Aquaculture Research Advisory Committee

Annual Report
July 2009 to June 2010

Professor Ian White (Chairperson)
Ms Jo Pickles (Executive Officer)

I&I NSW (Primary Industries)
Port Stephens Fisheries Institute
Taylors Beach NSW 2316

CHAIRPERSON'S REPORT

Following the easing of the decade-long drought, aquaculture in NSW has expanded slowly in 2009/10 with very positive signs of new investment in lease-based oyster farming and new confidence in land-based systems. The continuing resurgence of oyster farming in the Hawkesbury River is an excellent example of industry, government and the research community cooperating to overcome the adversity of catastrophic natural disease. The NSW government support for farmers to assist with the removal of derelict lease infrastructure and its investment in long-term, applied research to develop improved, disease-resistant Sydney rock oysters and triploid Pacific oysters provided a basis to re-establish the industry. These coupled with innovative and enthusiastic leadership among farmers in the Hawkesbury has led to installation of world-class farming infrastructure and positioned the oyster industry in the Hawkesbury River as a showcase of environmentally-responsible, economically viable aquaculture. In addition, the research into Sydney rock oysters and triploid Pacific oysters has had direct application in other estuaries throughout the state, providing increased resilience for the industry.

The flooding rains that broke the drought in eastern Australia, many oyster farmers in NSW have faced long periods of when oysters could not be harvested. Despite the existence of the innovative Oyster Industry Sustainable Aquaculture Strategy, continuing problems with microbiological contamination in some northern NSW estuaries remain unresolved and require coordinated and purposeful efforts from local and state governments to both allow oyster harvesting to resume and to protect other users of our waterways from potential health problems. The increased availability of freshwater has contributed to an increase in production of land-based aquaculture. There is a solid research base for this sector, however, targeted efforts are needed to encourage investment in non-oyster, marine aquaculture.

During the last year, five industry positions on ARAC expired and a competitive recruitment drive was initiated to ensure strong industry representation. In October 2009, ARAC welcomed three new members; Ms Milada Safarik, representing land-based aquaculture and Mr Michael Wright and Mr Ewan McAsh, representing lease-based aquaculture. Mr Geoff Diemar and Mr Tony Troup were re-appointed. ARAC farewelled Mr Rob McCormack, Mr Dominic Boyton and Ms Audrey Thors as outgoing members whose contributions have been greatly appreciated and valued.

This year, ARAC surveyed of all aquaculture farmers in NSW to identify new and emerging R&D priorities. The results allowed the Committee to update the 'ARAC R&D Strategic Plan 2007-2012' and priorities in the document 'Planning Strategic Research for Wild Fisheries, Aquatic Ecosystems and Aquaculture in NSW'. (www.dpi.nsw.gov.au/fisheries/aquaculture/publications/industry-development/arac-r_and_d-strategic-plan-2007-2012). ARAC members also attended the Joint Aquaculture Consultative Committee meeting on 4 May 2010. This combined meeting of the NSW aquaculture consultative groups helped clarify the roles of the aquaculture consultative groups, identify industry development priorities, promote industry innovation, and facilitate networking between industry representatives, the Minster and representatives from FRDC, SFM and I&I NSW.

I want to specifically thank the efforts of ARAC members. The farmer members have been outstanding and tireless representatives of their industries and I am extremely grateful to I&I NSW staff who have assisted and contributed to ARAC. Their professionalism, dedication, energy, commitment and organisational skills have been outstanding. I also want to thank the FRDC and the Seafood Cooperative Research Centre (AS-CRC) for their continued support for the NSW aquaculture industry. Finally I am extremely grateful to the Minister and I&I NSW for their strategic initiatives in and support for aquaculture.

ARAC is committed to increasing the profitability and growth of the aquaculture in NSW through applicable research. I have pleasure in presenting this report on activities of the NSW Aquaculture Research Advisory Committee.

Professor Ian White FTSE
CHAIR ARAC

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Preamble

This is the fourth Annual Report for the Aquaculture Research and Advisory Committee (ARAC). The Minister for Primary Industries approved the formation of the Aquaculture Research Advisory committee in October 2005 to provide advice on industry contributions and R&D expenditure for all aquaculture industries in NSW. Confirmation for ARAC's establishment was confirmed in 2006 after the completion of a NSW Government review of Boards and Committees. ARAC has replaced the Oyster Research Advisory Committee (ORAC) and the former Advisory Council on Aquaculture (ACoA).

ORAC was formally disbanded after its meeting in December 2005.

The Committee

The Aquaculture Research Advisory Committee (ARAC) was established in October 2006 and held its inaugural meeting on 31 January 2007.

ARAC is a statutory committee that advises the Minister on the amount of contributions payable by the NSW aquaculture industries into trust accounts for aquaculture research and development and the expenditure of those trust funds. The NSW prawn aquaculture industry is not included as it pays research levies directly to the Commonwealth.

ARAC is established under Section 157 of the *Fisheries Management Act 1994.*

Terms of Reference

1 Investigate and evaluate the requirement for aquaculture research and development in NSW, after consultation with NSW aquaculture industries and with reference to NSW, Australian and overseas experience, and whether funded by the Fisheries Research and Development Corporation or otherwise;

2 Revise as appropriate research and development plans for NSW aquaculture research and development and promote it to the wider research community;

3 Advise the appropriate NSW Fisheries Research Advisory bodies and the Fisheries Research and Development Corporation on NSW aquaculture research and development matters and priorities;

4 Advise the NSW Minister for Primary Industries on the level of funding from industry required for aquaculture research and development in NSW and on its expenditure.

5 Oversee the management of annual contributions for aquaculture research collected under Section 156 of the *Fisheries Management Act 1994*, and placed in separate trust accounts under Section 157 of the *Fisheries Management Act 1994.*

6 Report on a regular basis, including an Annual Report based on a financial year, to the NSW aquaculture industry, the NSW Minister for Primary Industries and NSW researchers on aquaculture research and development initiatives;

7 Facilitate the dissemination, adoption and commercialisation of the results of aquaculture research and development; and

8 Promote aquaculture research and development in NSW.

Membership and Selection Process

The *Fisheries Management (Aquaculture) Regulations 1995*, schedule 2 provisions relating to members and procedure of committee, section 2, states:

1 The Minister may convene a selection committee (including representatives of the aquaculture industry) for the purpose of recommending persons for appointment as members of a committee.
2 The Chairperson of a committee is to be the member of the committee at the time of being appointed by the Minister as Chairperson.
3 Section 157 (7) of the Act requires the Minister to ensure that a majority of the members of the committee are representatives of the aquaculture industry.

