

**Fisheries Resources Research Fund**

**Annual Report 2002-03**

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## TABLE OF CONTENTS

About this Report	iii
Abbreviations	iv
PART A: OPERATING ENVIRONMENT	1
About the Fisheries Resources Research Fund (FRRF)	1
Revenue Base	2
Administration	2
Selection of research and service providers	3
FRRF Program Assessment: 2002-2003	3
Program 1: Fishing Industry Development Program	3
Program 2: Resources Sustainability Program	5
PART B: PROJECTS FUNDED IN 2002-2003	8
PART C: PROJECTS COMPLETED IN 2002-2003	10
PART D: CURRENT PROJECTS AS AT 30 JUNE 2003	19
PART E: FRRF: HISTORICAL EXPENDITURE	29

## **ABOUT THIS REPORT**

This report covers the operations of the Fisheries Resources Research Fund (FRRF) during the 2002-2003 financial year. It describes the projects that were approved for funding during this period, the level of funding listed by research provider and projects that were completed during 2002-03.

The funding base for the FRRF is provided through an annual appropriation based on 0.25 per cent of annual gross value of national fisheries production (less specified reductions), and is usually between \$2 and 3 million. This report provides details of the FRRF funding allocations and its distribution to service providers.

In 2002-03, the FRRF funded 39 projects and researchers completed 28 projects in the same period. At the end of the financial year, 36 funded projects were ongoing.

An indication of the FRRF's research performance and effectiveness is presented in completed reports detailing whether the FRRF objectives, outlined in the FRRF 2000-2002 Strategic Plan, have been met. These objectives are more specifically addressed in the FRRF Annual Operating Plan for 2002-03.

## **Legislative requirements**

There is no legislative requirement for the preparation of the FRRF Annual Reports or Annual Operating Plans. These are prepared by the Department of Agriculture, Fisheries and Forestry in the interests of accountability, transparency and effective management of the Fund.

Secretary  
Fisheries Resources Research Fund  
August 2003

## ABBREVIATIONS

ABARE	Australian Bureau of Agricultural and Resource Economics
AFFA	Department of Agriculture, Fisheries and Forestry – Australia (formerly DPIE, now DAFF)
AFMA	Australian Fisheries Management Authority
AIMS	Australian Institute of Marine Science
APEC	Asia Pacific Economic Cooperation
APFA	Australian Prawn Farmers Association
BRS	Bureau of Rural Sciences
CCSBT	Commission for the Conservation of Southern Bluefin Tuna
CRC	Cooperative Research Centre
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DAFF	Department of Agriculture, Fisheries and Forestry
DPIE	Department of Primary Industries and Energy (now DAFF)
DSS	Decision support system
EA	Department of the Environment and Heritage (Environment Australia)
EEZ	Exclusive economic zone
ESD	Ecologically sustainable development
ETBF	Eastern Tuna and Billfish Fishery
FAD	Fish aggregating device
F&A	Fisheries and Aquaculture business group, DAFF
FAO	Food and Agriculture Organization of the United Nations
FRDC	Fisheries Research and Development Corporation
FRRF	Fisheries Resources Research Fund
ITQ	Individual transferable quota
IUU fishing	Illegal, unreported and unregulated fishing
NPOA	National Plan of Action
OCS	Offshore Constitutional Settlement
PBR	Potential biological removals
QX	<i>Marteilia sydneyi</i>
R&D	Research and development
RFMO	Regional fisheries management organisation
SBT	Southern bluefin tuna
SCALIA	Statistical Catch-at-Age/Length Integrated Assessment
SCTB	Standing Committee on Tuna and Billfish
UN Fish Stocks Agreement	Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, 1995
WTO	World Trade Organization

<b>PART A: OPERATING ENVIRONMENT</b>
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## **ABOUT THE FISHERIES RESOURCES RESEARCH FUND (FRRF)**

The Australian Government established the Fisheries Resources Research Fund (FRRF) in the 1991-1992 financial year as a result of recommendations arising from the Australian Government's 1989 policy statement: *New Directions for Commonwealth Fisheries Management in the 1990s*. The FRRF was specifically established to support fisheries related research to be undertaken by the Australian Bureau of Agricultural and Resource Economics (ABARE) and the Bureau of Rural Sciences (BRS) in support of Commonwealth fisheries management.

The resulting research is intended to provide accurate independent assessments on the status of various fish stocks and of fisheries management priorities. The FRRF was also intended to support management-related research categorised as being in the public interest, or where industry or other funds were unavailable or inappropriate.

In 1994, a Task Force Review into Rural Research, which included assessment of the FRRF, re-emphasised the intention of the 1989 policy statement that a major role for FRRF was to enable an independent assessment of Commonwealth fisheries management performance, including the status of stocks and progress reports on fisheries. The Review recommended that the independent assessment component of the FRRF be revised to consist of:

- a rolling program of independent assessment of all Commonwealth fisheries;
- a program of assessment development to improve independent assessment techniques; and
- a program of policy development to provide research as an input to underpin public fisheries policy development.

Following the 1994 review, the formalities of the FRRF funding approval changed and formal Ministerial endorsement of allocations was no longer required. Fisheries and Aquaculture business group (F&A) staff of the Department of Primary Industries and Energy (DPIE) – now the Department of Agriculture, Fisheries and Forestry (DAFF) - continued to administer the FRRF and allocate funds under the guidance of an independent Advisory Committee which oversees the evaluation of applications.

The Australian Government intended that FRRF programs:

- provide an agreed program of independent assessment of Commonwealth fisheries management performance; and
- support the development of new and improved policies for the management of Australia's fisheries.

In 1999, AFFA and funded agencies met to determine if the current approach was consistent with what was required for 2000 and beyond. The group agreed to continue to priority fund ABARE and BRS to do their economic and biological assessments of Commonwealth fisheries and management performance, but also acknowledged the growth of aquaculture, regional fisheries management organisations (RFMOs), and Indigenous issues, and the need

to fund research in these areas. The group also agreed to part fund a small number of regional conferences that supported aquaculture development.

For the remainder of the 1990s, delegated officers within DPIE (now DAFF) approved funding allocations following agreed priorities developed by F&A as a framework for canvassing and assessing FRRF applications.

### **Revenue base**

The Australian Government first allocated funding for the FRRF in the 1991-1992 financial year with an amount equivalent to 0.25 per cent of the annual gross value of national fisheries production each year. As a budgetary measure in the 1993-94 Budget the level was reduced by \$1 million, and continues at a reduced level. In accordance with the recommendations of the *Review of Institutional Arrangements for Management-Related Research in Commonwealth Fisheries* in March 1995, \$1 million (indexed) of the original funding allocation is currently transferred to the Australian Fisheries Management Authority (AFMA) annually for management-related research. This allocation recognises AFMA's obligation to arrange appropriate research in economically non-viable fisheries.

