



## **NSW North Coast Sustainable Aquaculture Strategy-Land Based Aquaculture**

### **Readers' Note**

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# NSW North Coast Sustainable Aquaculture Strategy

Land Based Aquaculture

August 2000

A NSW Government Initiative

## **North Coast Sustainable Aquaculture Strategy**

A NSW Government initiative of NSW Fisheries, Department of Urban Affairs and Planning, Department of State and Regional Development, Environment Protection Authority, Department of Land and Water Conservation, National Parks and Wildlife Service and NSW Agriculture to encourage sustainable aquaculture in New South Wales

### **Acknowledgment**

The Northern Rivers Regional Development Board has funded the publication of this Strategy as part of its commitment to sustainable development of the north coast region of NSW.

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**Cover photo** The cover photo shows a farm that is moving towards more sustainable aquaculture.

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## Foreword

Aquaculture is one of the fastest-growing agricultural industries in the world. More than 25 per cent of worldwide seafood consumption is produced through aquaculture. NSW is poised to capture a significant proportion of this dynamic growth industry. Thanks to the NSW Government's commitment to supporting and encouraging aquaculture investment, the number of permits issued more than doubled last year.

In recognition of this potential to create jobs and support regional businesses, the NSW Government, as part of its commitment to bring enterprise and employment to regional areas, has focused on implementing measures to stimulate further investment in aquaculture opportunities throughout the State.

The North Coast Sustainable Aquaculture Strategy is an important component of this initiative.

This strategy is the result of a whole-of-government approach involving the collaboration of a number of agencies, industry, environmental groups and the community who participated in its development.

This important regional planning document is a landmark for coastal land based aquaculture. It will assist investors and developers, consultants and planners prepare and submit development applications leading to ecologically sustainable practices. The Strategy will also help local councils and other regulatory agencies in assessing aquaculture development proposals. This ability to streamline the approvals process will be used as a model for future aquaculture developments in other regions of our State.

This strategy will increase aquaculture investment opportunities on the North Coast and will provide real incentives for economic development and benefits to the North Coast community.

We look forward to the continued close cooperation of all interested parties in the implementation of this Strategy.



**The Hon. Andrew Refshauge MP**

Deputy Premier  
Minister for Urban Affairs  
and Planning  
Minister for Aboriginal  
Affairs  
Minister for Housing



**The Hon. Harry Woods MP**

Minister for Regional  
Development  
Minister for Rural Affairs  
Minister for Local  
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**The Hon. Eddie Obeid MP**

Minister for Mineral  
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## Executive Summary

Aquaculture is one of the fastest-growing industries in the world. Already 25% of seafood consumed worldwide is produced through aquaculture. According to the United Nations' Food and Agriculture Organisation, this is projected to rise to 40% by the year 2010, as a result of increasing demand for seafood which wild capture fisheries can no longer meet.

While many types of aquaculture are still in their infancy in Australia, the same global trends that are driving aquaculture internationally are evident here. As the total value of Australian fisheries production has tended to stabilise over the last five years, the contribution of aquaculture has grown – by 12% in 1997/98 and by 80% over the course of the 1990's. The value of aquaculture production reached over \$600 million in 1998/99 – 26% of the total value of Australian fisheries production – and the industry is expected to increase in size four-fold to \$2.5 billion over the next decade.

New South Wales is poised to capture a significant proportion of this projected growth. A growing number of viable aquaculture investment opportunities are being generated by the drive to satisfy increasing domestic and export demand, and by the competitive advantages (both natural and man-made) which this State offers. Located largely in a temperate zone, New South Wales is not subject to the climatic extremes of many tropical and sub-tropical regions. Its coastal waters are not normally subject to cyclonic conditions.

Compared with many overseas locations, New South Wales offers a clean growing environment for most forms of aquaculture. It does not suffer from a number of diseases that have caused losses among aquaculture industries overseas. Strict national and State-level controls have been established to maintain our freedom from some of the worst exotic diseases.

New South Wales also offers reliable supplies of good quality water. It does not have problems with heavy industrial pollution, and controls are in place to protect estuaries, coastal areas and groundwater systems from contamination by sewage, agricultural pesticides and fertilisers and urban runoff.

