

## CHAPTER G. ECONOMIC ISSUES

This is the second formal incorporation of an economic assessment of a management strategy in the fisheries of NSW. It has been compiled from a limited amount of existing information, augmented by the results of economic and social surveys initiated by NSW Fisheries and undertaken by Roy Morgan Research (Roy Morgan, 2001a&b).

The following summary is based on the detailed consultant's report prepared by Dominion Consulting Pty Ltd and presented in Appendix CG1. The report on economic issues is in two sections; a review of existing information, and then an assessment of the draft FMS against the Planning NSW guidelines.

### 1. Existing Information

Existing information is available from NSW Fisheries records and provides information on licensing, effort and catches at the primary level. Price, at first sale in Sydney, is also available and this enables an imputed Sydney fish price to be generated. Potentially, all Sydney index data in this report may under state revenue by 50%, as estimated by the recent economic survey (Roy Morgan, 2001a), and by more than this in regions 2 and 3. Data on the fish processing industry is limited, being collected from annually renewed Registered Fish Receiver forms. The seafood processing, wholesale and retail industry in NSW requires further study.

An economic survey was undertaken by mail to enable a profile of the commercial fishers to be undertaken (Roy Morgan, 2001b). This had a response rate of 15.8%, 259 fishers from 1,640 completing the questionnaire, of which 59 were from ocean hauling endorsed businesses. This enabled the economic performance of businesses in the ocean hauling catching sector to be appraised and gave an indication of the position of industry to pay additional charges and purchase shares under the draft FMS.

A rapid social appraisal telephone survey was undertaken by Roy Morgan research (Roy Morgan, 2001a) and had a response rate of 50%, 870 fishers completing the questionnaire of which 222 ocean hauling fishers (25%) completed surveys. This enabled the assessment process to have up to date information on industry, its social profile and an indication of the potential social impacts of changes under the draft FMS which are examined in Chapter H.

The review of existing catch, effort and endorsement information, indicated the Ocean Hauling Fishery is based predominantly north of Sydney and there is substantial fishing in the south of the state also. The Ocean Hauling Fishery is seasonal with a high period in April to July and is predominantly one person businesses forming into teams, with business partnerships (7%) and a limited number of companies (2.4%). Approximately 17% of fishers work in other industries.

There were 374 businesses in the Ocean Hauling Fishery in 2001. For the 404 endorsement holders, 349 were actively fishing in a range of commercial fisheries in 1999-00 and 55 were latent. Of the 299 active fisher catch records (from 349 fishers who fished in the period), 151 could have fished in the fishery, but chose to catch fish in other fisheries for which they were endorsed. Of the residual 148, 21 fished only in the Ocean Hauling Fishery and 127 fished in ocean hauling and other fisheries, in the year 1999-2000.

The employment associated with ocean hauling endorsed fishing businesses was examined in the social survey. Between 615 to 975 persons were employed full time and part time in fishing businesses which hold an ocean hauling endorsement in 2001. There is no indication as to the extent of part-time employment in this seasonal fishery. This estimate also includes processing staff and needs further research as a statewide profiling exercise in order to avoid double counting of employment in the fishing and processing sectors.

The economic survey obtained data on industry operating costs, revenues and capital for one financial year only. The fishery is highly variable in activity and capital investment levels, some fishers having low capital investment. Survey returns were analysed to measure economic profit and to estimate a net economic contribution to the economy.

Estimates of operating profit were made, as many operators did not include owner's payment from fishing. An economic approach was used to review long term viability. The economic test of long term viability subtracts economic costs from revenues and tests for evidence of a surplus. The economic costs have operating costs, fixed costs, including opportunity costs of capital, labour and economic depreciation. Having imputed a 7% risk adjusted opportunity cost of capital and imputed labour costs for all days worked from survey information, an estimate of economic depreciation was applied to test for long run viability, evidence of capacity to replace capital in the long term. Given the variation in the scale and scope of fishing operations, results were divided into ocean hauling endorsed businesses receiving more than 20% of total revenue from ocean hauling and endorsed businesses with less than 20% of total revenue from ocean hauling.

Long run economic surplus exists for 25% of all ocean hauling fishing businesses examined, being greatest in the businesses which obtained more than 20% of total revenue from ocean hauling. These businesses had a net economic return of 3% in excess of a 7% opportunity cost of capital, while other businesses had negative net returns of -3% and did not cover the 7% opportunity cost of capital. The average net return across the entire ocean hauling businesses was -2%, the median being -12%.

Further economic annual surveying is required to monitor economic performance in the longer term. The businesses currently operating below the long term viability criteria, are effectively subsidised by forgoing returns on capital and particularly on labour. This may be to accommodate lifestyle, or indicate barriers to fishers exiting the industry, such as lack of alternative employment in rural areas.

For these less viable operators, increased charges and requirements to purchase shares, will significantly reduce operational viability. There is a large range of operator performance given numerous part time fishers, multiple fishing interests, and fishers with involvement in industries outside fishing, including subsidies from welfare. This is common in other rural industries, such as the NSW dairy industry, and requires on-going research on social structure of the industry and the economics of fishing households and communities.

