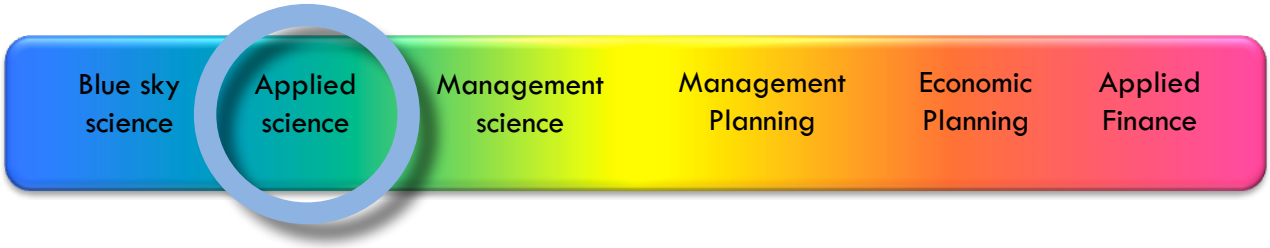
TE WHARE WĀNANGA O TE ŪPOKO O TE IKA A MĀUI
VICTORIA
UNIVERSITY OF WELLINGTON

ANZICE: Science – Policy Interface

The Policy implications of the ANZICE programme are being explored by Dr Sean Weaver of Carbon Partnership Ltd. Sean is particularly interested in how policy can be informed by cutting edge science that focuses on helping us understand poorly understood systems.

The science in the ANZICE programme fit into the science-policy spectrum at the position of applied science:



SCIENCE AS A POLICY TOOL

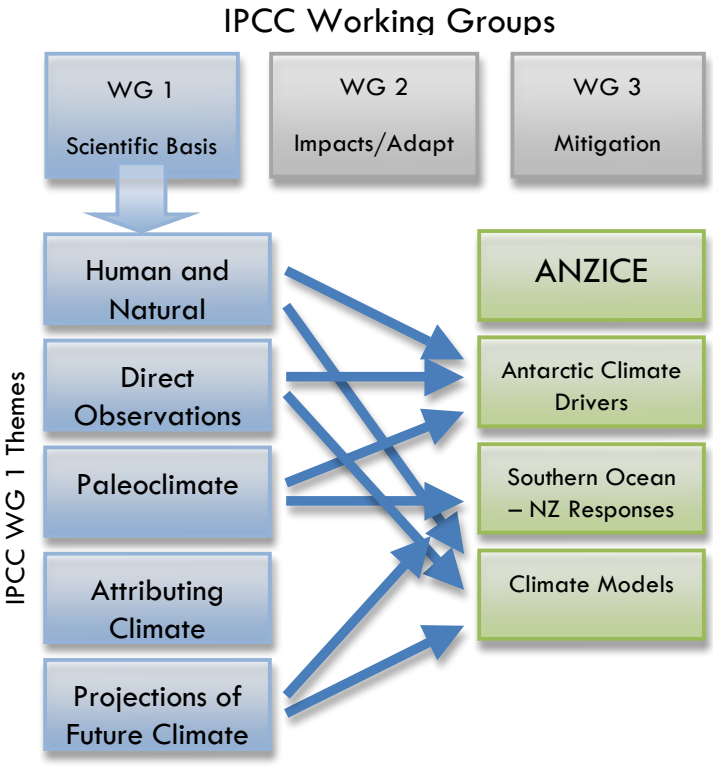
The purpose of publicly funded climate science is to generate reliable knowledge that can be used by society to make decisions concerning our relationship with the climate system. This includes:

a. Increasing our understanding of the climate system and human interactions with this system (scientific basis),
b. Helping us understand the nature, scale, and timing of climate change risk (vulnerability),
c. Helping us develop realistic climate change adaptation goals and strategies (adaptation),
d. Helping us develop realistic climate change mitigation goals and strategies (mitigation).

SCIENTIFIC CONSENSUS

Building a scientific consensus is fundamental in providing policy-makers with a reliable information resource on which to base their decisions.

The Intergovernmental Panel on Climate Change (IPCC) was established to provide reliable scientific information to the international policy community. The ANZICE programme contributes to the growing scientific consensus in the IPCC concerning the climate system and climate change.



ANTARCTIC CLIMATE DRIVERS

The research results arising from the ANZICE Antarctic Climate Drivers cluster have a number of implications for climate policy. Perhaps the most important consequence of the Ross Sea ocean-atmosphere research (from a policy point of view) is that it helps to explain the system dynamics of the Antarctic climate, and how this can generate anomalies such as regional cooling against a backdrop of continental and global warming.

It is common for media reporting to interpret Antarctic regional cooling as evidence against a global warming trend. Such data are also used by lobby-groups in their efforts to influence regulations that would curtail fossil fuel emissions. Some of these groups have found receptive audiences in the policy arena including central and local government.

The ANZICE research in Antarctica, therefore, can play an important role in helping to provide high quality, independent scientific explanations for policy makers who seek to understand and interpret conflicting messages concerning climate trends in Antarctica. The ANZICE findings together with the results coming from other research programs in Antarctica help to explain the uneven distribution of temperature changes under a warming climate.

SOUTHERN OCEAN – NEW ZEALAND RESPONSES

Understanding the potential effects of a warming climate on algal blooms is important for strategic management of our marine resources – particularly the fishing industry (quota worth $3.5 billion according to the Ministry of Fisheries). Algal blooms already threaten our aquaculture sector, and a future with more algal blooms would pose a significant challenge to aquaculture and fisheries productivity. Our understanding of likely future impacts of a warming climate on the frequency and intensity of algal blooms will be an important factor in managing our fisheries sector. The better we can understand the behaviour of algal populations to scenarios of future warming, the better we can understand the risks of climate warming, and in turn develop risk management response measures in the form of climate change adaptation and mitigation.

ICE SHELVES

The ANZICE research on modelling ice shelf collapse in relation to increasing temperature is helping to provide a basis for predicting future effects of global warming on global sea levels and the likely changes to Arctic and Antarctic environments. There is much speculation in the climate policy community on the meaning and significance of a string of recent ice shelf collapses on the Antarctic Peninsula and in Canada (Larsen B (2002) and Wilkins (2007/2008) ice shelves and in Canada, the Ward Hunt (2002, 2008) and the Ayles (2005) ice shelves have also collapsed). Is this a sign of imminent large-scale sea level rise or is it a signature of a longer-term process? The ANZICE modeling work can help us answer this question, and as the models improve, the more specific the answers will be (e.g. in terms of the timing of likely future ice shelf collapse in relation to future temperature trends.

NEW ZEALAND TEMPERATE GLACIERS

The Southern Alp ice mass is an important resource, providing water storage for hydroelectric power generation and irrigation for the drought prone East Coast. Our understanding of how these glaciers respond to changes in the climate is an important component of strategic water and energy policy. Furthermore, our understanding of the sensitivity of these glaciers to temperature changes can help us explain the trends that we observe in the rates of glacier advance and retreat.

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For more information see the ANZICE web page at: www.victoria.ac.nz/antarctic/research/anzice.aspx