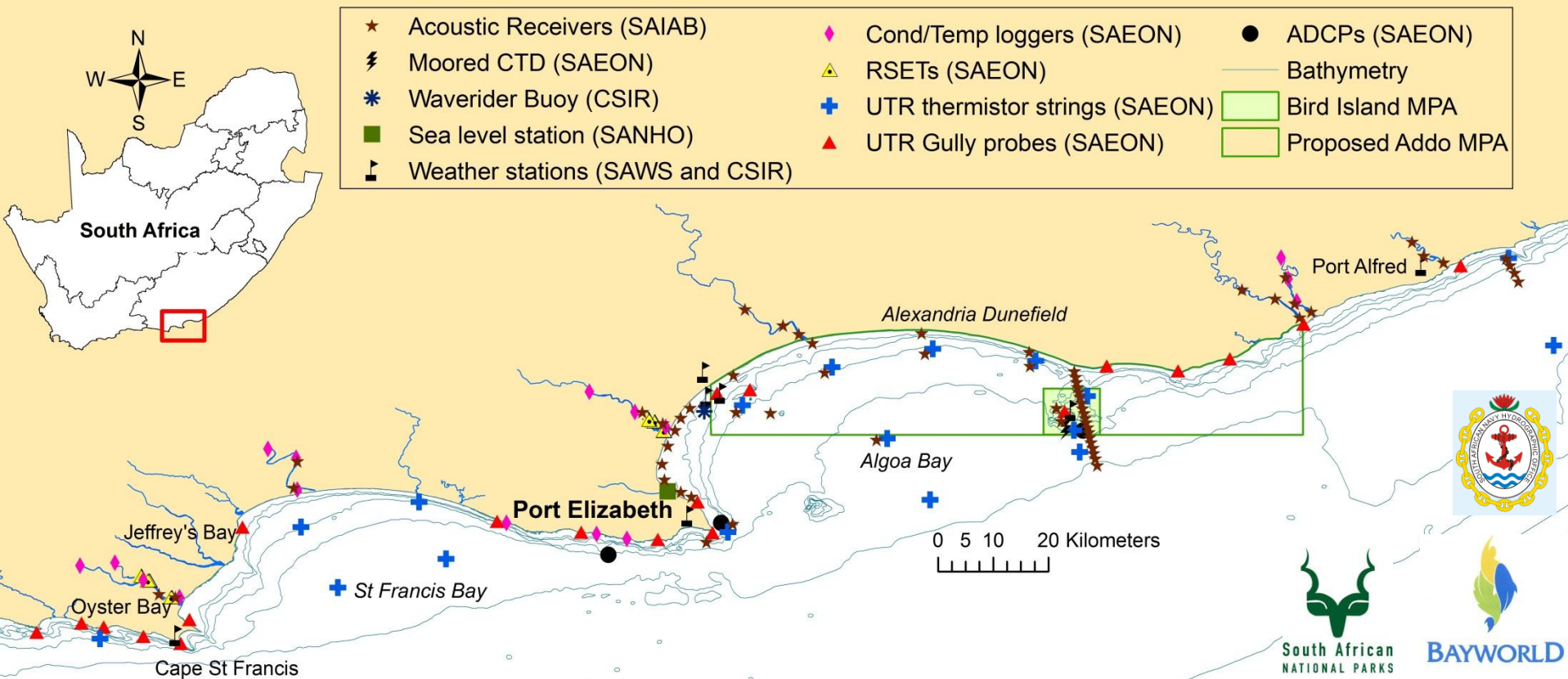


SAEON Marine Node Infrastructure: Tools in the field

SAEON Elwandle Coastal Node & Shallow Marine and Coastal Research Infrastructure (SARIR – DST)



Coastal Observations: Sentinel Site for Long Term Ecological Research



>100 *in situ* instruments, collecting data continuously (mostly delayed time measurements)



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SAIAB
South African Institute
for Aquatic Biodiversity

