

DEPARTMENT OF AGRICULTURE, FISHERIES AND FORESTRY -  
AUSTRALIA

TT May June 2003
Submission No: .....27.....

JOINT STANDING COMMITTEE ON TREATIES

(CONVENTION ON THE CONSERVATION AND MANAGEMENT OF HIGHLY  
MIGRATORY FISH STOCKS IN THE WESTERN AND CENTRAL PACIFIC OCEAN)

The Chair of the Joint Standing Committee on Treaties, Ms Julie Bishop asked the Department of Agriculture, Fisheries and Forestry – Australia on 23 June 2003:

- (1) What is the definition of subsistence fishing, and what exactly does it entail?

The Department of Agriculture, Fisheries and Forestry – Australia answer to the question is as follows:

The Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific requires conservation and management arrangements to take into account the interests of artisanal and subsistence fishers and ensure that there are no adverse impacts on, and ensure access to fisheries by, subsistence, small-scale and artisanal fishers and fishworkers. However, “subsistence, small-scale and artisanal” are not defined within in the Convention text.

Despite indicating to JSCOT that there was an international definition for “subsistence fishing”, further investigation has revealed that subsistence fishing is defined on a case-by-case basis. In the absence of a formal definition of subsistence fishing it will be up to the Commission (created by the Convention) to decide what fishing activities are defined as subsistence, small-scale or artisanal and those that are defined as commercial.

As a guide, the type of fishing will be defined by:

- The size, construction and method of powering a fishing vessel,
- The species of fish caught,
- The sophistication of the equipment used to catch fish,
- The volume and storage of the fish caught and the method by which it is disposed, and
- The geographical area in which the fishing is conducted.

The member of the Joint Standing Committee on Treaties, Senator Tchen asked the Department of Agriculture, Fisheries and Forestry – Australia on 23 June 2003:

(2) Is China in the process of ratifying the United Nations Fish Stocks Agreement?

The Department of Agriculture, Fisheries and Forestry – Australia answer to the question is as follows:

It is confirmed that China is not a signatory to the United Nations Fish Stocks Agreement. The Department of Agriculture, Fisheries and Forestry has, at this stage, been unable to ascertain whether or not China is in the process of ratifying the United Nations Fish Stocks Agreement. The Department is pursuing avenues to determine China's position with regard to ratification of the United Nations Fish Stocks Agreement and will advise JSCOT once we have confirmation of that position.

The member of the Joint Standing Committee on Treaties, Mr Martyn Evans asked the Department of Agriculture, Fisheries and Forestry – Australia on 23 June 2003:

- (3) Could you provide written advice regarding the background to the Scientific Research (and its cost) in this region?

The Department of Agriculture, Fisheries and Forestry – Australia answer to the question is as follows:

### **Research programs in the WCPO**

Pelagic Fisheries Research Program  
Joint Institute for Marine & Atmospheric Research  
School of Ocean and Earth Science and Technology  
University of Hawaii  
<http://imina.soest.hawaii.edu/PFRP/>

The Pelagic Fisheries Research Program (PFRP) was established in 1992 after the Magnuson Fishery Conservation and Management Act (1976) was amended to include "highly migratory fish". This amendment greatly increased the responsibilities of the Western Pacific Regional Fishery Management Council (WPRFMC or Council) which is mandated to manage fisheries in the Western Pacific region. The PFRP was created to provide scientific information on pelagic fisheries to the Council for use in development of fisheries management policies. The term "pelagic" generally refers to fish that live in the near-surface waters of the ocean, often far from shore.

Total funding available for projects can be in the order of up to one million US dollars annually. Current and recently completed projects are listed below.

### **Biology**

New biology project (#659326):  
Workshop on How to Improve Studies on the Collective Behavior of Pelagic Fish  
PI: Laurent Dagorn and Kim Holland  
**Project status:** Workshop completed Oct. 2002.

