



environmental affairs

Department:  
Environmental Affairs  
REPUBLIC OF SOUTH AFRICA

*DEA Perspective on  
Oceans and Coastal Research  
SANCOR presentation*

*16 May 2012*

# CONTENT

- 15 year draft research plan
- 5 year Flag ship projects
- DEA strategic objectives
- What is new and what is our emphasis for the way forward

# 15-yr Objectives

A world class institution with an inspired, respected and motivated workforce that:

- Leads and conducts multi-disciplinary, cutting edge research for informed decision-making.
- Develops and retains scientific, engineering and technical expertise and best practice.

# 15-yr Objectives.....

- Promotes an Earth systems science approach.
- Provides access to a data rich information system.
- Is well resourced in terms of human capital, infrastructure and funding.

# 15-yr Objectives.....

- Utilises and develops state-of-the-art technologies.
- Provides a platform for ocean and coastal advocacy..

# Strategic Framework

**Flagship  
Projects**

**Biodiversity**

**Ecosystem  
Health**

**Ecosystem  
Processes &  
Global Change**

**Operational  
Oceanography**

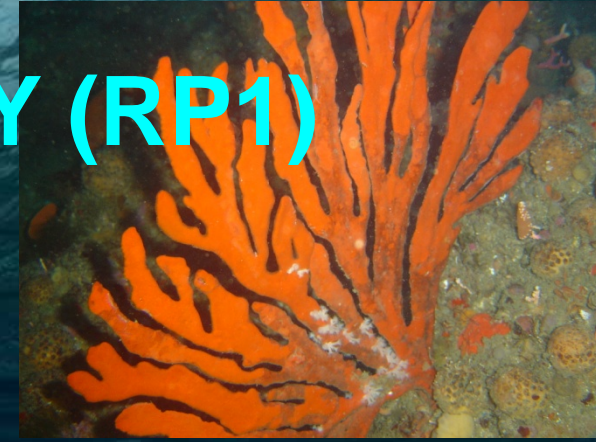
**Cross-cutting initiatives**

**Continuing Higher Education & Training  
Scientific and technical Support Services**

**Partnerships: Tertiary institutions, Govt depts  
(DST, DAFF,...), Entities (SAWS, SANBI, CSIR,..)**

# MARINE BIODIVERSITY (RP1)

## 15 Year Objectives



### **A Centre of excellence for Marine Biodiscovery**

- Molecular research on marine species
- New data collection and re-evaluation of existing data to assess status of SA's marine biodiversity and associated environmental data.
- Conduct long-term monitoring on representative biodiversity, associated ecosystems and environmental conditions to determine spatial and temporal changes.

# MARINE BIODIVERSITY (RP1)

## 15 Year Objectives

### National Biodiversity inventory

- Taxonomic reference material and corresponding data set on marine benthic species as part of a centralised National Marine Biodiversity Inventory.
- Evaluate critical habitats – Locate and characterize these Vulnerable Marine Ecosystems.
  - An established Deep-Water and coastal research programme.
  - Support a coherent network of protected areas for SA's vulnerable marine biodiversity.



# ECOSYSTEM HEALTH (RP2 plus)

## (Revised) Longterm Objectives



### Ocean and coastal ecosystem health research and monitoring

- Summary indices developed for identified aspects of ecosystem health, e.g. water quality, top predator performance
- Monitoring and research of top predators, including species Biodiversity Management plans
- A national pollution and water quality monitoring system in place

### Habitat Resilience and Degradation Evaluation

#### Research & Monitoring for:

- Mitigation of the effects of consumptive utilisation
- Mitigation of impacts of Non-consumptive utilisation of living resources. (e.g. tourism to mammals, birds, sharks, turtles).
- Other pressures causing altered ecosystem structure and functioning (e.g. global change).



# ECOSYSTEM FUNCTIONING (RP3)

## 15 Year Objectives

An understanding of the efficient functioning of the major ecosystems

In the oceans surrounding South Africa

An ecosystem-wide, long-term plankton monitoring programme

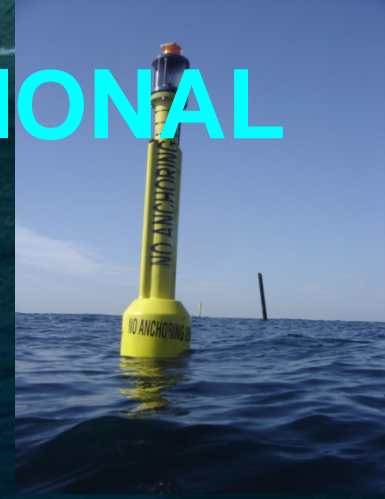
An integrated, collaborative research programme to measure/investigate production, life cycle parameters, trophic pathways and carbon and nitrogen fluxes.