Industry members of ARAC are appointed by the Minister through a competitive selection process from Aquaculture Permit holders who have submitted expressions of interest to join the committee. A selection committee is appointed, comprised of two representatives from the NSW Farmers Association, one representative from the Seafood CRC and the I&I NSW (Primary Industries) Director, Productivity and Food Security Research. Industry members are selected on merit.

The Chairperson is appointed to the committee by the Minister.

To aid the committee with their function, I&I NSW (Primary Industries) personnel attend meetings and undertake the role of facilitator and secretariat.

Deputy Members

The *Fisheries Management (Aquaculture) Regulations 1995*, schedule 2 provisions relating to members and procedure of committee, section 3, states:

1 The Minister may, from time to time, appoint a person to be the deputy of a member, and at any time revoke any such appointment.

Committee Members in 2009/10

Member	Representing	Date of Appointment	Expiry Date
Prof. Ian White	Independent Chair	Oct 2006	Oct 2012
Ms Milada Safarik	Industry	Oct 2009	Oct 2012
Mr Tony Troup	Industry	Oct 2006	Oct 2012
Mr Geoff Diemar	Industry	Oct 2006	Oct 2012
Mr Michael Wright	Industry	Oct 2009	Oct 2012
Mr Ewan McAsh	Industry	Oct 2009	Oct 2012
Mr Nick Arena	Industry	June 2008	June 2011

There are six members on ARAC, four lease-based (oyster) representatives and two land-based (non-oyster) representatives, which reflects the relative sizes of the industry sectors in NSW. All members of ARAC, including the independent Chairperson, are appointed for a term of three years.

In April 2009, I&I NSW (Primary Industries) mailed expressions of interest to all aquaculture permit holders in NSW, seeking to fill vacancies as five terms of appointment were due to expire. Only a limited number of applications were received and the panel agreed to re-advertise for more applicants. Applications closed in July 2009 and the panel re-convened in August 2009 to consider the applications and recommend suitable candidates to the Minister for NSW Primary Industries. In October 2009, the Committee welcomed three new members; Ms Milada Safarik, Mr Michael Wright and Mr Ewan McAsh. ARAC farewelled Mr Rob McCormack, Mr Dominic Boyton and Ms Audrey Thors as outgoing members – their efforts have been greatly appreciated.

Ms Ali Bowman (Director, Productivity and Food Security Research), Dr Geoff Allan (Research Leader, Aquaculture), Dr Wayne O'Connor (Senior Research Scientist), Mr Ian Lyall (Manager, Aquaculture), Mr Steve McOrrie (Policy Officer, Aquaculture) and Ms Jane Frances (Manager, Aquatic Biosecurity and Risk Management) from I&I NSW (Primary Industries) sit as observers on the Committee. Ms Jo Pickles from I&I NSW (Primary Industries) is the Executive Officer. Mr Justin Fromm (National Aquaculture Council) also sits as an observer.

Meetings

Two meetings were held during the financial year 2009/10:

Member	29 Oct 2009	5 May 2010
Prof. Ian White	✓	✓
Mr Tony Troup	✓	✓
Mr Geoff Diemar	✓	✓
Ms Audrey Thors	×	n/a
Mr Dominic Boyton	×	n/a
Mr Rob McCormack	✓	n/a
Mr Nick Arena	×	✓
Ms Milada Safarik	✓	✓
Mr Michael Wright	✓	✓
Mr Ewan McAsh	✓	✓
I&I NSW (Primary Industries)		
Ms Ali Bowman	✓	✓
Dr Geoff Allan	✓	✓
Mr Ian Lyall	✓	✓
Dr Wayne O'Connor	×	✓
Mr Steve McOrrie	✓	✓
Ms Jane Frances	✓	✓
Mr Justin Fromm	✓	✓
Ms Jo Pickles	✓	✓

Declaration of Pecuniary Interests

Schedule 2 of the *Fisheries Management (Aquaculture) Regulations 1995* sets out provisions relating to members and committee procedure. Clause 9, sub clause 1 of the state:

a a member of a committee is required to disclose any direct or indirect pecuniary interest in a matter being considered or about to be considered at a meeting of the committee, and

b a member whose interest appear to raise a conflict with the proper performance of the member's duties in relation to the consideration of the matter must as soon as possible after the relevant facts have come to member's knowledge, disclose the nature of the interest at a meeting of the committee.

No pecuniary interests were declared in this financial year.

Trust Accounts for the 2009/10 Financial Year

Advice on Level of Contribution

Section 156 of the *Fisheries Management Act 1994* states a permit holder is required to contribute to the cost of administration or research or to other industry costs. Under section 157(4) of the *Fisheries Management Act 1994* the Minister is to appoint a committee of persons to advise the Minister on the amount of contributions payable into any trust account. Research contributions made by the aquaculture community (excluding the prawn industry) are reported to the Minister by ARAC.

Research contributions from the oyster industry have been set at $35.00/ha/year. The amount of research contributions billed for 2009/10 was $105,817.03.

Research contributions from the non-oyster aquaculture industry have been set at $26/ha/year or $127 for a minimum of 5 ha/year. The amount of research contributions billed for 2009/10 was $24,766.21.

The required annual contribution to the Fisheries Research Development Corporation is calculated at 0.25% average gross value of production (AGVP), based on three year rolling calculations. The contribution from the oyster industry for 2009/10 was $90,719.38 ($96,414.73 less the fee waiver of $5,695.35). The contribution from the non-oyster aquaculture industry for 2009/10 was $15,993.65 ($17,514.00 less the fee waiver of $1,520.35).

Advice on Level of Expenditure

Section 156 of the *Fisheries Management Act 1994* states a permit holder is required to contribute to the cost of administration or research or to other industry costs. Under section 157(4) of the same Act the Minister is to appoint a committee of persons to advise the Minister on the expenditure of money in the trust account.

As at June 2010 there were 334 oyster permit holders and 250 non-oyster permit holders.