New biology project:  
Describing the Vertical Habitat of Bigeye and Albacore Tunas and Post-Release Survival for Marlins in the Central Pacific Longline Fisheries with Pop-Up Archival Transmitting Tags  
PI: Jeffrey Polovina and Michael Seki  
**Project status:** Year 1 funding to be available early 2003.

New biology project (#659556):  
Ecological Characterization of American Samoa's Small-Scale Alia Albacore Longline Fishery  
PI: John Kaneko, Paul Batram and Elvin Mokoma  
**Project status:** Year 1 funding to be available approx. December 2002.

New biology project (#659547):  
Evaluating Biochemical and Physiological Predictors of Long Term Survival in Released Pacific

Blue Marlin Tagged with Pop-Up Satellite Archival Transmitters (PSATs)

PI: Michael Musyl, Chris Moyes and Richard Brill

**Project status:** FY 2003 progress report posted.

New biology project:

Instrumented Buoys as Autonomous Observatories of Pelagic Ecosystems

PI: Kim Holland and Laurent Dagorn

**Project status:** Year 1 funding to be available early 2003.

Project 658285:

Investigating the Life History and Ecology of Opah and Monchong

PI: Michael Seki

**Project status:** FY 2003 progress report posted.

Project 657284:

Survivorship, Migrations, and Diving Patterns of Sea Turtles Released from Commercial Longline Fishing Gear, Determined with Pop-Up Satellite Archival Transmitters

PI: Richard Brill, Yonat Swimmer, George Antonelis, George Balazs and Jeffrey Polovina

**Project status:** FY 2003 progress report posted.

Project 657282:

Trophic Ecology and Structure-Associated Aggregation Behavior in Bigeye and Yellowfin Tuna in Hawaiian Waters

PI: Kim Holland, Richard Young, Richard Brill, and Laurent Dagorn

**Project status:** FY 2003 progress report posted.

Project 657061:

Distributions, Histories, and Recent Catch Trends with Six Fish Taxa Taken as Incidental Catch by the Hawai'i-Based Commercial Longline Fishery

PI: William Walsh

**Project status:** FY 2003 progress report posted.

Project 657062:

Pop-Off Satellite Archival Tags to Chronicle the Survival and Movements of Blue Shark Following Release from Longline Gear

PI: Michael Musyl and Richard Brill

**Project status:** FY 2003 progress report posted.

Project 657063:

Developing Biochemical and Physiological Predictors of Long Term Survival in Released Blue Shark

PI: Christopher Moyes, Richard Brill and Michael Musyl

**Project status:** FY 2003 progress report posted.

Project 653457:

Population Biology of Pacific Oceanic Sharks

PI: Chris Boggs

**Project status:** FY 2001 progress report posted.

Project 656282:

Developing Tools to Assess Sex and Maturational Stage of Bigeye Tuna (*Thunnus obesus*) and Swordfish (*Xiphias gladius*)

PI: Malia Chow and E. Gordon Grau

**Project status:** FY 2002 progress report posted.

Project 2131:

Hawaii Regional Tuna Tagging Project

PI: Kim Holland and David Itano

**Project status:** Project completed, FY 2002 progress report posted.

Project 2115:

Aspects of the Ecology of the Red Squid (*Ommastrephes bartramii*), a Potential Target for a Major Hawaiian Fishery

PI: Richard Young

**Project status:** Project completed, FY 2002 progress report posted.

Project 2042:

Design of Tag-Recapture Experiments for Estimating Yellowfin Tuna Stock Dynamics, Movements and Fishery Interactions

PI: John Sibert and Peter Bills

**Project status:** Project completed, SOEST-JIMAR technical report published.

Project 2044:

Automated Monitoring of Yellowfin Tuna at Hawaiian FADs and Relationship to Water Mass Dynamics based upon Satellite Imagery

PI: Peter Klimley and Charles Holloway

**Project status:** Project completed, article published in *Marine Biology*.

Project 2060:

Reproductive Biology of Yellowfin Tuna, *Thunnus albacares*, in Hawaiian Waters and the Western Tropical Pacific Ocean

PI: David Itano and Richard Shomura

**Project status:** Project completed, FY 1997 progress report posted, SOEST-JIMAR technical report published. Color slide images of yellowfin oocytes and a pdf file of this report are posted on this project page.