Trends in licence values show no significant rise in ocean hauling endorsement values in the last eight years, but this is a limited measure of economic performance, due to the restriction on transfers of endorsements for five years and poor perceptions of management among fishers.

Limited information is available on non-Sydney fish market prices, but shows higher prices for female mullet in roe in the north of the State. Exports of seafood out of Australia by ocean hauling fishers, was estimated at 12.6% of gross sales (Roy Morgan, 2001b).

Regional economic information on the fishing industry is limited to several studies in northern and southern NSW in the late 1980s. Economic multipliers in the fishing industry are low and total effects are generally between 1.5 and 2.0 times the direct effect (Tamblyn and Powell, 1988; Powell *et al.*, 1989). Existing information from expenditures outside local towns infers that approximately 70% of expenditure stays in the local communities, generating local multiplier effects (McVerry, 1996). This is an area for future research work. The social survey examined the type and location of major expenditure and regional purchase behaviour for major purchases made by ocean hauling fishers, showing the importance of business links between ocean hauling fishers, Sydney and Brisbane and between townships in the north and south of the state also. Fishing nets were the major purchase item for fishers.

## 2. Assessment

The assessment of the draft FMS draws on this background information and the responses under the draft FMS are ranked on their potential for larger scale economic impacts. There is insufficient cost and benefit information for a definitive ranking. The following issues are assessed:

- the intention under the draft FMS is to continue the annual 3% reduction in the number of fishing businesses seen under the Recognised Fishing Operation policy, to decrease effort in industry through the category 2 share management regime and give the remaining fishers improved fishing rights. For assessment purposes a 15% reduction in business numbers under the first five years of the draft FMS is envisaged, reducing 374 fishing businesses in 2001, to 319 in 2006, 55 choosing to exit. The basis of share allocation has yet to be decided. It is envisaged that minimum share holdings may translate into businesses having to pay between \$600-\$1,200 per year to remain in the fishery, in addition to new management charges. Some businesses will exit, the most likely being latent effort holders and those businesses grossing below \$10,000 per year. Shares will be more readily purchased by the 25% of businesses in economic surplus. To the majority of fishers without an economic surplus, there is an incentive to increase effort to cover the new payments. It is essential to monitor latent effort and contain active effort levels within historical guidelines, as stated in the strategy. Given the low output associated with exiting fishers, the economic flow-ons from exiting businesses will be low. Social costs are reported in Chapter H, social issues
- the draft FMS addresses any reduction in species availability using short term effort controls such as closures. These may have economic impacts as the capacity of fishers to desist from seasonal fishing would be related to their financial commitments and alternative activities. The use of seasonal closures reflects the seasonal nature of the fishery and defers the need to restructure due to what may be a seasonal variation in species availability
- a minimum shareholding provision at the endorsement level will be implemented within ocean hauling for garfish net (hauling) endorsements. There are currently 82 garfish net haulers mostly in Regions 4 and 6. This endorsement is not traded separately and has a marginal value of several thousand dollars when attached to a general hauling net package. This may equate to \$2,000-\$4,000 share value. A 15% reduction has been envisaged for assessment purposes, equating to a payment of perhaps \$400-\$800 per year, for five years, to retain a garfish endorsement. It is likely that latent effort holders and those businesses grossing less than \$10,000 per year, will sell. If 15% of 82 garfish endorsement holders exited in the next five years, 12 fishers would be impacted to some minor extent
- medium impact parts of the draft FMS are assessed, such as team based minimum shareholdings, category 2 share management, including upper limits on shareholdings in a region, improved marketing through fish penning and a new cost recovery framework
- low impact parts of the draft FMS involve changes in icing and food safety practices, allocation and effort containment issues, as well as some gear regulations.

The costs and benefits of the major elements of the draft FMS are appraised through an environmental account of the management of the fishery. To the estimate of economic surplus from fishing operations, the subsidised costs of management, research and compliance are added. Any

change in the level of stocks is also counted to give a statement of current fishery status under environmental accounting principles. New costs to industry from the draft FMS and share trading, are estimated and incorporated in the cost benefit analysis.

The fishery has a small economic deficit at the commencement of the draft FMS and seeks to have sound economic viability by 2006. Costs to fishers from new management charges and share purchase are substantial, as the fishery moves towards full cost recovery in the years following the plan (2006-2008).

The economic achievement of the objectives of the draft FMS depends on the category 2 shareholding proposal being as effective as envisaged in the plan. This is new territory in fisheries management and fuller economic investigation of share allocation and subsequent monitoring of restructuring is warranted. Mitigation may involve shares being related to an amount of total effort, as opposed to a share of access.

By 2006, changes arising from the draft FMS will alter industry operations and cost recovery policy will address subsidies, moving towards full cost recovery by 2008. The draft FMS enables this process to occur and monitors the health of stocks underpinning industry and fishery viability. The draft FMS is a first step towards a more economically sustainable fishery in accordance with ESD principles.

