

“Planning Strategic Research for Fisheries and Aquatic Conservation In NSW, 2004 – 2009”

UPDATED TABLES OF RESEARCH PRIORITIES

– Last updated 19 August 2009 –



**Industry &
Investment**

NOTES:

- This is a 'living document' – the list of priority research areas which are presented in this document were originally extracted from the document entitled “Planning Strategic Research for Fisheries and Aquatic Conservation in NSW, 2004 – 2009”. As priorities change in the light of new research being completed and as new questions are formulated, stakeholders are given the opportunity to update their priorities and these updates are presented in this document. Stakeholders wishing to provide updates to this document should e-mail: tracey.mcvea@dpi.nsw.gov.au
- * indicates that research is currently underway

Wild Harvest

Resource Assessment

PRIORITY PROJECTS

Stock assessments of all primary and secondary species in the Estuary General Fishery*

Stock assessments for the main species in the Ocean Fish Trawl fishery especially red spot whiting, trevally, angel and wobbegong sharks

Stock assessment models for eastern king and school prawns and determine optimal sizes at first capture*

Stock assessment of target species in the Ocean Haul fishery*

Stock assessment of commercially caught sharks

Stock assessments (including biomass-dynamics and length-structured models) for lobsters*

Stock assessment, distribution and vulnerability to overfishing of small pelagics (baitfish)*

Stock assessment distribution and population composition of yellowfin tuna

Stock assessments of all primary and secondary species in the Ocean Trap and Line Fishery

Stock assessment of squid

Develop fishery-independent surveys to complement fishery dependent stock assessment studies*

Develop non-destructive fishery-independent technologies for monitoring fish populations in the wild

Assessment of fisheries resource allocation between and within fishery sectors, e.g., commercial versus recreational, estuary general versus ocean hauling etc.

Develop stock assessment models for all target (primary) and overfished species in NSW commercial fisheries

STAKEHOLDER GROUPS

EGMAC, MPAC, DECC, I&I NSW, NCC

OFTMAC, OPTMAC, MPAC, I&I NSW, NCC

EPTMAC, OPTMAC, MPAC, I&I NSW, NCC

OHAULMAC, MPAC, I&I NSW, NCC

MPAC, NCC, I&I NSW

LOBMAC, MPAC, I&I NSW

ACoRF, MPAC, DECC, I&I NSW

ACoRF, MPAC

OT&LMAC, I&I NSW, NCC

I&I NSW

I&I NSW, NCC, AM

I&I NSW, NCC, AM

I&I NSW, NCC

I&I NSW, NCC

Wild Harvest (cont'd)

Biology

PRIORITY PROJECTS	STAKEHOLDER GROUPS
Biology and fisheries of sea river and snub-nosed garfish*	OHAULMAC, I&I NSW
Biology and fishery for sweep	OHAULMAC, I&I NSW
Reproductive biology abundance and spawning biomass of sea mullet*	OHAULMAC, I&I NSW
Growth and mortality of school prawns*	EPTMAC, I&I NSW
Abundance size-distributions growth movements and puerulus recruitment of lobsters*	LOBMAC, I&I NSW
Black bream biology and the management tools required for this species*	ACoRF, I&I NSW
Biology of luderick*	I&I NSW, ACoRF
Age and growth of recreationally important fish species*	I&I NSW, ACoRF
Biology of freshwater yabbies and their harvest potential*	Inland MAC, I&I NSW
Distribution abundance and habitats of spiny crayfish especially in relation to stocked salmonids	I&I NSW
Bream tagging program to determine growth, movements and biomass	ACoRF, I&I NSW
Identification, distribution and abundance of larval stages of fish and shellfish of commercial and recreational importance*	NSWAERP, DECC, AM
Monitoring of migration, movement and breeding behaviour of Australian Bass and Estuary Perch*	DECC, I&I NSW
Address information gaps with respect to biological data for species with an 'overfished' exploitation status	I&I NSW, NCC
Collect/review information on the biology of key primary/target and overfished species in NSW commercial fisheries and determine optimum size at capture to assist with development of appropriate size limits and/or harvest strategies	I&I NSW
Accurate stock identification and up-to-date taxonomy of exploited species, particularly demersal fish, sharks, rays and molluscs of the family Volutidae	AM, NCC
Research to provide advice on possible key threatening processes	FSC, AM, NCC
Population structure and distribution of carp	I&I NSW
Shark movements in Sydney Harbour and other NSW estuaries	I&I NSW

Wild Harvest (cont'd)

