YOUR MARINE VALUES

PUBLIC REPORT 2013

IMAS
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Acknowledgements

Title

Your Marine Values: Public Report 2013

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Introduction

The purpose of the *Your Marine Values: Public Report 2013* is to:

1. Communicate what matters most about the local marine environment to all of the different communities with an interest or a stake in the marine waters of the lower Huon Estuary and D'Entrecasteaux Channel, and
2. Identify for each key marine value:
   a. existing management arrangements,
   b. current research and monitoring activity, and
   c. useful sources of information, including assessments of the state or condition of each value where available.

The report is intended as a resource for all of the different communities with an interest or a stake in the marine waters of the lower Huon Estuary and D'Entrecasteaux Channel. However, as a result of the connection to a broader research project (INFORMD stage 2 – described in more detail below), the report includes a specific focus on marine values affected by and affecting aquaculture activity.

What do we mean by 'values'?

- That which you hold to be important about the marine environment
- Values arise from your use (amenity); or the marine environment may be important in and of itself
- Ecological, economic and social values

What do we mean by 'marine environment'?

- Marine waters throughout the water column
- Marine flora and fauna
- Marine habitats, including the benthos or seafloor
- Oceanographic processes

The *Your Marine Values* study

The *Your Marine Values* study commenced in 2012 and is aimed at identifying what is important about the local marine environment for those different communities which have a direct interest in the marine system.

The study included a series of workshops and a survey to engage people and to record their views (see Appendix C and D for more information). People who contributed came from a range of communities, marine industries, managing agencies.

Seventeen key marine values have been identified through the Your Marine Values study. These include regionally relevant environmental values and those values (social, economic and ecological) that affect and are likely to be affected by aquaculture (see Appendices C and D for the extended set of values identified).

Marine values matter

For resource planning and management to be effective it is important to understand all the various values held by different communities and users this marine environment, how they interact and what processes and arrangements exist for monitoring and protection of key values.

There are a range of human activities that will influence water quality and other marine environmental values in the lower Huon Estuary and D'Entrecasteaux Channel. Aquaculture is one of these, and other activities in these waters have the potential to be affected by, or have an effect on, aquaculture (e.g. industrial processes, urban development, municipal services, fisheries, recreation, tourism).

Identifying key marine values will help industry, managing agencies and local communities better understand how management changes and subsequent changes in human activities (e.g. fish pen distribution, other industries or new housing developments) can impact the values communities hold for this marine environment.

"Values, including environmental values, are held by people"

Linking values to marine science and management

The *Your Marine Values* study is the first part of a broader project (INFORMD Stage 2, funded by the Fisheries Research and Development Corporation on behalf of the Australian Government) within the INFORMD initiative. The basis of the INFORMD initiative is a partnership between research providers within UTAS and CSIRO, and state government, with the aim of both developing and demonstrating practical and science-based methods to support integrated planning, management and development of marine and coastal ecosystems in South East Tasmania.

The aim of the INFORMD Stage 2 project is specifically to develop a forecasting tool to assess management options, and which can be used to assist in future planning for the lower Huon Estuary and D'Entrecasteaux Channel region.

The larger project (INFORMD Stage 2) will incorporate these values into a range of risk-based tools to provide an integrated assessment package that will support consultation, planning and adaptive management for aquaculture and other multiple-uses of the coastal waters of South East Tasmania.

What is in this report?

The *Your Marine Values: Public Report 2013* includes the following sections:

Key marine values (pages 8 - 75)

The 17 ecological, economic and social key values the study identified are described. Each value is described in a separate section. Information provided about each value includes: current management arrangements, what is measured and monitored, and what further information is available (see opposite page for more details).

Marine farm management and environmental monitoring (Appendices A and B)

Current legislative and management arrangements (Appendix A) and environmental monitoring requirements (Appendix B) are outlined for marine farming in the D'Entrecasteaux Channel and lower Huon Estuary.

Your Marine Values study: results (Appendices C and D)

Results of the 6 workshops (Appendix C) and survey (Appendix D) are provided.

INFORMD stage 2 project (Appendix E)

Description of the FRDC-funded INFORMD stage 2 project is provided. The Your Marine Values study is the first stage of this broader project. Interactions between key values are also identified.

References and online resources (Appendix F)

Relevant legislation and policy are listed, along with links to online sources and the responsible government agencies. All resources (reports, websites, organisations) cited in each of the values tables are listed in full and links to online sources are provided.

What information is provided for key values?

Type of value

Brief description of existing management arrangements which directly affect the value

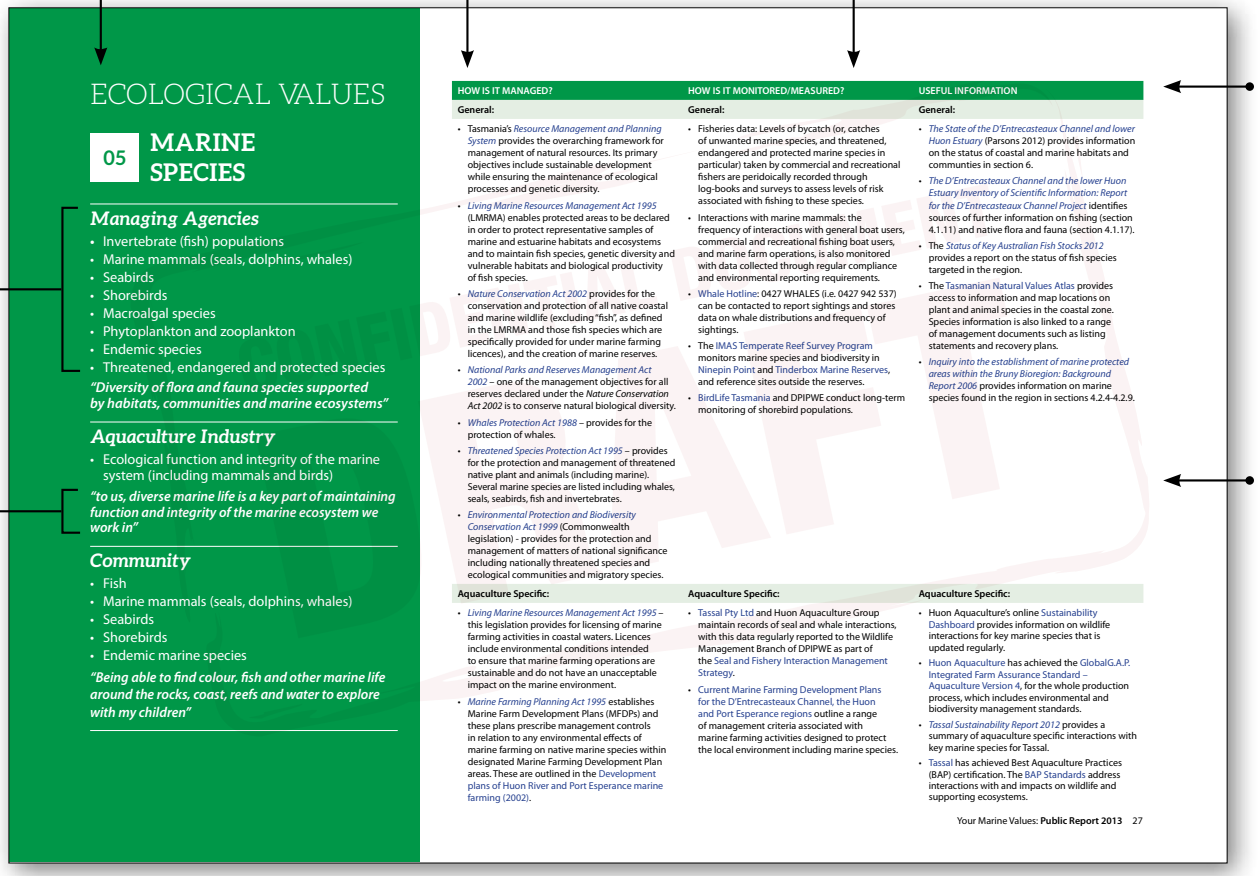
Brief description of any existing research and monitoring programs which collect information on the state of the value

Value as described by Managing agencies, Aquaculture industry and Community

Quote describing what the value means to Managing agencies, Aquaculture industry and Community, as recorded at the workshops

Details of further sources of information, including information about the current state or condition of the value

Information about the above which **directly** relates to the aquaculture sector



ECOLOGICAL VALUES

05 MARINE SPECIES

Managing Agencies

- Invertebrate (fish) populations
- Marine mammals (seals, dolphins, whales)
- Seabirds
- Shorebirds
- Macroalgal species
- Phytoplankton and zooplankton
- Endemic species
- Threatened, endangered and protected species

"Diversity of flora and fauna species supported by habitats, communities and marine ecosystems"

Aquaculture Industry

- Ecological function and integrity of the marine system (including mammals and birds)

"to us, diverse marine life is a key part of maintaining function and integrity of the marine ecosystem we work in"

Community

- Fish
- Marine mammals (seals, dolphins, whales)
- Seabirds
- Shorebirds
- Endemic marine species

"Being able to find colour, fish and other marine life around the rocks, coast, reefs and water to explore with my children"