### **3. Conclusions**

This economic analysis of the draft FMS is done against a background of little available information. An economic survey of fishers indicates an economic surplus for those businesses with more than 20% of revenue from the Ocean Hauling Fishery. The draft FMS will assist industry to remain economically viable, by following the rate of adjustment under the established RFO process and addressing sustainable harvesting by controlling effort through short term access closures and minimum shareholding provisions for species issues as required. The analysis of the costs and benefits of the management plan, indicate that the fishery will be more profitable by 2006-07. The level of achievement of the draft FMS, through the new category 2 share management regime, needs to be monitored. There may also be cumulative impacts on ocean hauling businesses from the restructuring of the Estuary General Fishery and from the recreational fishing area process. These will likely assist in reducing latent effort among ocean hauling endorsement holders at limited cost to ocean hauling fishers.

There are economic costs and social impacts for industry under the draft FMS, as 55 of 374 businesses are expected to exit the Ocean Hauling Fishery in the 2002-2007 period. Many of these will be low catch or latent effort businesses, leading to minor regional economic impacts due to their low output. The draft FMS should be seen as a significant step on the longer path towards achieving ESD objectives. The social issues are presented in Chapter H.

## **4. Data Requirements in Relation to the Assessment of the Impacts of the Economic Issues**

### **a) Reference to technical data and other information relied upon to assess impacts**

The data used in the assessment is from several sources. The catch and effort data is from NSW Fisheries and is logbook data joined with NSW Fisheries licensing data for tables that have endorsements. Effort data at the days fished level is complicated by the logbook system where fishing three methods in one day ends up being records as one day of effort against each of three methods. This limits the potential for accurate production modelling or bio-economic analysis. In the Ocean Hauling Fishery, the fishing teams and movement of fishers between teams impacts the collection of reliable fishery data as identified and addressed in the draft FMS.

A significant issue for fishers is the use of the Sydney index for price imputation on declared catches. The monthly average price for female mullet in Sydney Fish Market is less than prices for in the north of the state, and may on occasions be several times the Sydney price.

In contrast, the estimate of price at first sale does not deduct between 11% and 23% of gross revenue for market and handling expenses. Therefore to a fisher adjacent to Sydney landing to the fish market, the imputation by the Sydney Index is potentially too high to the extent of marketing fees.

The economic survey asked fishers to declare gross revenue from catch in 1999-2000 and this was compared with the predicted Sydney index for each fisher to see the inter-relationship. The Sydney index may under estimate actual prices in ocean hauling fishing businesses by 50% and more in some regions

There are also uncertainties in the value of fishery businesses and in endorsement values. Diversity among business packages mean the true value of access is difficult to determine. The move to share management will require examination of the structure of business and endorsement values.

### **b) Important knowledge gaps**

Several gaps are apparent. The major one is the lack of an industry wide profile of the seafood industry in NSW, including processing, wholesaling and the movements and values of seafood in the marketing chain. This would enable an evaluation of the secondary stages of the fish catch including processors, exports, imports and employment derived from the NSW fish resource. It could also potentially extend to retailing.

Multiplier estimates could be verified and contribute to future assessments. The regional importance of the seafood industry in each zone could be evaluated. Part of this could use the Register Fish Receiver annual renewal forms to include more information on processing activity in relation to the fisheries under management.

Fish price information outside Sydney needs to be collected on a regional basis from processors involved with the mullet fishery and other points of sale. This is required as several of the future assessment issues, such as the optimal harvesting time of species, will require bio-value models using biological and size and price information for different species during their migrations.

Economic viability is part of the objectives of the *Fisheries Management Act 1994*. Business values, endorsement values and shares valuation is an area requiring more research. Similarly, longer term planning needs to be able to monitor the cost of operations and could use existing survey information to establish a representative fishing cost index. This would monitor cost changes for producers and could parallel the Sydney price index for fish revenues. Economic linkages between fishing communities have been briefly addressed in the current social survey and could be augmented through time.

Category 2 share management is a new allocation mechanism and may not be sufficiently binding on individual producer behaviour as it does not automatically limit effort or catch. This scheme needs monitoring.

An environmental and management cost and benefit account system needs to be investigated, relating value of the stocks to the fishery management regime.

### **c) Timetable for developing the data sets**

Data needs can be addressed in the next five year period through development of a strategy for improving the following data:

- investigation of available fish price data and the accuracy of the Sydney index. This would include a direct comparison of Sydney and non-Sydney price differentials and comparisons of domestic and export markets. Price data is required to monitor fishery value and modelling resource management issue and mullet prices in the north of the state (first two years)
- examination of the viability of businesses, business values, endorsement and share values and the basis of share allocation prior to trading. Subsequently, monitoring of share values to ensure industry viability and the achievement of the draft FMS objectives (first year)
- surveying the economic performance category 2 share management and of businesses after the implementation of the plan (first two years)
- consider developing a state-wide fishing industry economic restructuring model for predicting and appraising fishing business adjustments across fishery administrative divides (immediate)
- revising the collection of catch and effort data to enable more sensible modelling of catch per unit effort and productivity data. This would involve changing the fishery data logbook system and needs to happen within five years in preparation for long term sustainability issues, including economic modelling and monitoring (immediate)
- developing an economic profile of the regional fishing and seafood processing industry in NSW. This could include marketing, economic infrastructure and regional benefits such as multiplier effects. This needs to be progressed by area and in conjunction with social community profiling as a basis for longer term planning (immediate)
- development of an environmental accounting approach to fishery management costs and benefits should be undertaken (first three years).