Both industry participants and the NSW Government's regulatory agencies are very conscious of the need to ensure that the development of the aquaculture industry in New South Wales proceeds in a manner that does not jeopardise its ecological sustainability. Industry and government continue to invest heavily in research, technology and management practices to provide for the sustainable growth of this sensitive industry. Both recognise the environmental benefits arising from aquaculture, as well as the environmental qualities aquaculture needs for it to operate successfully to ensure the continuing high quality of its products. Other countries have shown a high regard for and interest in New South Wales' performance in this area.

The North Coast Sustainable Aquaculture Strategy applies to three types of intensive land based aquaculture, namely:

- Estuarine pond aquaculture for endemic species of prawns and finfish
- Freshwater pond aquaculture
- Tank based high intensity recirculation aquaculture (saline or fresh water).

The Strategy is made up of two interlinked components – a best management component and an integrated approvals component so that projects can be established and operated in an efficient sustainable manner. The best management component provides the basis for the Aquaculture Industry Development Plans (AIDP) for Land-based Aquaculture on the North Coast under the provisions of the Fisheries Management Act 1994. The AIDP identifies best management for business planning, species selection, site selection and design, planning and operation of the facility and includes the performance requirements for relevant environmental regulations.

Based on best practice in the AIDP a “Project Profile Analysis” has been established to provide an up-front preliminary assessment of the likely level of risk to the environment from the proposal. This profile analysis provides the basis for streamlining approvals. Lower level risk proposals will only require a Statement of Environmental Effect to demonstrate that they comply with the best practice. Only those developments that have been identified as high risk in the profile analysis will require an environmental impact statement (EIS). This project profile analysis will be established through the State Environmental Planning Policy No 62 – Sustainable Aquaculture.

To streamline approvals required by a number of Acts or Regulations, the Strategy provides for integrated approvals. The approvals process will be managed so that approvals are obtained in a timely manner and the conditions are consistent with the provisions in the AIDP.

The Strategy recognises the importance of the role of NSW Fisheries in extension and compliance. In addition to NSW Fisheries Officers being available to provide up-to-date information as a result of research programs and advice on best practice in aquaculture management, they will be in the front line in ensuring best practice is followed and approvals are complied with.

The Strategy is designed to assist investors in simplifying the development approval process and by providing appropriate support to ensure that the aquaculture enterprises are established and operated in a sustainable manner.

# North Coast Sustainable Aquaculture Strategy for Land-based Aquaculture

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## ACRONYMS

AHD	Australian Height Datum
AIDP	Aquaculture Industry Development Planning
ANZECC	Australian and New Zealand Environment and Conservation Council
ASS	Acid Sulfate Soils
BCA	Building Code of Australia
BEV	Barramundi Encephalitis Virus
BOD	Biological Oxygen Demand
CIP	Clean in Place
CRC	Cooperative Research Centre
CSIRO	Commonwealth Scientific Industrial Research Organisation
DA	Development Application
DLWC	Department of Land and Water Conservation
DO	Dissolved Oxygen
DSRD	Department of State and Regional Development
DUAP	Department of Urban Affairs and Planning
EC	Electrical Conductivity
EHN Virus	Epizootic Haematopoietic Necrosis Virus
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
EP&A Act	Environmental Planning and Assessment Act
FAO	Food and Agricultural Organisation of the United Nations
GHP	Good Handling Practices
GIS	Geographical Information System
ha	Hectare
HACCP	Hazard Analysis Critical Control Point
IDA	Integrated Development Assessment
IPART	Independent Pricing and Regulatory Tribunal of NSW
IHHNV	Infectious Hypodermal-Haematopoietic Necrosis Virus
ISO	International Standards Organisation
LEP	Local Environment Plan
MHWN	Mean High Water Neap
MLWN	Mean Low Water Neap
N	Nitrogen
Na	Sodium
NFR	Non-Filterable Residues
NOFARIC	NSW OLMA Aquaculture Fishing and Related Industries Committee Inc.
NPWS	National Park and Wildlife Service
P	Phosphorous
pH	Acidity or basicity of water; Amount of Hydrogen-ion concentration
PMF	Probable Maximum Flood
POEO Act	Protection of the Environment Operations Act 1997
QA	Quality Assurance
R & D	Research and Development
Ramsar	Convention on Wetlands of International Importance (Ramsar Convention)
REP	Regional Environmental Plan
RTA	Road Transport Authority
SAR	Sodium Adsorption Ratio
SEE	State Environmental Effects
SEPP	State Environmental Planning Policy
SIS	Species Impact Statement
VENM	Virgin Excavated Natural Material
WMC	Water Management Committee