HOW IS IT MANAGED?	HOW IS IT MONITORED/MEASURED?	USEFUL INFORMATION
General:	**General:**	**General:**
• Tasmania's *Resource Management and Planning System* provides the overarching framework for management of natural resources. Its primary objectives include sustainable development while ensuring the maintenance of ecological processes and genetic diversity. • *Living Marine Resources Management Act 1995* (LMRMA) enables protected areas to be declared in order to protect representative samples of marine and estuarine habitats and ecosystems and to maintain fish species, genetic diversity and vulnerable habitats and biological productivity of fish species. • *Nature Conservation Act 2002* provides for the conservation and protection of all native coastal and marine wildlife (excluding "fish", as defined in the LMRMA and those fish species which are specifically provided for under marine farming licences), and the creation of marine reserves. • *National Parks and Reserves Management Act 2002* – one of the management objectives for all reserves declared under the *Nature Conservation Act 2002* is to conserve natural biological diversity. • *Whales Protection Act 1988* – provides for the protection of whales. • *Threatened Species Protection Act 1995* – provides for the protection and management of threatened native plant and animals (including marine). Several marine species are listed including whales, seals, seabirds, fish and invertebrates. • *Environmental Protection and Biodiversity Conservation Act 1999* (Commonwealth legislation) - provides for the protection and management of matters of national significance including nationally threatened species and ecological communities and migratory species.	• Fisheries data: Levels of bycatch (or, catches of unwanted marine species, and threatened, endangered and protected marine species in particular) taken by commercial and recreational fishers are peridoically recorded through log-books and surveys to assess levels of risk associated with fishing to these species. • Interactions with marine mammals: the frequency of interactions with general boat users, commercial and recreational fishing boat users, and marine farm operations, is also monitored with data collected through regular compliance and environmental reporting requirements. • Whale Hotline: 0427 WHALES (i.e. 0427 942 537) can be contacted to report sightings and stores data on whale distributions and frequency of sightings. • The IMAS Temperate Reef Survey Program monitors marine species and biodiversity in Ninepin Point and Tinderbox Marine Reserves, and reference sites outside the reserves. • BirdLife Tasmania and DPIPWE conduct long-term monitoring of shorebird populations.	• *The State of the D'Entrecasteaux Channel and lower Huon Estuary* (Parsons 2012) provides information on the status of coastal and marine habitats and communities in section 6. • *The D'Entrecasteaux Channel and the lower Huon Estuary Inventory of Scientific Information: Report for the D'Entrecasteaux Channel Project* identifies sources of further information on fishing (section 4.1.11) and native flora and fauna (section 4.1.17). • The *Status of Key Australian Fish Stocks 2012* provides a report on the status of fish species targeted in the region. • The Tasmanian Natural Values Atlas provides access to information and map locations on plant and animal species in the coastal zone. Species information is also linked to a range of management documents such as listing statements and recovery plans. • *Inquiry into the establishment of marine protected areas within the Bruny Bioregion: Background Report 2006* provides information on marine species found in the region in sections 4.2.4-4.2.9.
Aquaculture Specific:	**Aquaculture Specific:**	**Aquaculture Specific:**
• *Living Marine Resources Management Act 1995* – this legislation provides for licensing of marine farming activities in coastal waters. Licences include environmental conditions intended to ensure that marine farming operations are sustainable and do not have an unacceptable impact on the marine environment. • *Marine Farming Planning Act 1995* establishes Marine Farm Development Plans (MFDPs) and these plans prescribe management controls in relation to any environmental effects of marine farming on native marine species within designated Marine Farming Development Plan areas. These are outlined in the Development plans of Huon River and Port Esperance marine farming (2002).	• Tassal Pty Ltd and Huon Aquaculture Group maintain records of seal and whale interactions, with this data regularly reported to the Wildlife Management Branch of DPIPWE as part of the Seal and Fishery Interaction Management Strategy. • Current Marine Farming Development Plans for the D'Entrecasteaux Channel, the Huon and Port Esperance regions outline a range of management criteria associated with marine farming activities designed to protect the local environment including marine species.	• Huon Aquaculture's online Sustainability Dashboard provides information on wildlife interactions for key marine species that is updated regularly. • Huon Aquaculture has achieved the GlobalG.A.P. Integrated Farm Assurance Standard – Aquaculture Version 4, for the whole production process, which includes environmental and biodiversity management standards. • *Tassal Sustainability Report 2012* provides a summary of aquaculture specific interactions with key marine species for Tassal. • Tassal has achieved Best Aquaculture Practices (BAP) certification. The BAP Standards address interactions with and impacts on wildlife and supporting ecosystems.

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PUBLIC REPORT 2013

YOUR MARINE VALUES

TASMANIAN ABORIGINAL VALUES

01 TASMANIAN ABORIGINAL COMMUNITY

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putalina/ Oyster Cove: the return of land to its Aboriginal owners is vital to the health of the people and the land

TASMANIAN ABORIGINAL VALUES

01 TASMANIAN ABORIGINAL COMMUNITY

As the key representative body for the Tasmanian Aboriginal community, the Tasmanian Aboriginal Centre has identified the following ecological, economic and social values for the marine environment of the D'Entrecasteaux Channel and lower Huon Estuary in South East Tasmania.

The South East Tasmanian Aboriginal Corporation (SETAC) has a Land and Sea Country Plan 2012-2017, which documents SETAC's values and concerns for Aboriginal country in South East Tasmania.

Aboriginal Values

- Location of arrival of early invaders and site of multiple fatalities in the war against our people
- Continued use for subsistence and cultural pursuits
- Final resting place for many of our people
- Persistence of the natural bounty of the seas and waterways
- The sea country of many of our close relatives both born on and brought in captivity to this area
- Location of some of the few unspoilt natural ecosystems easily accessible from urban areas
- Historical connection with use of the Channel as a major means of transport and communication with other southern regions
- Unimpeded access to our traditional lands and waterways
- Original and continuing ownership, possession and stewardship/

Aspirations

- Recognition and honouring of our uses of the marine environment for millennia
- Tasmanian laws that would guarantee our rights to decision making in location of fish farms and aquaculture generally
- Mitigation of the effects of human-induced climate change and marine developments on our significant coastal areas
- Protection of our shorelines from vehicle and recreational boating damage
- Protection of our native species from exotic and invasive species of all types.

Summary values

Ecological and cultural

Aboriginal people value ecosystem health as a foundation for a range of important associated values. Aboriginal cultural belief is that the Land and Sea possess spirit and stories, and that the land and its many living creatures can convey these spirits and stories, often as living messengers or markers in the landscape. For these values to survive, respect must be given to protection and maintenance of the natural and ecological systems that maintain these values.

The cultural practice of harvesting shellfish such as limpets, warreners and abalone and the harvesting of the yula (muttonbird) and fish or lobster rely on a functioning healthy marine ecology. The Aboriginal community's health and wellbeing relies on our ability to continue these practices and the health of the resource is valued highly.

Social and economic

Aboriginal people as a community have been largely alienated from the economic benefits of the aquaculture industry. After dispossession of traditional land and sea rights the Aboriginal community's aspirations to rebuild an economic base has been an ongoing struggle. Aboriginal people value their right to use and profit sustainably from their traditional economic resources. Maintaining the potential for the development of Aboriginal community projects that incorporate Aboriginal cultural and social values within the marine environment is important to Aborigines.

The coastal margin

The coastal strip and hinterland has always been an important landscape for Aboriginal people. The important marine resource base, including living and non-living resources such as stone and minerals, mean that this area now contains a rich and irreplaceable tangible history which is present visibly in the landscape or is buried in the earth. The coastal margin is a fragile and valuable heritage area, holding an ancient record of Aboriginal life. Aquaculture land-based facilities need to consider this importance and protect these values.

How is it managed?

Administration and legislation

The *Aboriginal Relics Act 1975* protects Aboriginal "relics" defined to include middens, artefacts, engravings and places that bear signs of the activities of the original inhabitants. It is an offense to destroy, damage, conceal, remove, or interfere with an Aboriginal relic. Permits to interfere with Aboriginal heritage are processed by Aboriginal Heritage Tasmania (AHT), a division of the Department of Primary Industries, Parks, Water and Environment. AHT also keeps a register of known sites although most sites are not recorded on the Site Index. A ministerially appointed committee of Aborigines advises the Minister on the granting of permits for development applications.

The *Living Marine Resources Management Act 1995* acknowledges the Aboriginal community's cultural right to the wild harvest of marine species, whilst excluding activity of a commercial nature.

We are currently seeking to have Aboriginal community representation and management embedded in new Tasmanian Aboriginal Heritage Protection legislation.

Aboriginal community management

The Aboriginal Land Council of Tasmania is the statutory body which holds title to returned lands on behalf of the Aboriginal community. Tasmanian Aboriginal Centre Inc. is a state-wide Aboriginal community controlled organisation which performs, amongst other things, cultural heritage protection functions. Other groups provide heritage advisory and educational services for more limited purposes.

Aboriginal people maintain inherent ownership of Aboriginal heritage. Therefore the Aboriginal community must remain central in managing Aboriginal heritage. It is acknowledged through Commonwealth and international guidelines that Aboriginal people are the primary source of information on matters relating to Aboriginal culture and heritage, including interpreting Aboriginal values, and that Aboriginal people have a right to be represented and participate in decision making processes. Matters that potentially impact upon the heritage or culture of Aboriginal people should be referred to the Tasmanian Aboriginal Centre as the representative of the Aboriginal community.

Useful Information

Australian Heritage Council (2002) *Ask First – A guide to respecting Indigenous heritage places and values*

United Nations *Declaration on the Rights of Indigenous Peoples*, to which Australia is a signatory

Australian Institute of Aboriginal and Torres Strait Islander Studies (2011) *Guidelines for Ethical Research in Australian Indigenous Studies 2011*

– Tasmanian Aboriginal Centre, January 2014

YOUR MARINE VALUES

ECOLOGICAL VALUES

02 WATER QUALITY

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"we don't just monitor our farms – we monitor water quality at the broader scale"

ECOLOGICAL VALUES

02 WATER QUALITY

Managing Agencies

- Water quality (as defined in the *State Policy on Water Quality Management 1997*)

"the quality of water is a major driver of this marine ecosystem, and all the ways we use it"

Aquaculture Industry

- Water quality for healthy marine ecosystems
- Water quality which supports salmon and shellfish production

"if you mess up water quality the fish won't grow – we don't want to foul up our backyard"

Community

- Clean water
- Water clarity

"water that's clean enough to swim in, boat and dive, and safe enough to collect oysters from the rocks, and healthy enough for marine life in all its natural forms to thrive"