## CHAPTER H. SOCIAL ISSUES

This is the second formal incorporation of a social assessment of a management strategy in the fisheries of NSW. It has been compiled from a limited amount of existing information, augmented by several NSW Fisheries initiatives, taken to augment available information through a social survey (Roy Morgan 2001a).

The following summary is based on the detailed consultants' reports prepared by Dominion Consulting Pty Ltd and Umwelt (Australia) Pty Ltd and presented in Appendix CH1 and CH2. The report on social issues is in multiple sections; a review of existing information, an assessment of the draft FMS against the Planning NSW guidelines, health issues, heritage issues, Indigenous issues and data issues.

### 1. Existing Information

The regional and community location of fishers was identified from licensing data and compared with the ABS data for a range of social indices, at the post code level. This included local population, unemployment and fisher employment data from the 1996 national census and the SEIFA index of disadvantage for rural communities (ABS, 1996). The fishing communities tend to focus around key estuaries and towns, though a significant number of fishers reside in smaller communities. More in depth studies of fishing communities is an area for future work. A rapid social assessment telephone survey contacted 222 ocean hauling fishers with a range of questions relevant to the draft FMS.

Total employment in businesses with an ocean hauling endorsement, is estimated as between 615 and 975 persons (full time and part time), though those directly associated with the fishery would be less. Some of the employees are probably in processing and there is no measure of the extent of part time involvement. This requires further studies as recommended.

A demographic profile of ocean hauling fishers was generated describing, age, education levels, marital status and dependent children and relatives. The way of life of ocean hauling fishers was investigated through questions on working hours in the normal, high and low seasons, and details of industrial injury through fishing. The ocean hauling fishers were found to be an aged, highly resident population, with substantial fishing experience and strong family involvement with fishing, 61% of fishers having had more than 2 generations of family in the fishing industry. However, 39% are first generation fishers. Fishers in excess of 60 years of age, are 21% of all ocean hauling fishers and a wide range of fishers of all ages are evident in the fishery.

The skill sets of fishers were examined through the social survey and only 38 from 222 (17%) worked outside fishing, 14% being capable of working in another occupation full time. Further investigation suggests that up to 25% of the ocean hauling fisher population could consider working in other industries full time or part time. However, approximately 71% were insistent about their identity as fishers and were unable, or unwilling, to consider re training. This "psychic income" from fishing and problems in mobility of fishers are similar to NSW dairy farmers and a range of issues are discussed. These require future research. Regional unemployment in NSW is higher on the North coast of NSW (14%) and areas outside Sydney, and is a significant issue for aging fishers considering alternative employment to fishing.

There is little independent opinion on community perceptions of fishing activities. In a community telephone survey in 1999, there was general concern among a random selection of the population for the well being of the fishery environment and for the need to manage and conserve fish stocks (Roy Morgan, 1999). Other community opinion about fishers, is less formal and is an area requiring development. Most commercial fishing activity is not observed by the public.

Recreational fishers are more aware of the commercial fishery and conflict over commercial fishing methods, such as hauling is common. The draft FMS seeks to reduce the conflict among commercial fishers and between commercial and recreational fishers. The recreational fishing area program is addressing these issues outside the FMS process.

The regional liaison process, which included commercial fishers, NSW Fisheries, local people, representatives of local councils, NPWS, recreational fishers and community groups, were established in 1995 to reduce conflict on ocean beaches. The process involved selecting traditional hauling grounds, shared and closed beaches within each region, as well as access points and a code of conduct for operating on ocean beaches. The process was not completed in regions 5 and 6. At this stage, although beach-based fishers operate under the code of conduct, other facets of the process have not been implemented. It is proposed under the draft FMS to implement all facets of the process, to establish and implement a code of conduct for boat-based haulers, and to continue the process in regions 5 and 6.

## **2. Assessment**

The social assessment followed the Planning NSW guidelines, but as there is no established social impact assessment framework for fishery management plans, an approach was developed from guidelines and available literature. The draft FMS management responses were ranked into high and low impacts: firstly, those socio-economic issues arising from policy changes that could have broad impacts; secondly, issues of social process, where policy changes require these processes to function properly for management to be most effective.

The most highly impacting issues include the use of minimum business shareholdings, species closures and minimum shareholdings to assist garfish to recover. Each of these changes has the capacity to impact many families, local communities and regions, the assessment being able to examine regional and predicted family impacts from available data. Each of the impacts are assessed and mitigation is suggested where applicable.