In the 2002-03 Budget, funds of \$2.750 million were made available for FRRF allocation. This figure was later increased by \$3,000 as a revised appropriation measure, providing a total budget of \$2.753 million for 2002-2003. The \$2.753 million was fully disbursed during 2002-2003.

### **Administration**

The FRRF Strategic Plan 2000-2002 has been the primary guiding document for the administration of the Fund. This document is currently under review, with a draft document to be reviewed by the independent Advisory Committee. The new Strategic Plan will be operational for 2003-2006 and is scheduled to be in place by the end of 2003.

DAFF appoints members of the Advisory Committee on the basis of their skills, background and experience in fisheries management, research and assessment. The composition of the Committee is flexible and may change to reflect the range of proposals being considered. Generally, the Advisory Committee consists of four or five members who, apart from DAFF officers, may include members from the Fisheries Research and Development Corporation (FRDC), AFMA and the Department of the Environment and Heritage - Environment Australia (EA). The Committee membership is necessary to maintain the integrity of the Fund and to ensure that the commitment of public monies is an open and transparent process.

The current Advisory Committee membership is:

- Jonathon Barrington (DAFF)
- Patrick Hone (FRDC)
- David Walter (EA)
- Sam Nelson (AFMA)
- Mary Lack (Independent expert)
- Norm Kelly (FRRF Secretary, DAFF)

The role of the Advisory Committee is to provide expert independent advice and to recommend priority funding for research proposals submitted to the FRRF. The Executive Manager, Fisheries and Forestry, DAFF, approves the FRRF funding allocations, taking into account the advice of the Advisory Committee.

### **Selection of research and service providers**

Consistent with the purpose of the FRRF, a component of the budget is allocated to ABARE and BRS for fisheries related research. A further component is used to select other research and service providers, particularly where ABARE and BRS are unable to undertake the research. This is based on the following:

- *Targeted research:* DAFF selects organisations or individuals following one or two calls for applications per year. These calls may be conducted by open or selective invitation, depending on factors, such as the relative cost of evaluation processes and assessment by F&A of the potential number of research/service providers capable of delivering the required outputs.
- *Commissioned research:* DAFF selects organisations or individuals from known research providers, according to the type of research being commissioned, prior to scrutiny by the Advisory Committee.

### **FRRF PROGRAM ASSESSMENT: 2002-03**

FRRF funding supports an agreed program of independent assessment of Commonwealth fisheries management performance. The FRRF also supports the development of new and improved policies for fisheries management in accordance with the two-program approach as identified in the FRRF Strategic Plan 2000-2002. Under this arrangement, FRRF funds are allocated to the:

- Fishing Industry Development Program; and
- Resources Sustainability Program.

#### **Program 1: Fishing Industry Development Program**

##### *Purpose*

To achieve a fishing industry whose commercial (wild-catch and aquaculture), recreational and traditional sectors are socially and politically resilient, and whose commercial sector is profitable and internationally competitive.

##### *Program Description*

The program is consistent with the following Australian Government priorities for rural research and development (R&D):

- *Whole-of-chain approach:* A whole-of-chain approach to production, processing and marketing to ensure an effective supply chain approach that maximises Australia's competitive advantage.



- *Biotechnology*: Development of biotechnology to support Australia's aquaculture industries, along with sensitive handling to accommodate consumers' concerns, to supplement and replace wild-catch fisheries, where appropriate.
- *Increases in trade and market access*: A need for data and associated market analyses to allow for informed debate and to support Australia's negotiating position in international forums.
- *Clean and green*: Maintenance and enhancement of Australia's 'clean, green' image.
- *Food safety*: Addressing food safety concerns of consumers.
- *Improving human resources*: Cultivating creativity and innovation in the use of human capital.

These priorities for rural R&D within the Fishing Industry Development Program will be achieved through the following key strategies:

- Industry Growth and Competitiveness;
- Industry Sustainability; and
- Trade and Marketing.

#### ***Sub-Program 1: Industry Growth and Competitiveness***

The strategy of Industry Growth and Competitiveness will include projects that provide for:

- review, assessment and development of policy to support restructuring and adjustment schemes;
- review, assessment and development of strategies to deal with factors affecting development of the wild-catch and industry sectors of the fishing industry;
- review, assessment and development of strategies to deal with industry competitiveness;
- identification of economic and political impediments to the development of aquaculture;
- development of innovative applications for aquaculture;
- identification, development, review and assessment of sustainability criteria for aquaculture; and
- identification, development, review and assessment of strategies by which Aboriginal and Torres Strait Islander people may develop commercial fishing activities.

#### ***Sub-Program 2: Industry Sustainability***

The strategy of Industry Sustainability will include projects that provide for:

- identification, review and assessment of innovative methods of incorporating fisheries and aquaculture in regional development;

- determining the social characteristics of populations in, and associated with, the fishing industry to support the development of equitable fisheries policy that may affect regional Australia; and
- acquisition and analysis of information that allows domestic and international fisheries policies to meet short-term and long-term challenges in the most efficient and effective way.

### ***Sub-Program 3: Trade and Marketing***

The strategy of Trade and Marketing will be achieved through projects that provide for:

- review and assessment of domestic marketing issues; and
- review and assessment of policy dealing with international trade negotiations.

## **Program 2: Resources Sustainability Program**

### *Purpose*

To achieve a sustainable resource base for the fishing industry.

### *Program Description*

This program is consistent with the following Australian Government priority for rural R&D:

- *Sustainable management and use of our marine resource base*: through the integration of effective, scientifically-based resource assessments and mitigation strategies into our fishing and aquaculture industries.

This priority for rural R&D within the Resources Sustainability Program will be achieved through the following key strategies:

- Status of Fish Stocks, Environment and Industry;
- Fisheries Management, Regulation, Compliance and Improvement;
- Ecosystem Processes;
- External Fisheries Policy, Economic and Environmental Instruments; and
- Maintaining and Developing Linkages Overseas.

### ***Sub-Program 1: Status of Fish Stocks, Environment and Industry***

The strategy of Status of Fish Stocks, Environment and Industry will include projects that provide for:

- independent assessment of status and condition of Commonwealth fishing stocks and industry; and

- development, assessment and review of tools, indicators and methodologies to support environmental assessment and monitoring, and evaluation of fisheries performance against principles of ecologically sustainable development (ESD).

### ***Sub-Program 2: Fisheries Management, Regulation, Compliance and Improvement***

The strategy of Fisheries Management, Regulation, Compliance and Improvement will be achieved through projects that provide for:

- development of approaches for identifying and dealing with resource access and allocation issues;
- development, assessment and review of management strategies that support the sustainable utilisation of resources;
- assessment and review of management strategies, regulatory approaches and compliance arrangements;
- provide policy development to support specific fishery management plans;
- review and assessment of policy, legislation and jurisdictional issues (Commonwealth and Australia's Oceans Policy) to ascertain their support for an integrated ecosystem approach to fisheries resource management;
- identification, review and assessment of social and economic contributions, impacts and/or influences on sustainable management of the wild-catch and aquaculture sectors;
- development, review or assessment of alternative uses for bycatch; and
- identification and development of management strategies, indicators and methodologies to address aquaculture and land-use issues in coastal zones and inland Australia, such as integrated coastal zone management.