## DEFINITIONS

Following definitions apply as used in this Strategy:

TERM	DEFINITION
<b>Acid Sulfate Soils (ASS)</b>	Acidic soil material resulting from the oxidation of iron sulphides. The soil material has a pH <4 (1:5 soil:water) when measured in dry season conditions and may be identified by one of the following: <ul style="list-style-type: none"> <li>- yellow mottles and coatings of jarosite (straw yellow with a hue of 2.5Y or more yellow and chrome of 6 or more)</li> <li>- underlying potential acid sulfate soils</li> <li>- 0.05% or more water-soluble sulfate</li> </ul>
<b>AHD or Australian Height Datum</b>	A common national place of level corresponding approximately to mean sea level.
<b>Aquaculture</b>	The commercial cultivation of aquatic animals or marine vegetation for the purpose of harvesting the animals or marine vegetation, or their progeny for sale, or the keeping of animals or marine vegetation in a confined area for commercial purposes.
<b>Aquaculture Site</b>	Identified sites for estuarine pond aquaculture for endemic species of prawns and finfish, for freshwater pond aquaculture, and for tank based high intensity recirculation aquaculture (saline or freshwater) based on established locational and performance risk analysis criteria.
<b>Aquatic Species</b>	Live fish, molluscs and crustaceans including their reproductive products, fertilised eggs, embryos and juvenile stages, whether from aquaculture sites or from the wild
<b>Aquifer</b>	A layer of rock/subsoil that holds water and allows water to percolate on it a water table.
<b>Benthic Shear Stress</b>	An underlying stress that governs sediment condition of the ponds. It regulates the convection of volatile substances such as oxygen across the sediment-water interface. It is the primary determinant of where particulate matter scours, rolls, saltates, settles, and consolidates.
<b>BOD Biochemical Oxygen Demand</b>	The quantity of Oxygen used in the biochemical breakdown of organic matter in the effluent expressed in milligrams per litre or ppm
<b>Broodstock</b>	A parent fish or shellfish
<b>Catchment Area</b>	A drainage area, for example for a reservoir or river.
<b>Discharge water</b>	Treated water discharged from ponds, hatcheries etc that may be reused in the ponds or for irrigation or may be discharged to waterways.
<b>Dissolved Oxygen or DO</b>	The amount of Oxygen dissolved in water expressed in milligrams per litre or ppm . In ponds it is a measure of the stability of the water environment. The colder the water, the greater the amount of oxygen that can dissolve in it. In freshwater, oxygen is soluble up to 14.6 mg/L at 0°C, and up to 8.4 mg/L at 25°C. Fish and other aquatic organisms generally require more than 2 mg/L of DO to survive.
<b>Effluent</b>	Untreated water discharge from ponds, hatcheries or plants.
<b>Environmental Impact</b>	The potential biophysical, social and/or economic effects of a proposed aquaculture project on the community or the natural environment
<b>Environmental Impact Statement (EIS)</b>	A detailed assessment on the potential effects of the project if undertaken. It should be prepared by an appropriately qualified person and must stand up to rigorous community and agency review. The EIS must contain: <ul style="list-style-type: none"> <li>• a summary;</li> <li>• a statement of objectives of the activity;</li> <li>• an analysis of feasible alternatives;</li> <li>• description of the development;</li> <li>• prediction and analysis of the likely impacts of the development</li> <li>• reasons justifying the carrying out of the development; and</li> <li>• a list of approvals to be obtained</li> </ul>