The major social changes in the draft FMS involve the displacement of up to 70 fishers in the first five years through the implementation of minimum business shareholdings and garfish minimum shareholdings. These will probably impact part time, and older fishers as 21% of fishers are over 60 years old, and a diverse range of people, who are either latent endorsement holders, or fishing businesses grossing less than \$10,000 per year.

The predicted social impacts assume a 15% displacement of business/fisher numbers over the first five years of the FMS. The numbers of dependants associated with up to 60-70 typical ocean hauling fishers is between 73 and 91. This is an upper estimate, as if older fishers exit the fishery, then the number of dependants reduce to between 23 and 30 persons. Exiting fishers are likely to be low catchers, or have other income sources, if they are latent effort. This reduces the proportion of social impact attributable to the exiting of fishers under the draft FMS. The cumulative impacts of the estuary general FMS may lead to more ocean hauling businesses exiting. The funds from the recreational fishing area process may impact the adjustment process indirectly and to an unknown extent.

The draft FMS will have different regional community impacts as indicated by the SEIFA index of disadvantage for fishing communities. On implementation of the draft FMS, the ocean hauling fishing communities in Far South Coast, Illawarra, Manning, Clarence, and Wallis Lakes are most vulnerable to changes from the socio-economic impacts under the draft FMS. Other communities outside Sydney and the Central Coast are also potentially disadvantaged to a lesser but significant extent. Social impacts on communities will also depend on the economic responses of fishers to category 2 share management, which will not be uniform. The social impacts of the draft FMS may be mitigated by the rate at which adjustment of minimum shareholdings occurs.

Other measures in the draft FMS will require functioning social processes to ensure effective management. Responses involving communication, compliance, codes of conduct and new gear regulation require cooperation between management and industry and a reduction in conflict to make the draft FMS successful. The draft FMS seeks to reduce conflict among ocean hauling fishers and between commercial and recreational fishers. This needs to be monitored to ensure the effective implementation of the plan.

### **3. Conclusions**

This is the second social assessment of a FMS in NSW. Available information, data and specially commissioned survey results, are used to describe the fishers and communities in the fishery. It is notable that several rural areas away from Sydney on the north and south coast, are socio-economically disadvantaged and will be less resilient to impacts under the draft FMS.

Most of the social issues arise from reallocation under category 2 share management and will impact fishers, employees, families and communities associated with the exiting 55 ocean hauling businesses, with up to 70 fishers. It is predicted that older fishers, businesses earning less than \$10,000 per year and latent effort holders, will be likely to exit, with low levels of regional economic impact, due to the small loss of output associated with these fishers. An estimated 60 to 70 fishers, with between 23-91 dependents, will be impacted to differing extents in proportion to their age and income dependence on the fishery.

The social impact will be noticeable in ocean hauling fishing communities, given the lack of alternative employment for many aged fishers, though elderly fishers will now be able to retire with a payment from the sale of shares. Other social aspects of NSW fishing communities require further research in the next five years. A priority should be to understand fishing communities, as a basis to appraise the impacts of successive fishery plans on a community. This would give greater clarity and reduce the impacts on fishing communities through a series of different fishery management strategies. The current FMS is a first step in moving towards ESD objectives in the management of the Ocean Hauling Fishery.

## 4. Health Issues

### a) Health risks related to the environment

The seafood safety scheme is based on the premise that some species and/or activities represent a potentially higher food safety risk than others. The highest food safety risk is associated with bivalve molluscan shellfish because they can readily accumulate harmful contaminants (bacteria, viruses, algal toxins and heavy metals) from their environment and transmit these to the consumer. Bivalve molluscs are not retained in the Ocean Hauling Fishery and the species that are targeted in the fishery do not require any special management arrangements.

### b) Handling and processing health risks

As food producers, the provisions of current NSW food legislation, namely the *Food Act 1989* and the *Food Regulations 2001*, bind participants in the fishery. Vessels are included in the definition of “vehicles” in the *Food Act 1989*. There are no specific provisions relating to seafood specifically in the context of this fishery but general requirements about hygiene and cleanliness, keeping good records and keeping products cool apply to the handling of all foods including fish.

The *Food Production (Seafood Safety Scheme) Regulation 2001* due to be introduced by December 2001 will require all seafood businesses, including those in the harvest sector to be licensed with SafeFood Production NSW and prepare a Food Safety Program in respect of their activities.

With respect to the fishery, this will apply from the point at which the catch is brought on board the vessel. Where the same business or individual further processes or handles products on shore (after landing) the Food Safety Program will have to encompass each and all of those other activities.

For most participants who simply catch fish and transport them to land, the basic requirements would already be understood and met since they involve good handling and hygienic practices. Given the range of scale and sophistication of vessels and businesses engaged in the fishery, however, it is likely that some improvements will need to be made, primarily of a minor nature. Most such changes would probably be accommodated in the draft FMS, which encourages better handling, icing, and value-adding methods.