### ***Sub-Program 3: Ecosystem Processes***

The strategy of Ecosystem Processes will encompass projects that provide for the:

- identification and development of a comprehensive understanding of key ecosystem processes and the impacts of fishing, pollution, habitat destruction, environment and climatic factors on fish stocks;
- review and assessment of economic and/or social factors influencing fisheries and their ecosystems; and
- development, assessment and review of management strategies, tools, indicators and methodologies related to the management of marine health, diseases and pest incursions.

***Sub-Program 4: External Fisheries Policy, Economic and Environmental Instruments***

The strategy of External Fisheries Policy, Economic and Environmental Instruments will be achieved through projects that provide for:

- development, assessment and review of high seas management;
- review and assessment of policy dealing with international obligations and agreements that affect Australian fisheries resources; and
- development, assessment and review of economic and environmental instruments to aid ESD.

***Sub-Program 5: Maintaining and Developing Linkages Overseas***

The strategy of Maintaining and Developing Linkages Overseas will focus potential benefits, to Australia and Australian industries – through shared research and development activity and membership of regional and international fisheries management or aquaculture organisations.

<b>PART B: PROJECTS FUNDED IN 2002-2003</b>
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**Table 1: Projects funded in 2002-2003**

During 2002-2003, FRRF provided a total of \$2,753,000 in funding for 39 projects.

<b>Research Organisation</b>	<b>Project Title</b>	<b>2002/03 Funding \$</b>	<b>Scheduled Completion</b>
ABARE	Australian Aquaculture 2001-2002	110,534	<b>Completed</b>
ABARE	Australian Aquaculture 2002-2003	45,252	July 2003
ABARE	Sustainable Ecosystems 2001-2002	37,618	July 2003
ABARE	Sustainable Ecosystems 2002-2003	114,803	December 2004
ABARE	Assessing Alternative Management Instruments 2001-2002	103,925	August 2003
ABARE	Assessing Alternative Management Instruments 2002-2003	83,751	December 2003
ABARE	Performance Monitoring - Surveys 2001-2002	140,612	<b>Completed</b>
ABARE	Performance Monitoring - Surveys 2002/03	229,848	March 2004
ABARE	FAO <sup>1</sup> Aquaculture Review	8,996	August 2003
AFMA	Northern Prawn Fishery: Fishing Power	35,052	August 2003
AFMA	Ecological Indicators	25,707	October 2003
AIMS <sup>2</sup>	Shark Abundance	32,176	December 2003
Bergin and Associates	Regional and International Engagement	40,000	<b>Completed</b>
BRS	Arafura Sea – Repayment of Unspent Funds	-39,383	<b>Completed</b>
BRS	The Future of Beche-de-mer and Trochus Fisheries in Australia	18,808	<b>Completed</b>
BRS	Fishery Status Reports 2002-2003	213,918	October 2003
BRS	Towards Ecosystem-Based Fisheries Management	7,555	August 2003
BRS	Offshore Constitutional Settlement (OCS) arrangements	17,310	<b>Completed</b>
BRS	Ballast Water – advice	7,500	<b>Completed</b>
BRS	Service Level Agreement	667,554	<b>Completed</b>
BRS	Ballast Water – Decision Support System (DSS)	50,000	November 2003
BRS	Seal Strategy	17,863	<b>Completed</b>
BRS	Standing Committee on Tuna and Billfish (SCTB) 16 <sup>th</sup> Session - Sponsorship	10,000	December 2003
BRS	Ornamental Fish	9,600	July 2003
CRC <sup>3</sup>	Proposal for a Cooperative Regional Research Centre in the APEC <sup>4</sup> region	15,358	<b>Completed</b>

<sup>1</sup> Food and Agriculture Organization of the United Nations

<sup>2</sup> Australian Institute of Marine Science

<sup>3</sup> Cooperative Research Centre

Dominion Consulting Pty Ltd	Sectoral Catch	16,450	<b>Completed</b>
F&A	Torres Strait Protected Zone Joint Authority	40,081	<b>Completed</b>
F&A	Deep Sea 2003 Sponsorship	17,593	March 2004
F&A	Seabird Bycatch	3,800	<b>Completed</b>
F&A	Recreational Fisheries - Sectoral Allocation Workshop	75,500	<b>Completed</b>
F&A	Administration and Overhead Costs	188,475	<b>Completed</b>
F&A	Indigenous Aquaculture	125,000	June 2004
F&A	FAO – IUU <sup>5</sup> Fishing Expert Consultation	10,471	<b>Completed</b>
F&A	Market Access	123,495	June 2004
F&A	Seafood Directions 2003 Sponsorship	7,500	<b>Completed</b>
F&A	Ballast Water Workshop	21,000	October 2003
F&A	Aquafest 2002 Sponsorship	8,655	<b>Completed</b>
FRDC	Oysters – QX <sup>6</sup> Disease	40,000	June 2005
FRDC	SBT <sup>7</sup> Research Review	28,623	July 2003
FRDC	Aquaculture Peak Body	30,000	July 2003
James Cook University	3 <sup>rd</sup> International Symposium on Fish Otolith Research and Application - Sponsorship	5,000	<b>Completed</b>
Seafood Council (South Australia)	Sponsorship – National Seafood Industry Leadership Program	7,000	<b>Completed</b>
	<b>Total Expenditure 2002-03</b>	<b>2,753,000</b>	

<sup>4</sup> Asia Pacific Economic Cooperation

<sup>5</sup> Illegal, unreported and unregulated

<sup>6</sup> *Marteilia sydneyi*

<sup>7</sup> Southern bluefin tuna

<b>PART C: PROJECTS COMPLETED IN 2002-03</b>
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## Overview

During 2002-03, a total of 28 FRRF projects, worth a total of \$2,535,510 were completed. Outputs from the completed projects were consistent with FRRF funding guidelines.

There is a time lag before inputs resulting from completed projects provide significant outputs and subsequent outcomes. As a result, evaluation of the effectiveness of completed projects and whether they have met their stated objectives, and the FRRF Strategic Plan goals, tends to be at a number of stages. The first stage is usually an evaluation of the completed project against its stated objectives. Subsequent stages normally relate to the usefulness and effectiveness of the research's outputs as inputs to other related work.

Several completed projects from ABARE and BRS provide inputs to the FRRF's key goal, i.e. to provide an independent assessment on the status of various Commonwealth fish stocks and of fisheries management, in order to assess whether AFMA is meeting its legislative requirements in terms of the objectives stated in the *Fisheries Management Act 1991* and the *Fisheries Administration Act 1991*.

A summary of projects completed during 2002-2003 is provided below:

### 1. ABARE – Australian Aquaculture: Import Competitiveness and Industry Profiles

Total Funding – \$136,312

Objectives: To assess the import competitiveness of Australian aquaculture, and to provide a detailed stocktake of current prospects for aquaculture species including crustaceans, molluscs, fish and other species.

