Introduction to CLIOTOP

CLimate Impacts on Oceanic TOp Predators
CLIOTOP is a “regional” programme of GLOBEC
IGBP Vision and Goal

The Vision of IGBP is to provide scientific knowledge to improve the sustainability of the living Earth.

- IGBP studies the interactions between biological, chemical and physical processes and human systems
- IGBP collaborates with other programmes to develop and impart the understanding necessary to respond to global change
The goal of GLOBEC is to advance our understanding of the global ocean ecosystem, its major subsystems, and its response to physical forcing in order to forecast responses to global change. GLOBEC foci:

- Retrospective analyses
- Process Studies
- Modelling
- Feedbacks to the human system
The central question is the effect of climate variability on cod stock fluctuations, ranging from the effects of small-scale turbulence on encounter rates between fish larvae and their prey, to large-scale effects of inter-decadal changes in wind fields on circulation and transport of heat and young fish.

Chairperson: Ken Drinkwater (Canada)/ Geir Ottersen (Norway)
Coordinator: Keith Brander (ICES)
Climate Change and Carrying Capacity (PICES-CCCC)

This activity is directed at studying the effects of climate variations on the marine ecosystem of the oceanic and coastal regions of the subarctic Pacific, and in particular the food webs.

Chairperson: Hal Batchelder (USA) / Makoto Kashiwai (Japan)
Coordination: PICES Secretariat
Southern Ocean Programme (SO-GLOBEC)

This programme is focused on understanding how physical and biological factors affect growth, reproduction and survivorship of Antarctic species (krill and its predators), particular in winter.

Chairperson: Eileen Hoffman (USA)
Coordination: SO Planning Office (USA)
Small Pelagic Fishes and Climate Change (SPACC)

The long-range goal is to forecast how the productivity of small pelagic fish populations will be altered by climate variability and change. SPACC will involve process studies, based on comparisons of standard measurements from different ecosystems, and retrospective studies built around palaeoecological and genetic data.

Chairpersons: Claude Roy (South Africa)/ Dave Checkley (USA)
CLIOTOP

- GLOBEC endorsement in October 2004.
- A ten year project 2005-2014
- CLIOTOP works as a GLOBEC Regional Program since 2005 with the aim to:

  “organize a large-scale worldwide comparative effort to understand the key processes involved in ecosystem functioning and to determine the impact of climate variability on the structure and function of open ocean pelagic ecosystems and their top predator species*”.

* tunas, billfishes, sharks, marine mammals, turtles and seabirds
CLIOTOP STRUCTURE

WG 1
Early Life History of Top Predators

WG 2
Physiology, Behaviour and Distribution

WG 3
Trophic Pathways in Open Ocean Pelagic Ecosystems

WG 4
Synthesis and Modeling

WG 5
Socio-Economic Aspects and Management Strategies

Cross-cutting issues
- Data compilation
- Retrospective and comparative analysis
- Modelling

Cross-cutting forcings
- Natural climate variability
- Anthropic: Fishing, Global warming...
Interest in CLIOTOP

- CLIOTOP is actively investigating potential funding sources (in addition to the support provided by GLOBEC) to organise collaborative activities, i.e., workshops, symposia, publications, etc...

- The CLIOTOP SC promote the CLIOTOP program goals to be endorsed officially by several national and international funding bodies with interest in this area. Such recognition is expected to increase the chance of success of research proposal affiliated to CLIOTOP which are seeking for funds.

- Participation to CLIOTOP provides an additional value by enabling collaborative and comparative analyses to be conducted within the working groups of the program.

- Participants of the project involved in working groups participate in internationally acknowledged research efforts, and access innovative approaches, data and techniques, develop and use standardized methods and increase opportunities of collaborative publications through review papers and synthesis books.
Affiliation to CLIOTOP

- Simple and obvious obligations

- A project requiring affiliation needs to address at least one key question identified in the Science Plan
  - to participate in comparative approaches developed through the WG activities,
  - to agree with the data sharing policy of CLIOTOP,

- to provide a short annual activity report to the SC

- to acknowledge CLIOTOP affiliation in presentations and publications.

- Projects or proposals requiring affiliation must submit a summary of their objectives and planned activities to the CLIOTOP SC.
Time table 2006-07

• 1st CLIOTOP Steering Committee, 27 Feb- 1 Mar 2006, Hawaii

• AGU symposium, Hawaii Feb 2006

• WG3 Squids, with PFRP-PI meeting in Hawaii (Nov 06)

• Joint WG3 and WG4 workshop, Designing an Ocean Mid-trophic Automatic Acoustic Sampler (MAAS), Sète, France (15-19 Jan 07)

• WG5 workshop, “The Challenge of Change: Managing for Sustainability of Oceanic Top Predator Species”, A NSF-Community Building Workshop, April 12-14, 2007, University of California, Santa Barbara

• 2nd CLIOTOP Steering Committee, NRIFSF, Yokohama, Japan, May 2007

• Joint WG1 and WG4 workshop, NRIFSF, Yokohama, Japan, May 2007

• CLIOTOP Symposium (SC +WG meetings), La Paz Mexico, Dec 2007
Climate impacts on oceanic TOP predators

SESSIONS
The Symposium will have only plenary sessions. Posters will be displayed throughout the meeting.

WORKING GROUP SESSIONS
[ WG1 ] Early life history of top predators
[ WG2 ] Physiology, behaviour and distribution of top predators
[ WG3 ] Trophic pathways in open ocean ecosystems
[ WG4 ] Synthesis and modelling
[ WG5 ] Socio-economic aspects and management strategies

CROSSCUTTING SESSIONS
[↑] Climate change and top predators / pelagic ecosystems
[↑] Meso-scale issues (including downscaling and upscaling from and to the global scale) in CLIO TOP
[↑] Global change implications for management and conservation strategies of top predators
[↑] Future scientific challenges: what is needed from the field, what is needed from the models, where are the gaps.
CUOTOP (Climate Impacts on Oceanic TOP Predators) is a ten year program implemented under the international research program GLOBEC, a component of the International Geosphere-Biosphere Programme (IGBP). CUOTOP is devoted to the study of oceanic top predators within their ecosystems and is based on a worldwide comparative approach, i.e. among regions, oceans and species. It requires a substantive international collaborative effort. The project aims at identifying, characterising and modelling the key processes involved in the dynamics of oceanic pelagic ecosystems in a context of both climate variability and change and intensive fishing of top predators. The goal is to improve knowledge and to develop a reliable predictive capacity for single species and ecosystem dynamics at short, medium and long term scales.

CUOTOP is based on the idea that the variety of climatic and oceanographic conditions in the three oceans (Atlantic, Indian and Pacific) provides a unique opportunity for large-scale comparative analysis of open ocean ecosystem functioning.

Conference sessions:

The symposium will consist of plenary and poster sessions:

- Working group sessions:
  - WG1 - Early life history of top predators
  - WG2 - Physiology, behaviour and distribution of top predators
  - WG3 - Trophic pathways in open ocean ecosystems
  - WG4 - Synthesis and modelling
  - WG5 - Socio-economic aspects and management strategies

- Crosscutting sessions:
  - Climate change and top predators/pelagic ecosystems
  - Mesoscale issues (including downscaling and upscaling from and to the global scale) in CUOTOP
  - Global change implications for management and conservation strategies of top predators
  - Future scientific challenges: what is needed from the field, what is needed from the models, where are the gaps

Registration will be open in December on the web site.

before 01/07/2007
100 US$

and 200 US$ after 01/07/2007

(½ price for students)
Thank you!