HOW IS IT MANAGED?	HOW IS IT MONITORED/MEASURED?	USEFUL INFORMATION
General:	**General:**	**General:**
• Tasmania's *Resource Management and Planning System* provides the overarching framework for management of natural resources. Its primary objectives include sustainable development while ensuring the maintenance of ecological processes and genetic diversity. • *State Policy On Water Quality Management 1997* supports the sustainable management of surface waters and coastal water resources. • *Environmental Management and Pollution Control Act 1994* enables regulation of those activities involving discharge of pollutants and hazardous substances to air, land or water consistent with maintaining environmental quality. • *Pollution of Waters by Oil and Noxious Substances Act 1987* and regulations deal specifically with with discharges of oil and noxious substances from ships. • *National Parks and Reserves Management Act 2002* – one of the management objectives for all reserves declared under the *Nature Conservation Act 2002* is to preserve the quality of water and protect catchments.	• *The State Policy On Water Quality Management 1997* provides guidance as to the requirements and responsibilities for monitoring and assessment of pollutants and siltation of surface waters (including coastal waters) and groundwater. • Annual recreational water quality reports – Kingborough Council and Huon Valley Council provide information on the spatial distribution of sampling sites and parameters measured (NB this is really focussed on addressing areas of concern with respect to human health and primary contact). • Staff and students at the Woodbridge School Marine Discovery Centre have maintained the Marine Discovery Centre Water Quality Monitoring Program for the past 10 years which has involved sampling biological and physical parameters of the sediments and the water column at nine regular sites in the D'Entrecasteaux Channel in the vicinity of Kettering, Woodbridge and Roberts Point, using their dedicated education vessel RV Penghana.	• *The State of the D'Entrecasteaux Channel and lower Huon Estuary* (Parsons 2012) provides information on the status of water quality in section 11. • *The D'Entrecasteaux Channel and the lower Huon Estuary Inventory of Scientific Information: Report for the D'Entrecasteaux Channel Project* identifies sources of further information on water quality in section 4.1.22 and 4.1.23.
Aquaculture Specific:	**Aquaculture Specific:**	**Aquaculture Specific:**
• *Living Marine Resources Management Act 1995* – provides for licensing of marine farming activities in coastal waters, and as part of the Marine Farm licencing process enables provisions to be included in lease/ licence conditions to protect environmental condition. • *Marine Farming Planning Act 1995* and associated regulations – defines Marine Farming Development Plan (MFDP) areas and provides for management of marine farming activities including any potential environmental impacts. Management controls to safeguard water quality in marine farm leases in the D'Entrecasteaux Channel and the Huon River and Port Esperance are outlined in the respective Development Plans (2002). In addition every marine farming lease can have specific management and reporting criteria allocated through both specifications on the MFDPs and individual lease/ licence conditions.	• Current Marine Farming Development Plans for the D'Entrecasteaux Channel, the Huon, and Port Esperance regions outline a range of management criteria associated with marine farming activities designed to protect the local environment, several criteria relate specifically to water quality. • Broadscale Environmental Monitoring Program (BEMP) – system wide monitoring of water quality in D'Entrecasteaux Channel and Huon Estuary, undertaken by salmon industry with specific requirements for water quality monitoring. • The Tasmanian Shellfish Quality Assurance Program (TSQAP) – continuous environmental monitoring program for harmful contaminants, including toxic algal blooms (sampling timeframe is both regular/cyclical and event based). • Farm-based monitoring is undertaken by salmon aquaculture operators of local water conditions within their leases for dissolved oxygen, temperature, salinity, and phytoplankton (targeting HAB identification) is also assessed in areas around and adjacent to farms. In addition monthly reporting of feed usage from farms within the Huon Estuary and D'Entrecasteaux Channel MFDP areas is required by DPIPWE to assess compliance with system wide nutrient input limits.	• *The Evaluation of the Broadscale Environmental Monitoring Program (BEMP) Data from 2009-2012* (IMAS Report). • The Tasmanian Shellfish Quality Assurance Program (TSQAP) website provides information on whether areas are open/closed for shellfish harvesting, or a summary can be obtained by calling 03 6222 7784. See Appendices A and B of this report for more details about water quality management controls outlined in Marine Farming Development Plans, and water quality monitoring requirements. • Huon Aquaculture provide the following information on their online Sustainability Dashboard: (1) Water Temperature at Marine Farms (updated monthly); and (2) Dissolved Oxygen Levels at Marine Farms (updated monthly).

YOUR MARINE VALUES

ECOLOGICAL VALUES

03 SEDIMENT QUALITY

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"Sediment health is really important to ecological function and integrity"

ECOLOGICAL VALUES

03 SEDIMENT QUALITY

Managing Agencies

- Ecological health of the benthos

"Sediment health is really important to ecological function and integrity"

Aquaculture Industry

- Supportive marine ecosystems

"…the land under the sea… a healthy marine environment allows us to run a business"

Community

- Healthy marine benthic habitats within marine farm leases and throughout the whole system

"natural state of seabed"

HOW IS IT MANAGED?	HOW IS IT MONITORED/MEASURED?	USEFUL INFORMATION
General:	**General:**	**General:**
• Tasmania's *Resource Management and Planning System* provides the overarching framework for management of natural resources. Its primary objectives include sustainable development while ensuring the maintenance of ecological processes and genetic diversity. • The *Environmental Management and Pollution Control Act 1994* enables regulation of those activities involving discharge of pollutants and hazardous substances to air, land or water consistent with maintaining environmental quality.	All industrial discharges are subject to the EM& PC Act, and will have targeted monitoring to protect against adverse environmental impacts. Factors which may be assessed can include levels of nutrients, pollution and siltation in the sediment on the seabed, temperature effects, and effects on light levels and local flow regimes.	• The *State of the D'Entrecasteaux Channel and lower Huon Estuary* (Parsons 2012) provides information on the status of sediment quality in section 12. • *The D'Entrecasteaux Channel and the lower Huon Estuary Inventory of Scientific Information: Report for the D'Entrecasteaux Channel Project* identifies sources of further information on sediment quality in section 4.1.24.
Aquaculture specific:	**Aquaculture specific:**	**Aquaculture specific:**
• *Tasmania's Resource Management and Planning System* supports the sustainable development of natural resources whilst ensuring the maintenance of ecological processes and genetic diversity. • *Living Marine Resources Management Act 1995* – this legislation provides for licensing of marine farming activities in coastal waters. • *Marine Farming Planning Act 1995* controls marine farming (aquaculture) activities within designated Marine Farming Development Plan areas. The environmental effects of these activities on sediment quality are managed under these plans and associated regulations. Management controls to safeguard sediment quality in as well as outside leases are outlined in the Development plans of Huon River and Port Esperance marine farming (2002).	• Current Marine Farming Development Plans for the D'Entrecasteaux Channel, the Huon, and Port Esperance regions outline specific management controls to safeguard sediment quality in as well as outside leases. • Broadscale Environmental Monitoring Program (BEMP) – system wide monitoring of sediment and water quality in D'Entrecasteaux Channel and Huon Estuary, undertaken by salmon industry with specific sediment monitoring requirements. • The Tasmanian Shellfish Quality Assurance Program (TSQAP) – continuous environmental monitoring program for harmful contaminants, including toxic algal blooms; evidence of certain microalgae may trigger sediment sampling. • Farm-based monitoring of sea-bed conditions is also undertaken by salmon aquaculture operators for internal management and compliance purposes. • Marine farming licences require the salmon industry to undertake statutory annual video surveys to assess sediment condition under the most heavily stocked cage sites and at compliance sites outside lease areas.	• The *Evaluation of the Broadscale Environmental Monitoring Program (BEMP) Data from 2009-2012* (IMAS Report) – provides a review of the BEMP monitoring data from 2009-2012, along with a summary of the modelling outputs and relevant additional input data from previous studies in the MFDPs, and sediment quality monitoring requirements. • The *Benthic Monitoring Review 2004* includes the assessment of sediment quality monitoring results and industry compliance levels over the period 1997-2002 together with consideration of research recommendations See Appendices A and B of this report for more details about sediment quality management controls outlined in Marine Farming Development Plans, and sediment quality monitoring requirements.

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ECOLOGICAL VALUES

04 MARINE HABITATS AND COMMUNITIES

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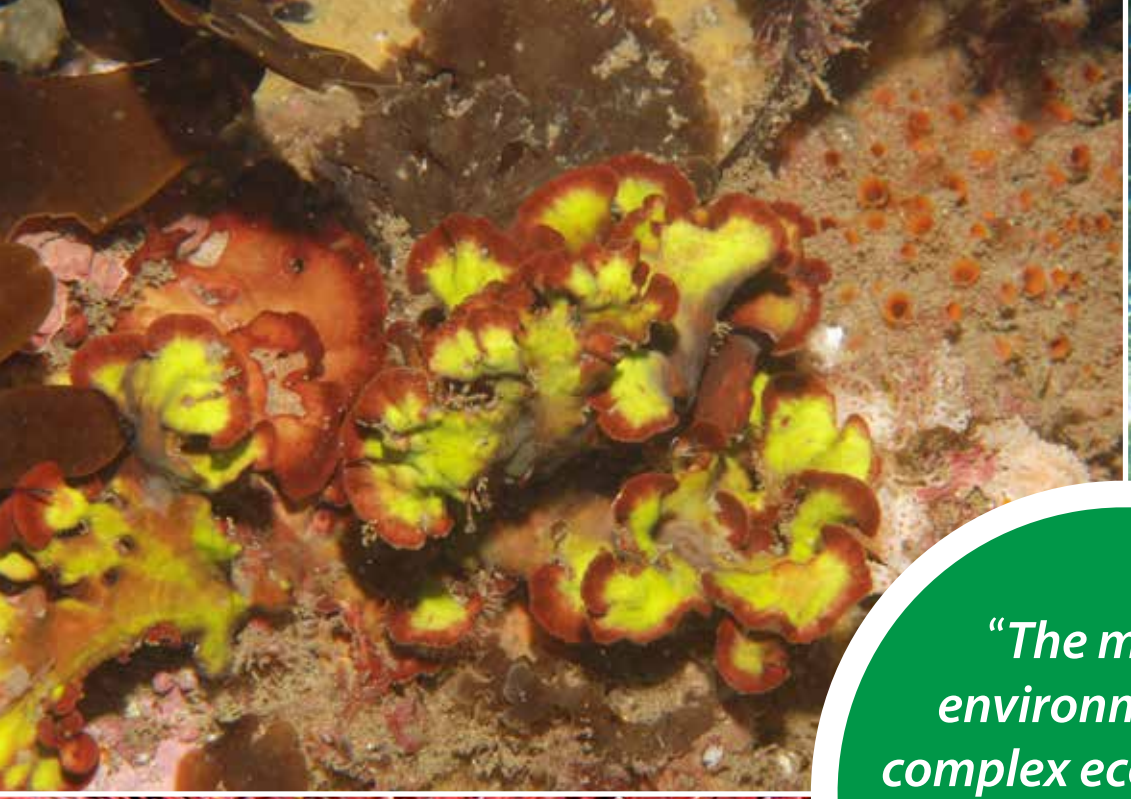

"The marine environment is a complex ecosystem of interactions sustaining all sorts of life and activities"

ECOLOGICAL VALUES

04 MARINE HABITATS & COMMUNITIES

Managing Agencies

- Coastal, estuarine and marine habitats, communities and ecosystems

"The marine environment is a complex ecosystem of interactions sustaining all sorts of life and activities"

Aquaculture Industry

- Ecological function and integrity of the marine system (including intertidal ecology)

"without a healthy marine environment we've got nothing"

Community

- Estuaries
- Wetlands
- Reefs
- Beaches and foreshore
- Seagrass communities
- Filter feeding communities (e.g. intertidal mussels)
- Reefs

"health and wonderful diversity in marine, bird and plant life"