Outcome: Two reports were published, *Import Competitiveness of Australian Aquaculture*, and *Australian Aquaculture – Industry Profiles for Selected Species*.

### 2. ABARE – Performance Monitoring

Total Funding – \$464,860

Objectives: Provide information necessary for the performance of AFMA fishery managers to be assessed against economic efficiency and cost effective management criteria. Outputs include: estimates of the economic performance of fisheries; a framework for analysing performance against economic efficiency; an assessment of techniques for obtaining measures of efficiency; an assessment of the efficiency enhancing effects of individual transferable quota (ITQ) in the South East Fishery; and assessments of performance for individual Commonwealth fisheries.

Outcome: Three reports were published, *A Framework for Assessing the Economic Performance of Fisheries Management, Efficiency Gains and Cost Reductions from Individual Transferable Quotas: A Stochastic Cost Frontier for the South East Fishery*, and *Australian Fisheries Surveys Report 2002*.

**3. ABARE – Factors Effecting the Efficiency of Individual Transferable Quotas (ITQs)**

Total Funding – \$29,979

Objectives: Provide an outline of when ITQs are likely to provide the best economic solution to fisheries management, how they should be designed to do so and the circumstances in which they are likely to fail.

Outcome: A report, *Efficiency of Individual Transferable Quotas in Fisheries Management*, was published in September 2002.

**4. Bergin and Associates – A Strategic Approach to Australia's Regional and International Fisheries Engagement**

Total Funding - \$40,000

Objectives: Establish an appropriate framework for developing Australia's regional and international fisheries objectives and goals that leads to effective state and Commonwealth management regimes; Develop a policy platform for demonstrating how Australia's fisheries engagement protects and advances the national interest; Identify DAFF's appropriate roles and responsibilities in international fisheries; Advise on a model system to measure Australia's performance in regional and international fisheries forums; Advise on a strategy that will maximize Australia's long-term interests in regional fisheries management organisations (RFMOs) and bilateral reforms; Advise on the likely change drivers that will shape Australia's approach to international fisheries in the next decade.

Outcome: A report, *It's Not Just About Fish – A Strategic Approach to Australia's External Fisheries Engagement*, was delivered in June 2003.

**5. BRS – Effects of Fishing on Non-target Species**

Total Funding – \$155,751

Objectives: Evaluate additional methods of assessing the effect of fishing on non-target species by examining methods to assess the vulnerability of non-target species, and criteria for setting baselines from which to measure changes in vulnerability. Evaluate the applicability, practicality and effectiveness in particular fisheries of alternative monitoring methods for assessing the effect of fishing on non-target species. Report on the progress of individual Commonwealth fisheries in achieving the objectives of the Commonwealth Bycatch Policy.

Outcome: A report, *The Effectiveness of Commonwealth Action Towards Non-Target Catch Management in Fisheries*, was published in March 2003.



**6. BRS – Bycatch of Sea Turtles in Longline Fisheries**

Total Funding – \$64,500

Objectives: Identify the extent of longline turtle bycatch in Australia. Outline legal frameworks and policy responses implemented in foreign fisheries on the longline turtle bycatch issue. Review the research being conducted on sea turtle-longline interactions. Assess the possible usefulness of management and mitigation responses adopted overseas to the Australian situation. Establish a set of monitoring and mitigation measures that may be implemented in Commonwealth tuna longline fisheries where turtle bycatch is an issue (i.e. Eastern Tuna and Billfish Fishery and Southern and Western Tuna and Billfish Fishery).

Outcome: A report, *Bycatch of Sea Turtles in Pelagic Longline Fisheries – Australia*, was published in December, 2002. This project included contributions from BRS, the University of Wollongong, and AFMA.

**7. BRS – Mapping Standardised Stock Abundance Indices for Use in Fisheries Access, Resource Allocation and Marine Planning and Management Processes**

Total Funding – \$88,431

Objectives: Investigate the significance of oceanographic, geographic and effort variables in developing standardised spatial stock abundance indices using specific regression techniques. Generate maps of stock abundance indices. Investigate the accuracy and precision of the predictive surfaces generated, and assess their potential for use in marine planning, and as a predictive tool for resource allocation.

Outcome: A report, *Mapping Stock Abundance Indices for Use In Fisheries Management and Marine Reserve Planning*, was published in December 2002.

**8. BRS – Implementation of a National Fisheries Production Database**

Total Funding – \$53,054

Objectives: Produce a comprehensive database of fisheries production by species, jurisdiction and year, available to the fishing industry, the public and State, national and international fisheries agencies on the internet. Provide users with information on distribution, biology, fisheries, and annual export volume since 1988, for each species where the information is available. Explore the feasibility of establishing an ongoing, integrated national system for the collation and dissemination of production by species data with a finer spatial and temporal resolution.

Outcome: Production of a database was completed in February 2003, and is accessible at <http://adl.brs.gov.au/fishstats/>. BRS is pursuing additional funding from other sources for the development of recording and management protocols for the database.

**9. BRS – Impact of Fish Aggregating Devices (FADs) on Tuna and Billfish Fisheries**

Total Funding – \$122,812

Objectives: Identify and review the information available for fisheries where there is incidental catch associated with FAD fishing. Document information on the extent of FAD fishing and link this information to the efficiency and potential impact of high seas tuna fisheries. Review available research on FAD fishing and develop further links with countries involved in industrial purse seine fisheries and FAD research in both the Indian and Pacific Oceans. Establish a unified view for presentation at international fora, with other countries involved with FAD research in order to facilitate control of FAD fishing. Further international cooperation to ensure sustainability of highly migratory fish stocks, such as bigeye tuna.

Outcome: A report, *A Review of the Impact of Fish Aggregating Devices (FADs) on Tuna Fisheries*, was published in May 2003.

**10. BRS – Provide a Vehicle for Information Flow (with limited access)**

Total Funding – \$27,481

Objectives: – Evaluate the input from participants at the Northern Australian Fisheries Managers' Workshop as to how a limited access bulletin board should operate. Examine various information technology solutions to providing a limited access bulletin board or an alternative means of communication. Develop the technology for communication.

Outcome: An experimental web site for this project has been developed (<http://cfsandbox.in.affa.gov.au/frb/northern/northern.cfm>), however, an ongoing funding source will be required for this site to be viable in the longer term.

**11. BRS – Analysis of Ballast Water Decision Support System (DSS) Risk Evaluation Threats**

Total Funding – \$99,580

Objectives: The DSS, its data, and the operational requirements of its use, are at an early stage of development. This project will coordinate and review the scientific evidence used to underpin policy decisions relating to ballast water issues.

Outcome: BRS provided ongoing advice on this policy issue. In addition, a report, *Assessment of Options for the Ballast Water Decision Support System*, was published.