Expenditure Purpose and Level

The allocated expenditures for the 2009/10 financial year are outlined below:

ARAC REVENUE AND EXPENSES – 1 July 2009 to 30 June 2010 *Note: this is an accrual accounting report for WBS 116-1 (Oyster Research Levy)		
Revenue:	Credit	Debit
Balance carried forward 30.06.2009	$13,248.14	
Research Contributions billed 01.07.2009 to 30.06.2010	$105,817.03	
Total Revenue	**$119,065.17**	
Expenses: Internal Transfer to Committee Account		$5,350.00
Bad Debts		$367.00
FRDC Contribution (reduced by fee waivers for research)		$90,719.38
Total Expenses		**$96,436.38**
Balance of Cost Centre as at 30.06.2010	**$22,628.79**	

ARAC Committee expenses – 1 July 2009 to 30 June 2010 *Note: this is an accrual accounting report for WBS 2492-1		
Revenue:	Credit	Debit
Balance carried forward 30.06.2009	$4,405.04	
Transferred from NSW Primary Industries funds	$8,000.00	
Total Revenue	**$12,405.04**	
Operating Expenses:		
Travel		$4,547.68
Committee Fees		$5,169.67
Consumables		$1,278.17
Total Expenditure		**$10,995.52**
Balance of Cost Centre as at 30.06.2010	**$1,409.52**	

ARAC REVENUE AND EXPENSES – 1 July 2009 to 30 June 2010 *Note: this is an accrual accounting report for WBS 119-1 (Aquaculture [non-oyster] Research Levy)		
Revenue:	Credit	Debit
Balance carried forward 30.06.2009:	$32,603.49	
Research Contributions billed 01.07.2009 to 30.06.2010	$24,766.21	
Total Revenue	**$57,369.70**	
Expenses:		
Internal Transfer to Committee Account		$2,650.00
Bad Debts		$168.29
FRDC Contribution (reduced by fee waivers for research)		$15,993.66
Total Expenses		**$18,811.95**
Balance of Cost Centre as at 30.06.2010	**$38,557.75**	

Levy Collection

Billing is conducted on the financial year and permit holders have the option of paying in full by 30 September or by quarterly instalments at 30 September, 31 December, 31 March and 30 June of that year.

Money held in the NSW Primary Industries Crown Trust Account does not receive interest.

Forward Budget

ARAC REVENUE AND EXPENSES – 1 July 2010 to 30 June 2011 (Oyster Research Levy)		
Revenue:	Credit	Debit
Balance carried forward 30.06.2010	$22,628.79	
Research Contributions billed 01.07.2010 to 30.06.2011	$113,673.25	
Total Estimated Revenue	**$136,302.04**	
Expenses:		
FRDC Contribution (estimate)		$95,000.00
ARAC Committee Expenses (Internal transfer)		$8,000.00
Total Estimated Expenses		**$103,000.00**
Estimated Balance as at 30.06.2011	**$33,302.04**	

ARAC REVENUE AND EXPENSES – 1 July 2010 to 30 June 2011 (Aquaculture [non-oyster] Research levy)		
Revenue:	Credit	Debit
Balance carried forward 30.06.2010:	$38,557.75	
Research Contributions billed 01.07.2010 to 30.06.2011	$25,705.50	
Total Estimated Revenue	**$64,263.25**	
Expenses:		
FRDC Contribution (estimate)		$20,000.00
ARAC Committee Expenses (Internal transfer)		$4,000.00
Minor research activities		$20,000.00
Total Estimated Expenses		**$44,000.00**
Estimated Balance as at 30.06.2011	**$20,263.25**	

COMMITTEE REVENUE AND EXPENSES – 1 July 2010 to 30 June 2011		
Revenue:	Credit	Debit
Balance carried forward 30.06.2010	$1,409.52	
Internal transfers	$12,000.00	
Total Estimated Revenue	**$13,409.52**	
Expenses:		
Consumables		$1,500.00
Travel		$7,000.00
Committee fees		$4,500.00
Total Estimated Expenses		**$13,000.00**
Estimated Balance as at 30.06.2011	**$409.52**	

Recommendation on Level of Contribution

On 31 January 2007, the Committee agreed the oyster research levy should increase to $35.00/ha/yr from $29.00 as this amount was insufficient to maintain the contribution to FRDC at 0.25% of AGVP and operate ARAC. Letters were then written to lease-based farmers explaining the reasons for the increase. An amendment in the Regulation Review has also been prepared seeking approval to raise the levy to be in effect 2008/09. The Committee has agreed that levies be reviewed on an annual basis at the first meeting in the calendar year.

List of Activities

- In October 2009, ARAC welcomed three new members; Ms Milada Safarik, who will be representing land-based aquaculture and Mr Michael Wright and Mr Ewan McAsh who will represent lease-based aquaculture. Five positions were advertised via expression of interest as the membership terms were due to expire. Mr Geoff Diemar and Mr Tony Troup were re-appointed. ARAC farewelled Mr Rob McCormack, Mr Dominic Boyton and Ms Audrey Thors as outgoing members – their efforts have been greatly appreciated.

- At previous meetings, ARAC discussed scope in the current budget for a small land-based research project up to $20,000. The project should have direct results to existing farmers or perhaps building flexibility into their business. The Committee agreed to streamline the process for identifying R&D priorities, evaluating those of highest priority to industry, and helping assess the likely cost benefit of developing and conducting research. A new form 'Submission to ARAC for a Research Initiative' was sent to all Aquaculture permit holders calling for research priorities. This gave farmers an opportunity to submit their ideas and advise of the issues constraining the growth of their business. The Committee discussed these submissions and other research issues raised by Committee members to determine which of these priorities could be resolved by research. After 14 submissions from land-based permit holders, there is still no unanimous priority or research initiative suitable for investment using the limited funds available. Three respondents mentioned energy consumption and solar aeration and Justin Fromm (National Aquaculture Council) suggested using some of these funds to hold energy efficiency workshops for land-based farmers, giving examples of how savings can be made (oyster farmers would also be interested). At this time, ARAC have agreed to leave these surplus funds in the trust account (these funds are carried over each year) and will investigate the possibility of supporting the above mentioned workshops and efforts to improve energy efficiency.

- ARAC is progressing with an oral history and photographic archive of the NSW Oyster Industry. Steve McOrrie suggested a Register of Historic Oyster Industry Information and has prepared an invitation and registration form that will be circulated to the NSW Oyster Industry. This invitation to oyster farmers asks them to register with I&I the type of material they have available ie. photos, oral histories, equipment etc. ARAC recommended collating and cataloguing these items before any further application is made for a project to document NSW oyster history. .

- NSW Farmers Association sponsored and arranged two Oyster Industry Field Days held at Batemans Bay and Wallis Lake in September 2009 that focused on the work being undertaken by the Seafood CRC Oyster Consortium. The keynote speaker John Sussman (seafood specialist) gave a case study of marketing shellfish in Australia – how a South Australian producer turned a commodity shellfish product into a high valued product through processing, innovative packaging, advertising and promotion. The days were well supported by industry and included awards for the Most Beautiful Oyster Contest.