TERM	DEFINITION
<b>Environmentally Sustainable Aquaculture</b>	Applications of the best practice in aquaculture so that ecological process, on which life depends, are maintained, and the total quality of life now and in the future can be preserved and enhanced. It does not pollute natural watercourses or ground water, does not degrade soils on the land-use area, and ensures land-use options for future generations.
<b>Estuarine</b>	Of, pertaining to or formed in an estuary (brackish water). Relates to those soil materials, which have been under the influence of brackish water during their deposition.
<b>Fish</b>	Any marine, estuarine or freshwater fish (including aquatic molluscs, crustaceans, echinoderms and beachworms and other aquatic animals) at any stage of their life cycle.
<b>Flood Plain</b>	Levels nominated in an LEP or those areas inundated as a result of a 1/100 year flood event.
<b>Groundwater</b>	Underground waters (aquifers) both suitable and unsuitable for domestic and aquaculture purposes.
<b>Growout</b>	Stage and/or unit where the cultivation of aquatic animals is undertaken from initial seeding of young fry or juveniles up to harvesting of marketable sizes. Other stages in the production cycle include broodstock (breeders), hatchery (production of seed) and nursery (transition before growout).
<b>Health Certificate</b>	A certificate issued by a competent authority attesting to the health status of a shipment of aquatic animals and/or their production facility.
<b>Intensive Growout</b>	A production scheme in aquaculture where stocking density is optimised requiring a high degree of life support system, supplementary feeding, sufficient water supply, adequate aeration system, etc. to attain its high production target.
<b>Landform Element</b>	Part of the landform characterised by a distinctive slope, shape, size, form and type of geomorphologic processes (eg. alluvial) active on it.
<b>Levee</b>	Very long, low ridge that is immediately adjacent to a stream or river channel, built up by overbank flow.
<b>Nutrient</b>	A food essential for cells, organisms or plants. Provided artificially as fertilisers for plant growth, its basic elements are Nitrogen (N), Phosphorous (P) and Potassium (K). N is much more mobile, and its primarily mediated by microorganisms. P is considered the major element responsible for potential algal bloom, while K is sometimes replaced with Silicate (Si) as in the case of the brown alga, the Diatoms that are essential in hatchery and pond aquaculture.
<b>Oxidation</b>	Process in which Oxygen combines with another molecule resulting in the removal of one or more electrons from an atom or ion. Oxidation is important in the formation of acid sulfate soils by converting pyrite to jarosite and sulfuric acid.
<b>Pathogen</b>	An infectious agent capable of causing disease.
<b>Permeability</b>	The ease with which water can penetrate or force its way through rocks, gravel and soils. Coarse sand and gravel permit rapid flow and are rated as highly permeable materials. Microscopic pores in clay impede flows; such soils are considered impermeable or of low permeability for dike and dam constructions.
<b>pH</b>	A measure of acidity or alkalinity of a substance. A pH of 7.0 denotes neutrality, higher values indicate increasing alkalinity, and lower values indicate increasing acidity.
<b>PMF or Probable Maximum Flood</b>	It is used to cover the situation when worst predictable meteorological condition could combine with the worst ground condition at which time maximum runoff would be achieved. It can vary over time relative to catchment changes: e.g., removal of vegetation, man-made disturbances.