**12. BRS – The Future of Beche-De-Mer and Trochus Fisheries in Australia**

Total Funding – \$58,808

Objectives: Assess the potential for establishing and maintaining modern beche-de-mer and trochus fisheries in Australia. Review and assess the feasibility of beche-de-mer and trochus hatchery technology for enhancement of stocks. Assess suitable regions, site characteristics and local community potential for development of beche-de-mer and trochus fisheries based on sustainable harvest methodologies and hatchery enhancement of stocks.

Outcome: A report, *The Future of Beche-de-mer and Trochus Fisheries and Aquaculture in Australia*, was published in February 2003.

**13. BRS – Offshore Constitutional Settlement (OCS) Issues and Potential By-product Species/Reallocation of OCS Species**

Total Funding – \$57,310

Objectives: Map the lines of division for each State and the Northern Territory that are identified under the OCS arrangements for fisheries. Overlay fish stock distributions for each State and the Northern Territory. Identify and review all OCS arrangements to determine whether they are defined by: species/group species; fishing method; species/method; and other.

Outcome: A two-part report, *OCS Arrangements for Fisheries (Part 1 – History and Concepts, Part 2 – A Geodatabase of OCS Arrangements)*, was published in May 2003.

**14. BRS – A National Approach to the Management of Exotic Fish Species in the Aquarium Trade**

Total Funding – \$29,712

Objectives: Review exotic species currently within the domestic aquarium trade.

Outcome: A report, *A National Approach to the Management of Exotic Fish Species in the Aquarium Trade: An Inventory of Exotic Freshwater Species*, was published in September 2002.

**15. BRS – FAO Expert Consultation on Ecosystem-based Fisheries Management**

Total Funding – \$20,000

Objectives: To contribute to the running costs of an FAO Expert Consultation, held in Iceland in September 2002, and to assist in the drafting of guidelines on ecosystem-based fisheries management.

Outcome: A report, *Implementation of the Expert Consultation on the Guidelines for Ecosystem-based Fisheries Management*, was published in June 2003.

**16. BRS – National Seal Strategy Group – National Approach to Seal Conservation, Management and Research in Australia**

Total Funding – \$17,863

Objectives: Establish a national register of seal researchers. Compile a list of observer programmes, logbook data and interview data. Establish a national bibliographic database. Establish a reference library of key material relevant to the National Seal Strategy Group.

Outcome: The project was finalised in June 2003 with the production of the relevant databases.

**17. BRS – Service Level Agreement**

Total Funding – \$667,554

FRRF made a significant change to its funding arrangement with BRS in 2002-03, moving away from an individual project focus, to an ongoing provision of advice and scientific support role. A Service Level Agreement was entered into in October 2002, for BRS to provide scientific services and advice. The Agreement runs until 30 June 2005, however, projects, priorities, and funding levels are determined on an annual basis.

Objectives:

1. Scientific Support for International Fisheries Policy Development - Provide support for Australia's engagement in emerging regional fisheries issues and international fisheries forums.
2. Science for Sustainable Management of Marine Resources – Independent assessments of the status of fisheries, from an ecological, social and economic perspective. Development of assessment techniques and fishery-specific characteristics that effect the management of fisheries.
3. Scientific Data and Fishery Advisory Services – Provide support for the sustainable development of Australia's fishing and aquaculture industries.

Outcome: This project funded participation by BRS in a number of international forums, including the Standing Committee on Tuna and Billfish, Western Central Pacific Fisheries Commission, Commission for the Conservation of Southern Bluefin Tuna, and the Indian Ocean Tuna Commission. Meeting debriefings were provided to F&A officers. In addition, BRS supplies *ad hoc* briefings on issues, as requested by F&A.

BRS also attended domestic meetings, including the Shark Fishery Advisory Group, Eastern Tuna Research Review Committee, and the Small Pelagic Research and Assessment Team.

**18. CRC Reef Research Centre – Development of a Proposal for the Establishment of a Cooperative Regional Research Centre in the APEC Region**

Total Funding – \$55,358

Objectives: Develop a project proposal to create a Cooperative Regional Research Centre in the Asian Pacific Economic Cooperation (APEC) region to allow governments, industry and non-government organisations to invest in research and mechanisms to protect coral reef species and reef areas, support sustainable marine aquaculture and improve coastal water quality.

Outcome: The project was finalised in August 2002, following the submission of the report by F&A to APEC's Fisheries Working Group and Marine Resource Conservation Working Group.

**19. CSIRO<sup>8</sup> – Monitoring the Longline Catch of SBT landed in Indonesia 2000-02**

Total Funding – \$160,938

Objectives: Monitor the Indonesian longline fishery operating out of Benoa, Bali including species composition of landings and changes in fishing effort and targeting. Monitor changes in the spawning population of southern bluefin tuna (SBT) including size and age distribution, and temporal patterns of abundance on the spawning ground. Support the database at the Provincial Fisheries Service, Bali to record the export of tuna by species, product type and country. Support the database at the Research Institute of Marine Fisheries, Jakarta to record the catch data generated by longline monitoring at Benoa, Bali.

Outcome: A final report, *Monitoring the Longline Catch of SBT Landed in Indonesia 2000-2002*, was published in August 2002.

**20. Dominion Consulting Pty Ltd – Investigation of Sectoral Catch in Species in Commonwealth Fisheries**

Total Funding – \$27,200

Objectives: Determine the species caught in Commonwealth-managed fisheries by the recreational, charter and traditional fishing sectors. Determine the level of the catch of identified species by each of these sectors. Compare the catches of the recreational, charter and traditional sectors with the commercial catch. Identify and rank the species where resource sharing is highest and where allocation may be required.

Outcome: A report, *Sectoral Catch in Commonwealth Fisheries*, was produced in September 2002. This report was utilised at the workshop on recreational fishing rights and resource allocation in Commonwealth-managed fisheries, held in Coolangatta in October 2002.

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<sup>8</sup> Commonwealth Scientific & Industrial Research Organisation

**21. F&A – Torres Strait Protected Zone Joint Authority**

Total Funding – \$40,081

Objectives: To assess the need for further management action in the Torres Strait fisheries to ensure ecological sustainability, and to advise on related issues.

Outcome: A report, *A Fair Share of the Catch*, was produced in November 2002, and has subsequently been used in F&A's policy development on Torres Strait issues.

**22. F&A – Seabird Bycatch**

Total Funding – \$3,800

Objectives: To review the seabird bycatch mitigation trials undertaken to date and determine a way forward for the fishing industry to continue this research. This review may include a proposal to develop a research project, which tests alternative mitigation measures.

Outcome: A final report, *Development and Evaluation of Trials to Mitigate Seabird Bycatch in Pelagic Longline Fisheries*, was delivered in December 2002.

**23. F&A – Recreational Fisheries – Sectoral Allocation Workshop**

Total Funding – \$75,500

Objectives: To hold a workshop on resource allocation involving the recreational, commercial and Indigenous fishing sectors, and other key stakeholders, to develop principles for rights-based management for the recreational fishing sector, compatible with the frameworks applying to other fishing sectors and resource users. To develop a declaration/strategy and action agenda to be used to facilitate the implementation of the recreational fishing rights principles.