HOW IS IT MANAGED?	HOW IS IT MONITORED/MEASURED?	USEFUL INFORMATION
General:	**General:**	**General:**
• Tasmania's *Resource Management and Planning System* provides the overarching framework for management of natural resources. Its primary objectives include sustainable development while ensuring the maintenance of ecological processes and genetic diversity. • *Living Marine Resources Management Act 1995* (LMRMA) provides protection for designated marine habitats and communities. The LMRMA specifically provides for the protection of representative samples of marine and estuarine habitats and ecosystems and sites of ecological significance or fragility, the protection of vulnerable fish species and their habitats, and the establishment of scientific reference areas and public education in the resources, protection and use of the marine environment. • The *Nature Conservation Act 2002* provides for the conservation and protection of all native coastal and marine wildlife (excluding "fish", as defined in the LMRMA and those fish species which are specifically provided for under marine farming licences), and the creation of marine reserves. • *National Parks and Reserves Management Act 2002* – one of the management objectives for all reserves declared under the *Nature Conservation Act 2002* is to conserve natural biological diversity.	• Condition or health of marine habitats and communities may be measured by assessing changes in habitat extent, the abundance and distribution of key indicator species, and the presence of introduced species. Periodic monitoring of coastal and marine habitats and communities occurs on an intermittent basis as part of site and issue-specific studies across the region. • Regular monitoring: Marine habitats, communities and biodiversity are regularly (annual/ biannual/ biennial) monitored at Ninepin Point and Tinderbox marine reserves, and reference sites outside the reserves, as part of the IMAS temperate reef survey program. A framework for coastal and estuarine resource condition assessment has been developed and trailed in North West Bay (2007-8); however, no follow-up assessment has yet occurred. • Single assessments: The extent or amount of area (km^2) occupied by various types of marine habitats and communities found in the D'Entrecasteaux Channel and lower Huon Estuary have been mapped (see SeaMap Tasmania).	• The *State of the D'Entrecasteaux Channel and lower Huon Estuary* (Parsons 2012) provides information on the status of coastal and marine habitats and communties in sections 5 and 6. • *The D'Entrecasteaux Channel and the lower Huon Estuary Inventory of Scientific Information: Report for the D'Entrecasteaux Channel Project* identifies sources of further information on coastal and marine habitats and communities in sections 4.1.15, 4.1.16 and 4.1.17. • The *Inquiry into the establishment of marine protected areas within the Bruny Bioregion: Background report 2006* provides a detailed description of the marine environment of the region. • *Assessment and mapping of foreshore values, condition and pressures for the southern natural resource management region* (Migus 2008) provides a very useful summary of foreshore types and management issues. • SeaMap Tasmania provides maps (scale) of seabed habitat types and distribution in the region.
Aquaculture Specific:	**Aquaculture Specific:**	**Aquaculture Specific:**
• *Living Marine Resources Management Act 1995* –this legislation provides for licensing of marine farming activities in coastal waters. Licences include environmental conditions intended to ensure that marine farming operations are sustainable and do not have an unacceptable impact on the marine environment. • *Marine Farming Planning Act 1995* and associated management controls, provides the framework for management of aquaculture activities, and any potential environmental effects of marine farming on marine habitats and communities within designated Marine Farm Development Plan (MFDP) areas.	• Key indicator species and major habitat/ community changes may be reported as part of Marine Farm monitoring requirements. For example, the presence of certain introduced species will be reported as part of annual fin-fish farm video assessments.	• The *Benthic Monitoring Review 2004* includes the assessment of monitoring results, including monitoring of impacts of marine farming on marine habitats and communities, and industry compliance levels over the period 1997-2002 together with consideration of research recommendations. • Tassal has achieved Best Aquaculture Practices (BAP) certification. The BAP Standards address impacts on sediment quality outside a defined sediment impact zone. • Huon Aquaculture has achieved the GlobalG.A.P. Integrated Farm Assurance Standard – Aquaculture Version 4, for the whole production process, which includes environmental and biodiversity management standards.

YOUR MARINE VALUES

ECOLOGICAL VALUES

05 MARINE SPECIES

IMAS
INSTITUTE FOR MARINE AND ANTARCTIC STUDIES

"Diversity of flora and fauna species supported by habitats, communities and marine ecosystems"

ECOLOGICAL VALUES

05 MARINE SPECIES

Managing Agencies

- Invertebrate (fish) populations
- Marine mammals (seals, dolphins, whales)
- Seabirds
- Shorebirds
- Macroalgal species
- Phytoplankton and zooplankton
- Endemic species
- Threatened, endangered and protected species

"Diversity of flora and fauna species supported by habitats, communities and marine ecosystems"

Aquaculture Industry

- Ecological function and integrity of the marine system (including mammals and birds)

"to us, diverse marine life is a key part of maintaining function and integrity of the marine ecosystem we work in"

Community

- Fish
- Marine mammals (seals, dolphins, whales)
- Seabirds
- Shorebirds
- Endemic marine species

"Being able to find colour, fish and other marine life around the rocks, coast, reefs and water to explore with my children"

HOW IS IT MANAGED?	HOW IS IT MONITORED/MEASURED?	USEFUL INFORMATION
General:	**General:**	**General:**
• Tasmania's *Resource Management and Planning System* provides the overarching framework for management of natural resources. Its primary objectives include sustainable development while ensuring the maintenance of ecological processes and genetic diversity. • *Living Marine Resources Management Act 1995* (LMRMA) enables protected areas to be declared in order to protect representative samples of marine and estuarine habitats and ecosystems and to maintain fish species, genetic diversity and vulnerable habitats and biological productivity of fish species. • *Nature Conservation Act 2002* provides for the conservation and protection of all native coastal and marine wildlife (excluding "fish", as defined in the LMRMA and those fish species which are specifically provided for under marine farming licences), and the creation of marine reserves. • *National Parks and Reserves Management Act 2002* – one of the management objectives for all reserves declared under the *Nature Conservation Act 2002* is to conserve natural biological diversity. • *Whales Protection Act 1988* – provides for the protection of whales. • *Threatened Species Protection Act 1995* – provides for the protection and management of threatened native plant and animals (including marine). Several marine species are listed including whales, seals, seabirds, fish and invertebrates. • *Environmental Protection and Biodiversity Conservation Act 1999* (Commonwealth legislation) - provides for the protection and management of matters of national significance including nationally threatened species and ecological communities and migratory species.	• Fisheries data: Levels of bycatch (or, catches of unwanted marine species, and threatened, endangered and protected marine species in particular) taken by commercial and recreational fishers are peridoically recorded through log-books and surveys to assess levels of risk associated with fishing to these species. • Interactions with marine mammals: the frequency of interactions with general boat users, commercial and recreational fishing boat users, and marine farm operations, is also monitored with data collected through regular compliance and environmental reporting requirements. • Whale Hotline: 0427 WHALES (i.e. 0427 942 537) can be contacted to report sightings and stores data on whale distributions and frequency of sightings. • The IMAS Temperate Reef Survey Program monitors marine species and biodiversity in Ninepin Point and Tinderbox Marine Reserves, and reference sites outside the reserves. • BirdLife Tasmania and DPIPWE conduct long-term monitoring of shorebird populations.	• *The State of the D'Entrecasteaux Channel and lower Huon Estuary* (Parsons 2012) provides information on the status of coastal and marine habitats and communties in section 6. • *The D'Entrecasteaux Channel and the lower Huon Estuary Inventory of Scientific Information: Report for the D'Entrecasteaux Channel Project* identifies sources of further information on fishing (section 4.1.11) and native flora and fauna (section 4.1.17). • The *Status of Key Australian Fish Stocks 2012* provides a report on the status of fish species targeted in the region. • The Tasmanian Natural Values Atlas provides access to information and map locations on plant and animal species in the coastal zone. Species information is also linked to a range of management documents such as listing statements and recovery plans. • *Inquiry into the establishment of marine protected areas within the Bruny Bioregion: Background Report 2006* provides information on marine species found in the region in sections 4.2.4-4.2.9.
Aquaculture Specific:	**Aquaculture Specific:**	**Aquaculture Specific:**
• *Living Marine Resources Management Act 1995* – this legislation provides for licensing of marine farming activities in coastal waters. Licences include environmental conditions intended to ensure that marine farming operations are sustainable and do not have an unacceptable impact on the marine environment. • *Marine Farming Planning Act 1995* establishes Marine Farm Development Plans (MFDPs) and these plans prescribe management controls in relation to any environmental effects of marine farming on native marine species within designated Marine Farming Development Plan areas. These are outlined in the Development plans of Huon River and Port Esperance marine farming (2002).	• Tassal Pty Ltd and Huon Aquaculture Group maintain records of seal and whale interactions, with this data regularly reported to the Wildlife Management Branch of DPIPWE as part of the Seal and Fishery Interaction Management Strategy. • Current Marine Farming Development Plans for the D'Entrecasteaux Channel, the Huon and Port Esperance regions outline a range of management criteria associated with marine farming activities designed to protect the local environment including marine species.	• Huon Aquaculture's online Sustainability Dashboard provides information on wildlife interactions for key marine species that is updated regularly. • Huon Aquaculture has achieved the GlobalG.A.P. Integrated Farm Assurance Standard – Aquaculture Version 4, for the whole production process, which includes environmental and biodiversity management standards. • *Tassal Sustainability Report 2012* provides a summary of aquaculture specific interactions with key marine species for Tassal. • Tassal has achieved Best Aquaculture Practices (BAP) certification. The BAP Standards address interactions with and impacts on wildlife and supporting ecosystems.

YOUR MARINE VALUES

ECOLOGICAL VALUES

06 GEOLOGICAL AND GEOMORPHOLOGICAL FEATURES

IMAS
INSTITUTE FOR MARINE AND ANTARCTIC STUDIES

"the reality of sea level rise shows us how important our shorelines are"

ECOLOGICAL VALUES

06 GEOLOGICAL & GEOMORPHOLOGICAL FEATURES

Managing Agencies

- Areas of geoconservation value
- Resilience of coastal environment to erosion and inundation

"Bruny Island Neck is a unique tombola formation connecting two islands"

"Variety Bay coastal karst in which stalactites and flowstone have developed on the roof and walls of sea caves"

HOW IS IT MANAGED?	HOW IS IT MONITORED/MEASURED?	USEFUL INFORMATION
General:	**General:**	**General:**
• Tasmania's *Resource Management and Planning System* provides the overarching framework for management of natural resources. Its primary objectives include sustainable development while ensuring the maintenance of ecological processes and genetic diversity. • *The Nature Conservation Act 2002* protects geoconservation values where sites are within existing coastal or marine reserves. The 24 such sites identified in the region are managed using a range of different administrative processes and legislation, depending on tenure. • *National Parks and Reserves Management Act 2002* – one of the management objectives for all reserves declared under the *Nature Conservation Act 2002* is to conserve geological diversity. • The *State Coastal Policy 1996* – applies to State waters and all land to a distance of one kilometre inland from the high-water mark. • Local authority planning schemes: Proposed changes to both Kingborough and Huon Valley Council planning schemes, include provision for primary management responses such as sea level rise planning allowances, and the development of climate change adaptation plans and strategies by local governments.	• What is measured and monitored is determined by the significance and sensitivity of the feature or site on the shoreline. While assessments will vary and be quite site specific, some of the key elements in any assessment will be: form (such as, hard-rock or sandy) , profile (such as, low-lying or coastal cliff) and processes (such as level of exposure to storm surges). • Tasmanian Geoconservation Database (available through the LIST) provides a periodic inventory of listed sites. • Tasmanian Shoreline Monitoring and Archiving (TASMARC) project periodically undertakes shoreline monitoring to document and assess coastal vulnerability and coastal condition.	• DPIPWE Geoconservation webpage provides useful information on the geodiversity of the coastal environment, including sites of special interest, as well as important data on climate change effects and advice on how to address wave wake erosion in coastal areas. • Natural Values Atlas provides infor mation on the distribution of plant and animal species in the coastal zone - with maps and overlays that can be viewed, as well as information on species taxonomy and relevant management documents such as listing statements and recovery plans. • *The State of the D'Entrecasteaux Channel and lower Huon Estuary* (Parsons 2012) provides information on the status of coastal and marine geoconservation values in section 2.3 and on projected climate change impacts in section 8. • The LIST map provides coastal inundation map layers online (select 'Coastal Vulnerability' layers). • *Indicative Mapping of Tasmanian Coastal Vulnerability to Climate Change and Sea Level Rise: Explanatory Report, 2nd edition* outlines the vulnerability of the Tasmanian coastline to the impacts of climate change and sea-level rise.