- The Committee made some minor changes to its priorities in the document 'Planning Strategic Research for Wild Fisheries, Aquatic Ecosystems and Aquaculture in NSW' and also updated (with minor changes) the 'ARAC R&D Strategic Plan 2007-2012' (www.dpi.nsw.gov.au/fisheries/aquaculture/publications/industry-development/arac-r_and_d-strategic-plan-2007-2012).

- In recent years, I&I NSW, the NSW Silver Perch Growers Association and the National Aquaculture Council (NAC) have worked cooperatively to progress the approval of Minor Use Permits with the Australian Pesticides and Veterinary Medicines Authority (APVMA) for a number of chemicals used in aquaculture in Australia. These chemicals included salt, formalin, potassium permangenate, oxytetracycline, trichlorfon and copper sulphate. In addition, an application was lodged by I&I NSW for the use of Clove oil as an anaesthetic at the request of the NSW aquaculture industry. In 2009, ARAC wrote to the NAC asking if they would take over the application for Clove oil, considering a national approach, on behalf of the Australian aquaculture industry. The NAC discussed the matter with its members and the broader industry and advised they will not pursue the application. This is because of the variations between batches of clove oil and the difficulty characterizing the impurities in the products, the cost to meet the application requirements of registration (eg. defining maximum residue levels, conducting toxicological studies and analysing the full chemical profile) is exorbitant and the chance of registration under current APVMA regulations is negligible. Therefore, Clove oil remains a non registered chemical and all land-based permit holders were advised in writing the use of Clove oil is no longer permitted.

- Ms Jane Frances (Manager, Aquatic Biosecurity and Risk Management) asked to attend ARAC meetings as an 'observer' and has attended our meetings since October 2009. ARAC agree that Jane provides a valuable contribution to our meetings and is grateful for the updates on aquatic biosecurity issues affecting the NSW aquaculture industry.

- ARAC members attended the Joint Aquaculture Consultative Committee meeting held on 4 May 2010 at the Sydney Fish Markets. This was a one day combined meeting of the NSW aquaculture consultative groups aimed to clarify the roles of the aquaculture consultative groups, identify industry development priorities, promote industry innovation, and facilitate networking between industry representatives, the Minster and representatives from FRDC, SFM and I&I NSW. Members from POAG and the LBACG were also invited as well as aquaculture representatives from SIAC, FRAB, Seafood CRC, FRDC, SFM and I&I NSW. Everyone invited was able to contribute to the meeting and this gave an industry viewpoint of how the committees are working. It was clear that a greater link between the committees is needed particularly in relation to advice being provided to the Minister. It does appear that change is imminent with the department's committees and amalgamations may take place in the future.

- The oyster industry in upper Port Stephens (Karuah River) has experienced significant mortality and production is declining. The cause/s remain unexplained, but concerns have been raised over the potential impacts of mine effluent and leachate on oyster health. Geoff Diemar is working with Dr Wayne O'Connor and have approached Newcastle University researchers, with expertise in this field, to see if they would be willing to assist and what might be a path of action. ARAC has given 'in principle' support to investigate funding sources for this research and with the support of a number of agencies including the Great Lakes Council, it is planned to develop a full research application.

- Peat Leith from the University of Tasmania contacted ARAC about the National Adaptation Research Network for Marine Biodiversity and Resources (ARN-MBR), which is a hub of the National Climate Change Adaptation Research Facility. They were running a project to identify and facilitate climate change adaptation in the Australian edible oyster industry. Tony Troup agreed to represent ARAC to consult with ARN-MBR in relation this project and to ensure the project has good synergies with other ARAC initiatives. Peat Leith conducted workshops 'Climate adaptation in the Australian edible oyster industry' which took place at Forster and Batemans Bay in April 2010. Tony Troup attended the Forster workshop and advised it was very well run with attendees able to give anonymous responses to advice on climate change.

- Michael Wright raised the issue of norovirus testing in the Kalang River. Some testing is being conducted by the NSW Food Authority and SARDI has conducted testing in two closed estuaries (the estuaries were closed by PCR testing). There is some question about what the test is testing, as virus particles detected by PCR may not be viable and hence, is the test 'fit for purpose'. The Committee have asked Michael to prepare a brief about the issues affecting the Kalang River.

- ARAC discussed the research levies that had been calculated for oysters and non-oyster aquaculture in NSW that are due to the FRDC. The money collected from these levies goes primarily to the FRDC to support aquaculture research in NSW (primarily through the Seafood CRC). A small portion of the levy contributes to the running of ARAC and to fund other small research activities. The contribution to FRDC is calculated at 0.25% average gross value of production (AGVP), based on three year rolling calculations. The total funds available to FRDC are provided from three sources: 1) Unmatched funds. The Commonwealth Government pays 0.5% of the average gross value of production for fisheries for 3 preceding years (AGVP), 2) Industry contributions. The industry contributes 0.25% of AGVP, and 3) Matched funds. The Commonwealth Government matches industry contribution up to a maximum of 0.25% AGVP. Unmatched funds are provided by the government because the Commonwealth acts as 'steward' for fisheries resources on behalf of the Australian community. The 'return' from FRDC for research on aquaculture in NSW over the last 10 years has represented good value to the industry. For example, recent estimates indicate that up to $4 for $1 in oyster industry contributions has been spent on oyster R&D.

- ARAC wrote to the NSW Food Authority about data gathered under the Shellfish Quality Assurance Program which is collected and archived by the NSW Food Authority. The NSW Food Authority responded to our request, advising the NSW Shellfish Program, agreed the release of data to councils and other relevant agencies could yield significant benefits to industry. They are waiting on formal legal advice on the level of consultation legally required to release the data.

- Continue to update the ARAC homepage on the Department's website including the summary of discussions from previous meeting and contributing to the Aquaculture Update newsletter.

- Kept informed of the Seafood CRC. The Seafood Cooperative Research Centre (CRC) is Australia's first entity to stimulate and provide comprehensive seafood-related R&D and industry leadership on a national basis. The Seafood CRC formed the Oyster Consortium to ensure the national oyster industry became a core participant in the Australian Seafood CRC. The Oyster Consortium consists of 6 representatives from NSW (currently including two members of ARAC), 6 from SA and 6 from Tas. The Consortium will determine a national approach to R&D on edible oysters. Together the Consortium and the Seafood CRC will determine what research and development proceeds. From here the Seafood CRC will develop the program and decide the best institution/agency and project leader to conduct the research.

Aquaculture Research and Development currently being undertaken by I&I NSW (Primary Industries)

For the most up-to-date information on oyster research and development currently being undertaken by I&I NSW (Primary Industries), please refer to its web site: www.dpi.nsw.gov.au/research/areas/production-research/aquaculture. The web site contains non-technical summaries of all research projects, scientific outputs and final reports.