CSIR
our future through science



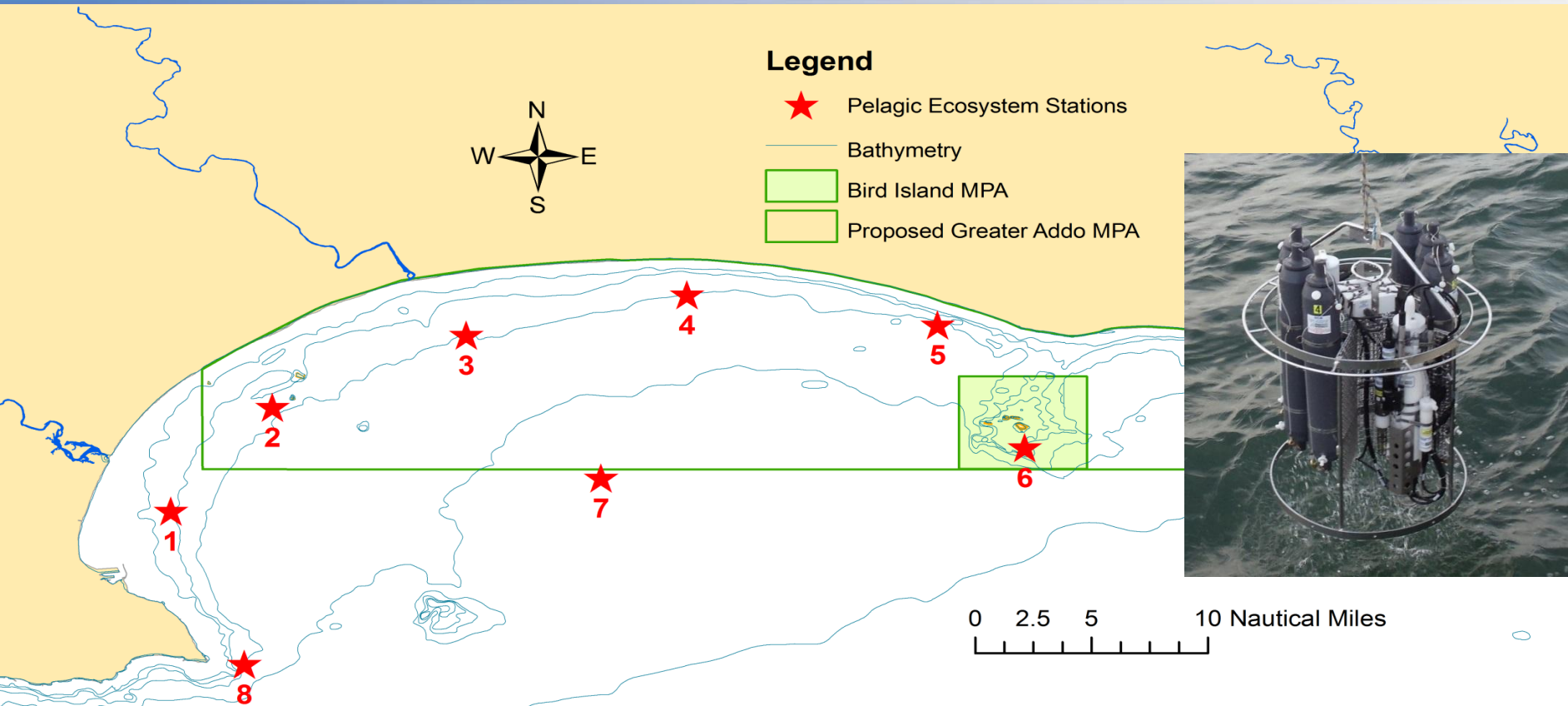
South African
Weather Service

ISO 9001 Certified Organisation



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South African Environmental
Observation Network

Coastal Observations: Pelagic Ecosystem (Sentinel continued)



- Eight stations sampled on a monthly basis for physical, chemical and biological (phytoplankton and zooplankton) oceanography data and samples