YOUR MARINE VALUES

ECONOMIC VALUES

07 AQUACULTURE INDUSTRY

IMAS
INSTITUTE FOR MARINE AND ANTARCTIC STUDIES

"Local job opportunities on marine farms"

ECONOMIC VALUES

07 AQUACULTURE INDUSTRY

Managing Agencies

- Sustainable economic development of natural resources
- Productivity of marine ecosystems to support commercial activity
- Economic benefits to the Tasmanian community
- Employment opportunities in regional communities
- Food safety of seafood products harvested from the region

"Sustainable economic development of these waters through marine farming"

Aquaculture Industry

- Access to marine areas suitable for salmon and shellfish farming
- Growth, productivity and profitability
- Economic benefits to the Tasmanian community
- Locally-based professional/skilled workforce
- Production of high quality seafood that is safe to eat

"Use of a public resource to produce a profitable product that is sustainable, to grow food that people value in Tasmania, and to provide benefits to regional communities"

Community

- Marine farming as one of a range of sustainable marine resource-based industries
- Income derived from resource rents (i.e. access fees) and cost-recovery for management and remediation of environmental impacts
- Flow of economic benefits into regional communities
- Local, long-term employment opportunities
- Seafood that is safe to eat

"Local job opportunities on marine farms"

HOW IS IT MANAGED?	HOW IS IT MONITORED/MEASURED?	USEFUL INFORMATION
Aquaculture Specific:	**Aquaculture Specific:**	**Aquaculture Specific:**
• Tasmania's *Resource Management and Planning System* provides the overarching framework for management of natural resources. Its primary objectives include sustainable development while ensuring the maintenance of ecological processes and genetic diversity. • *Living Marine Resources Management Act 1995* – provides for licensing of marine farming activities in coastal waters by defining those fish species which can be included in marine farming licenses. • *Marine Farming Planning Act 1995* – defines Marine Farming Development Plan (MFDP) areas in which marine farming can occur. The Act, and associated regulations and management controls, provides the framework for management of aquaculture activities, and any potential effects of marine farming on marine environments within MFDP areas (see 01. Ecological values). The Act also specifies the system of fees to be paid by lease operators for access to State Waters. • *National Parks and Reserves Management Act 2002* – one of the management objectives for *Nature Conservation Act 2002* reserves of the class Conservation Area is to provide for commercial or industrial uses of coastal areas. • *Environmental Management and Pollution Control (General Fees) Regulations 2007* prescribes a fee schedule intended to improve cost recovery for environmentally relevant activities (including discharge of pollutants and hazardous substances into waters). • The *Primary Production and Processing (PPP) Standard for Seafood* was developed by Food Standards Australia and New Zealand (FSANZ). Food Safety Plans and Food Safety Systems for seafood (including farmed shellfish) have been developed cooperatively by seafood industry sectors and the Tasmanian Government.	• *The Australian Fisheries Statistics report* (ABARES) includes economic data collected on the volume and value of production from aquaculture, as well as volume and value of Australian aquaculture trade, by destination, source and product. Employment data is also collected for salmon, oyster and mussel aquaculture in Tasmania. • Regional sustainability indicators have been developed to measure the flow of economic benefits from salmon aquaculture to the region. Specific indicators used include: Direct and Indirect contributions to Gross Regional Product, and Direct and Indirect Regional Employment Created. • The Tasmanian Shellfish Quality Assurance Program (TSQAP) operates a continuous environmental monitoring program to ensure harvesting of oysters and mussels only occurs from waters free from harmful contaminants, including toxic algal blooms. Specifically, levels of shellfish poisons derived from toxic microalgae, E. coli (an indicator species for faecal pathogens) in bivalve molluscs, and heavy metals in various seafood types are monitored.	• The *D'Entrecasteaux Channel Marine Farm Development Plan (2002)* and the *Huon River and Port Esperance Marine Farm Development Plan (2002)* provide information about the areas which can be occupied by marine farming activity and specific management controls designed to safeguard the marine environment (see 01. Ecological values). • *DPIPWE Annual Reports* include a profile on the economic performance of aquaculture. The *Tasmanian Government's Economic Development Plan* includes a salmon sector strategy. • The *Tasmanian Seafood Scorecard* provides information about the volume (tonnes) and value (AU$) of annual aquaculture seafood production and sales for the whole of Tasmania. • Food safety and quality assurance certification: Huon Aquaculture have achieved the GlobalG.A.P. Integrated Farm Assurance Standard – Aquaculture Version 4 for the whole production process, which includes food safety standards. In addition, Huon Aquaculture has also achieved; - British Retail Consortium (BRC) certification for it's processing facility at Parramatta Creek; - HACCP and AQIS certification for all processing sites. Tassal has received the following certifications: - ISO 9001:2008 quality management system certification for marine operations, hatcheries and processing sites - HACCP and AQIS Approved arrangement for processing sites - SQF (Safe Quality Food) Code Level 3 for Value Added Processing Sites. Tassal has achieved Best Aquaculture Practices (BAP) certification at all farms and primary processing facilities. This includes food safety standards. • The Tasmanian Salmonid Growers Association (TSGA) website offers further information about salmon aquaculture in Tasmania. • The Oysters Tasmania and Bruny Island Shellfish Growers Association websites offer further information about shellfish farming in Tasmania. • Proceedings of the 'Managing Marine Farming: have we achieved best practice?' conference in 2012, run by the Environmental Defenders Office, Tasmania, include presentations by a range of speakers which explore whether the objectives of the *Marine Farming Planning Act 1995* were being met from the perspectives of industry, the community and the environment.

YOUR MARINE VALUES

ECONOMIC VALUES

08 FISHING INDUSTRY

IMAS
INSTITUTE FOR MARINE AND ANTARCTIC STUDIES

"Fisheries that are managed to ensure long-term sustainability and viability"

ECONOMIC VALUES

08 FISHING INDUSTRY

Managing Agencies

- Productivity of marine ecosystems to support commercial activity
- Economic benefits to the Tasmanian community
- Availability of local seafood for the Tasmanian community

"Fisheries that are managed to ensure long-term sustainability and viability"

Aquaculture Industry

- Diversity of sustainable marine based industries

"Economic benefits of healthy seas"

Community

- Sustainable commercial fishing

"Local marine industries which are economically viable"

HOW IS IT MANAGED?	HOW IS IT MONITORED/MEASURED?	USEFUL INFORMATION
General:	**General:**	**General:**
• Tasmania's *Resource Management and Planning System* provides the overarching framework for management of natural resources. Its primary objectives include sustainable development while ensuring the maintenance of ecological processes and genetic diversity. • *Living Marine Resources Management Act 1995* (LMRMA) enables fish to be caught for commercial sale and recreational purposes under license, as well as management arrangements for all targeted species. • *National Parks and Reserves Management Act 2002* – one of the management objectives for *Nature Conservation Act 2002* reserves of the class Conservation Area is to provide for commercial or industrial uses of coastal areas. • *The Fisheries (General and Fees) Regulations 2006* establishes fees for commercial and recreational fisheries licenses recovered by the Tasmanian Government. • The *Food for all Tasmanians: A food security strategy 2012* outlines strategies for regional development of local, sustainable food systems, with a view to increasing opportunities for Tasmanians to buy locally produced food.	• Limited amounts of commercial abalone fishing occur in the northern and southern fringes of the D'Entrecasteaux Channel and lower Huon Estuary region. No other commercial fisheries are permitted. The commercial fishing ports in the region are used to land catches from other regions. Fishing effort and catch in the region is primarily undertaken by recreational fishers. • IMAS Fisheries Assessment Programs monitor fishing catch and effort, as well as population characteristics, of fish species caught by commercial and recreational fishers. Data is captured through commercial fishing logbooks, landing reports, surveys of recreational fishers and fisheries-independent surveys of fish populations. Fisheries Assessment Reports for Tasmanian abalone, scallop, rock lobster, scalefish and recreational fisheries and fish stocks are produced annually or biannually. • *Australian Fisheries Statistics* (ABARES) include economic data collected on the volume and value of production from commercial fisheries, as well as volume and value of Australian fisheries trade, by destination, source and product. Profiles of commercial fisheries include key species, fishing methods and number of licence holders. Information is also provided on the recreational sector and customary fishing by Indigenous Australians. • Measures of the flow of economic benefits of fishing industries (commercial and recreational) to the Tasmanian community are not routinely monitored. Royalties are collected by the Tasmanian Government from commercial abalone fishing Statewide on an annual basis. Revenue is also collected by the Tasmanian Government from the sale of recreational sea fishing licenses Statewide annually.	• *The State of the D'Entrecasteaux Channel and lower Huon Estuary (Parsons 2012)* provides information on the status of fishing (section 3.6). • The *D'Entrecasteaux Channel and the lower Huon Estuary Inventory of Scientific Information: Report for the D'Entrecasteaux Channel Project* identifies sources of further information on fishing (section 4.1.11). • The *Status of Key Australian Fish Stocks 2012* reports on the status of fish species targeted in the region. • The *Tasmanian Seafood Scorecard* provides information about the volume (tonnes) and value (AU$) of annual wild-caught seafood production and sales for the whole of Tasmania. • *DPIPWE's Corporate Report: Financial Information section* provides details of the Tasmanian Government's annual revenue from fishing licenses.