Essentially the major food safety requirements on all participants in the fishery are keep the catch clean, keep it cold and keep good records. The current level of compliance is largely unknown but with the introduction of the Seafood Safety Scheme all participants will be licensed and subject to audit and inspection.

### c) Health risks to fishers

There are a variety of occupational health and safety (OH&S) risks associated with the Ocean Hauling Fishery. Primarily, these include the use of boats, four-wheel drive vehicles and powered winches. Workcover administers the legislation that controls these activities and protects workers' health. The fishing businesses in the fishery are required by law to operate in a manner consistent with the OH&S legislation. The draft FMS is not required to provide additional specific management responses to OH&S issues.

## **5. Heritage Issues**

The following summary is based on the detailed consultant's report prepared by Umwelt (Australia) Pty Ltd and presented in Appendix CH2.

### **a) European heritage**

European heritage sites, reflecting the importance of maritime activities in the past development of NSW, are widely distributed along the NSW coastline, with some 1,500 shipwreck sites recorded. This assessment considers potential impacts of ocean hauling fishing activities on those European heritage sites that are listed in inventories maintained by the NSW Heritage Commission, the National Estate, and the Australian Shipwreck register.

Historic heritage has been differentiated between the transport and structural contexts. This differentiation is essentially dictated by the base source(s) or recording database(s) from which data has been derived. The transport context is specifically represented in the record of shipwrecks. The structural environment includes such resources as landing ramps, seawalls, breakwaters, piers and boat harbours, but also includes such developments as groynes and piles.

### **i) The interaction of commercial fishing with historic heritage resources**

The activities associated with commercial fishing are limited to associated boating, foreshore access and the use of a variety of nets. The physical and spatial presence of heritage resources along ocean beaches is likely to have only a marginal effect on commercial fishing operations. With regard to shipwrecks, it appears likely that commercial fishing will have no impact on residual material evidence, having regard to the likely nature, bulk and mass of any residual material and the potential for sub-surface material to be covered by silt/sand.

It is considered that there is a low risk that activities in the Ocean Hauling Fishery will impact on heritage sites, although some shipwreck sites may present safety risks to ocean hauling fishers in boats.

### **b) Aboriginal heritage**

There is abundant ethnographic and archaeological evidence for past use of beaches, headlands and nearshore waters by Aboriginal people, and of the importance of resources from these environments to Aboriginal economies and lifestyles.

Known Aboriginal sites are recorded in the NPWS Aboriginal Sites Register, and there are many hundreds of known sites located along beaches and in associated coastal dune systems. Middens are reported from many beaches, although the distribution of known midden sites is heavily influenced by the nature of the beach and dune system.

### **i) Interactions between the Ocean Hauling Fishery and Aboriginal heritage sites**

Aboriginal sites along the sandy coastline are potentially at some risk of impacts by beach-based fishers, principally because of access to these areas by four-wheel drive vehicles. It should be noted, however, that beach haulers comprise only a small proportion of the four-wheel drive users of those ocean beaches that were traditional fishing and shellfishing locations for Aboriginal people.

Beach midden sites in many areas are also threatened by natural processes such as storm wave erosion of frontal dunes and the mobility of transgressive dune fields. Significant destruction of coastal dune sites also occurred during several decades of beach and dune mining for heavy mineral sands.

Commercial fishers access the traditional hauling grounds and shared beaches via access routes that have been agreed upon during the regional liaison process, which involved consultation with local councils and NPWS. The access routes are generally open to the general public. There are a few locations in each region where access is via a locked gate. It is assumed that in agreeing to access along various tracks to beaches, that NPWS has considered the risk that ongoing vehicle access could impact on Aboriginal sites. In addition, the closure of some beaches further reduces the risk of impacts on cultural heritage sites at those locations.

Where potential impacts on Aboriginal sites are known to exist, it is important that they are addressed by liaison and management actions at the local level. This will ensure compliance with the requirements of the NPW Act, and will also enhance cooperation and understanding of cultural concerns. An example is the presence of Aboriginal cultural heritage material at the boat ramp at Arrawarra. This ramp is also adjacent to a stone structure considered to be an Aboriginal fish trap.

In general, the physical evidence of past Aboriginal occupation along beaches is most severely threatened by land uses and activities other than ocean hauling fishing. Large midden sites in the Hunter estuary and north coast estuaries were exploited for lime in the nineteenth century, and sometimes also for road base. Many sites have also been destroyed by agricultural land uses, urban and tourist development and some have been destroyed by bank erosion (that may have natural or anthropogenic causes).

The overall risk that activities authorised by the draft FMS could detrimentally impact on Aboriginal cultural heritage evidence along NSW beach and dune systems is considered to be small.