Influence of Habitats and Other External Impacts

PRIORITY PROJECTS	STAKEHOLDER GROUPS
Mapping and description of all fishing grounds to assist in management strategies involving spatial and temporal allocations of fishing effort	SIAC, EPTMAC, OPTMAC, NCC, DECC, I&I NSW, AM
Mapping of reef areas along the NSW coast	OT&LMAC, DECC, I&I NSW, AM
Investigate the influence of sewerage treatment outfalls / discharge points and regional development on wild fisheries	SIAC, ABMAC, I&I NSW
Factors affecting the recruitment of prawns to estuaries	EPTMAC, OPTMAC, DECC, I&I NSW
Identify the causes of, and ways to eradicate or decrease the spread of, <i>Perkinsus</i> -related mortality in abalone	ABMAC, I&I NSW
Sources of primary productivity that support NSW estuarine fisheries	NSWAERP, DECC
Impact of nutrient enrichment and other stressors on fisheries production	NSWAERP
Identify key water quality parameters necessary for sustainable fisheries to establish a mechanism to maintain and improve the environmental conditions required for sustainable fisheries production	EGMAC, EPTMAC

Impacts of Management and Manipulation

PRIORITY PROJECTS	STAKEHOLDER GROUPS
Effects of estuarine recreational fishing havens on key stocks and by-catch species and fishing in adjacent areas*	EGMAC, FRCAC, NCC, DECC, FSC, I&I NSW
Assessing the utility of closure strategies in managing a range of issues including marine pests, biodiversity, stock sustainability and sharing the resources	SIAC, NCC, DECC, NSWAERP, I&I NSW, AM
Fishery independent surveys to assess populations in estuaries open and closed to different fishing regimes	EGMAC, NCC, DECC, I&I NSW
Applicability of spatial closures to conserve small prawns	OPTMAC, I&I NSW
Utility of alternative size limits and fish downs for abalone	ABMAC, I&I NSW
The relationship between the release of larger fish by recreational fishers and population fecundity	ACoRF, DECC, I&I NSW
Assessment of kingfish stocks following the removal of pelagic traps	ACoRF, DECC
Investigate the viability of stocking fish into the marine environment (e.g., suitable species, methods, environmental impacts)*	NSWAERP, I&I NSW
Restoring depleted reefs of abalone through techniques such as transplants, habitat rehabilitation and reseedling	AbMAC

Wild Harvest (cont'd)

Reporting, Managerial and Policy Methodologies

PRIORITY PROJECTS	STAKEHOLDER GROUPS
Develop and evaluate indicators and performance measures for the impacts of fishing activities on biodiversity in the Estuary General, Ocean Haul and Estuarine Prawn Trawl fisheries	NCC, DECC, I&I NSW, AM
Improve catch and effort reporting and develop a daily logbook system in the Ocean Haul, Estuary Prawn Trawl, Ocean Prawn Trawl and Charter Boat fisheries	OHAULMAC, EPTMAC, OPTMAC, I&I NSW
Evaluate performance indicators and trigger points in all Fishery Management Strategies and develop robust indicators	EGMAC, NCC, DECC
Estimation of catches of species for all sectors (including unreported recreational, aboriginal and commercial catches)	MPAC, DECC, I&I NSW, NCC
Survey of the recreational and unreported commercial catch of rock lobsters	LOBMAC, I&I NSW
Commercial fishery logbook program for lobsters*	LOBMAC, I&I NSW
Estimate the illegal catch of abalone	ABMAC, I&I NSW
NSW Angler Survey (based on data from the National Angler Survey database)*	ACoRF, DECC, I&I NSW
Quantify the catch of spearfishers	ACoRF, DECC, I&I NSW, NCC
Coordinate underwater harvesting programs to provide: (1) a comprehensive picture of competition and nonclub-based spearfishing activity and (2) estimates of recreational harvest	DECC, I&I NSW
Assessment of recreational baitfish usage*	DECC, I&I NSW
Monitoring recreational fishing effort in coastal waters using sea rescue bases	I&I NSW
Development of indicators of recreational fishing quality*	I&I NSW
Developing a framework for the evaluation of recreational fishing survey design*	I&I NSW
Develop protocols for analysis of charter boat logbook information	I&I NSW
Use of recreational license data to provide the basis or frame for future survey and assessment work	I&I NSW
Collect historical/anecdotal information from older fishers regarding the biology and fishery of yellowtail scad	OHAULMAC
Determining the appropriate geographical size of management units*	AM, DECC
Development of a strategic research and development plan for the abalone fishery and industry in NSW	AbMAC
Finer scale co-management of the abalone fishery, particularly through the use of industry knowledge and experience, to provide a more cost-efficient and effective assessment of stocks	AbMAC
Development of policies and procedures for the effective monitoring and management of abalone farms	AbMAC
Robust time-series estimates of recreational catch and effort	I&I NSW
Estimate recreational catches of abalone and eastern rock lobster to enhance the TACC setting process for these species	I&I NSW
Estimate monetary value of species landed in the Estuary General and Estuary Prawn Trawl fisheries when sold in markets alternative to the Sydney Fish Market	EGMAC, EPTMAC
Estimation of catches of species for all sectors (including unreported recreational, aboriginal and commercial catches)	I&I NSW, NCC