Outcome: A workshop, *Workshop on Recreational Fishing Rights and Resource Allocation in Commonwealth Fisheries*, was held at Coolangatta, Queensland, from 7-10 October 2002. The resulting communiqué from this workshop is being used for policy development in this area.

**24. F&A – FAO / IUU Expert Consultation**

Total Funding – \$10,471

Objectives: To have an Australian representative at the FAO Expert Consultation on Port State Control Measures, held in Rome in November 2002.

Outcome: Australia sent a representative from the Attorney General's Department to the Expert Consultation. A report from the Consultation was delivered to F&A in February 2003.

**25. F&A – Seafood Directions 2003 Conference Sponsorship**

Total Funding – \$7,500

Objectives: To provide sponsorship assistance to the Seafood Directions 2003 conference, to be held in Perth in September 2003.

Outcome: Sponsorship funding provided.

**26. F&A – Aquafest 2002 Conference Sponsorship**

Total Funding – \$8,655

Objectives: To provide sponsorship assistance to the Aquafest 2002 conference, held in Hobart in September 2002.

Outcome: Sponsorship funding provided.

**27. James Cook University – 3<sup>rd</sup> International Symposium on Fish Otolith Research and Application – Conference Sponsorship**

Total Funding – \$5,000

Objectives: To provide sponsorship assistance to the 3<sup>rd</sup> International Symposium on Fish Otolith Research and Application, to be held in Townsville in July 2004.

Outcome: Sponsorship funding provided.

**28. Seafood Council (South Australia) – National Seafood Industry Leadership Development Program**

Total Funding – \$7,000

Objectives: To provide financial support for the National Seafood Industry Leadership Development Program.

Outcome: Sponsorship funding provided.

<b>PART D: CURRENT PROJECTS AS AT 30 JUNE 2003</b>
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At 30 June 2003, a total of 36 FRRF projects, worth \$3,333,491 in funding, were being undertaken. A brief summary of these projects is listed below, in order of research provider.

**1. ABARE – Sustainable Ecosystems 2001-02**

Total Funding – \$101,971

Due Completion Date – 31 August 2003.

Objectives – Provide information that will assist in improving the management of environmental issues that affect commercial fisheries. Provide information about the risks associated with alternative management tools through the development of a modelling approach, which incorporates key biological and economic parameters. Assist in the provision of efficient disease management services by developing a model to determine the optimal level of quarantine activity and the best response, in terms of quarantine, containment or eradication measures, to the discovery of a disease in a fishery.

**2. ABARE – Alternative Management Instruments 2001-02**

Total Funding – \$157,538

Due Completion Date – 31 August 2003.

Objectives – To provide AFMA fishery managers and policy makers with economic information necessary to make informed decisions when choosing management instruments. Investigate the effectiveness of ITQs as a management tool in fisheries that have seasonal variability in abundance. Improve current methods used to set and assess the effectiveness of management instruments in multi-species fisheries.

**3. ABARE – Performance Monitoring 2002-03**

Total Funding – \$348,642

Due Completion Date – 31 March 2004.

Objectives – Provide information necessary for the performance of AFMA fishery managers to be assessed against economic efficiency and cost effective management criteria. Outputs include: estimates of the economic performance of fisheries; a framework for analysing performance against economic efficiency; an assessment of techniques for obtaining measures of efficiency; an assessment of the efficiency enhancing effects of ITQs in the South East Fishery; and assessments of performance for individual Commonwealth fisheries.



**4. ABARE – Alternative Management Instruments 2002-03**

Total Funding – \$174,225

Due Completion Date – 19 December 2003.

Objectives – To provide AFMA fishery managers and policy makers with economic information necessary to make informed decisions when choosing management instruments. Investigate the effectiveness of ITQs as a management tool in fisheries that have seasonal variability in abundance. Improve on current methods used to set and assess the effectiveness of management instruments in multi-species fisheries.

**5. ABARE – Sustainable Ecosystems 2002-03**

Total Funding – \$320,091

Due Completion Date – 21 May 2004.

Objectives – provide recommendations regarding policies designed to reduce the level of discard in fisheries. Examine the economic values associated with recreational and charter fishing in the Eastern Tuna and Billfish Fishery, and how these values could be used in an allocation framework.

**6. ABARE – Australian Aquaculture 2002-03**

Total Funding – \$45,252

Due Completion Date – 31 July 2003.

Objectives – To provide potential aquaculture operators and investors with an idea of the type of information they will need when seeking finance, or thinking of investing in new operations or expanding existing operations. To identify and highlight any problems associated with investment in aquaculture.

**7. ABARE – FAO Aquaculture Review**

Total Funding – \$8,996

Due Completion Date – 31 August 2003.

Objectives – To prepare a short review of the state of information (statistical data and other information) and procedures for status and trends reporting of aquaculture in Australia, according to the terms of reference and outline forwarded by the FAO.

**8. AFMA – A New Approach to Fishing Power Analysis for the Northern Prawn Fishery**

Total Funding – \$116,840 (representing FRRF 50% share, jointly funded by AFMA)

Due Completion Date – July 2003 (originally December 2002).

Objectives – Improve knowledge of engine power performance, effective fishing time and catch efficiency. Validate the Prawn Trawl Performance Prediction Model. Improve estimates of changes in fishing power in the Northern Prawn Fishery and reassess stock status in light of these changes. Investigate possible management strategies to control fishing effort and its effects on sustainability and the industry.

Research conducted for AFMA by the CSIRO, Division of Marine Research.

**9. AFMA – Ecological Indicators for Fishery Management: Non-target Species, Habitats and Food Chains**

Total Funding – \$171,382 (representing FRRF 33.3% share, jointly funded by AFMA and EA)

Due Completion Date – 31 May 2004.

Objectives – To review the current use of ecological indicators in fisheries management. To identify robust ecological indicators and reference points for fisheries management.

Research conducted for AFMA by the CSIRO, Division of Marine Research.

**10. Australian Institute of Marine Science (AIMS) – Shark Abundance**

Total Funding – \$64,353

Due Completion Date – 15 December 2003.

Objectives – To develop and test a rapid, non-destructive technique for assessment of shark abundance that can be used in marine habitats throughout Australia. To provide a preliminary assessment of shark abundance on oceanic reefs in northern Australia that are protected and unprotected from shark fishing.

**11. Australian Prawn Farmers Association (APFA) – 2003 Prawn and Barramundi Farmers Conference - Sponsorship**

Total Funding – \$4,000

Due Completion Date – 31 July 2003.

Objectives – To provide sponsorship assistance to the 2003 Prawn and Barramundi Farmers conference, to be held in Darwin in July 2003.

**12. BRS – Striped Marlin Status in Relation to Measures of Ecologically Sustainable Development**

Total Funding – \$33,880

Due Completion Date – 31 January 2003 (overdue).