## **ii) Protocols to reduce the risk of harm to sites**

Notwithstanding the low risk of impact on Aboriginal cultural heritage, several management actions are proposed to ensure that risks to archaeologically and culturally sensitive areas are minimised. These include:

- consultation with local Aboriginal community representatives in relation to any proposed commercial fishery facility that would be located on an ocean shoreline. This would include maintenance of existing ramps, new launching ramps and regional boat storage or maintenance sites. In general, such facilities will require separate environmental assessment and development consent including assessment of potential impacts on Aboriginal cultural heritage
- preparation of cultural awareness information for holders of Ocean Hauling authorisations. In particular, these operators should be aware of the nature of pipi and other midden sites along ocean beaches, and that such sites are protected by the NPW Act
- ongoing consultation with local Aboriginal communities about developments in the commercial sector. This will occur, for instance, through Aboriginal representation on regional management advisory committees.

## **6. Indigenous Issues**

The following summary is based on the detailed consultant's report prepared by Umwelt (Australia) Pty Ltd and presented in Appendix CH2.

It is important to note that there are several other concurrent policy development initiatives by NSW Fisheries that will affect the interaction of Aboriginal fishers with the Ocean Hauling Fishery. In particular, NSW Fisheries is currently working with the Aboriginal community to develop an Indigenous Fisheries Strategy, which will provide a new framework for the management of Indigenous fishing. The information presented in this assessment draws on the work in progress towards the Indigenous Fisheries Strategy, and outlines a process for ongoing review of regulatory relationships, but in no way pre-empts the outcomes of that strategy.

### **a) Current access of Aboriginal communities to coastal fishery resources**

Commercial fishing has existed along the NSW coast since the mid-nineteenth century. Commercial fishing operations commenced around Sydney then moved to more remote areas early in the twentieth century. Thus, the interaction of traditional Aboriginal fishing activity on beaches with the commercial sector spans approximately 150 years in the Sydney area, and 100 years elsewhere on the NSW coast. In many Aboriginal communities, at least some members held general commercial fishing licences, and participated in the commercial sector, as well as fishing to support family and friends.

From the late nineteenth century, a number of beaches were closed to commercial fishing, generally to conserve or to allow the regeneration of fish stocks. Traditional Aboriginal fishers would have continued to have access to the aquatic resources of these beaches during periods of commercial closure.

Since the mid-1980s, NSW Fisheries has introduced a number of new regulations. The broad objective of these regulations was to enhance the efficiency of the commercial fishery, and introduce greater control over fishing effort and impact. The number of Aboriginal people who are licensed as commercial fishers in the Ocean Hauling Fishery and the relative scale of their fishing effort is unknown.

The introduction of greater regulation in the Ocean Hauling Fishery from the mid-1980s had several unintended consequences in relation to the access of Aboriginal communities to the ocean beach fishery. The impacts of the regulations continue to be of concern to Aboriginal fishers.

### **b) Management of Indigenous fishing and Ocean Hauling Fishery interactions**

#### **i) Outstanding issues of concern to coastal Aboriginal communities**

The level of Aboriginal participation in the commercial fishery sector (based on interview data) appears to have declined substantially over the last twenty years. There are now perhaps less than 15 active fishing licences (estuary general and ocean hauling) held by Aboriginal families along the coast, however, the lack of commercial participation is not an indication of declining Indigenous participation in fishing generally. There are four main categories of outstanding issues of concern to

the Aboriginal community in relation to their participation in the management of fisheries in NSW (NSW Fisheries 2000) and each of these is also relevant to the impact of the draft FMS on Aboriginal communities:

- lack of recognition and accommodation of traditional Indigenous fishing practices
- declining participation of Aboriginal people in commercial, recreational and aquaculture fisheries
- insufficient meaningful presence and participation of Aboriginal people in the process for managing and conserving fisheries resources
- need for better communication and consultation with Aboriginal people.

### ***Actions to address Aboriginal concerns in the draft FMS***

The draft FMS identifies Indigenous people as stakeholders in the Ocean Hauling Fishery, noting that these interests arise from:

- direct participation in the fishery as commercial fishers
- traditional fishing practices, whereby people catch fish on behalf of themselves and their community
- lodging Native Title claims over beaches that are used for commercial fishing.

Existing legislation does not currently recognise Indigenous fishers as a separate sector of the fishing population, and this is a large part of the reason that none of the legislative reviews to date have given extensive consideration to Aboriginal community concerns.

The draft FMS does not specifically address the Aboriginal community's view that the evolution of the fisheries legislation in NSW has gradually but consistently undervalued the interests of Aboriginal people in the Ocean Hauling Fishery. The draft FMS does, however, foreshadow future amendments to the strategy to better accommodate Aboriginal community interests. For instance, objective 4.1 aims to monitor and provide an appropriate allocation of the fisheries resource between fishing sector groups.

In the draft FMS the performance indicator listed for appropriate sharing of the fishery resource is the catch level (including estimates) of the commercial, recreational and Indigenous fishing sectors. A trigger point for review is noted as a shift of relative catch levels of 25% between sectors over the term of the strategy.

It is important to note that such a shift in relative catch is unlikely to occur without significant changes to policies affecting access to the resource.