Oyster Research and Development currently being undertaken in Australia

1	Project Title	Australian Oyster Industry Benchmarking Program Development
	Principal Investigator	Shane Comiskey
	Time Frame	2009
	Funding Sources	Seafood CRC (2009/701)
2	Project Title	Australian Edible Oyster Industry Business Plan
	Principal Investigator	Shane Comiskey
	Time Frame	2009
	Funding Sources	Seafood CRC (2009/729)
3	Project Title	Protecting and enhancing the Sydney rock oyster breeding program
	Principal Investigator	Wayne O'Connor
	Time Frame	2006 – 2010
	Funding Sources	I&I NSW, FRDC and Seafood CRC (2006/226)
4	Project Title	Enhancement of the Pacific oyster selective breeding program
	Principal Investigator	Mr Barry Ryan
	Time Frame	2006 – 2009
	Funding Sources	ASI, FRDC and Seafood CRC (2006/227)
5	Project Title	Paralytic shellfish poisoning – A molecular genetic probe for fast, accurate detection
	Principal Investigator	Dr Shauna Murray
	Time Frame	2009 – 2010
	Funding Sources	UNSW, USYD, UTAS, I&I NSW
6	Project Title	Ecological impacts of QX Oyster disease and its management strategy in the Hawkesbury River Estuary
	Principal Investigator	Dr Brendan Kelaher
	Time Frame	2007 – 2010
	Funding Sources	UTS, I&I NSW, ARC, Hornsby Shire Council
7	Project Title	Building Bivalve Production Capacity in Vietnam and Australia
	Principal Investigator	Dr Wayne O'Connor
	Time Frame	2007 – 2012
	Funding Sources	ACIAR
8	Project Title	A critical evaluation of supply-chain temperature profiles to optimise food safety and quality of Australian oysters
	Principal Investigator	Tom Madigan
	Time Frame	2007 – 2009
	Funding Sources	SARDI and Seafood CRC (2007/700)

9	Project Title	CRC Oyster Consortium – communication, extension and management of R&D results
	Principal Investigator	Rachel King
	Time Frame	2007 - 2010
	Funding Sources	Seafood CRC (2007/715)
10	Project Title	Develop the non-maxima pearl industry at the Abrolhos Islands (*Pinctada imbricate/fucata*)
	Principal Investigator	Derek Cropp
	Time Frame	2007 – 2011
	Funding Sources	Latitude Fisheries Pty Ltd and FRDC (2007/216)
11	Project Title	Protecting the safety and quality of Australian oysters with integrated predictive tools
	Principal Investigator	Mark Tamplin
	Time Frame	2008 - 2009
	Funding Sources	UTAS and Seafood CRC (2007/719)
12	Project Title	Australian Oyster Industry supply chain analysis and improvement strategy
	Principal Investigator	Shane Comiskey
	Time Frame	2008 - 2009
	Funding Sources	SOCo and Seafood CRC (2008/777)
13	Project Title	Using genomic information to understand and improve the quality of the Australian South Sea Pearl
	Principal Investigator	Degnan, B.
	Time Frame	2009-2014
	Funding Sources	UQ, ARC, Autore Pearling Pty Ltd, Pearl Oyster Propagators
14	Project Title	Linking genes with the phenotype – creation of a genetic linkage map for the silver-lipped pearl oyster *Pinctada maxima*
	Principal Investigator	Jerry, D.
	Time Frame	2008-2010
	Funding Sources	ARC, James Cook University, Atlas South Sea Pearl
15	Project Title	Climate change research: Can Sydney rock oysters adapt to chronic multigenerational exposure to ocean acidification and temperature?
	Principal Investigator	Laura Parker
	Time Frame	2010-2011
	Funding Sources	ARC

16	Project Title	Molluscan biomonitor for quantification and impact assessment of endocrine disrupting chemicals in marine ecosystems
	Principal Investigator	MacFarlane, G.
	Time Frame	2008-2011
	Funding Sources	ARC, The University of Newcastle, I&I NSW, Port Stephens Council, Hunter Water Corporation
17	Project Title	Incorporation of selection for reproductive condition, marketability and survival into a breeding strategy for Sydney rock oysters and Pacific oysters
	Principal Investigator	Graham Mair
	Time Frame	2009-2013
	Funding Sources	Seafood CRC (2009/743)
18	Project Title	Aquatic Animal Health Subprogram: development of diagnostic tests to assess the impact of Haplosporidium infections in pearl oysters
	Principal Investigator	Phillip Nicholls
	Time Frame	2006-2009
	Funding Source	Murdoch University and FRDC (2006/064)
19	Project Title	PhD supplementary funding – human enteric viruses in Australian bivalve molluscan shellfish (operating)
	Principal Investigator	Tom Ross
	Time Frame	2008-2010
	Funding Source	Seafood CRC (2008/741)
20	Project Title	Industry management and commercialisation plan for the Sydney rock oyster breeding program
	Principal Investigator	Mr Ray Tynan
	Time Frame	2005 – 2009
	Funding Sources	Select Oyster Company Pty Ltd, I&I NSW, FRDC and Seafood CRC (2005/209)
21	Project Title	Protecting the safety and quality of Australian oysters using predictive models integrated with ‘intelligent’ cold chain technologies
	Principal Investigator	Mark Tamplin
	Time Frame	2008 - 2011
	Funding Sources	UTAS and Seafood CRC (2008/700)
22	Project Title	Methodologies for the implementation of Micro Mobile Information Systems in the Cold Chain and the resulting implications of Time Temperatures
	Principal Investigator	Paul Turner
	Time Frame	2007 - 2010
	Funding Sources	UTAS and Seafood CRC (2008/734)

22	Project Title	Proactive control of oyster spat production by controlling microbiological contamination
	Principal Investigator	Mark Tamplin
	Time Frame	2008 - 2011
	Funding Sources	UTAS and Seafood CRC (2008/761)
23	Project Title	Quality, shelflife and value adding of Australian Oysters
	Principal Investigator	Tom Madigan
	Time Frame	2009 - 2012
	Funding Sources	Uni SA and Seafood CRC (2008/763)
24	Project Title	Impact of acid sulphate soils on the survival of adult Pacific oysters challenged by bacterial extracellular products
	Principal Investigator	James Harris
	Time Frame	2009
	Funding Sources	Flinders University and Seafood CRC (2009/764)
25	Project Title	Development of tools for the sustainable management of genetics in polypoid Pacific oysters, *Crassostrea gigas*
	Principal Investigator	Anthony Koutoulis
	Time Frame	2010
	Funding Sources	University of Tasmania and Seafood CRC (2010/724)