Coastal Observations: Shallow Marine and Coastal Research Infrastructure

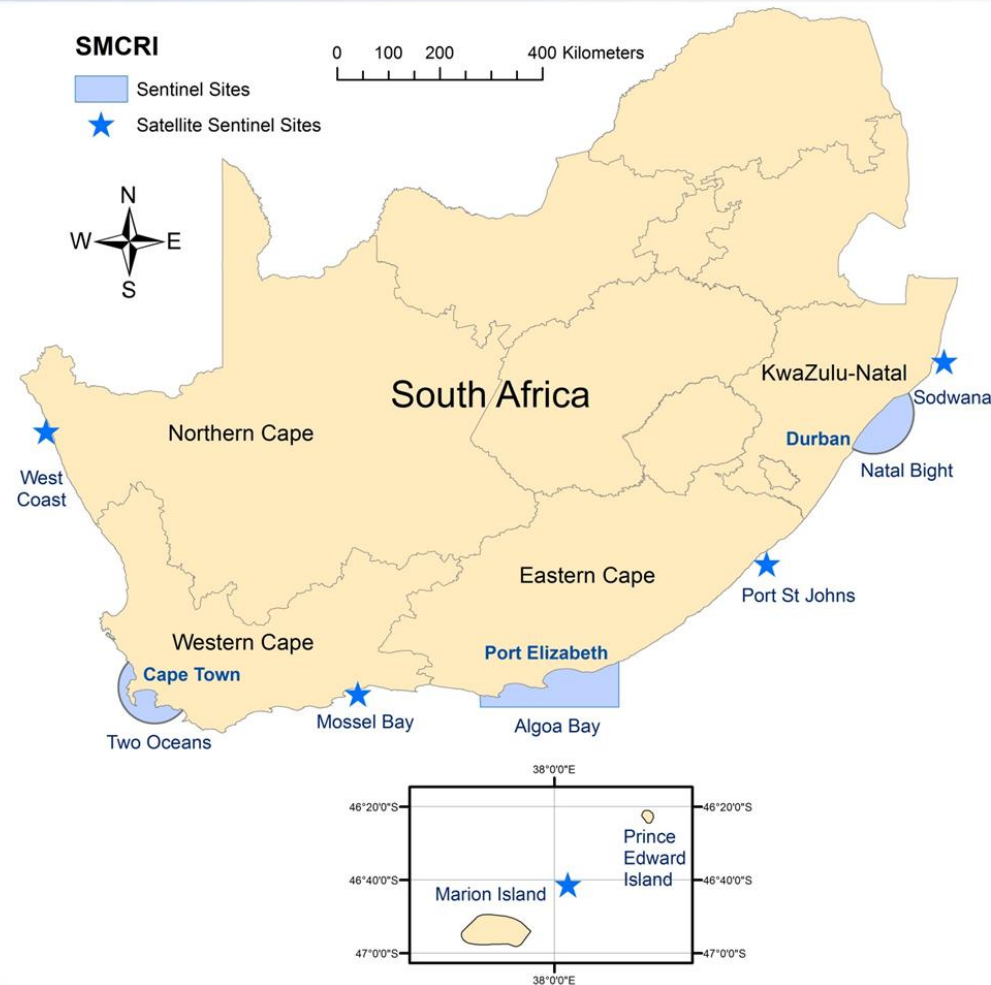
South African Research Infrastructure Roadmap (DST funded): Shallow Marine and Coastal Research Infrastructure (SMCRI)