TERM	DEFINITION
<b>Potential Acid Sulfate Soil (PASS)</b>	Soil material which is waterlogged and contains oxidisable sulfur compounds, usually ferrous iron disulfide (pyrite, FeS <sub>2</sub> ), that has a field pH of 4 (1:5 soil:water) but will become severely acid when oxidised. May also be referred to as sulfidic materials.
<b>Project Profile Analysis</b>	A matrix of environmental and operational factors for ranking the level of environmental design and operational factors and the level of environmental risk in relation to the siting, establishment and operation of an aquaculture development in relation to those factors.
<b>Pond Aquaculture</b>	Type of aquaculture predominantly in ponds, raceways or dams but may include some culture in tanks particularly during the hatchery or depuration phases but does not include any culture in natural waterbodies, eg. pond culture of prawns, yabbies or silver perch.
<b>Quarantine</b>	<p>a) The holding of aquatic animals or plants in a facility which ensures retention and destruction of said animals as well as any organisms associated with them;</p> <p>b) Disease management procedures including quarantine (sense 1) and certification (Australia).</p>
<b>Reconditioned water</b>	Water from culture units that has been treated by physical, biological and chemical processes to remove waste products
<b>Recycled Water</b>	Wastewater from ponds, tanks or hatcheries that has been treated and re-used for culture
<b>Regional Sustainable Aquaculture Strategy</b>	<p>A framework for encouraging the sustainable siting, establishment and operation of aquaculture development within a region. It provides a whole-of-government best practice for types of aquaculture in the region. The Strategy includes:</p> <p>(i) an Aquaculture Industry Development Plan (AIDP) approved under the <i>Fisheries Management Act of 1994</i>;</p> <p>(ii) the assessment regime under this State Environmental Planning Policy (SEPP) which relates to the AIDP; and</p> <p>(iii) integrated approval arrangement agreed to by the relevant approval authorities responsible for regulating aquaculture in that region.</p>
<b>Salinity</b>	The measure of salt concentration of water in ponds, tanks or hatchery expressed in part per thousand or ppt.
<b>Sedimentation System</b>	Pond system of sufficient size (at least 10% of total watered area) designed to minimise benthic shear and retain all discharged water for at least 24 hours for some or all settleable particles to settle.
<b>SEPP</b>	State Environmental Planning Policy as an instrument pertaining to issues of State Environmental Planning significance made by the Governor of NSW on the advice of the Minister for Urban Affairs and Planning under section 39 of the Environmental Planning and Assessment Act 1979.
<b>Statement of Environmental Effects (SEE)</b>	<p>For Class 1 category, the SEE is a straightforward statement, which sets out the details of the development to demonstrate compliance with all Class 1 criteria and with best practice in the AIDP.</p> <p>For Class 2 category, the SEE is a more substantial assessment on the impacts of the development project, with particular reference to higher level assessment criteria and their potential impact to the environment with a minimum 30 day exhibition period for public participation.</p>
<b>Stocking Densities</b>	Number of animals per square meter of effective pond area.
<b>Suspended Solids</b>	In water, the amount of available particulate matter (organic and inorganic) that can be trapped by mechanical filters
<b>Tank Aquaculture</b>	Type of aquaculture exclusively in tanks (eg. hatcheries and tank aquaculture of barramundi, and abalone).
<b>Waterway</b>	Generally refers to wetland, waterbody or groundwater

## Acknowledgment

The North Coast Regional Steering Group developed the Strategy as an extension of an initiative of the Northern NSW Land-based Coastal Aquaculture Industry Steering Committee which published the *Overview and Future Directions – Northern NSW Land based Coastal Aquaculture Industry* in May 1998. The Regional Steering Group would like to thank all those who contributed to the development of the Strategy by making submissions or attending workshops or meetings. The Regional Steering Group will continue to liaise with all stakeholders in implementing the Strategy and reviewing it from time to time.

The Regional Steering Group would also like to thank the Northern Rivers Regional Development Board for funding the publication of the Strategy as part of its commitment to the Sustainable Development of the Northern Rivers.

The following have contributed through the North Coast Regional Aquaculture Steering Group to the development of the Strategy.

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### **To obtain copies of the Strategy**

Copies of the document can be accessed from [www.fisheries.nsw.gov.au](http://www.fisheries.nsw.gov.au) or can be purchased from NSW Fisheries at the above locations or from:

The Information Centre  
Department of Urban Affairs and Planning  
Governor Macquarie Tower  
Box 3927 GPO, Sydney 2001 Telephone 02 9391 2222