Objectives – Summarise information on striped marlin biology. Describe research, assessment and management of existing striped marlin fisheries. Identify ways of mitigating striped marlin bycatch and evaluate their potential effectiveness. Analyse evidence of longline activities affecting angler strike rates for striped marlin. Propose indicators and reference points for the sustainability of activities taking striped marlin. Report on the status of striped marlin against proposed reference points.

**13. BRS – Estimation of the Volume and Value of Exported Product for Australian Seafood Species**

Total Funding – \$38,374

Due Completion Date – 31 August 2001 (overdue).

Objectives – Determine the full range of seafood species exported from Australia within the past three years. Determine the feasibility of estimating total annual volume and value of exports for fish and invertebrate species. Produce reliable estimates of annual volume and value of exports for species that form a predetermined major proportion of exports.

**14. BRS - The Use of Potential Biological Removals (PBR) in Australia**

Total Funding – \$99,757

Due Completion Date – 30 May 2002 (overdue).

Objectives – Identify and review the information available for fisheries where the incidental catch of marine animals (i.e. seabirds, marine mammals and reptiles) is perceived as a problem and where the PBR approach may provide a management strategy for reducing or minimising that problem. For two selected marine animals, evaluate the merits of the PBR approach and associated issues, in Australian fisheries. Provide a comprehensive report comparing the potential usefulness of PBR and other bycatch mitigation approaches as management tools for these selected marine animals.

**15. BRS – Review of Straddling Fish Stocks between Australia and East Timor**

Total Funding – \$58,003

Due Completion Date – 1 December 2001 (overdue).

Objectives – Identify commercially fished species whose distributions straddle the Australian exclusive economic zone (EEZ) and the probable East Timor EEZ. Review both domestic and relevant international fisheries for these species. Provide advice to F&A on the fisheries relevant to discussions on the interaction between the two EEZs.

**16. BRS – Status of Australian Fisheries 2002-03**

Total Funding – \$333,918

Due Completion Date – 31 October 2003.

Objectives – Assess and report on the status of Commonwealth-managed fish stocks.

**17. BRS – Summary of Data Provision Requirements for Regional Fisheries Management Organisations (RFMOs) and UN Fish Stocks Agreement<sup>9</sup>**

Total Funding – \$86,259

Due Completion Date – 31 January 2003 (overdue).

Objectives – Identify policy directions and future long-term needs for handling of data. Assemble a database of catch, fishing effort, port and onboard biological sampling for species subject to data requests from RFMOs. Document the process of obtaining the raw data, data management considerations, and filtering or processing methods applied. Identify relevant data holdings of State/Northern Territory fisheries management agencies and promote their cooperation in contributing data to RFMO data reports.

**18. BRS – Towards Ecosystem-based Fisheries Management – The Nature and Extent of Land-based Marine Pollution and its Impacts on Fisheries Ecosystems**

Total Funding – \$32,555

Due Completion Date – 31 July 2003.

Objectives – Conduct a pilot project to assess the potential impacts of land-based pollution on important wild fisheries and aquaculture resources.

**19. BRS – Refinements of the Ballast Water Decision Support System (DSS), and Scientific Support for Introduced Marine Pests Policy**

Total Funding – \$100,000

Due Completion Date – 30 November 2003.

Objectives – To facilitate a coordinated approach to guide policy making and refine the DSS by assisting in maintaining an effective science/policy interface. Provide science/policy advice to support the Invasive Marine Species Program policy development. Oversight and liaise with the CSIRO Centre for Research on Introduced Marine Pests on marine pest projects to develop, and refine the ballast water DSS.

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<sup>9</sup> Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, 1995

**20. BRS – 16<sup>th</sup> Meeting of the Standing Committee on Tuna and Billfish**

Total Funding – \$10,000

Due Completion Date – 31 December 2003.

Objectives – To facilitate the successful organisation and running of the 16<sup>th</sup> Meeting of the Standing Committee on Tuna and Billfish in Mooloolaba, to be held in July 2003.

**21. BRS – A Strategic Approach to Ornamental Fish**

Total Funding – \$9,600

Due Completion Date – 15 July 2003.

Objectives – To develop a strategic plan to progress the issues raised in the report of the Ornamental Fish Workshop, held at Coffs Harbour in September 2002, and the draft Action Plan.

**22. CSIRO - Monitoring the Longline Catch of SBT landed in Indonesia 2002-03**

Total Funding – \$95,573

Due Completion Date – 31 July 2003.

Objectives – Monitor the Indonesian longline fishery operating out of Benoa – Bali, Muara Baru – West Java, and Cilacap – Central Java, including species composition of landings, and the measurement of length and weight of a representative sub-sample of the key species caught. Monitor changes in the spawning population of SBT including size and age distribution, and temporal patterns of abundance on the spawning ground. Evaluate the accuracy of the Provincial Fisheries Service, Bali data on export tuna to address discrepancy between CSIRO estimates of Indonesian SBT exports and Japanese export statistics. Provide the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) with an estimate of the Indonesian SBT catch.

**23. CSIRO – Understanding the Nature of SBT Bycatch in the Eastern Tuna and Billfish Fishery (ETBF)**

Total Funding – \$141,392

Due Completion Date – 31 July 2003.

Objectives – Determine the level of SBT by-catch taken by a range of vessels within the ETBF over the June – September period. Describe the extent to which by-catch varies with geographical location, time and targeting practices. Determine the life status of the SBT caught by the ETBF longliners and, in particular, the proportion of the catch that is dead when brought to the vessel. Determine the extent of post-release mortality in SBT after capture by longline and examine whether this varies with life status and set time.

**24. CSIRO – Evaluation of Complex Population Models used for the Assessment and Management of Migratory Fish Stocks**

Total Funding – \$130,104

Due Completion Date – 31 July 2003.

Objectives – Evaluate the performance of Statistical Catch-at-Age/Length Integrated Assessment (SCALIA) models in relation to the advice and stock status parameters needed for the formulation of management policies. Provide advice on the appropriateness and implications of these models for application in the provision of stock status advice in an RFMO context on SBT specifically, and tuna in general. Provide a non-technical description of the key scientific issues and critical assumptions in SCALIA assessments that fisheries managers will have to deal with in negotiations, and formulation of policy in the CCSBT and other tuna RFMOs.

**25. F&A – Development of a National Plan of Action for the Conservation and Management of Sharks (Sharkplan)**

Total Funding – \$50,490

Due Completion Date – 30 April 2002 (overdue).

Objectives – Develop Sharkplan by addressing the issues raised in the Shark Assessment Report, and taking account of a range of initiatives including the development of fisheries management plans, implementation of bycatch action plans, the Standing Committee on Fisheries and Aquaculture ESD process, meeting the requirements of the *Environment Protection and Biodiversity Conservation Act 1999*, and State and Northern Territory legislative and regulatory requirements.

Research conducted for F&A by Shellack Pty Ltd.