Project 2062/2068:

Laboratory and Field Research to Enhance Understanding of Tuna Movements and Distribution, and to Improve Stock Assessment Model

PI: Richard Brill

**Project status:** Project completed, FY 2000 progress report posted.

Project 2064:

A Tag and Release Program for the Hawaii Seamount Yellowfin and Bigeye Tuna

PI: Kim Holland

**Project status:** Project completed, FY 1997 progress report posted.

Slide Presentation, "Tuna Fishing at Cross Seamount", John Sibert, UH Ocean 780 Seminar, December 4, 1997

Project 2067:

Feasibility of Airborne Laser Devices for Pelagic Fish Surveys

PI: John Sibert and Chris Schoen

**Project status:** Project completed, SOEST-JIMAR technical report published.

Project 2069:

Three-Dimensional Laser Confocal Microscopy as a Tool to Age Fish Otoliths by Optical Sections: Validation of Daily Microincrements by both Injected Dyes and Theoretical Otolith Growth Models

PI: Robert Gauldie

**Project status:** Project completed?

Project 2073:

Investigation of Pacific Broadbill Swordfish Migration Patterns and Habitat Characteristics using Electronic Archival Tag Technology

PI: Chris Boggs and John Gunn

**Project status:** Project completed, FY 2000 progress report posted.

## Oceanography

New oceanography project (#659559):

Trophic Structure and Tuna Movement in the Cold Tongue-Warm Pool Pelagic Ecosystem of the Equatorial Pacific

PI: Valerie Allain, Robert Olson, Felipe Galvan Magana and Brian Popp

**Project status:** FY 2003 progress report posted.

New oceanography project (#659563):

Oceanographic Characterization of the American Samoa Longline Fishing Grounds for Albacore, *Thunnus alahunga*

PI: Michael Seki and Jeffrey Polovina

**Project status:** FY 2003 progress report posted.

Project 656196:

Development of Oceanographic Atlases for Pelagic and Insular Fisheries and Resource Management of the Pacific Basin

PI: Russell Brainard, John Sibert, and David Foley

**Project status:** FY 2002 progress report posted. A detailed project web page maintained by David Foley, NMFS-HL Coastwatch Program.

Project 656196:

The Role of Oceanography on Bigeye Tuna Aggregation and Vulnerability in the Hawaii Longline Fishery from Satellite, Moored and Shipboard Time Series

PI: Russell Brainard, Jeff Polovina, Michael Seki, Bo Qiu, and Pierre Flament

**Project status:** FY 2003 progress report posted.

Project 2045:

Physical Characteristics of the Environment influencing Pelagic Fishes.

PI: Pierre Flament

**Project status:** Project completed, FY 2000 progress report posted.

Project 2065:

Evaluation of Remote Sensing Technologies for the Identification of Oceanographic Features Critical to Pelagic Fish Distribution around the Hawaiian Archipelago

PI: Gary Mitchum and Jeffrey Polovina

**Project status:** Project completed, FY 2001 progress report posted.

Project 2070:

A Numerical Investigation of Ocean Circulation and Pelagic Fisheries around the Hawaiian Islands

PI: Bo Qiu and Pierre Flament

**Project status:** Project completed, article published in *Journal of Physical Oceanography*, FY 2002 progress report posted.