YOUR MARINE VALUES

ECONOMIC VALUES

09 MARINE TOURISM INDUSTRY

IMAS
INSTITUTE FOR MARINE AND ANTARCTIC STUDIES

"A tourism magnet to be promoted, visited and managed very wisely"

ECONOMIC VALUES

09 MARINE TOURISM INDUSTRY

Managing Agencies

- Productivity of marine ecosystems to support commercial activity
- Economic benefits to the Tasmanian community
- Access for recreational activities generally

"Diverse and ecologically sustainable marine industries"

Aquaculture Industry

- Diversity of sustainable marine based industries

"A healthy working marine environment that helps sustain viable marine industries"

Community

- Marine tourism as a sustainable industry

"A tourism magnet to be promoted, visited and managed very wisely"

HOW IS IT MANAGED?	HOW IS IT MONITORED/MEASURED?	USEFUL INFORMATION
General:	**General:**	**General:**
• Tasmania's *Resource Management and Planning System* provides the overarching framework for management of natural resources. Its primary objectives include sustainable development while ensuring the maintenance of ecological processes and genetic diversity. • Local authority planning schemes: Kingborough and Huon Valley Planning Schemes, as well as the *Crown Lands Act 1976*, establish tenure, zoning and access to sections of coastal foreshore for a variety of land-use purposes, including tourism. • The *Threatened Species Protection Act 1995* provides for the protection, management and conservation of threatened fauna. A number of species of larger marine mammals and seabirds which interact with marine tourism operations are listed as threatened. • *National Parks and Reserves Management Act 2002* – one of the management objectives for *Nature Conservation Act 2002* reserves of the class Conservation Area is to encourage and provide for tourism, recreational use and enjoyment consistent with the reserves natural and cultural values. • *Guidelines for watching whales, penguins and seals* in Tasmanian waters have been developed to protect public safety as well as the welfare of the animals. • Destination Southern Tasmania is the regional tourism association for the D'Entrecasteaux Channel and lower Huon Estuary and is responsible for developing a Destination Management Plan for the region.	• Numbers of tourism licenses issued are collected through the Business License Information Service, run by the Dept. of Economic Development. Numbers of commercial visitor services licenses are collected by the Parks and Wildlife Services for tourism operations in Marine Reserves. • The *Tasmanian Visitor Survey* provides a profile of the characteristics, travel behaviour and expenditure of international and domestic visitors to Tasmania. • The *Analysis of economic impact of tourism for the Southern Tasmanian region* report is undertaken by Tourism Tasmania and measures levels of tourism employment, wages and salary. • The Whale Hotline is used to report and record whale sightings in Tasmanian waters, whale or dolphin strandings, injured whales, dolphins or seals, and strange or unusual marine mammals and turtles.	• *The State of the D'Entrecasteaux Channel and lower Huon Estuary* (Parsons 2012) provides information on the status of marine tourism (section 3.7). • The *D'Entrecasteaux Channel and the lower Huon Estuary Inventory of Scientific Information: Report for the D'Entrecasteaux Channel Project* identifies sources of further information on tourism (section 4.1.10). • The LIST map provides information about coastal foreshore and marine tenure (select 'Land Tenure' and/or 'All Planning Zones' layers) • The Hobart & Beyond website provides tourism information for the D'Entrecasteaux Channel and lower Huon Estuary region.

YOUR MARINE VALUES

SOCIAL VALUES

10 RECREATION

IMAS
INSTITUTE FOR MARINE AND ANTARCTIC STUDIES

"it's really important that my children are brought up with the experience of the water"

SOCIAL VALUES

10 RECREATION

Managing Agencies

- Access for recreational fishing and marine-based recreational activities generally
- Safe waterways for all users
- Safe water safe for primary and secondary contact

"Fisheries managed to ensure long-term sustainability and viability for recreational fishers"

Aquaculture Industry

- Public use and enjoyment of the marine environment for recreation.

"good management so there can be recreational use and local marine industries sharing these waters"

Community

- Access for sailing, boating, anchoring, fishing, kayaking, swimming, diving, waterski-ing, beach walking and marine wildlife viewing.
- Safe water, waterways and coastal zone for recreational users
- Public marine facilities which enable recreational activities

"enjoying being in the marine environment in which ever way, while being safe and having a reasonable chance of catching a fish"

HOW IS IT MANAGED?	HOW IS IT MONITORED/MEASURED?	USEFUL INFORMATION
General:	**General:**	**General:**
• Tasmania's *Resource Management and Planning System* provides the overarching framework for management of natural resources. Its primary objectives include sustainable development while ensuring the maintenance of ecological processes and genetic diversity. • *Living Marine Resources Management Act 1995* (LMRMA) – provides for management of the marine environment which takes account of the community's needs and interests – including recreational access for fishing and other activities, and marine wildlife viewing – in living marine resources. The LMRMA enables the setting of bag and possession limits and requirement for licenses for particular fish species through fisheries management plans. It also enables the creation of marine protected areas, or no-take marine reserves. • *Nature Conservation Act 2002* – enables the creation of national parks and reserve, including marine reserves (although any restrictions on the take of marine life are proclaimed under the LMRMA 1995). • *National Parks and Reserves Management Act 2002* – one of the management objectives for *Nature Conservation Act 2002* reserves of the class Conservation Area is to encourage and provide for tourism, recreational use and enjoyment consistent with the reserves natural and cultural values. • *Marine and Safety Authority Act 1997*, and associated by-laws, - provides for a system of licensing and regulation to ensure the safe operation of all recreational and commercial vessels up to 500 tonnes, or 35 metres in length, in Tasmanian waters. Regulations address operational areas, speedlimits, collisions, pilotage and navigation, safe operations, mnanning, maritime incidents, appliances and equipment. The Act also provides for Marine and Safety Tasmania (MAST) to manage public marine facilities, including jetties and wharves. • *Public Health Act 1997* – outlines processes and responsibilities for monitoring and evaluating recreational water quality.	• Recreational Boating Customer Surveys: MAST conducts periodic surveys of recreational boat owners to determine boating levels. • *Recreational fishing levels of rock lobster and abalone:* (Lyle and Tracey 2010) provides a summary by region of the number of recreational fishing licence holders, estimated days of fishing effort, total estimated catch (number and total tonnes), and periods of most intense fishing activity for rock lobster and abalone (and fishing method in the case of rock lobsters). D'Entrecasteaux Channel/Huon Estuary are included in the South East region, with some data presented for D'Entrecasteaux Channel and lower Huon Estuary specifically. • Fish stocks: See Value 04 Marine Species and Value 07 Fishing Industry. • Recreational water safety: Annual recreational water quality reports – Kingborough Council and Huon Valley Council provide information on the spatial distribution of sampling sites and parameters measured. These include levesl of e-coli and faecal pathogens. See also Value 01 Water Quality. • Interactions with marine mammals: Whale Hotline: 0427 WHALES (i.e. 0427 942 537) can be contacted to report sightings and stores data on whale distributions and frequency of sightings.	• *The State of the D'Entrecasteaux Channel and lower Huon Estuary* (Parsons 2012) provides information on the status of foreshore land use (section 3.2), marine facilities and structures (3.3), navigation (3.4), recreational fishing (section 3.6), recreational use (section 3.8), recreational water quality (11.3) and seafood safety (secion 14). • The *D'Entrecasteaux Channel and the lower Huon Estuary Inventory of Scientific Information: Report for the D'Entrecasteaux Channel Project* identifies sources of further information on foreshore land use (section 4.1.7), navigation (section 4.1.9), recreational fishing (section 4.1.11), other recreation (section 4.1.12) and water quality (sections 4.1.22 and 4.1.23). • Recreational fishing guides: The *Fishing the D'Entrecasteaux Channel and Bruny Island guide*; and the *Recreational Sea Fishing Guide 2013-14* are published by DPIPWE. • Cruising and anchorage guides are compiled by the Cruising Yacht Club of Tasmania and the Royal Yacht Club of Tasmania. Further information is available from the MAST 'Cruising Tasmania' site. • The LIST map provides information about coastal foreshore and marine tenure (select 'Land Tenure' and/or 'All Planning Zones' layers). • Inquiry into the establishment of marine protected areas within the Bruny Bioregion: Background Report 2006 provides information on recreational activities undertaken in the region in sections 4.3.9, 4.3.10, 4.3.12.
Aquaculture Specific:	**Aquaculture Specific:**	**Aquaculture Specific:**
• *Marine Farm Planning Act 1995* – includes the objective of ensuring marine areas are managed for multiple purposes, including non-industrial uses. It also provides lesses of Marine Farm Leases exclusive access rights to lease areas. Recent amendment of the Act includes the requirements that any Environmental Impact Statement (EIS) produced considers the impact of proposed activities on social values.	• Marine Farm Development Plans (MFDPs) determine where leases may be located. Lease location and operations are subject to a regulatory inspection program.	• The *Marine Farming Development Plans for the D'Entrecasteaux Channel and the Huon and Port Esperance regions* set out where leases may be located. • Tassal has achieved *Best Aquaculture Practices (BAP)* certification. Standards address issues including community property rights and community relations. • Huon Aquaculture has achieved the GlobalG.A.P. Integrated Farm Assurance Standard – Aquaculture Version 4, for the whole production process, which includes standards for specific social criteria.

YOUR MARINE VALUES

SOCIAL VALUES

11 SEASCAPES

IMAS
INSTITUTE FOR MARINE AND ANTARCTIC STUDIES

"this is a magnificent, world-class waterway for so many reasons"

SOCIAL VALUES

11 SEASCAPES

Managing Agencies

- Aesthetic values of waterways

"scenic values and visual amenity"

Aquaculture Industry

- Aesthetic values communities and visitors hold for this marine environment

"we're part of the visual landscape of these waterways and we make efforts to keep our presence minimal but clearly marked"

Community

- Visual beauty and natural water views
- Views of fishing boats and marine farms
- Natural (undeveloped) skyline

"natural water views and visual splendour – you can cruise on the Channel and, in parts, see what the explorer D'Entrecasteaux saw"

HOW IS IT MANAGED?	HOW IS IT MONITORED/MEASURED?	USEFUL INFORMATION
General:	**General:**	**General:**
• Tasmania's *Resource Management and Planning System* provides the overarching framework for management of natural resources. Its primary objectives include sustainable development while ensuring the maintenance of ecological processes and genetic diversity. • *Tasmanian Marine Protected Areas Strategy* – one of the Strategy's social goals is protection of the natural aesthetic values of marine and estuarine areas. • Local government planing schemes and land use strategies (*Kingborough Council Planning Scheme*, *Huon Valley Council Planning Scheme* and the *Huon Valley Land Use and Development Strategy*) – these outline the designation of zones and planning strategies intended to protect and manage the visual impact of development on natural and community values including coastal habitats, skylines and scenic landscapes.	• *Environmental Management and Pollution Control Act 1994* - requires that applications for significant development report any potential environmental effects and proposed management of: affected marine and costal environments, biodiversity and nature conservation values, and visual effects in a Development Proposal and Environmental Management Plan. Plans are then assessed by the Board of the Environmental Protection Authority. • *Kingborough Planning Scheme 2000* – applications for development require that visual impact is assessed, including impact on the skyline.	• *Inquiry into the establishment of marine protected areas within the Bruny Bioregion: Background Report 2006* – the report into the establishment of marine protected areas in the Bruny bioregion provides information on nature recreation, as well as cultural values and management status of the Channel and lower Huon Estuary. • The *State of the D'Entrecasteaux Channel and lower Huon Estuary* (Parsons 2012) provides information on the status of conservation and natural values (including aesthic values) in sections 4.2 and 4.3. • The *D'Entrecasteaux Channel and the lower Huon Estuary Inventory of Scientific Information: Report for the D'Entrecasteaux Channel Project* identifies sources of further information on foreshore land use (section 4.1.7) and marine industries (section 4.1.8).
Aquaculture Specific:	**Aquaculture Specific:**	**Aquaculture Specific:**
• *Marine Farm Planning Act 1995* – the Act includes the objective of ensuring marine areas are managed for multiple purposes, including non-industrial uses and natural value protection.	• Proposed amendments to Marine Farming Development Plans are considered by the Marine Farming Planning Review Panel. The Panel assesses the draft amendments against the objectives of resource management, which include ensuring marine areas are set aside for the purposes of both marine farming and non-industrial uses.	• *Marine Farming Development Plans for the D'Entrecasteaux Channel and the Huon and Port Esperance regions (2002)* set out where leases may be located. • Tassal has achieved Best Aquaculture Practices (BAP) certification. Standards address issues including community property rights and community relations. • Huon Aquaculture has achieved the GlobalG.A.P. Integrated Farm Assurance Standard – Aquaculture Version 4, for the whole production process, which includes standards for specific social criteria. Huon Aquaculture also provides the date and location of all Marine Debris Clean-ups performed by them via the Sustainability Dashboard.