A suite of operational models (e.g. IBM & ecosystem models).

# OBSERVATIONAL AND OPERATIONAL OCEANOGRAPHY(RP4)

## 15 Year Objectives

- Established operational oceanography service based on the assimilation of data from *in situ* and remote sensing observations.
- Integration of operational service into regional and international earth observational programmes
- Centre of Excellence for operational oceanography leading sensor and platform innovation and training and communication.



# FLAGSHIP PROGRAMMES (5yrs)

## Coastal Research

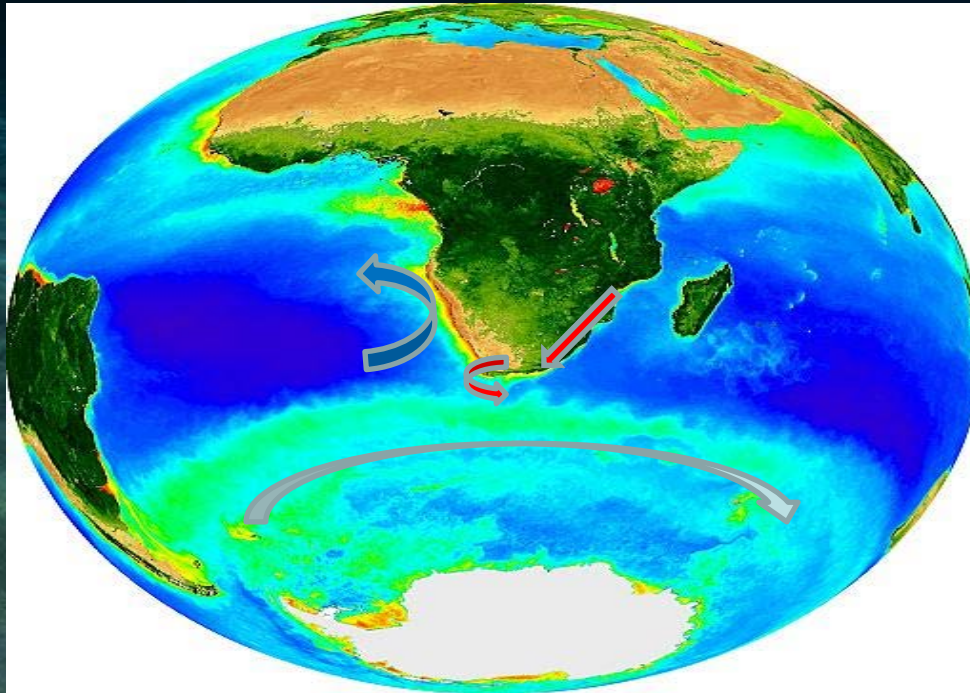
- Predictive modelling – pollution, other hazards.
- Sediment research.
- Estuarine research.
- Coastal Processes.

## Southern Oceans / Antarctica Research

## Deepwater research

## IEP – West Coast

The DEA Research Chief Directorate undertakes leading research on the ocean and coastal environment. Our strategic objective is - Strengthened national science programmes for integrated oceans and coastal management.



# DEA Strategic plan obligations

- Biodiversity – Expand information on habitat & species in the SA EEZ and associated LMEs; describe new or unknown species (with emphasis on benthic species), support bio-discovery, assess MPAs.
- Top predators and Ecosystem Health - Monitoring and research of marine top predator populations and behaviour provides an ongoing baseline for advice to improve the conservation status of such species; & advice regarding non-consumptive use. Such information also provides an overview of the health of marine ecosystems.
- Coastal Research - Plan the role of the Coastal Research Unit in the context of national obligations and other organizational capacity and develop the unit.
- Observational and Operational Oceanography - A functioning coastal and ocean observation and monitoring network is crucial for the establishment of a climate and Early Warning System.
- Ecosystem functioning – with reference to the above

# What is new?

## Emphasis

- Focus on the inshore and coastal environment
- Focus on coastal processes and vulnerability
- Move toward predictive modelling
- Fill research gaps (eg pollution, sediments, estuaries)
- Benthic Biodiversity Research.
- Deep Sea and Antarctic Research
- Climate and earth systems approach

## New or renewed relationships

- Continued participation in terms of our mandate
- Set-up and support new relationships to fill gaps in terms of discipline and geographic/historical factors





THANK YOU