## Statistics and Modelling

New statistics and modelling project:

Mixed-Resolution Models for Investigating Individual to Population Scale Spatial Dynamics

PI: Patrick Lehodey, Jeffrey Polovina, David Kirby and Raghu Murtugudde

**Project status:** Year 1 funding to be available early 2003.

New statistics and modelling project (#659560):

Comparisons of Catch Rates for Target and Incidentally Taken Fishes in Widely Separated Areas of the Pacific Ocean

PI: William A. Walsh and Sam Pooley

**Project status:** FY 2003 progress report posted.

New statistics and modelling project (#659558):

Causes of Rapid Declines in World Billfish Catch Rates

PI: Ransom Myers and Peter Ward

**Project status:** FY 2003 progress report posted.

Project 657864:

Incorporating Oceanographic Data in Stock Assessments of Blue Sharks and Other Species Incidentally Caught in the Hawai'i-based Longline Fishery

PI: Pierre Kleiber and Hideki Nakano

**Project status:** FY 2003 progress report posted.

Project 653517:

Pacific-Wide Analysis of Bigeye Tuna (*Thunnus obesus*) using a Length-Based, Age Structured

Modeling Framework (MULTIFAN-CL)

PI: John Hampton, Richard Deriso and Naozumi Miyabe

**Project status:** Project completed, FY 2000 progress report posted. Report of the MULTIFAN-CL Workshop (Feb. 1-3, 2000, Honolulu) posted (PDF file from SPC-OFI web site).

Project 2040:

Integrative Modeling in Support of the Pelagic Fisheries Research Program: Spatially Disaggregated Population Dynamics Models for Pelagic Fisheries

PI: John Sibert and Peter Bills

**Project status:** SOEST-JIMAR technical report published, FY 2003 progress report posted.

Project 2041:

Local Pelagic Catch and Effort Data Analysis and Integrated Modeling to Quantify the Effects of Local Fisheries on Fish Availability

PI: Chris Boggs

**Project status:** Project completed, article published in *NOAA Technical Memorandum*, FY 1997 progress report posted.

Project 2047:

Development of Assessment Model for Yellowfin Tuna

PI: John Sibert

**Project status:** Project completed, Workshop proceedings printed.

Project 2063 (2111):

Integration of Hawaii Longline Fishery Performance Models with Environmental Information

PI: Chris Boggs

**Project status:** Project completed, article published in *Fisheries Oceanography*, FY 1997 progress report posted.

Project 2072:

Stock and Fishery Dynamics of Yellowfin Tuna, *Thunnus albacares*, in the Western and Central Pacific Ocean: Development of an Integrated Model Incorporating Size and Spatial Structure

PI: John Hampton and David Fournier

**Project status:** Project completed, manuscript posted (PDF file), updated assessment report - SPC Working Paper posted (PDF file from SPC-OFI web site).

Project 2077:

Estimation of Bycatch and Discards of Sharks and Other Species by the Hawaii Longline Fishery

PI: Pierre Kleiber, Chris Boggs, William Walsh

**Project status:** Project completed, FY 2001 progress report posted.

## Genetics

Project 2043:

Analysis of Pacific Blue Marlin and Swordfish Population Structure using Mitochondrial and Nuclear DNA Technologies

PI: John Graves and Barbara Block

**Project status:** Project completed.

Project 2061:

Population Structure and Dynamics in Mahimahi as Inferred through Analysis of Mitochondrial DNA

PI: Carol Reeb

**Project status:** Project completed, FY 1997 progress report posted.

Project 2074:

An Assessment of Bigeye Tuna (*Thunnus obesus*) Population Structure in the Pacific Ocean based on Mitochondrial DNA and Microsatellite Variation

PI: John Hampton and Peter Grewe

**Project status:** Project completed, FY 1997 progress report posted, SOEST-JIMAR technical report published.

Project 2076:

Genetic Analysis of Population Structure in Pacific Swordfish (*Xiphias gladius*) using  
Microsatellite DNA Techniques

PI: Barbara Block and Carol Reeb

**Project status:** Project completed, FY 2001 progress report posted

### **Economics**

New economics project (#659562):