YOUR MARINE VALUES

SOCIAL VALUES

12 COASTAL LANDSCAPES

IMAS
INSTITUTE FOR MARINE AND ANTARCTIC STUDIES

"management of the coastal zone has a major influence on the marine environment and how we interact with it"

SOCIAL VALUES

12 COASTAL LANDSCAPES

Managing Agencies

- Natural values of the coast, including intangible values and ecosystem services

"natural and community values including coastal habitats and access to foreshore areas for a variety of uses"

Aquaculture Industry

- Coastal values communities and visitors hold for this marine environment

"access to foreshore areas for marine farm operations"

Community

- Natural and unimpacted state of beaches, foreshore and coastal habitats

"access to clean and clear coastal waters, free of rubbish and feral oysters, for swimming and generally enjoying the sea side"

HOW IS IT MANAGED?	HOW IS IT MONITORED/MEASURED?	USEFUL INFORMATION
General:	**General:**	**General:**
• Tasmania's *Resource Management and Planning System* provides the overarching framework for management of natural resources. Its primary objectives include sustainable development while ensuring the maintenance of ecological processes and genetic diversity. • Local government planing schemes and land use strategies (*Kingborough Council Planning Scheme*, *Huon Valley Council Planning Scheme* and the *Huon Valley Land Use and Development Strategy*) – these include strategies and the designation of zones intended to protect and manage the impact of development on natural and community values including coastal habitats and access to foreshore areas. • *National Parks and Reserves Management Act 2002* – establishes the South Bruny National Park, as well as the 21 Conservation Areas, Nature Reserves, State reserves, and Game Reserves located within the coastal area of the Channel and lower Huon Estuary. • *Litter Act 2007* and associated regulations prohibit the act of depositing litter in the environment, including coastal areas. • *Pollution of Waters by Oil and Noxious Substances Regulations 2007* – these address pollution of coastal and marine waters by garbage, oil and other pollutants from boat sources. • *State Coastal Policy 1996* – applies to State waters and all land to a distance of one kilometre inland from the high-water mark. The principles of the policy are: protection of natural and cultural values of the coast, sustainable use and development, and integrated management of the coastal zone. A *Coastal Protection and Planning Framework* is being developed which will comprise a Tasmanian Coastal Policy Statement and an Implementation Plan outlining how the Policy Statement will be given effect through existing and/or new policy instruments and processes, and integrated with the RMPS.	• The *Assessment and mapping of foreshore values, conditions and pressures for the Southern NRM Region* (Mingus 2008) includes baseline information about the state of coastal areas in the Channel and lower Huon Estuary. The assessment of foreshore natural values included biological and geomorphological indicators. The assessment of foreshore condition used ecological disturbance, geomorphology, and introduced species as indicators. • The *Monitoring and Reporting System for Tasmania's National Parks and Reserves* (DPIPWE 2013) report outlines the measures used to assess the condition of natural values in coastal parks and reserves. • Coastal clean up activities undertaken by seafood industry and community organisations (including Clean Up Australia Day annual activities) have recorded debris by frequncey collected, major sources, types, volumes, and collection sites.	• *Tasmanian Natural Values Atlas* provides access to information on various natural values in the coastal zone and can display map locations. This web-based database allows observations of Tasmanian natural values to be viewed, recorded and analysed, and is also linked to a range of related management documents. • The *State of the D'Entrecasteaux Channel and lower Huon Estuary* (Parsons 2012) provides information on the status of conservation areas and natural values of coastal areas in sections 4.2 and 4.3. Information about litter and marine debris is provided in section 9.5 and about introduced marine species in section 7.2. • Information about individual coastal and marine reserves is available from the Tasmanian Parks and Wildlife Service website and the Tasmanian Reserve Estate Spatial Layer (available on LIST map).
Aquaculture Specific:	**Aquaculture Specific:**	**Aquaculture Specific:**
• *Marine Farming Planning Act 1995* provides guidelines and associated management controls in relation to waste disposal within designated Marine Farming Development Plan areas. These are outlined in the *Marine Farming Development Plans for the D'Entrecasteaux Channel and the Huon and Port Esperance regions (2002)*.	• The Channel and Huon Coastal Waters Clean Up: A Seafood Industry Initiative commenced in 2009 and was facilitated by the Tasmanian Seafood Industry Council in partnership with local salmon and shellfish aquaculture operators. The project aimed to enhance the health and condition of local foreshores by removing marine debris, identifying common sources of marine farm debris and developing a management plan to reduce future entry of debris into coastal waters and to identify "hot spots" for local operators to focus regular clean up efforts. • Tassal, Huon Aquaculture and the Bruny Island Shellfish Growers Association continue to conduct regular beach clean ups.	• Salmon aquaculture initiatives: *Tassal Sustainability Report 2012* provides an outline of company initiatives to address marine debris accumulation, including adoption of a uniquely identifiable rope, shoreline clean ups and commencing the development of farm level waste mitigation plans and monitoring strategies. Huon Aquaculture have installed large bins at popular coastal areas in the region for the disposal of collected marine debris. Huon also provides the location and date for all marine debris clean-ups via it Sustainability Dashboard (see Cleanup Locations tile). • A guide to controlling Pacific oysters in your coastal area has been produced by NRM South to assist local Coastcare groups in managing feral oysters.

YOUR MARINE VALUES

SOCIAL VALUES

13 MARINE ENVIRONMENT FOR ITS OWN SAKE

IMAS
INSTITUTE FOR MARINE AND ANTARCTIC STUDIES

"Healthy, diverse marine life and systems"

SOCIAL VALUES

13 MARINE ENVIRONMENT FOR ITS OWN SAKE

Managing Agencies

- Marine environment

"The marine environment's ability to function and maintain the continuing existence of a diverse range of marine life and ecological processes"

Aquaculture Industry

- Marine environment in and of itself

"A healthy marine environment is our best protection from introduced disease and pests"

Community: Valeus

- Marine environment for its own sake

"The sense of well-being from the knowledge that it is: healthy; available; protected and self-sustaining."

HOW IS IT MANAGED?	HOW IS IT MONITORED/MEASURED?	USEFUL INFORMATION
General:	**General:**	**General:**
• Tasmania's *Resource Management and Planning System* provides the overarching framework for management of natural resources. Its primary objectives include sustainable development while ensuring the maintenance of ecological processes and genetic diversity. • *Living Marine Resources Management Act 1995* (LMRMA) – provides protection for designated marine habitats and communities. The LMRMA specifically provides for the protection of representative samples of marine and estuarine habitats and ecosystems and sites of ecological significance or fragility, the protection of vulnerable fish species and their habitats, and the establishment of scientific reference areas and public education in the resources, protection and use of the marine environment. • *The Nature Conservation Act 2002* provides for the conservation and protection of all native coastal and marine wildlife (excluding "fish", as defined in the LMRMA and those fish species which are specifically provided for under marine farming licences), and the creation of marine reserves. • *Tasmanian Marine Protected Areas Strategy*. The Strategy aims to protect long-term ecological viability of marine and estuarine systems, to maintain ecological processes and systems, and to protect Tasmania's biological diversity, and to establish and manage a comprehensive, adequate and representative system of marine protected areas.	• Condition or health of marine habitats, communities and species: measured by assessing changes in habitat extent, the abundance and distribution of key indicator species, and the presence of introduced species. Periodic monitoring of coastal and marine habitats and communities occurs on an intermittent basis as part of site and issue-specific studies across the region. *A framework for coastal and estuarine resource condition assessment* (2008) has been developed and trailed in North West Bay. However, no follow-up assessment has yet occurred. • Fisheries data: Levels of bycatch (or, catches of unwanted marine species, and threatened, endangered and protected marine species in particular) taken by commercial and recreational fishers are periodically recorded through log-books and surveys to assess levels of risk associated with fishing to these species. See also Value 04 Marine Species and Value 07 Fishing Industry. • Interactions with marine mammals: the frequency of interactions with general boat users, commercial and recreational fishing boat users, and marine farm operations, is also monitored with data collected through regular compliance and environmental reporting requirements. • Whale Hotline: 0427 WHALES (i.e. 0427 942 537) can be contacted to report sightings and stores data on whale distributions and frequency of sightings. • The IMAS Temperate Reef Survey Program monitors marine species and biodiversity in Ninepin Point and Tinderbox Marine Reserves and reference sites outside the reserves.	• Tasmanian Natural Values Atlas provides access to information on various natural values in the marine zone and can display map locations. This web-based database allows observations of Tasmanian natural values to be viewed, recorded and analysed, and is also linked to a range of related management documents. • The *State of the D'Entrecasteaux Channel and lower Huon Estuary* (Parsons 2012) provides information on the status of coastal and marine habitats and communties in sections 5 and 6. • The *D'Entrecasteaux Channel and the lower Huon Estuary Inventory of Scientific Information: Report for the D'Entrecasteaux Channel Project* identifies sources of further information on coastal and marine habitats and communities in sections 4.1.15, 4.1.16 and 4.1.17. • The *inquiry into the establishment of marine protected areas within the Bruny Bioregion: Background report 2006* provides a detailed description of the marine environment of the region.