# Overview of the Strategy

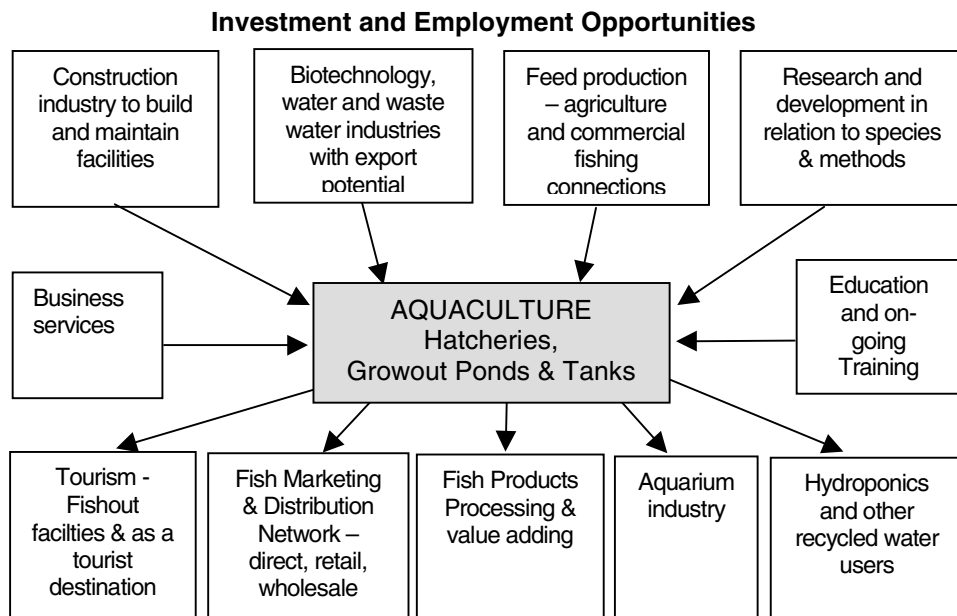
North Coast Sustainable Aquaculture Strategy  
Land Based Aquaculture  
August 2000

A NSW Government Initiative

## 1. Encouraging Sustainable Aquaculture in NSW

Aquaculture is becoming an increasingly important alternative source of seafood. Throughout the world, demand for seafood is growing, while wild catches are stable or declining. As a result, aquaculture production is increasing in importance as a reliable supply of quality seafood products. The future growth of aquaculture in the NSW depends on its ability to encourage investment and support the development of existing and new aquaculture enterprises that can be competitive in the NSW, Australia and world markets. It is critical that a long-term view is taken to ensure that the investment in aquaculture development is ecologically, economically and socially sustainable in the local and regional environmental context.

Aquaculture has and will continue to play an increasingly important role in generating employment and revenue for this region. Since its beginnings in the early 1980s when there was little expertise in Australia in aquaculture, the industry has matured and grown in experience. The prawn industry that now produces over 400 tonnes of prawns in 1997/1998 estimates that there is the potential to increase the pond area by 500 hectares. This could translate into significant economic benefits as it is estimated that aquaculture employs an average of 1 full time person per 2 hectares of ponds (plus part time labour at harvest time) with additional flow-on added value and employment benefits in the region.



In addition to the expanding prawn sector, the fresh and saline water aquaculture industry (for example silver perch, barramundi) is increasing steadily in size with added experience and knowledge. In addition to the increasing understanding of pond culture, improvements in recirculation and filtration technology has resulted in an expanding “boutique” tank based industry located in industrial zones in towns supplying high quality fish principally to the restaurant and tourist trade.

The Sustainable Aquaculture Strategy provides a common basis to plan for the future growth of aquaculture in the Region. The outcome of the strategic planning approach will be increased aquaculture opportunities and related employment through:

- facilitating the growth of existing sustainable aquaculture industries;
- attracting new aquaculture industries to the region;
- attracting aquaculture related industries and jobs to the region.

Aquaculture has the potential to be a significant employer in regional areas as well as having flow-on employment and export opportunities.

A partnership has been developed between the aquaculture industry and the local and regional community recognising the natural resource, infrastructure and market opportunities and constraints to facilitate the long-term growth of investment in aquaculture in the region. The Strategy provides a clearly defined framework to facilitate the entry of new aquaculture industries into the region and the continued growth of existing businesses. This strategic framework will provide a competitive advantage for the Region as it provides a tailor-made decision making process and a streamlined approval regime resulting in upfront certainty without compromising environmental outcomes.

## 2. Overview of the Strategy

The Sustainable Aquaculture Strategy has been developed to provide a focus for facilitating economic development and attracting aquaculture activities to the region. The strategy provides an environmentally sound framework for interfacing the technical provisions of Aquaculture Industry Development Plan (AIDP) under the Fisheries Management Act with the land use planning and integrated environmental regulatory provisions under the Environmental Planning and Assessment (EP&A) Act. This initiative demonstrates leadership in the field. The upfront integration of commercial, infrastructure, environmental and public participation considerations into the process is at the core of this strategic planning initiative.