Concomitant Effects of Wild Harvest

Ecological Processes

PRIORITY PROJECTS	STAKEHOLDER GROUPS
Develop ecosystem-based fisheries management	NCC, DECC, I&I NSW
Develop ecological sustainability performance indicators to assist in the management of fisheries' impacts on ecosystems*	MPAC, NCC, DECC, I&I NSW
Review the trophic level of catch by the Ocean Haul Fishery and trophic interactions with other fisheries	OHAULMAC, DECC, I&I NSW
Determine the impacts of a possible sea urchin fishery on enhancing abalone populations and effects on other species	ABMAC, I&I NSW
Examine predatory impacts of Australian salmon on other commercially important fish species*	OHAULMAC

Impacts of Fishing Methods

PRIORITY PROJECTS	STAKEHOLDER GROUPS
Observer programmes to monitor by-catches and retained catches for all commercial fisheries*	OHAULMAC, EPTMAC, OPTMAC, OT&LMAC, LOBMAC, I&I NSW, MPAC, NCC, DECC,
Impact of trawling, hauling and other fishing methods on other fisheries biodiversity ecosystems and habitats*	OHAULMAC, OFTMAC, OPTMAC, OT&LMAC, NCC, DECC, AM, NSWAERP, I&I NSW
Effects of nipper pumping in sensitive estuarine areas	SIAC, DECC, I&I NSW
The effect of 'riddling' on the mortality rate of discarded prawns*	EPTMAC, OPTMAC, I&I NSW
Studies of the effects of lobster trapping on the benthos including physical disturbance and potential effects on the ecosystem	DECC, NSWAERP
Investigate changes in biomass and species composition of affected species after reducing by-catch	ACoRF, DECC, I&I NSW
Hook mortality rate of released fish (species survival; best handling methods; hook patterns and sizes)*	ACoRF, NCC
Impacts of pollution from fishing activities (e.g., lost gear bait wrappers etc.) on the environment and the development of strategies to minimise the impacts of pollution from fishing activities	DECC
Potential impacts and interactions of various fishing sectors and methods with seabirds and marine mammals	MPA, DECC
Quantify and investigate the fate of discards across all gears in all fisheries and develop strategies to maximise discard survival	I&I NSW
Determine the selectivity of current gear (including effective BRDs) for key target species	I&I NSW
Impacts of fisheries (especially trawl fisheries) on non-target species, particularly invertebrates	AM
Data on the effect of gear selectivity on non-commercial by-catch	AM
Monitoring of habitat loss / modification as a result of commercial fishing	AM

Concomitant Effects of Wild Harvest (cont'd)

Technology

PRIORITY PROJECTS	STAKEHOLDER GROUPS
Develop fishing operations and gear designs to minimise the impact of trawling in the Estuarine Prawn Trawl fishery on incidental species and small prawns*	EPTMAC, DECC, I&I NSW
Develop appropriate gear for trawl whiting with particular regard to minimising captures of juvenile whiting and other incidental catch*	OFTMAC, DECC, I&I NSW
Investigate the selectivity of trawl nets for silver trevally*	OFTMAC, DECC, I&I NSW
Studies of lobster trap selectivity rates of ingress and egress and consequences for trap efficiency and ghost-fishing mortality	LOBMAC, DECC, I&I NSW
Development of a system for the remote release of submerged lobster head-gear	LOBMAC
Develop appropriate mesh size and other dimensions for flathead nets*	EGMAC, I&I NSW
Describe retention/meshing rates of 28mm garfish hauling nets and determine appropriate mesh size*	OHAULMAC, I&I NSW
Investigate the utility of circle hooks on maximising the post-release survival of primary/target species in the commercial line fisheries	I&I NSW
Determine the selectivity of all commercial gear (including effectiveness of BRDs) and develop strategies for improvement	I&I NSW
Investigation of the optimum design of escape panels for fish and juvenile lobster in lobster traps	I&I NSW
Assessment of industry-initiated gear modifications in all fisheries	I&I NSW
Determine the effectiveness of approved BRDs following the implementation of square-mesh codends in the Estuary Prawn Trawl and Ocean Trawl fisheries	I&I NSW