**26. F&A – Regional Marine Plans: Fisheries Management Challenges under Australia's Ocean Policy**

Total Funding – \$23,100

Due Completion Date – 1 July 2003.

Objectives – Identify critical issues in implementation of fisheries management within regional marine plans under Australia's Oceans Policy.

Research conducted for F&A by Liz Foster, University of Tasmania (under the Strategic Partnerships with Industry – Research and Training Scheme).

**27. F&A – Aquaculture Industry Development for Indigenous Australians**

Total Funding – \$250,000

Due Completion Date – 31 December 2004.

Objectives – Establish an aquaculture unit to implement the National Indigenous Aquaculture Development Strategy and enhance the quality of the Australian Government's program and service delivery to current and prospective Indigenous clients. Generate employment, training and education opportunities and to achieve long-term commercial outcomes and sustainable development for Indigenous communities.

**28. F&A – Implementation of the Strategy for Maintaining and Increasing Market Access for Australia's Fishing Industry**

Total Funding – \$244,249

Due Completion Date – 31 July 2004.

Objectives – Development of a targeted market access agenda, including participation in the current World Trade Organization (WTO) round of negotiations and in impending bilateral agreements. Publish industry-identified export market guides. Development of a strategy to promote greater coordination and cooperation between the Australian seafood industry and Commonwealth, State and Territory governments in dealing with market access issues. Development of a program to alleviate current inadequacies in the collation and dissemination of market information.

**29. F&A – 1<sup>st</sup> International Ballast Water Risk Assessment Workshop, Melbourne, September 2003 - Sponsorship**

Total Funding – \$21,000

Due Completion Date – 1 February 2004.

Objectives – To provide funding, allowing three scientists from each of the six Pilot Countries to attend the workshop. To facilitate greater global coordination regarding the concept of practicable and sound ballast water risk assessment.

**30. F&A – Deep Sea 2003 Conference, Queenstown New Zealand, December 2003 - Sponsorship**

Total Funding – approximately \$61,947 (actual is \$NZ70,000)

Due Completion Date – 31 March 2004

Objectives – To provide sponsorship and underwriting assistance to the Deep Sea 2003 conference, to be held in Queenstown, New Zealand in December 2003.

**31. FRDC – Development of a Disease Zoning Policy for Marteilliosis to Support Sustainable Production, Health Certification and Trade in the Sydney Rock Oyster**

Total Funding – \$120,000

Due Completion Date – 31 December 2004.

Objectives – Implement and field test the zoning policy framework developed under *Australia's National Strategic Plan for Aquatic Animal Health 1998-2003* (Aquaplan) in a practical context. Facilitate further zoning policy development for other significant diseases of aquatic animals.

Research conducted by Queensland Museum.

**32. FRDC – Identification of the Role of a Peak Industry Body for the Australian Aquaculture Industry, and its Role in the Implementation of an industry-driven National Aquaculture Action Agenda**

Total Funding – \$30,000 (FRRF share is 38% of total project funds, in partnership with the National Aquaculture Council –38%, and FRDC - 24%)

Due Completion Date – 31 July 2003.

Objectives – To provide an options paper that identifies how the recommendations of the Action Agenda and the Prime Minister's Science, Engineering and Innovation Council will be implemented. Provide a draft constitution of the new peak industry body.

Research conducted by the National Aquaculture Council and ACIL Economics.

**33. FRDC – Preparation of a Field Guide to Sharks and Rays Caught by Australian Fisheries**

Total Funding – \$30,000

Due Completion Date – March 2004.

Objectives – Produce a cost-effective, user-friendly field guide for the sharks and rays caught by Australian fisheries.

Research conducted for FRDC by CSIRO, Division of Marine Research.

**34. FRDC – Southern Bluefin Tuna Research Review**

Total Funding – \$28,623 (FRRF share is 33% of total project funds, in partnership with FRDC – 67%)

Due Completion Date – 28 February 2003 (overdue).

Objectives – Analyse outcomes/expected outcomes of past, ongoing and current SBT research projects. Identify gaps in current research. Ensure the processes for developing, prioritizing, selecting and funding SBT research projects are effective and appropriate.

Research conducted by Shellack Pty Ltd.



**35. University of Wollongong – Approaches for Mitigating Bycatch in Commonwealth Fisheries**

Total Funding – \$65,230

Due Completion Date – 31 May 2001 (overdue).

Objectives – Review and analyse policy and operational approaches for mitigating bycatch overseas, especially in the United States. Identify schemes that have successfully mitigated bycatch. Recommend approaches that may be adopted by DAFF, AFMA and EA to meet the requirements of the *Environment Protection and Biodiversity Conservation Act 1999*.

**36. University of Wollongong – Observer Programs in Commercial Fisheries: A Global Review and Lessons for Australia**

Total Funding – \$41,600

Due Completion Date – 30 June 2002 (overdue).

Objectives – Identify and describe domestic observer programs in use in commercial fisheries in Australia, around the world, and under the auspices of regional fisheries management agreements. Evaluate the efficacy of these programs with respect to their operational characteristics including the level of fleet coverage; cost attribution and recovery; evidentiary burdens and legal admissibility; sampling units and the extrapolation of data; and worker safety and welfare. Document and report on the overseas experience with at-sea observation and distil advice for the Australian situation.

<b>PART E: FRRF: HISTORICAL EXPENDITURE</b>
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The following table shows a summary of FRRF expenditure, by service provider, for the period 1991-92 to 2001-02. Note that from 1995-96, \$1 million was allocated annually to AFMA for the management-related component of research. This allocation (not shown below) recognises AFMA's obligation to arrange appropriate research in economically non-viable fisheries.

**Table 2: FRRF disbursements for 1991-92 to 2002-03**

Provider	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
AFMA	\$2,270,212	\$1,942,778	\$1,467,243	\$724,006	\$38,702	nil
ABARE	\$232,000	\$362,522	\$359,257	\$300,317	\$775,555	\$564,462
BRS	\$230,000	\$641,700	\$408,500	\$1,002,283	\$816,880	\$843,936
OTHER	nil	nil	nil	nil	\$182,580	\$413,800
<b>TOTAL</b>	<b>\$2,732,212</b>	<b>\$2,947,000</b>	<b>\$2,235,000</b>	<b>\$2,026,606</b>	<b>\$1,813,717</b>	<b>\$1,822,198</b>

Provider	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
AFMA	nil	nil	\$318,218	\$111,535	\$98,151	\$60,759
ABARE	\$511,273	\$784,270	\$420,214	\$459,412	\$542,903	\$875,339
BRS	\$1,062,213	\$901,751	\$1,381,058	\$940,143	\$762,706	\$980,725
OTHER	\$305,236	\$884,077	\$874,332	\$857,309	\$635,219	\$836,177
<b>TOTAL</b>	<b>\$1,878,722</b>	<b>\$2,570,098</b>	<b>\$2,993,822</b>	<b>\$2,368,399</b>	<b>\$2,038,979</b>	<b>\$2,753,000</b>