The Strategy has two components – the Aquaculture Industry Development Plan and the Integrated Approvals provisions:

### 2.1 Aquaculture Industry Development Plan

The Aquaculture Industry Development Plan provides the best practice environmental management components of the Sustainable Aquaculture Strategy. The AIDP includes the following sections:

- Business Planning
- Species Selection
- Site Selection
- Planning and Design
- Operating the Farm.

The AIDP incorporates a whole-of-government approach. It relates specifically and only applies to land-based aquaculture. It presents a clear message to the existing aquaculture industry as well as new investors as to the environmental performance objectives expected.

The information in the AIDP represents current best practice. However the strategy encourages continuous improvement in environmental and economic performance and approaches which provide outcomes superior to those outlined in the AIDP are encouraged.

## 2.2 Integrated Assessment and Approvals

Integrated assessment and approvals are achieved through a combination of the existing and new provisions under the EP&A Act. This assessment and approval framework provides for efficient assessment, appropriate development controls and holistic decision making. This framework complements and implements the AIDP.

The development of best practice in the AIDP for the location and operation of aquaculture enterprises has led to environmental performance criteria that form the basis for “risk” profiles. Based on these profiles, a streamlined approval process for particular types of development has been established in the *State Environmental Planning Policy (SEPP) 62 – Sustainable Aquaculture*. The SEPP

1. makes aquaculture permissible use on certain land in the local government areas providing it meets “minimum locational performance criteria”;
2. utilises the best practice in the AIDP to establish risk criteria in a “*Project Profile Analysis*” which can lead to the ranking of development which is considered low risk as Class 1, moderate risk as Class 2 or higher risk as Class 3 Designated Developments. As a result, development which may be currently designated development (and need an Environmental Impact Statement (EIS) under Schedule 3 of the EP&A Regulation) may be de-designated. Other development currently not designated may become designated based on criteria specific to the region.

These provisions will ensure that the level of assessment matches the level of impacts of a development proposal. Class 1 and 2 development applications will need to be accompanied by a Statement of Environmental Effects (SEE). Class 3 developments will require an EIS to accompany the development application.

Under the integrated development approvals provisions of the EP&A Act, almost all aquaculture proposals will be considered to be *integrated* development as they will require at least one approval under the following legislation:

*Fisheries Management Act 1994, Heritage Act 197, National Parks and Wildlife Act 1974, Protection of the Environment Operations Act 1998, Rivers and Foreshores Improvement Act 1948, Roads Act 1993, Soil Conservation Act 1938 and Water Act 1912.*

In developing the best practice and environmental performance criteria in the AIDP, consideration has been given to the requirements of the above legislation as well as the legislation listed below which may also apply but are not included

in these provisions. This will ensure a whole-of-government approach is taken from the outset in establishing sustainable performance and integrated approvals for the environmental management of aquaculture.

*Crowns Land Act, Native Vegetation Conservation Act, National Parks and Wildlife Act, Exhibition of Animals Act.*

As the Best Practice in the AIDP includes all key issues for an integrated approval, the obtaining of subsequent approvals should not be onerous. To achieve this objective where ever possible, the development approval will incorporate the general terms of approval relating to all relevant legislation for the establishment of the project.

In addition, an integrated compliance monitoring provisions of the development consent will integrate the requirements of all approval authorities. This will streamline the post-approval monitoring and reporting requirements.