Conservation

Biology

PRIORITY PROJECTS	STAKEHOLDER GROUPS
Population genetics, distribution, abundance, movements and biology of threatened marine and freshwater species*	ACoRF, NCC, DECC, NSWAERP, I&I NSW, AM
Protecting the genetic integrity of wild stocks of Australian native freshwater fish	ACoA, NCC, DECC, AM
Modelling the Grey Nurse Shark population	NCC,, I&I NSW
Artificial propagation of Grey Nurse Sharks	I&I NSW
Distribution, abundance and genetic studies of <i>Notopala sublineata</i> (snail) and <i>Archaeophya adamsi</i> (dragonfly)	FSC, AM
Active research on the distribution of remaining populations of the river snail, <i>Notopala sublineata</i> , and techniques for a captive breeding and conservation stocking program	FSC
Establish and monitor the distribution and abundance of threatened species, to assess species conservation status and response to recovery actions	NCC, FSC, DECC, I&I NSW
Determine the historical genetics and existing genetic variability of threatened species	FSC
Determine the genetic diversity within and between populations of <i>Posidonia</i> along the coast of NSW	FSC
Actively search for populations and determine the distribution of <i>Nereia lophocladia</i> at Coffs Harbour	FSC
Monitor the status of caprellids along NSW coastal waters	FSC
Monitor eastern freshwater cod populations in the Richmond River catchment	FSC
Assess status of trout cod populations	FSC

Ecological Processes and Biodiversity

PRIORITY PROJECTS	STAKEHOLDER GROUPS
Studies of estuarine ecosystem relationships and functions, including potential effects of climate variability	NCC, DECC, NSWAERP, I&I NSW
Determine genetic and ecological effects of stocking in freshwater habitats	NCC, DECC, NSWAERP, I&I NSW
Compile biodiversity inventories for marine and freshwater bioregions	NCC, DECC, I&I NSW, AM
Studies of biodiversity and environmental change	NSWAERP, AM
Contribute to sustainable rivers audit and other freshwater biodiversity surveys*	NCC, DECC, I&I NSW
Develop survey methods for marine biodiversity	NCC, DECC, NSWAERP, I&I NSW, AM
Develop genetic biodiversity procedures	NCC, DECC, NSWAERP, I&I NSW, AM
Develop ecosystem models for aquatic habitats*	NCC, DECC, NSWAERP, I&I NSW
Initiate ecological investigations of key habitats in Marine Parks	NCC, DECC, NSWAERP, I&I NSW
Develop tools for the assessment of the ecological health of estuarine and freshwater aquatic habitats	NCC, DECC, AM, NSWAERP
Examination of species connectivity at multiple scales, particularly in relation to local and regional scale oceanography	MPA, AM
Comprehensive regional assessments of biodiversity, with a particular emphasis on the distribution of rare and threatened aquatic species	FSC, AM

Conservation (cont'd)

Influence of Habitats and Other External Impacts

PRIORITY PROJECTS	STAKEHOLDER GROUPS
Determine and reduce the impacts of water extraction, flood mitigation, invasive species, blue green algae, flood events and land management practices on water quality, fish habitats, ecosystems and associated fisheries	EGMAC, OT&LMAC, ACORF, NCC, DECC, NSWAERP, I&I NSW
Integrated monitoring and standard of environmental flows and impacts on different life stages of freshwater fish*	NCC, DECC, NSWAERP, I&I NSW
Determine effects of thermal pollution, altered water chemistry and boundary layer processes on key freshwater species	NCC, DECC, NSWAERP, I&I NSW
Identify rivers with current/potential salinity issues and fish likely to be affected*	NCC, DECC, I&I NSW
Relate river discharge to estuarine production of fish and invertebrates	NCC, DECC, NSWAERP, I&I NSW
Determine flow requirements for threatened freshwater fish	NCC, DECC, NSWAERP, I&I NSW
Design regular monitoring programs for fresh, estuarine and marine waters	NCC, DECC, I&I NSW
Determine whether FAD's and artificial reefs provide nursery areas for fish and their other effects on biodiversity*	ACoRF, NCC, I&I NSW
Develop habitat hierarchies for mapping marine and freshwater biodiversity	DECC, I&I NSW
Investigate fish use of snags and develop 'resnagging' methodologies*	NCC, DECC, I&I NSW
Investigate recruitment and migration of fish into floodplains*	NCC, DECC, I&I NSW
Develop methods to assess and monitor existing and potential marine estuarine and freshwater habitats as aquatic reserves*	NCC, DECC, NSWAERP, I&I NSW
Improve standard techniques for bioregional assessments	NCC, DECC, I&I NSW
Determine the habitat requirements of fishes and invertebrates throughout their life cycle	DECC, AM, NSWAERP
Determine the habitat requirements, environmental tolerances, population dynamics and other aspects of the life history and ecology of threatened species	FSC
Clearly identify the precise impacts of known and potential threats to threatened species	FSC
Investigate potential impacts of sea level rise on coastal fish habitats, in particular saltmarsh, mangroves, seagrass and rocky shores*	NCC, DECC, NSWAERP, I&I NSW
Examine the effects on fish stocks of the management of Intermittently Closed and Open Lagoons	NCC, NSWAERP, DECC, I&I NSW
Assist Catchment Management Authorities to assess the status of river health and aquatic biodiversity associated with regional natural resource management reforms	CMA, DECC, I&I NSW
Assess the effects of seawalls on saltmarsh and seagrass	NCC, NSWAERP
Examine the potential impacts of stock access on saltmarsh and mangrove communities	I&I NSW
Investigate low flow fish passage in unregulated coastal rivers	I&I NSW