Aquaculture Research and Development currently being undertaken in Australia

Australian Centre for International Agriculture Research (ACIAR)

Active and Pipeline ACIAR Aquaculture Projects. NB. All ACIAR-funded Projects have an Australian component with the Commissioned Organisation [responsible for administering the funds] being an Australian University or State or Commonwealth Government Department. *More information visit* ***www.ACIAR.gov.au***

Active Sustainable production of aquaculture and culture based fisheries projects	
FIS/2001/058	Sustainable tropical spiny lobster aquaculture in Vietnam and Australia
FIS/2002/001	Developing aquaculture in degraded inland areas in India and Australia
FIS/2002/077	Improved hatchery and growout technology for marine finfish in the Asia-Pacific region
FIS/2005/009	Technical capacity building and research support for the reconstruction of tsunami-affected, brackishwater aquaculture
FIS/2005/108	Freshwater prawn aquaculture in the Pacific: improving culture stock quality and nutrition in Fiji
FIS/2005/114	Building bivalve hatchery production capacity in Vietnam and Australia
FIS/2005/137	Control of nodaviral disease in tropical marine finfish hatcheries: enhanced biosecurity through the application of contemporary biotechnology, epidemiology and pathobiology
FIS/2005/169	Improving productivity and profitability of smallholder shrimp aquaculture and related agribusiness in Indonesia
FIS/2006/002	Aceh aquaculture rehabilitation project
FIS/2006/138	Developing aquaculture based livelihoods in the Pacific Islands region and tropical Australia
FIS/2006/140	Achieving consistent spawning of captive yellowfin tuna (*Thunnus albacares*) broodstock
FIS/2006/141	Improving feed sustainability for marine aquaculture in Vietnam and Australia
FIS/2006/172	Winged oyster pearl industry development in Tonga
FIS/2008/043	Advisory Committee: Barramundi feed development trial in Western Province, Papua New Guinea
FIS/2009/035	Determinants for White Spot Disease outbreaks in Indonesian smallholder shrimp ponds – a pilot study of locality factors, White Spot Syndrome Virus genotype distributions and pond factors
FIS/2009/054	Refinement and application of Cage Aquaculture Decision Support Tool (CADS Tool) for freshwater systems in the Philippines
Recently concluded Sustainable production of aquaculture and culture based fisheries projects	
FIS/2001/058	Sustainable tropical spiny lobster aquaculture in Vietnam and Australia
FIS/2001/083	Inland aquaculture in PNG: improving fingerling supply and fish nutrition for smallholder farms

FIS/2002/068	Improving feeds and feeding for small scale aquaculture in Vietnam and Cambodia
FIS/2002/075	Application of PCR for improved shrimp health management in the Asian region
FIS/2002/076	Land capability assessment and classification for sustainable pond-based aquaculture systems
FIS/2003/027	Planning tools for environmentally sustainable tropical finfish cage culture in Indonesia and northern Australia
FIS/2004/065	Culture of promising indigenous fish species and bioremediation for barramundi aquaculture in northern Australia and PNG
FIS/2005/115	Improving capability for shrimp virus PCR testing laboratories in Vietnam
FIS/2006/143	Philippines mariculture enterprise development project
FIS/2006/144	Strengthening regional mechanisms to maximise benefits to small-holder shrimp farmer groups adopting better management practices (BMPs)
FIS/2007/045	Evaluation of production technology, product quality and market potential for the development of bivalve mollusc aquaculture in the Philippines
FIS/2007/094	Policy, institutional and economic constraints to aquaculture research adoption in Vietnam
FIS/2007/117	Review of sandfish pond-culture progress in Vietnam
FIS/2007/124	Diversification of smallholder coastal aquaculture in Indonesia
FIS/2008/023	Increasing production from inland aquaculture in Papua New Guinea for food and income security
FIS/2009/027	Training in soil assessment and scientific writing for aquaculture officers in Papua New Guinea
Fisheries and aquatic resource management projects	
FIS/2002/074	Capacity development to monitor, analyse and report on Indonesian tuna fisheries
FIS/2002/111	Culture, capture conflicts: sustaining fish production and livelihoods in Indonesian reservoirs
FIS/2003/033	Integrated fisheries resource management (Rinconada Lakes, Philippines and NSW Australia)
FIS/2003/059	Sea ranching and restocking sandfish (*Holothura scabra*) in Asia-Pacific
FIS/2005/078	Culture-based fisheries development in Lao PDR
FIS/2005/096	Assessment of the impact of the PNG purse seine fishery on tuna stocks, with special focus on the impact of FADs
FIS/2006/137	Analyses of three databases of fisheries data from Mekong River
FIS/2006/142	Developing new assessment and policy frameworks for Indonesia's marine fisheries, including the control and management of IUU fishing
FIS/2007/116	Improving resilience and adaptive capacity of fisheries-dependent communities in Solomon Islands
FIS/2008/031	An assessment of the extent of genetic introgression in exotic culture stocks of tilapia in the Pacific
FIS/2009/014	Preliminary assessment of invasive and exotic fish species in Papua New Guinea
FIS/2009/033	Preliminary assessment of the hand-line (banca) fisheries in the Philippines

Recently concluded Fisheries and aquatic resource management projects	
FIS/2006/183	Development of fish passage criteria for floodplain species of central Laos
FIS/2006/183	Development of fish passage criteria for floodplain species of central Lao PDR
FIS/2007/076	Thai Department of Fisheries assistance with Lao Fish Passage Development Program
FIS/2007/076	Thai Department of Fisheries assistance with Lao Fish Passage Development Program

Australian Research Council (ARC)

New and ongoing projects and fellowships of the Australian Research Council. *For more information visit* ***www.arc.gov.au***