Dispersed Sentinel Sites

- Two Oceans
- Algoa Bay
- KwaZulu-Natal Bight

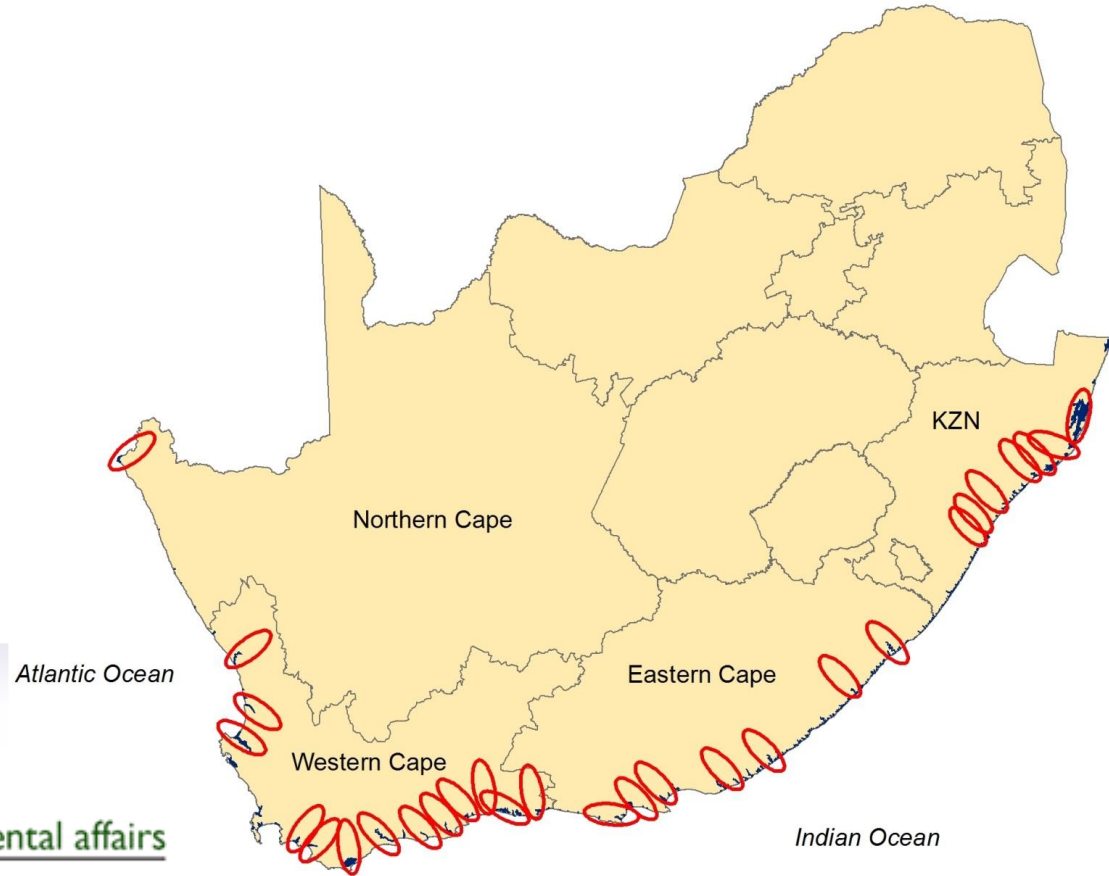
Satellite Sentinel Sites

- St Helena Bay
- Mossel Bay
- Port St Johns
- Sodwana Bay
- Prince Edward Islands



Coastal Observations: National Estuaries Network

- Coordinated effort to monitor all estuaries around South Africa
- SAEON focuses on four that influence Algoa Bay directly:
 - Kromme
 - Swartkops
 - Gamtoos
 - Kariega



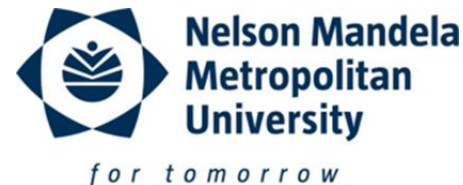
Atlantic Ocean

Northern Cape

Eastern Cape

Western Cape

Indian Ocean



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**agriculture,
forestry & fisheries**

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SAEON
South African Environmental
Observation Network

Coastal Observations: National Estuaries Network (continued)

1. Kromme (since May 2012)

- 4 CT-logger sites (hourly, continuous)
- 97 YSI sites reduced to 24 (quarterly)
- 6 PE sites (quarterly)