### **3. Implementation of the Strategy**

#### **3.1 Putting the Strategy into Action**

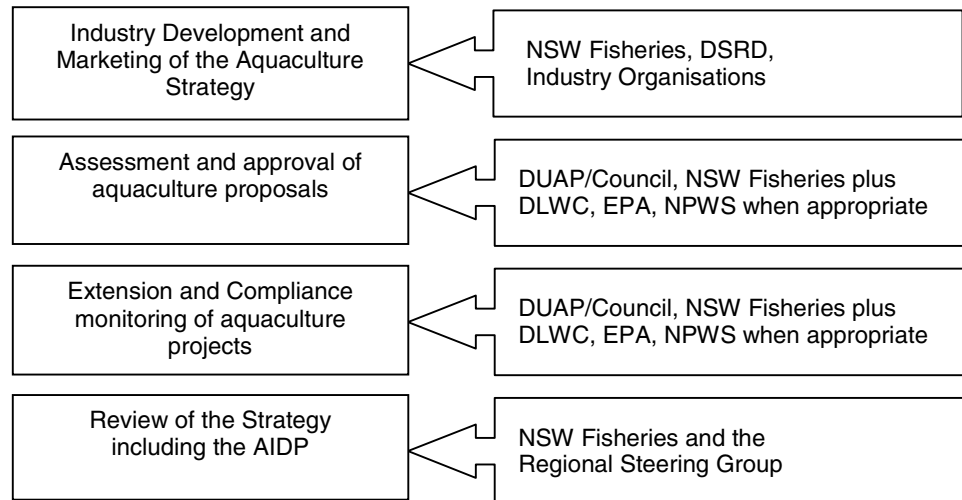
The implementation of the Sustainable Aquaculture Strategy requires a partnership between government, industry and the community. In order to maximise efficiencies and competitive advantages, interagency and local government co-operation is essential in facilitating sustainable new and expanding aquaculture projects. The application of the Strategy will avoid unnecessary duplication of effort by applicants and agencies. It also will ensure that project approvals can be streamlined when appropriate. This approach offers significant benefits to industry, the community and the environment, the most important being:

- In terms of economic development and employment opportunities, there is clear support for the location of sustainable aquaculture enterprises in the Region. This strategic approach has provided a competitive advantage in attracting sustainable employment to the Region;
- In terms of development applications, there is more upfront certainty for applicants as to the environmental requirements and criteria to be met. The approach also provides clear incentives to industry to adopt best environmental practice at the outset.
- In terms of environment, consideration of environmental impact at the strategic level offers a more appropriate indication of environmental sustainability relative to individual project impact assessments. The consideration of cumulative impacts at the strategic level addresses shortcomings associated with individual impact assessment in isolation.

NSW Fisheries is the key agency responsible for delivery of the on-the-ground outcomes in these four action areas. The other key player is the consent authority (council or DUAP) with responsibility for development consent and integrating approvals. NSW Fisheries and the consent authority will be supported by a Regional Aquaculture Steering Group that will provide technical assistance with regard to legislative requirements, performance standards and monitoring

protocols to ensure that a whole-of-government approach is reinforced in each action areas.

The implementation of the strategy has four distinct action areas – industry development, approvals, compliance and review.



Extensive consultation has been undertaken with local government, the aquaculture industry, environmental groups and other stakeholders in the development of the Strategy. This consultative approach will be continued in the implementation, monitoring and review of the Strategy.

### 3.2 Monitoring and Review of the Strategy

The focus of the strategy is on individual land based aquaculture projects. However it is recognised that cumulative impacts may occur when a series of aquaculture enterprise developments are established within a catchment or subcatchment. NSW Fisheries along with other agencies will be responsible for making recommendations to the Regional Steering Group on the need to review and update any aspects of the strategy as a result of cumulative or other changes in the catchment.

NSW Fisheries will monitor the performance indicators in the AIDP and will trigger a review if those indicators show that cumulative impacts could be occurring. These indicators include a trigger relating to the clustering of prawn farms in estuaries. The Strategy will be reviewed in 5 years or earlier if triggered by the performance indicators.

NSW Fisheries will report annually in the NSW Fisheries Annual Report on the implementation of the Strategy. This Report shall include recommendation on the need to update or review the Strategy generally or in relation to particular catchments or sub-regions or particular aspects of environmental performance. This recommendation shall be referred to the Regional Steering Group for action.

#### 4. The Way Forward

The implementation of the Sustainable Aquaculture Strategy requires effective collaboration between government, industry and the community. The Strategy brings together the interests of economic development, land use planning and development control to form a partnership that can lead to Sustainable Aquaculture and employment generation in the Region. The Sustainable Aquaculture Strategy can result in:

- improved environmental outcomes with cumulative issues providing better indicators of sustainability;
- improved development outcomes with greater certainty and a simplified assessment and approval approach;
- improved community outcomes with the development of environmental performance criteria and encouraging employment in the region;
- improved outcomes for the Region with co-ordinated assistance in attracting Sustainable Aquaculture investment.