Project ID	Project Title
DP0878499	Omega-3 fats in vegetable oils: Improving their benefits
DP0880358	Production of structured designer particles with high encapsulation capacities and efficiencies
DP0985995	The essence of being an animal: sponge allorecognition and the evolution of individuality
LP0776273	Establishing an ecological basis for stocking density of Australian bass in freshwaters: Experimental field tests of a general numerical model
LP0776759	Uncovering the genetic basis for saxitoxin production in Australian marine and freshwater systems: novel molecular tools for management
LP0776985	Alternate diets for a sustainable aquaculture industry: neuroethology of feeding in barramundi
LP0882042	Reducing skeletal malformations in cultured marine fish using gene expression, improved nutrition and advanced system operation
LP0882235	Linking genes with the phenotype - creation of a genetic linkage map for the silver-lipped pearl oyster Pinctada maxima
LP0883806	An investigation of the underlying mechanisms that control gender and fertility in the Moreton Bay Bug, Thenus orientalis
LP0883880	Improving vaccine performance through understanding host-pathogen interaction in yersiniosis
LP0883918	Molluscan Biomonitor for Quantification and Impact Assessment of Endocrine Disrupting Chemicals in Marine Ecosystems
LP0989830	Regulation of saxitoxin production in bacteria and algae
LP0990606	Optimising barramundi production through early prediction of thermal tolerance and growth
LP0990664	Towards closing the life cycle of marine sponges: benefits for public aquarium display and coral reef conservation
DP1093395	Investigations of Australian Hematodinium species (sp.): a dinoflagellate parasite damaging major crustacean fisheries in Australia and worldwide
DP1093444	More than mud: how will disruption of soft-sediments threaten coastal biodiversity?
DP1093570	Triggering the dormant capacity of fish to make omega 3 fatty acids
LE1010059	Dual frequency identification SONAR (DIDSON) facility for sampling benthic and pelagic fish populations
LP1010069	Enzymatic synthesis, microencapsulation and biological evaluation of a new class of omega-3 derived functional food ingredients
LP1010153	Linking fish recruitment and habitat use to ecosystem processes

LP1010367	Feeding and breeding: Rainfall effects on connectivity and fidelity of iconic coastal fishes
LP1020409	Restoration genetics of five endangered fish species from the Murray-Darling Basin
DI1010158	Climate change research: Can Sydney rock oysters adapt to chronic multigenerational exposure to ocean acidification and temperature?

Fisheries Research and Development Corporation (FRDC)

The Fisheries Research and Development Corporation plans, invests in and manages fisheries research and development throughout Australia. It is a federal statutory authority jointly funded by the Australian Government and the fishing industry. *For more information visit:* ***www.frdc.com.au***

Project ID	Project Title
2010/214	Investigating the development process of a large scale aquaculture farm incorporating Indigenous cultural considerations
2010/203	Atlantic Salmon Aquaculture Subprogram: oxygen regulation in Tasmanian Atlantic salmon
2010/033	Atlantic Salmon Aquaculture Subprogram: characterisation of EST03G12 and elucidation of its role in Amoebic Gill Disease (AGD) severity
2009/328	Tactical Research Fund: Seafood Industry Partnerships in Schools – Program Pilot, Tasmania
2009/327	Tactical Research Fund: Working on Water – a careers promotion program for marine-based sectors
2009/324	People Development Program: Nuffield Scholarship for an Aquaculture and/or Fish producer
2009/315.06	People Development Program: scholarship program for enhancing the skills of aquatic animal health professionals in Australia – Dr Kevin Ellard & Dr Debbie Grull
2009/315	People Development Program: scholarship program for enhancing the skills of aquatic animal health professionals in Australia
2009/303	Australasian Aquaculture 2010 to 2014
2009/219	New and emerging Aquaculture Species Subprogram: review of FRDC investment policies and strategies and development of a management framework for new and emerging aquaculture research
2009/217	Capability audit and assessment for fisheries and aquaculture RD&E framework
2009/214	Sector Overview: National Fisheries and Aquaculture RD&E Framework
2009/208	Developing clam aquaculture in Australia: a feasibility study on culturing Donax deltoids and Katelysia sp on intertidal and subtidal leases in South Australia
2009/206	Development of octopus aquaculture
2009/085	Atlantic Salmon Subprogram: Mitigation of climate change effects on salmon broodstock: effects of estrogen therapy
2009/067	Tactical Research Fund: Nutrient and phytoplankton data from Storm Bay to support sustainable resource planning
2009/046	PIRSA Initiative II: carrying capacity of Spencer Gulf: hydrodynamic and biogeochemical measurement modelling and performance monitoring
2009/044	Aquatic Animal Health Subprogram: surveys of ornamental fish for pathogens of quarantine significance

2008/354	Tactical Research Fund: investigating the establishment of a national aquatic animal health industry reference group
2008/328.12	People Development Program: 2009 FRDC Visiting fellows program Prof Hugh Ferguson
2008/328.11	People Development Program: FRDC Visiting fellows program Dr Alyssa Joyce
2008/317	Aquatic Animal Health Subprogram: Intensive pathology training workshop for laboratory diagnosticians
2008/314.17	People Development Program: 2009 FRDC International travel bursary – Paul Hardy-Smith
2008/314.16	People Development Program: 2009 FRDC International travel bursary – Mark Oliver
2008/228	ASBTIA: Maintaining SBT High Health Status - understanding SBT parasites and investigating ways to mitigate their influence on SBT production
2008/227	ASBTIA: SBT Research Program - Coordination, facilitation and administration
2008/226	Tactical Response Fund: Salmon Aquaculture Subprogram: ecological effects due to contamination of sediments with copper-based antifoulants
2008/222	Rickettsia-like organism vaccine development for the salmonid aquaculture industry
2008/221	Atlantic Salmon Aquaculture Subprogram: whole genome selection to improve selection efficiency for AGD resistance
2008/217	Atlantic Salmon Sub Program: Effect of temperature on reproductive development of maiden and repeat spawning Atlantic salmon: understanding the basis for improved egg survival and quality
2008/202	Towards reliable hatchery-produced quality blue mussels: an integrated approach to optimising supply
2008/094	Primary Industries Standing Committee (PISC) and Research and Development Corporations National RD&E Framework
2008/041	Aquatic Animal Health Subprogram: Tools for investigation of the nodavirus carrier state in marine, euryhaline and freshwater fish and control of NNV through integrated management
2008/038	Improvements to Semi Intensive Floating Tank System to achieve commercial readiness in marine environments
2007/406	Food safety validation of storage/transport temperatures for live Australian oyster species
2007/316	Capacity building in the surveillance, diagnostics, and management of disease issues of pearl oysters
2007/249	Market investigation of the impact of rock lobster aquaculture
2007/246	Tactical Research Fund: A review of the ecological impacts of selected antibiotics and antifoulants currently used in the Tasmanian salmonid farming industry and development of a research programme to evaluate the environmental impact of selected treatments
2007/230	Aquaculture Nutrition Subprogram: Technical review, project management and development services.