Conservation (cont'd)

Impacts of Management and Manipulation

PRIORITY PROJECTS	STAKEHOLDER GROUPS
Baseline and ongoing habitat/species monitoring programs to assess performance of each marine park and the zones within them*	MPAC, NCC, DECC, I&I NSW
Evaluating marine protected areas' contribution to sustaining fisheries ecosystems and the conservation of threatened species	MPAC, NCC, DECC, NSWAERP, I&I NSW, AM
Monitor improvement of fish abundances after the water reform process	NCC, DECC, I&I NSW
Investigate effects of weir removal on improving fish passage	NCC, DECC, I&I NSW
Assess the effectiveness of aquatic habitat and fish passage rehabilitation techniques*	NCC, CMA, DECC, I&I NSW
Determine effectiveness of rehabilitation in ASS areas and NCC, DECC, NSWAERP, floodplains*	DECC, I&I NSW
Use existing and new data to determine optimum size and arrangement of MPA's	NCC, DECC, I&I NSW, AM
Determine the effects of reclamation jetties and other structures on benthic habitats and biodiversity	NCC, DECC, I&I NSW
Assessing the benefits of fishing restrictions at Grey Nurse Shark critical habitat sites	NCC, I&I NSW
Determine the effectiveness of existing aquatic habitat protection and management policies	DECC, I&I NSW, NCC
Develop techniques for captive breeding and conservation stocking of Macquarie perch	FSC
Develop techniques for captive breeding and conservation stocking of southern pygmy perch	FSC

Technology

PRIORITY PROJECTS	STAKEHOLDER GROUPS
Develop and assess new designs for fishways and the effectiveness of existing fishway designs*	NCC, DECC, I&I NSW
Evaluate effectiveness of by-pass channels	NCC, I&I NSW
Assess modified lock operations and weir design in ameliorating fish passage*	NCC, I&I NSW
Assess the effectiveness of new fish passage remediation options such as active floodgate management and new designs for waterway crossings	NCC, CMA, I&I NSW
Continually improve efficiency of electrofishing and other fish sampling techniques to minimise mortality or harm	NCC, FSC, I&I NSW
Investigate the efficacy of screens on water pump inlets in preventing fish / larvae / egg entrainment	I&I NSW
Investigate techniques to reduce the by-catch of threatened species in NSW's commercial and recreational fisheries	FSC

Conservation (cont'd)

Alien Species

PRIORITY PROJECTS	STAKEHOLDER GROUPS
Research into the control/of <i>Caulerpa taxifolia</i> *	EGMAC, ACoRF, DECC, I&I NSW, NCC
Determine impacts of <i>Caulerpa</i> on habitats, biodiversity and commercial fish*	SIAC, EGMAC, DECC, I&I NSW
Map growth and spread of new and existing <i>Caulerpa</i> outbreaks*	DECC, I&I NSW
Determine impacts of dredging in <i>Caulerpa</i> areas	DECC, I&I NSW
Management of carp in water storages *	DECC, I&I NSW
Environmental benefits of carp reduction	DECC, I&I NSW
Population structure and distribution of carp*	Inland MAC, DECC
Responses of carp populations to reduction (e.g., can carp compensate for reduction in adult density by increasing recruitment)	DECC, I&I NSW
Identification of habitats where carp do not occur to prevent invasion or to eradicate new invasions before they are established	DECC, I&I NSW
Determine distribution patterns and impacts of introduced freshwater alien fish species on habitats and biodiversity	DECC, NSW AERP, I&I NSW
Targeted biodiversity surveys in ports to detect presence of introduced species	DECC, I&I NSW, AM
Develop control techniques for <i>Gambusia</i>	DECC, I&I NSW
Develop control techniques for redfin, goldfish, weatherloach, banded grunter and other freshwater pests	DECC, I&I NSW
Determine impacts and develop management and control techniques for all alien species	NCC, DECC, NSW AERP