2. Swartkops (since June 2012)

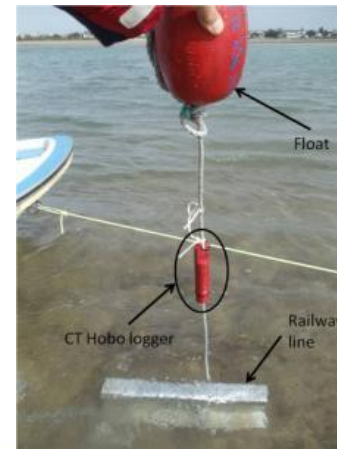
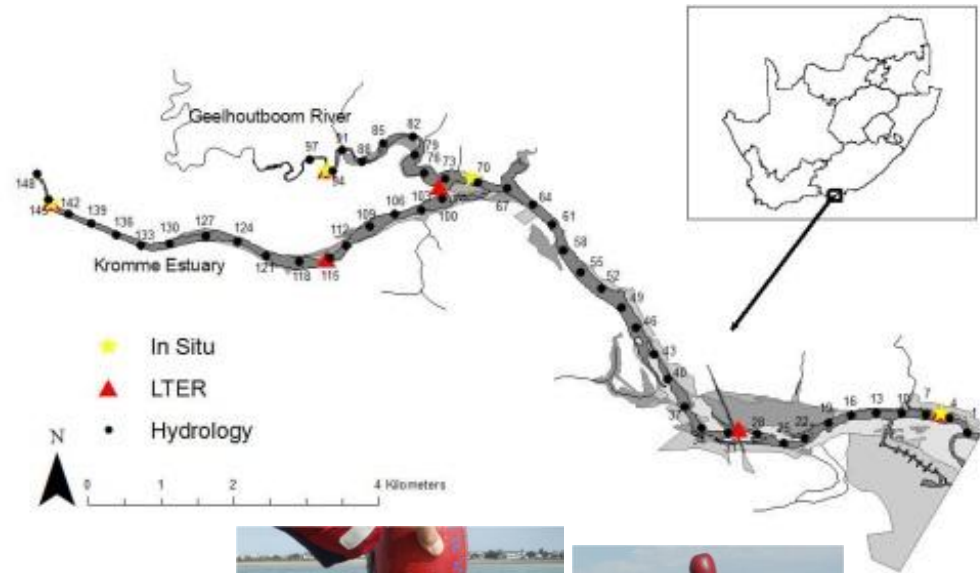
- 2 CT-logger sites (hourly, continuous)

3. Gamtoos (since October 2012)

- 3 CT-logger sites (hourly, continuous)
- 20 YSI sites (quarterly)
- 10 PE sites (quarterly)

4. Kariega (since November 2012)

- 3 CT-logger sites (hourly, continuous)
- 82 YSI sites reduced to 20 (quarterly)
- 6 PE sites (quarterly)