Modeling Longline Effort Dynamics and Protected Species Interaction

PI: PingSun Leung, Naresh Pradhan and Sam Pooley

**Project status:** FY 2003 progress report posted.

Evaluating Closed-Area Management Regimes in the Gulf of Mexico, Northwest Atlantic, and  
Central Pacific Highly Migratory Species Longline Fisheries

PI: David Kerstetter and John Graves

Virginia Institute of Marine Science (VIMS), Gloucester Point, VA

**Project status:** FY 2002 and FY 2001 progress reports posted.

Project 658849:

Incidental Catch of Non-Target Fish Species and Sea Turtles: Comparing Hawaii's Pelagic  
Longline Fishery Against Others

PI: John Kaneko and Paul Bartram

**Project status:** FY 2003 progress report posted.

Project 657863:

Regulatory Impact Analysis Framework for Hawaii Pelagic Fishery Management

PI: Keiichi Nemoto and Sam Pooley

**Project status:** FY 2003 progress report posted.

Project 657285:

Recreational Fisheries Meta Data - Preliminary Steps

PI: Paul Dalzell and Sam Pooley

**Project status:** FY 2003 progress report posted.

Project 653530:

Economic Fieldwork on Pelagic Fisheries in Hawaii

PI: Minling Pan and Sam Pooley

**Project status:** FY 2003 progress report posted.

Project 653536:

Analysis of Alternatives for Participation in International Management of Pelagic Fisheries

PI: Sam Pooley

**Project status:** Project completed, FY 2002 progress report posted.

Project 653540:

Analyzing the Technical and Economic Structure of Hawaii's Pelagic Fishery

PI: PingSun Leung

**Project status:** Project completed, FY 2001 progress report posted.

Project 2046:

Hawaii Pelagic Fishing Vessel Economics

PI: Sam Pooley

**Project status:** Project findings published in SOEST-JIMAR technical reports and journal articles,  
FY 2001 progress report posted. See also Project 653530 (Economic Fieldwork on Pelagic  
Fisheries in Hawaii).

Project 2048:

Contributions of Tuna Fishing and Transshipment Operations to Local Economies

PI: Michael Hamnett and Sam Pintz

**Project status:** Project completed. SOEST-JIMAR technical report published.

Project 2049:

Factors Affecting Price Determinations and Market Competition for Fresh Pacific Pelagic Fish.



Phase I: Tuna and Marlin

PI: John Kaneko and Paul Bartram

**Project status:** Project completed. SOEST-JIMAR technical report published.

Project 2066 (2113):

A Multilevel and Multiobjective Programming Model of Hawaii Commercial Fisheries

PI: PingSun Leung and Stuart Nakamoto

**Project status:** Project completed. Project findings published in SOEST-JIMAR technical report and journal articles, FY 1999 progress report posted.

Project 2075:

The Economics of Recreational Fishing for Pelagics in Hawaii

PI: K. Ted McConnell

**Project status:** Project completed. Project findings published in SOEST-JIMAR technical reports, FY 2000 progress report posted.

Project 2114:

Economic Contributions of Hawaii's Fisheries

PI: PingSun Leung, Stuart Nakamoto and Sam Pooley

**Project status:** Project completed. Project findings published in SOEST-JIMAR technical report, FY 1999 progress report posted.

Project 2116:

Economic Interactions between U.S. Longline Fisheries

PI: Michael Travis

**Project status:** Project completed. Project findings published in SOEST-JIMAR technical report. FY 2001 progress report posted.

Project 2118:

A Dynamic Model to Evaluate the Effect of Regulation on the Hawaii Commercial Fisheries

PI: Ujjayant Chakravorty

**Project status:** Project completed. Project findings published in SOEST-JIMAR technical report, FY 2001 progress report posted.