Aquaculture

Technology – Oysters

PRIORITY PROJECTS	STAKEHOLDER GROUPS
Determine sustainable oyster stocking densities within part or all of an estuary	ARAC, DECC
Develop and maintain a selective breeding program for Sydney rock oysters to achieve desired traits	ARAC, I&I NSW
Develop and maintain a selective breeding program for pearl oysters to achieve desired traits	ARAC, I&I NSW
Determine optimum post-harvest storage temperatures and procedures for Sydney rock oysters	ARAC
Benchmark current oyster farm practices to determine optimum current practices and to test for benefit of new practices and lines of selectively bred oysters	ARAC

Technology – Prawns

PRIORITY PROJECTS	STAKEHOLDER GROUPS
Develop cost-effective prawn feeds (and reduce dependence on fishmeal)*	ARAC, NCC, I&I NSW
Domesticate prawn species for culture*	ARAC, I&I NSW
Genetically improve prawn culture species	ARAC, I&I NSW
Improve prawn broodstock performance	ARAC, I&I NSW
Enhance access to broodstock	ARAC, I&I NSW
Optimise prawn pond and sediment management practices	ARAC, DECC
Improve survival, growth rates and food conversion ratios of prawns	ARAC, I&I NSW

Technology – Silver Perch

PRIORITY PROJECTS	STAKEHOLDER GROUPS
Maintenance of genetic separate lines of silver perch broodstock*	ARAC, I&I NSW
Selective breeding of silver perch for faster growth	ARAC
Adopt health management strategies*	ARAC, I&I NSW
Reduce feed costs for silver perch through improved feeding practices	ARAC
Identification of appropriate sites and site selection	ARAC, I&I NSW
Improve technology for commercial, cost-effective production e.g., cage culture	ARAC, I&I NSW

Aquaculture (cont'd)

Technology – Marine Fish

PRIORITY PROJECTS	STAKEHOLDER GROUPS
Develop and improve broodstock management techniques for marine species, including Australian bass, mulloway and kingfish for improved production of high quality eggs on a year-round basis*	ARAC, I&I NSW
Improve technology for commercial cost-effective production of marine fish fingerlings	ARAC
Develop improved diets with less reliance on fishmeal for grow-out of marine fish including snapper, mulloway and kingfish*	ARAC, I&I NSW, NCC
Develop genetically superior stocks of key species	ARAC, I&I NSW
Reduce feeding costs through improved feeding practices	ARAC, I&I NSW
Identification of sites and site selection	ARAC, I&I NSW
Improve technology for commercial, cost-effective sea cage farming	ARAC, I&I NSW

Technology – Other Species

PRIORITY PROJECTS	STAKEHOLDER GROUPS
Rock lobster aquaculture and enhancement*	LOBMAC, I&I NSW
Abalone aquaculture and enhancement*	ARAC, I&I NSW
Sea Urchin aquaculture and enhancement	ARAC, I&I NSW
Investigate the integration of alternative utilisation species into normal oyster farming regimes to enhance and diversify production from a lease*	ARAC, I&I NSW
Investigate potential for aquaculture of new native species	ARAC

Technology – General

PRIORITY PROJECTS	STAKEHOLDER GROUPS
Development and evaluation of recirculation technology for NSW species (freshwater and marine)*	ARAC, NCC, DECC, I&I NSW
Improve and extend hatchery technology	ARAC
Reduce feeding costs through improved feeds and feeding practices	ARAC, I&I NSW
Reduce impacts from bird predation – alternative to bird netting for land-based aquaculture	ARAC

Aquaculture (cont'd)