2007/228	Rock Lobster Propagation Subprogram: Facilitated development and coordination of research towards the commercial propagation of rock lobsters in Australia
2007/226	Aquatic Animal Health Subprogram: rapid strain identification of the bacterial fish pathogen Streptococcus iniae and development of an effective polyvalent vaccine for Australian barramundi
2007/225	Aquatic Animal Health Subprogram: Metazoan parasite survey of selected macro-inshore fish of southeastern Australia, including species of commercial importance
2007/216	Develop the non-maxima pearl industry at the Abrolhos Islands (*Pinctada Imbricata/fucata*)
2007/010	Integration of socio economic sustainability criteria into a reporting framework for the Australian aquaculture industry
2006/235	Rocklobster Propagation Subprogram: commercially viable production of temperate rocklobster (Jasus spp.) puerulus from eggs
2006/078	Innovative Solutions for Aquaculture and Aquafin CRC: Development of rapid environmental assessment and monitoring techniques for application to finfish aquaculture in South Australia
2006/064	Aquatic Animal Health Subprogram: development of diagnostic tests to assess the impact of Haplosporidium infections in pearl oysters
2006/062	Aquatic Animal Health Subprogram: identification of host interactions in the life-cycle of QX disease
2005/401	A supply chain assessment of marine vibrios in oysters: prevalence, quantification and public health risk
2005/227	Selection of genetic strategies in Pacific oysters to maximise commercial benefit

Australian Seafood Cooperative Research Centre (Seafood CRC)

The Australian Seafood Cooperative Research Centre is Australia's first entity to stimulate and provide comprehensive seafood-related research and development and industry leadership on a national basis. *For more information visit:* ***www.seafoodcrc.com.au***

Project ID	Project Title
2010/730	Industry Bursary Oyster Consortium Members – group study tour to New Zealand
2010/724	Development of tools for the sustainable management of genetics in polyploidy Pacific oysters, *Crassostrea gigas*
2010/723	Improving Safety and Marketability of Australian Oysters in China
2010/713.30	Seafood CRC Industry Bursary: Market Intelligence Study Tour to Shanghai, China
2009/770	Retail Transformation Chilled Pre Packaged Seafood Category Development (CRC Syndicate Project)
2009/766	Development of Near-Infra Red method to detect and control microbial spoilage
2009/765	Nutritional genomics and its application in aquaculture
2009/764	Impact of acid sulphate soils on the survival of adult Pacific oysters challenged by bacterial extracellular products
2009/761	The role of inbound Chinese tourists in promoting Australian food products in China
2009/752.10	Communal: Seafood Trade Expert Panel
2009/752	Overseas Market Access for Shellfish
2009/748	Marketing Master Class 2009
2009/747	Can they hear me? Modern and innovative strategies to talk to the seafood industry about MISA/CRC research results
2009/743	Incorporation of selection for reproductive condition, marketability and survival into a breeding strategy for Sydney rock oysters and Pacific oysters
2009/741	Visiting scientist Dr Clive Talbot
2009/729	Australian edible oyster industry business plan
2009/727	Supply Chain analysis increasing profitability in selected supply chains
2009/725	Sustainable aquaculture development through effective policies
2009/702	Seafood Success: Entrepreneurship and Innovation Program
2009/701	Australian oyster industry benchmarking program development
2008/915	Australian Barramundi Farmers Association – R&D planning, implementation, extension and utilisation
2008/909	Market access for Abalone
2008/907	Seafood CRC participation in the Seafood Access Forum
2008/906	Seafood Trade & market Access portal
2008/905	Australian Seafood Compositional profiles portal
2008/904	Benefit-cost analysis of marker assisted selection in Australian aquaculture species

2008/903	Understanding Yellowtail Kingfish
2008/902	Aquaculture Innovation Hub
2008/781	Australian Seafood Productivity Improvement Centre
2008/779	Tracking seafood consumption and measuring consumer acceptance of innovation in the Australian seafood industry
2008/777	Australian Oyster Industry Supply Chain Analysis Improvement Strategy
2008/775	A one day workshop to define oyster 'condition' and to review the techniques available for its assessment
2008/768	Seafood Innovation through molecular biology
2008/763	Quality, shelf life and value adding of Australian oysters
2008/761	Proactive control of oyster spat production by controlling microbiological contamination
2008/758	Development of a genetic management and improvement strategy for Australian cultured Barramundi
2008/757	Commercial production of all-female reproductively sterile triploid Giant Tiger prawns (*Penaeus monodon*): Assessing their commercial performance in ponds
2008/756	Increasing seedstock production of domesticated giant tiger prawns (*Penaeus monodon*) through improved male fertility
2008/753	Oyster Consortium marketing projects investment meeting
2008/751	A business plan for the Australian barramundi industry
2008/746	Improvements in Yellowtail Kingfish larval and juvenile survival and quality
2008/744	Seafood Productivity Engineer
2008/741	PhD supplementary funding – human enteric viruses in Australian bivalve molluscan shellfish (operating)
2008/734	Methodologies for the implementation of Micro Mobile Information Systems in the Cold Chain and the resulting implications of Time Temperature logging for models of microbial growth
2008/729	SARDI Shellfish Safety
2008/723	The development of a genetic management and improvement strategy for temperate marine finfish (SBT, YTK and Mulloway)
2008/722	Scope and economic analysis of options for a nationally unified breeding program that provides significant economic benefit to the Australian abalone aquaculture industry
2008/711	Addressing key aquatic animal health issues limiting production of Australian yellowtail kingfish (*Seriola lalandi*) and hatchery-reared southern bluefin tuna (*Thunnus maccoyii*) industries
2008/705	Quantitative Genetics Scientist
2008/700	Protecting the safety and quality of Australian Oysters using predictive models integrated with 'intelligent' cold chain technologies
2007/719	Protecting the safety and quality of Australian oysters with integrated predictive tools
2007/718	Yellowtail kingfish juvenile quality: Identify timing and nature of jaw deformities in yellowtail kingfish and scope the likely causes of this condition

2007/717	Southern Bluefin Tuna (SBT) Maturation and Sexing; develop and apply new technologies
2007/715	Oyster consortium – communication, extension and management of R&D results
2007/707	Resolving larval rearing, juvenile development and productivity constraints for propagated Southern Bluefin Tuna. Improvements to the production of Yellowtail Kingfish and Mulloway
2007/706	Establish the technical and market data to assess the feasibility of live bivalve mollusc (Australian oysters) access in USA – Stage 1
2007/700	A critical evaluation of supply-chain temperature profiles to optimise food safety and quality of |Australian oysters
2007/310	Oyster consortium strategic plan (2007 to 2014)
2007/234	AGD vaccine phase III; Sea-based trials, vaccine refinement and commercialisation
2007/224	Increasing the profitability of Penaeus monodon farms via the use of low water exchange, microbial floc production systems at Australian Prawn Farms and at CSIRO
2006/227	Enhancement of the Pacific oyster selective breeding program
2006/226	Securing and enhancing the Sydney rock oyster breeding program
2005/209	Industry management and commercialisation plan for the Sydney rock oyster breeding program