## Socio-cultural

New socio-cultural project (#659561):

A Sociological Baseline of Hawaii's Longline Fishery

PI: Sam Pooley and Stewart Allen

**Project status:** FY 2003 progress report posted.

Project 2117:

Local Fishery Knowledge: Its Application to the Management and Development of Small-scale Tuna Fisheries in the U.S. Pacific Islands

PI: John Kaneko and Paul Bartram

**Project status:** Project completed, FY 2001 final progress report posted, SOEST-JIMAR technical report published.

Project awarded directly to JISAO, Univ. of Washington:

Social Aspects of Pacific Pelagic Fisheries, Phase I: The Hawaii Troll and Handline Fishery

PI: Marc Miller

**Project status:** Project completed, SOEST-JIMAR technical report published.

Project awarded directly to JISAO, Univ. of Washington:

Social Aspects of Pacific Pelagic Fisheries, Phase II: The Hawaii Troll and Handline Fishery

PI: Marc Miller

**Project status:** FY 2001 progress report posted.

Project 2078:

Coordinated Sociocultural Investigation of Pelagic Fishermen in American Samoa and the Commonwealth of the Northern Mariana Islands

PI: Michael Hamnett, Robert Franco and Craig Severance

**Project status:** FY 1999 progress report posted.

Project 2079:

A Sociocultural Study of Pelagic Fishing Activities in Guam

PI: Donald Rubinstein and Thomas Pinhey

**Project status:** Project completed. FY 2001 final progress report posted.

Project 2086

Integrated Information System for Pelagic Fishery Research and Management

PI: Robert Skillman

**Project status:** Project completed, FY 1998 progress report posted.

Protected species

A General Bayesian Integrated Population Dynamics Model for Protected Species

PI: Mark Maunder (IATTC, La Jolla, CA)

**Project status:** Year 1 funding to be available early 2003.

Project 659557:

Integrated Statistical Model for Hawaiian Albatross Populations

PI: Daniel Goodman (MSU, Montana) and Jean-Dominique Lebreton (CNRS-CEFE, France)

**Project status:** FY 2003 progress report posted.

Project 659564:

Development of a Hierarchical Model to Estimate Sea Turtle Rookery Contributions to Mixed Stocks in Foraging Habitats

PI: Ben Bolker, Karen Bjorndal and Alan Bolten (University of Florida)

**Project status:** FY 2003 progress report posted.

Direct Tests of the Efficacy of Bait and Gear Modifications for Reducing Interactions of Sea Turtles with Longline Fishing Gear in Costa Rica

PI: Yonat Swimmer (NMFS-HL)

**Project status:** FY 2003 progress report posted.

## Secretariat of the Pacific Community – Oceanic Fisheries Programme

The Oceanic Fisheries Programme (OFP) was established in 1980 "to provide member countries with the scientific information and advice necessary to rationally manage fisheries exploiting the region's resources of tuna, billfish and related species". The OFP functions as three sections: Statistics and Monitoring, Tuna Ecology and Biology, Stock Assessment and Modelling, with common functions (reporting and liaison, information technology / computer support) supported by a small administrative section.

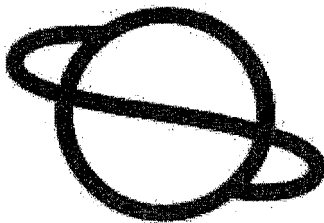
The ongoing expenses of the Programme are currently funded by extra-budgetary contributions from Australia, France, and New Zealand, and a contribution from the SPC core budget. Funds for specific projects have also been received from the European Union (EU), the Australian Agency for International Development (AusAID), the Food and Agriculture Organisation of the United Nations (FAO), the Australian Centre for International Agricultural Research (ACIAR), the University of Hawaii Pelagic Fisheries Research Program (PFRP), the Global Environment Facility (GEF), the Republic of Korea and the Government of Taiwan. In particular the GEF funds presently employ one staff member of the OFP, the Fishery Monitoring Supervisor, to provide

support to the observer and port sampling programmes. Also

supported is the 'Strategic Action Programme for the International Waters of the Pacific Small Island Developing States' project

with the objective of

conservation and sustainability of living ocean resources through biological research on the ecosystem supporting the



WCPO tuna fishery.