Health Management

PRIORITY PROJECTS	STAKEHOLDER GROUPS
Develop and improve affordable diagnostic tools and improve access to qualified laboratories for aquaculture species*	ARAC, I&I NSW
Investigate the potential that sewage, stormwater and agricultural runoff may lead to an accumulation of chemicals, viruses and bacteria within oysters and/or the environment that will cause human health issues	ARAC, NCC, DECC, I&I NSW
Develop simple testing procedures for the presence of marine biotoxins to assist aquaculture, especially farming filter feeders like oysters	ARAC, DECC, I&I NSW
Understand the occurrence of QX and winter mortality in oysters within NSW*	ARAC, I&I NSW
Implement farm management tools to deal with diseases of silver perch (i.e., Winter disease)	ARAC, I&I NSW
Improve disease resistant oyster stock through genetic selection*	ARAC, I&I NSW
Develop an assessment process for relaying of oysters which considers the disease status of each waterway*	DECC
The relationship between the occurrence of an oyster disease (QX, Winter Mortality, etc) and the environment of an estuary and model/predict the severity of an outbreak*	DECC
Develop appropriate protocols for on-farm disease prevention, control and treatment for prawn diseases*	I&I NSW
Identify potential disease threats to prawn farming*	DECC
Study of microbial ecology in aquaculture	NSWAERP
Improve rapid diagnostic testing for VNN in barramundi, Australian bass and other native species	ARAC, I&I NSW
Improve understanding and management of exotic and endemic diseases	ARAC, DECC
Increase understanding and management of nodavirus and other viral diseases	ARAC
Develop a national approach to biosecurity, particularly for translocation of aquaculture species	ARAC
Improve understanding and management of flukes and parasites for fish culture	ARAC
Improve knowledge base to support registration of chemicals for aquaculture	ARAC

Aquaculture (cont'd)

External Impacts

PRIORITY PROJECTS	STAKEHOLDER GROUPS
Develop a unified Whole of Government waterway classification model with defined assessment criteria with relevance to oyster farming and other aquaculture	DECC, ARAC
Identify and mitigate estuaries or areas which are affected by water quality problems like acid sulphate releases, nutrient run off, chemical run off, sediment, etc. which affect the productivity of oysters and other aquaculture*	DECC, I&I NSW, ARAC
Assess and minimise the impacts from agricultural and urban development to increase production and profitability of commercial, sustainable aquaculture	ARAC, I&I NSW
Develop strategies to understand impacts of how to best adapt to climate change	ARAC

Concomitant Effects

PRIORITY PROJECTS	STAKEHOLDER GROUPS
Effects on wild populations from aquaculture fish, pond run-off or artificial feeds escaping or being released	OTLMAC, DECC, I&I NSW
The environmental influence of prawn farm management practices at a range of scales from molecular to regional	DECC
Assess non-lethal methods of excluding predators from aquaculture activities	DECC, NCC
Environmental impacts of aquaculture on water quality and coastal environments	DECC, NSWAERP, ARAC, NCC
Assess the benefits of aquaculture to decrease pollution and improve aquatic ecosystems (i.e., seagrasses)	DECC, ARAC
Evaluate and/or develop alternative commercially viable products to replace timber and tar where applicable for oyster farming	ARAC, NCC, DECC

Aboriginal Fisheries

PRIORITY PROJECTS

Facilitate the development of a centre for research into Aboriginal fisheries

Develop a research plan for Aboriginal fisheries

Consolidate any existing research on Aboriginal fisheries

Determining catch, cultural significance of species and traditional fishing knowledge needs

Evaluation of the socio-economic impact of non-Aboriginal fisheries on Aboriginal fisheries

Socio-economic study of the value of cultural fishing to Aboriginal communities

STAKEHOLDER GROUPS

NSWALC, ARG, AC (TOG)

NSWALC, ARG, AC (TOG)

ARG, AC (TOG)

ARG, AC (TOG)

ARG, I&I NSW

ARG, I&I NSW

Post-Harvest and Value-Adding

PRIORITY PROJECTS	STAKEHOLDER GROUPS
Examine the dynamics of value-adding margins along the whole marketing chain for wild harvest and aquaculture products	I&I NSW
Improve oyster handling techniques post-harvest to ensure a high quality safe food product is delivered to the consumer*	ARAC
Evaluate and develop an effective oyster marketing strategy which will assist industry and provide a platform for increasing investment opportunities and consumer confidence in the industry	ARAC
Develop an oyster marketing standard and grading criteria	ARAC
Identify and implement processes for adding value to oysters and byproducts	ARAC
Identify and develop available markets and identify critical factors limiting growth of export markets for Australian farmed prawns	ARAC, I&I NSW
Investigate strategies to enhance product and add value to the Estuary General Fishery	EGMAC, I&I NSW
Development of improved tagging and marketing of abalone	I&I NSW
Emerging technologies in seafood traceability systems	SFM
Identify, rank and design solutions to reduce barriers to consumption of Australian seafood	SFM
Market development of abalone, particularly through the use of product integrity and quality assurance programs to help develop unique branding	AbMAC
Evaluate mechanisms and new technologies to assist with direct marketing of fish by fishers	I&I NSW
Evaluating technology and its impact on the dynamic at the buyer-seller interface	MFMA
Investigating and developing strategies for utilising performance in the post-harvest sector	MFMA
Identifying and implementing strategies for addressing growth limiting factors in the post harvest sector	MFMA

