



Day 1: Monday 20 April 2009

Welcome and introduction

11:00	Registration (Chapel)
12:00	Welcome lunch (Chapel)
13:00	Open : Dr. Andrew Constable (ACE CRC/AAD, Australia)
13:10	Opening address : John Gunn (Chief Scientist, AAD, Australia)
13:25	Antarctic climate and ecosystems Dr. Tony Press (CEO, ACE CRC, Australia)
13:55	Southern Ocean Sentinel – an overview Dr. Andrew Constable (ACE CRC/AAD, Australia)
14:30	Setting the Scene: the Southern Ocean’s evolving state over the last three decades inferred from ocean salinity, temperature, oxygen and altimetry data Prof. Nathan Bindoff (ACE CRC/TPAC, Australia)
15:00	Afternoon tea (Chapel)
15:30	Southern Ocean Acidification: a tipping point at 450 ppm atmospheric CO ₂ . Dr. Richard Matear (CMAR, Australia)
16:00	How could rates of changes in biodiversity that result from climate change be measured in the short term and monitored over longer terms? Dr. Colin Southwell (AAD, Australia)
16:30	Wrap up of Day 1 and overview of program for remainder of workshop
17:00	Close



Day 2: Tuesday 21 April 2009

Change in Antarctic and Southern Ocean marine ecosystems – past, present and future

09:00	Introduction to Day 2
09:10	Prof. Eugene Murphy (BAS, UK): Changes in the Antarctic marine ecosystem
09:40	Dr. Rob Massom (ACE CRC, Australia): Antarctic Sea Ice – Complexities and Patterns in Distribution and Properties, and Their Physical and Ecological Implications
10:10	Dr. Dirk Welsford (AAD, Australia): Dynamics of mesopelagic species and assemblages
10:40	Morning tea (Chapel)
11:00	Dr. Graham Hosie (AAD, Australia): Southern Ocean Continuous Plankton Recorder Survey
11:30	Dr. Henri Weimerskirch (Centre d'Etudes Biologique de Chize, France): Long term changes in top predators in the Southern Indian Ocean and relationships with climate and human activities
12:00	Dr. Nick Gales (AMMC, Australia): Responses of Southern Ocean whales to climate change
12:30	Lunch (Chapel)
13:30	<p>Workshop 1 (Wombat Room): Facilitators: Dr. Richard Matear, Prof. Eugene Murphy</p> <p>What changes have been observed in the physical and chemical environment that might influence marine ecosystems and are linked to changes in climate?</p> <p>Workshop 2 (Convention Room): Facilitators: Dr. Steve Nicol, Dr. Dirk Welsford.</p> <p>What are the characteristics of marine biota that determine their resilience or susceptibility to these changes?</p>
15:30	Afternoon tea (Chapel)
16:00	<p>Workshop 1 (continued in Wombat Room)</p> <p>Workshop 2 (continued in Convention Room)</p> <p>Workshop 3 (SCAF Room): Facilitators: Prof. Peter Fairweather, Dr. Nick Gales.</p> <p>What future changes to biodiversity, including species composition and ecological processes, might be expected in marine ecosystems if the environment continues to change?</p>
17:00	Integrating Committee (Wombat Room)
18:00	Close



Day 3: Wednesday 22 April 2009

Measuring change – populations, species and ecosystems

09:00	Introduction to Day 3 and report from Integrating Committee
09:30	Dr. Steve Nicol (AAD, Australia): Measuring change in krill abundance
10:00	Prof. Dan Costa (UCSC, USA): Measuring change in marine habitats
10:30	Morning tea (Chapel)
11:00	Dr. Martin Riddle (AAD, Australia): Measuring change in marine benthos
11:30	Dr. Phil Trathan (British Antarctic Survey, UK): Monitoring the response of marine predators to climate change
12:00	Dr. Beth Fulton (CSIRO, Australia): Practical examples on deciding how to measure change in biota
12:30	Lunch (Chapel)
13:30	Workshops 1, 2 and 3 (continuation as needed in Wombat Room, SCAF Room) Workshop 4 (Convention Room): Facilitators: Dr. Beth Fulton, Dr. Phil Trathan. How could rates of changes in biodiversity that result from climate change be measured in the short term and monitored over longer terms?
15:30	Afternoon tea (Chapel)
16:00	Workshops 1, 2 and 3 (continuation as needed in Wombat Room, SCAF Room) Workshop 4 (Convention Room)
17:00	Integrating Committee (Wombat Room)
18:00	Close



Day 4: Thursday 23 April 2009

Requirements in designing a long-term field program to detect and estimate rates of change

09:00	Introduction to Day 4 and report from Integrating Committee
09:30	Dr. Steve Rintoul (ACE CRC, Australia): Can we detect, interpret and predict Southern Ocean change?
10:00	Assoc. Prof. Kevin Arrigo (Stanford University, USA): Using remote sensing to monitor oceans and ice
10:30	Morning tea (Chapel)
11:00	Dr. Eileen Hofmann (Old Dominion University, USA): Understanding and monitoring climate change in the Southern Ocean mesopelagic environment
11:30	Prof. Peter Fairweather (Flinders University, Australia): Measuring change in marine ecosystems: theory and practice
12:00	Dr. Bill de la Mare (CSIRO, Australia): Approaches for matching objectives, monitoring and decision making in the face of uncertainty?
12:30	Lunch (Chapel)
13:30	<p>Workshop 5 (Convention Room): Facilitators: Dr. Eileen Hofmann, Dr. Steve Rintoul</p> <p>What are the key processes in developing an international, multidisciplinary monitoring program to ensure it is cost-effective and likely to achieve its objective?</p> <p>Workshop 6 (Wombat Room): Facilitators: Prof. Nathan Bindoff, Assoc. Prof. Kevin Arrigo</p> <p>What research needs to be done to reduce uncertainty in IPCC-relevant projections of future climate change and its impacts?</p>
15:30	Afternoon tea (Chapel)
16:00	Workshops continue as needed (Wombat Room, SCAF Room)
	Open Forum Briefing (Convention Room)
	Introduction to the Southern Ocean Sentinel program and its relevance to climate change policy and management
17:00	Integrating Committee (Wombat Room)
18:00	Close
19:00	Open Forum Dinner (Catch Restaurant)
	Keynote: Parliamentary Secretary for Pacific Island Affairs, the Hon Duncan Kerr, SC, MP



Day 5: Open Forum: Friday 24 April 2009

09:00	Outcomes of workshops Workshop 1: Facilitators - Dr. Richard Matear, Prof. Eugene Murphy Workshop 2: Facilitators - Dr. Steve Nicol, Dr. Dirk Welsford Workshop 3: Facilitators - Prof. Peter Fairweather, Dr. Nick Gales Workshop 4: Facilitators - Dr. Beth Fulton, Dr. Phil Trathan Workshop 5: Facilitators – Prof. Eileen Hofmann, Dr. Steve Rintoul Workshop 6: Facilitators - Prof. Nathan Bindoff, Assoc. Prof. Kevin Arrigo
10:30	Morning tea (Chapel)
11:00	What would be the benefits of a Southern Ocean Sentinel Program? <ul style="list-style-type: none">• Antarctic scientific community• NGOs• International forums• IPCC• Australia
12:30	Lunch (Chapel)
13:30	Facilitator: Dr. Andrew Constable Synthesis and Future: General discussion of outcomes, actions and future of a Southern Ocean Sentinel Program
15:30	Close