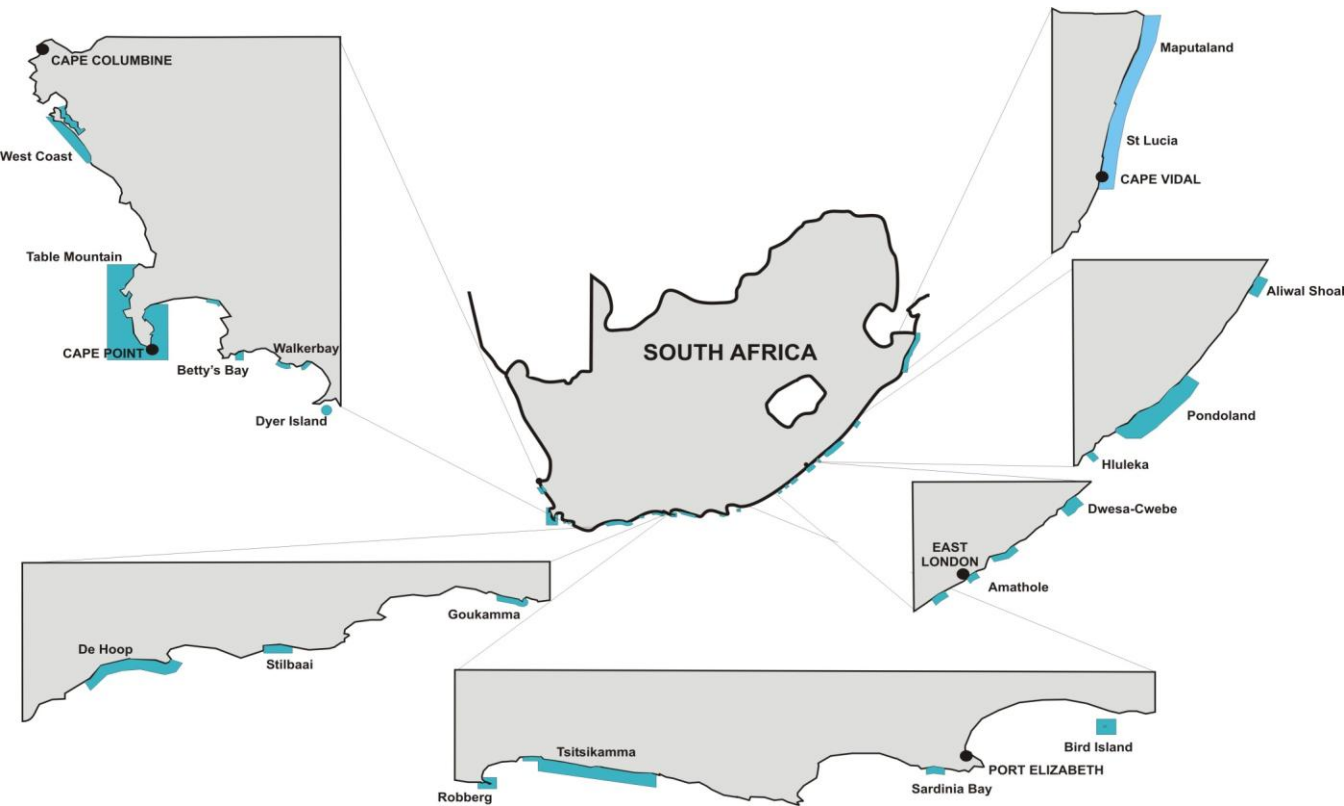
YSI Sites = Temp, Salinity, DO, pH, turbidity

PE Sites = Nutrients, Chl a, Secchi depth, light attenuation, zooplankton

Coastal Observations:

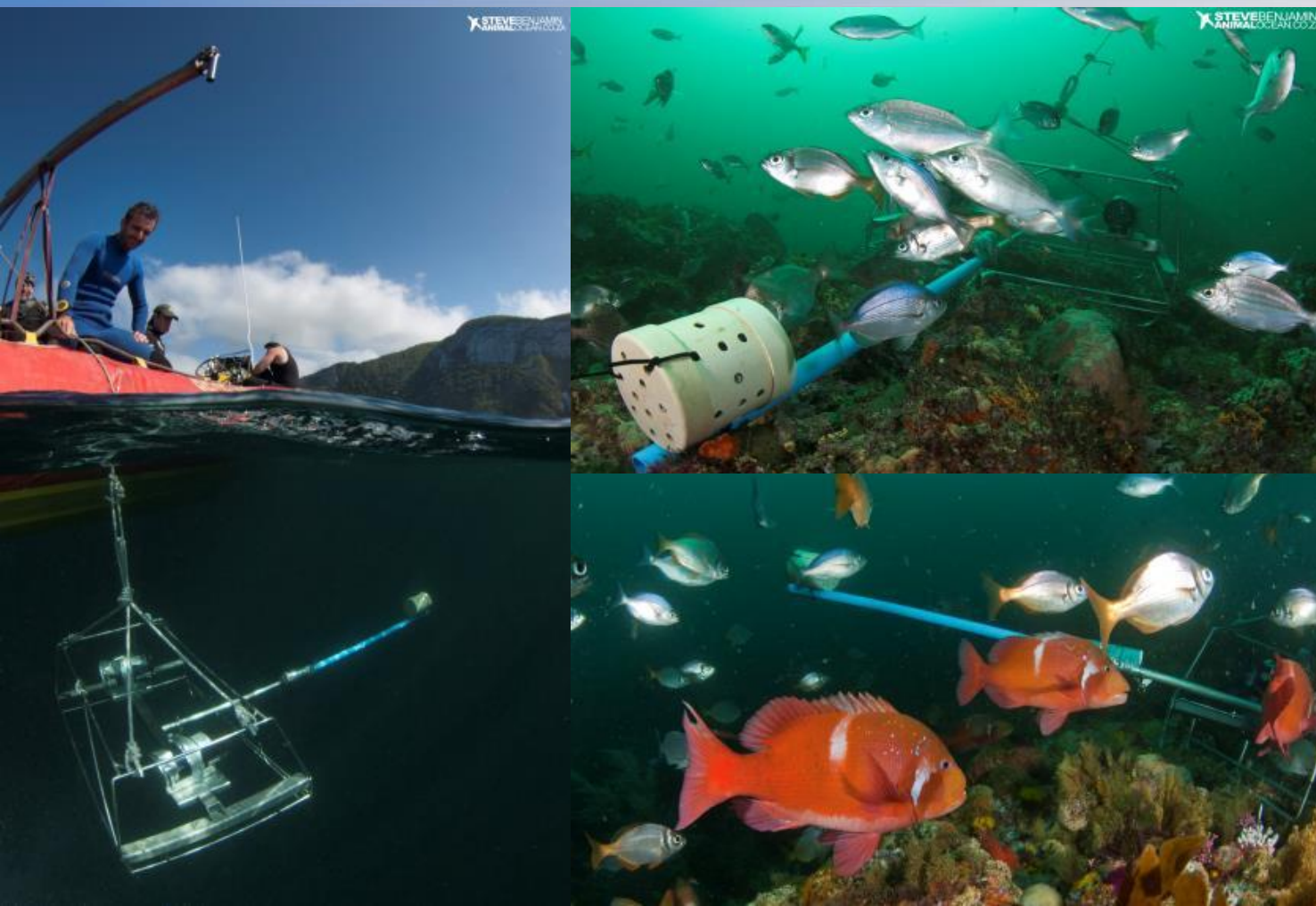
Marine Protected Area Long Term Ecological Research

Applied and basic ecological research on subtidal reef habitats around the coastline of South Africa.



- Table Mountain National Park
- De Hoop
- Stilbaai
- Goukamma
- Tsitsikamma
- Bird Island
- Amathole
- Pondoland
- St Lucia

Coastal Observations: Stereo BRUV's (MPA continued)



- Reef based observations
- From shallow (10 m) to deep (150 m)

Coastal Observations: Research Infrastructure

- Fully equipped coastal research vessels,
- Current, wave, telemetry, pCO₂ & pH, water level, salinity and temperature (CTD)
- Real time surface Data Buoys
- Single instruments for dispersal from Central Coordinating Unit,
- Data and information management system



Acoustic receiver



Data Buoy



SBRUVS



CTD+Niskin Rosette

Coastal Observations: Ocean Sciences Campus

- Marine and estuarine Water Quality laboratory
 - AA3 Nutrient Auto Analyser
 - DEA, CSIR and NMMU support
- Aerial Surveillance Platform
 - High Resolution georeferenced aerial photography/videos (infrared)
 - LiDAR / Hyperspectral Imager
- Dive Chamber
- Data management



SAEON Data Management

- Access to the research infrastructure and platforms are on the principle of equal and open, but competitive basis.
- All data collected by the DST / NRF platforms are:
 - Free and open data by default
 - High quality and quantity (limited data gaps)
 - Usable by all (i.e. understandable)
 - Released specifically for improved governance
 - Released specifically for innovation