Socio-Economics, Education and Communication

PRIORITY PROJECTS	STAKEHOLDER GROUPS
Independent assessment of the economic value of the NSW commercial fishing industry and undertake extension and promotion activities to increase the public awareness of commercial fishing (including its value) and the results of relevant research to reduce conflict	SIAC, EGMAC, EPTMAC, OPTMAC
Socio-economics of the Ocean Fish and Ocean Prawn Trawl fisheries and the likely impact of fisheries management strategies and Marine Parks*	OFTMAC, OPTMAC, I&I NSW
Economics of the commercial lobster fishery (costs of catching lobsters, profitability, impacts of management and community contribution on trading of quota and sales of shares)	LOBMAC, I&I NSW
Survey of fishers' costs and earnings to quantify their terms of trade	I&I NSW
Examine the technical capacity and efficiency in the NSW fishing fleet*	I&I NSW
Economic assessment of the impact of the abalone fishery	I&I NSW
Examine fisher-attitudes towards the environment and consequent education programmes	DECC
Survey of economic benefits of recreational fishing to coastal communities*	ACoRF, I&I NSW
Assess the benefits of declaring a species 'recreational only' (do recreational benefits outweigh the value of the commercial catch?)	ACoRF, I&I NSW
Training and extension of recirculation systems in aquaculture	DECC
Increase awareness and utilisation of sustainable aquaculture practices	ARAC, NCC, DECC, I&I NSW
Increase farmer awareness and adoption of relevant R&D outcomes (extension) for all aquaculture species*	ARAC, I&I NSW
Investigate and define the socio-economic and environmental value of fisheries and fish habitats to the community	I&I NSW
Investigate the social and economic benefits (both direct and follow-on) of commercial fishing to the community	I&I NSW
Investigate strategies to improve industry empowerment and development with respect to leadership and management initiatives	I&I NSW
Educate and communicate to the broader public of NSW the concept of sustainable seafood, and increase awareness of sustainable fishing practices in NSW	NCC

Appendix – List of Acronyms

ABMAC	Abalone Management Advisory Committee
AC (TOG)	Aboriginal Communities (Traditional Owner Groups) <i>(new stakeholder group for 2009)</i>
ACoRF	Advisory Council on Recreational Fishing
AM	Australian Museum
ARAC	Aquaculture Research Advisory Committee <i>(replaces the former Advisory Council on Aquaculture (ACoA and Oyster Research Advisory Council (ORAC))</i>
ARG	Aboriginal Reference Group
CMA	Catchment Management Authorities
DECC	Department of Environment and Climate Change <i>(includes the former agencies of the Department of Environment & Conservation (DEC) and the Department of Natural Resources (DNR))</i>
EGMAC	Estuary General Management Advisory Committee
EPTMAC	Estuary Prawn Trawl Management Advisory Committee
FRCAC	Fisheries Resource Conservation Assessment Council <i>(this committee has been subsumed by SIAC)</i>
FRDC	Fisheries Research and Development Corporation
FSC	Fisheries Scientific Committee
I&I NSW	Industry & Investment NSW <i>(incorporates the former NSW Department of Primary Industries)</i>
Inland MAC	Inland Management Advisory Committee
LOBMAC	Lobster Management Advisory Committee
MFMA	Master Fish Merchants' Association
MPAC	Marine Park Advisory Council
NCC	Nature Conservation Council
NSWALC	NSW Aboriginal Lands Council
NSWAERP	NSW Aquatic Ecology Research Programme
I&I NSW	NSW Department of Primary Industries
OHAULMAC	Ocean Haul Management Advisory Committee
OPTMAC	Ocean Prawn Trawl Management Advisory Committee
OT&LMAC	Ocean Trap & Line Management Advisory Committee
SFM	Sydney Fish Markets
SIAC	Seafood Industry Advisory Council <i>(replaces the former Advisory Council on Commercial fishing (ACCF), the Fisheries Resource Conservation Assessment Council (FRCAC) and the Seafood Industry Advisory Forum (SIAF)</i>