## **ii) Towards a NSW Indigenous Fisheries Strategy**

NSW Fisheries has recognised that coastal Aboriginal communities have long standing and legitimate interests in the fishery resources of the coastline. The NSW Government now also acknowledges that Indigenous community interests in the coastal fishery are contemporary and do not relate only to past history. Existing fisheries management policies and legislation have restricted the traditional access of Aboriginal communities to natural resources.

A recent working paper prepared by NSW Fisheries (2000) indicates that consultation is progressing about how best to recognise and accommodate the rights and interests of Aboriginal

people in commercial fisheries. The working paper is part of the process for the development of an Indigenous Fisheries Strategy for NSW.

### ***Interaction of the draft FMS and the Indigenous Fisheries Strategy***

The time frame for the finalisation of the Indigenous Fisheries Strategy is not clear, and there are many complex issues to be resolved before the stakeholders agree to a sustainable strategy. It is most probable that the draft FMS will be assessed and will commence before negotiations about the Indigenous Fisheries Strategy are complete.

The preliminary indications are that the Indigenous Fisheries Strategy will address many of the issues that remain as outstanding concerns to the Aboriginal community in relation to the Ocean Hauling Fishery. It is also possible that the strategy will include a staged series of actions to gradually improve Indigenous access to the natural resources of beaches and other fisheries, so that any necessary changes to the draft FMS will also be gradual.

Ongoing review of the draft FMS will be essential to ensure that changes in the policy approach to Indigenous fisheries are adopted within the draft FMS. It is proposed that the draft FMS should be reviewed in two years, with particular attention to ensuring consistency between any Indigenous Fisheries Strategy that exists at that time, and the management protocols contained in the draft FMS.

## **c) Summary**

As noted above, the risk of impacts on Aboriginal sites from ocean hauling activities is considered to be low at the whole of industry level, although specific local issues will need careful management.

Many of the concerns of Aboriginal communities about the impact of current commercial fishery regulations on their livelihoods and lifestyles are being addressed through the partnership with NSW Fisheries to develop an Indigenous Fisheries Strategy. This process may take some time, however, both to finalise to the satisfaction of all stakeholders and to implement through changes to other strategies and legislation.

In the short term, several actions are recommended to minimise the risks of adverse interactions between the Ocean Hauling Fishery, Aboriginal heritage and contemporary Indigenous community issues. These include:

- focussing on enhancing communication between NSW Fisheries and Aboriginal communities at all levels
- preparing cultural awareness material for fishers highlighting risks to Aboriginal sites and how these can be minimised
- ensuring close co-ordination of the preparation of new fishery management strategies for commercial, conservation, recreational and Indigenous sectors, to enhance opportunities for identifying innovative cross sectoral management options
- exploring opportunities for further Indigenous fishery or recreational fishery development on beaches that are currently subject to a low level of commercial fishing activity
- the draft FMS should be reviewed after two years, so that changes to Indigenous fishery policies can be accommodated.

## **7. Data Requirements in Relation to the Assessment of the Impacts on the Social Issues**

### **a) Reference to technical data and other information**

Prior to this study there was little social information on commercial fishers in NSW. The survey data comes from a rapid social appraisal questionnaire executed by a telephone survey, which is a first step towards the incorporation of social information in the management of fishers in NSW. The survey is not a definitive social profiling exercise. Given the complexity of the fisheries production inter-relationships, multiple communities and political climate among industry members facing significant allocation issues, the survey sought to gain a rapid over view of social issues raised under the draft FMS.

The survey revealed some inconsistencies in answers involving fisher income and these have been investigated by matching with the available Sydney index information and preliminary results from the economic survey.

### **b) Important knowledge gaps**

The social profile of ocean hauling fishers can be augmented through time by further studies. Regional analysis of fisher communities is a priority integrating with economic information on the importance of the fishing activity to the community infrastructure of towns in NSW. Other approaches examine community linkages such as expenditures by businesses, employees, employee residential locations, social infrastructure services and existing social networks (Fenton and Marshall, 2001). Future social survey work should address community structure and inter-relationships at a regional level and articulate with regional economic studies previously recommended in Chapter G. It is important to understand the fishing community in order to appraise the impacts of the fishery management strategies being developed in the next few years, which will have cumulative effects on fishing communities.

### **c) Timetable for developing the data sets**

More comprehensive social profiles and regional analysis should be commenced in the next two years to assist in monitoring the impacts of adjustment and in preparation for appraisal of future management strategies. The survey information recently obtained can have existing NSW Fisheries data added to it for analysis, but has a limited shelf life.

More complete regional industry and fishing community studies need to be undertaken recognising the fishing communities can be cumulatively impacted by multiple fishery management strategies. In time it is desirable for the fishing community profile and characteristics to be more clearly identified. This would enable impacts from different draft FMS to be monitored. In the longer term repeating social impact assessments for each fishery draft FMS risks ending up as a piecemeal and duplicative process if progress is not made in more fundamental fishery community profiling and monitoring in the next five years commencing as soon as possible.