YOUR MARINE VALUES

SOCIAL VALUES

14 QUALITY OF LIFESTYLE

IMAS
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"the marine environment can mean a livelihood as well as serenity"

SOCIAL VALUES

14 QUALITY OF LIFESTYLE

Managing Agencies

- Access for recreational activities generally
- Sustainable development

"a well-managed marine environment supports community well-being, development and growth"

Aquaculture Industry

- Being local seafood producers and part of local communities

"it's a healthy working marine environment that we live in and work in and love it and are proud of"

Community

- Quietness and serenity
- Natural night sky
- Opportunities for coastal and marine recreation
- Local employment in marine-based industries
- Sense of place and seaside heritage

"its uniqueness, peacefulness, views, recreation, marine life – the Channel adds to our quality of life and way of living"

HOW IS IT MANAGED?	HOW IS IT MONITORED/MEASURED?	USEFUL INFORMATION
General:	**General:**	**General:**
• Tasmania's *Resource Management and Planning System* supports and facilitates the sustainable development of natural (including marine) resources, where "sustainable development" means managing the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic and cultural well-being and for their health and safety, whilst ensuring the maintenance of ecological processes and genetic diversity. • *Local Government planing schemes and land use strategies* (*Kingborough Council Planning Scheme*, *Huon Valley Council Planning Scheme* and the *Huon Valley Land Use and Development Strategy*) – outline designated planning zones and strategies intended to protect and manage the visual impact of development on natural and community values including coastal habitats, skylines, scenic landscapes, sense of place and recreational amenity.	• A range of social indicators are available, including: the Tasmanian Together framework, state-based social inclusion frameworks, and other established reporting frameworks (e.g. Ecologically Sustainable Guidelines, or Global Reporting Initiative, Australian Institute of Health and Welfare, OECD Better Life Index). However, no region-wide systematic measurement or monitoring of these types of social indicators has been conducted for the D'Entrecasteaux Channel and lower Huon Estuary region.	• The *State of the D'Entrecasteaux Channel and lower Huon Estuary* (Parsons 2012) provides information on the status of population centres (section 3.1), foreshore land use (section 3.2), recreational fishing (section 3.6), recreational use (section 3.8), heritage values (section 4.1), and natural values (4.3). • The *D'Entrecasteaux Channel and the lower Huon Estuary Inventory of Scientific Information: Report for the D'Entrecasteaux Channel Project* identifies sources of further information on population centres (section 4.1.6), foreshore land use (section 4.1.7), recreational fishing (section 4.1.11), other recreation (section 4.1.12), and heritage (section 4.1.14).
Aquaculture Specific:	**Aquaculture Specific:**	**Aquaculture Specific:**
• *Environmental Management and Pollution Control Act 1994* – section 53 deals with 'environmental nuisance', which includes noise. *Environmental Management and Pollution Control (Miscellaneous Noise) Regulations 2004* – outlines acceptable noise levels at various places and times (e.g. noise of outboards must not be greater than 74dB(A) when measured at 25 metres), the process for regulating noise levels, and the issuing of approvals and permits for emission of certain noises. • *Marine Farming Planning Act 1995* – establishes Marine Farm Development Plans (MFDPs) and these plans contain specific management control regulating noise from marine farming operations. These are outlined in the *Marine Farming Development Plans for the D'Entrecasteaux Channel and the Huon and Port Esperance regions (2002)*.	• Attributing noise emissions accurately presents substantial challenges to regulators. Sources of noise emissions in the D'Entrecasteaux Channel and lower Huon Estuary include: recreational boat users, commercial fishing boats, and aquaculture operations. Measurement of the level of any noise is taken to be the A-weighted sound pressure level of that noise expressed in dB(A) or decibels. A-weighting measures of noise levels gives a scale for noise level as experienced or perceived by the human ear and is the standard measure for noise levels used in legislation. • Regional sustainability indicators have been developed to measure the flow of economic benefits from salmon aquaculture to the region. Specific indicators used include: Direct and Indirect contributions to Gross Regional Product, and Direct and Indirect Regional Employment Created.	• Salmon aquaculture initiatives: Tassal has noise measurement data for major pieces of equipment used in their marine farming operation. The *Tassal Sustainability Report 2012* details complaints received in relation to noise levels from marine farm operations, as well as outlining the actions which may be taken in response. • Tassal has achieved Best Aquaculture Practices (BAP) certification. Standards address issues including community property rights, community relations, and worker safety and employee relations. • Huon Aquaculture has a noise management program that involves regular monitoring and testing of equipment used in marine farm operations. • Huon Aquaculture has a community grants program to support and enhance the local communities in which it operates. • Huon Aquaculture has achieved the GlobalG.A.P. Integrated Farm Assurance Standard – Aquaculture Version 4, for the whole production process, which includes standards for specific social criteria.

YOUR MARINE VALUES

SOCIAL VALUES

15 MARITIME HERITAGE

IMAS
INSTITUTE FOR MARINE AND ANTARCTIC STUDIES

"rich in European history and unique position at the interface of the Channel, the Huon Estuary and the sea"

15 MARITIME HERITAGE

Managing Agencies

- Maritime heritage values of shipwrecks in State Waters

"Protection of maritime heritage of shipwrecks in State Waters"

Aquaculture Industry

- Maritime heritage

"we're part of a long history of local marine industries"

Community

- Maritime heritage

"this waterway has seen unbelievable amounts of activity on the water over the years"

HOW IS IT MANAGED?	HOW IS IT MONITORED/MEASURED?	USEFUL INFORMATION
General:	**General:**	**General:**
• The Tasmanian *Historic Cultural Heritage Act 1995* promotes the identification, assessment, protection and conservation of places having historic cultural heritage significance. Part 9 applies to shipwrecks in State Waters which are at least 75 years old from the date of the wreck. It stipulates the approvals process and regulation of any activity which may disturb historic shipwrecks. • The *Tasmanian Maritime Heritage Program* is an historic shipwrecks program in Tasmania within the broader context of a more general maritime heritage program. • *National Parks and Reserves Management Act 2002* – one of the management objectives for all reserves declared under the *Nature Conservation Act 2002* is to conserve sites or areas of cultural significance.	• Maritime heritage records for historic shipwrecks include the following information: name of vessel, type of vessel, year wrecked, sailing rig type, gross tonnage, location, and general history (including wrecking event, voyage, dimensions, construction, site management). • Within the Channel and lower Huon Estuary, artefacts remain at some wreck sites, while at others there is no remaining evidence of the vessels. Many of the wrecks involved small coastal transport or fishing vessels, with no major loss of life (Parsons 2012).	• Australian National Shipwrecks Database includes all known shipwrecks in Australian waters. Twenty six protected shipwrecks are recorded in the Channel and lower Huon Estuary region. • The *State of the D'Entrecasteaux Channel and lower Huon Estuary* (Parsons 2012) provides information on the status of European heritage in section 4.1.2. • The *D'Entrecasteaux Channel and the lower Huon Estuary Inventory of Scientific Information: Report for the D'Entrecasteaux Channel Project* identifies sources of further information on heritage in section 4.1.14. • *Inquiry into the establishment of marine protected areas within the Bruny Bioregion: Background Report 2006* provides information on recreational activities undertaken in the region in sections 4.4.2, 4.4.3.


probe

YOUR MARINE VALUES

SOCIAL VALUES

16 MARINE RESEARCH

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INSTITUTE FOR MARINE AND ANTARCTIC STUDIES

"the role for research is to find out what's in our marine environment, and what's happening to it"

SOCIAL VALUES

16 MARINE RESEARCH

Managing Agencies

- Marine research to support management, planning and decision-making

"research which helps us to establish the causes and impacts of changes in the marine environment"

Aquaculture Industry

- Industry values the contribution of Tasmania's scientific research community to the sustainability of aquaculture in Tasmania

"we value local marine knowledge and the contribution research makes to that"

Community

- Independent research into the marine environment

"Unless we have knowledge of the sea, we can't possibly define the change"

HOW IS IT MANAGED?	HOW IS IT MONITORED/MEASURED?	USEFUL INFORMATION
General:	**General:**	**General:**
• The *Tasmanian Marine Protected Areas Strategy* includes the scientific goal to provide for reference sites for scientific studies, including sites for baseline fisheries monitoring and long-term environmental monitoring. • *National Parks and Reserves Management Act 2002* – one of the management objectives for all reserves declared under the *Nature Conservation Act 2002* is to encourage research, particularly that which furthers the purposes of reservation.	• The IMAS Temperate Reef Survey Program monitors marine species and biodiversity in Ninepin Point and Tinderbox Marine Reserves and reference sites outside the reserves. • Periodic monitoring of coastal and marine habitats and communities occurs on an intermittent basis as part of site and issue-specific studies across the region. • *A framework for coastal and estuarine resource condition assessment* (2008) has been developed and trailed in North West Bay. • There are a variety of ways in which data on larger marine species and fish is captured: – Levels of bycatch (or, catches of unwanted marine species, and threatened, endangered and protected marine species in particular) taken by commercial and recreational fishers are periodically recorded through log-books and surveys to assess levels of risk associated with fishing to these species. – Interactions with marine mammals – specifically the frequency of interactions with general boat users, commercial and recreational fishing boat users, and marine farm operations, is also monitored with data collected through regular compliance and environmental reporting requirements.	• The *State of the D'Entrecasteaux Channel and lower Huon Estuary* (Parsons 2012) provides information on the status of research in section 3.9 and on integrated coastal and marine research in section 10. • The *D'Entrecasteaux Channel and the lower Huon Estuary Inventory of Scientific Information: Report for the D'Entrecasteaux Channel Project* identifies detailed studies underway in section 4.3.
Aquaculture Specific:	**Aquaculture Specific:**	**Aquaculture Specific:**
• The Fisheries Research and Development Corporation (FRDC) funds research, on behalf of the Australian Government, to assist in the management of the fisheries and aquaculture resource for ongoing sustainability. This includes research that has a benefit for commercial (wild catch and aquaculture), recreational and indigenous fisheries, and also delivers a public good benefit to the Australian community. • The *Sustainable Marine Research Collaboration Agreement* exists between the University of Tasmania (IMAS) and the Tasmanian State Government (DPIPWE) to undertake marine farming, fisheries and coastal marine research for the purposes of supporting management, planning and decision-making for Tasmanian marine resources.	• The D'Entrecasteaux Channel and Huon Estuary have been the focus of several major, system-wide research projects aimed at better understanding the ecosystem dynamics of the waterways. These studies headed by the CSIRO have been triggered by the need to understand the environmental carrying capacity of the region for fish farming and other anthropogenic inputs (Parsons 2012). • Environmental assessment and monitoring in relation to marine farming includes a benthic monitoring program (Appendix B) in marine farm leases and across Marine Farm Development Plan Areas. The Broadscale Environmental Monitoring Program (BEMP) is a system-wide water quality and sediment monitoring program, required by DPIPWE and undertaken by the salmon aquaculture industry. Samples to test water quality are taken regularly throughout the year at multiple sites (15), which are located outside of marine farm leases and are distributed across different areas of the Channel and lower Huon Estuary.	• FRDC research reports include non-technical summaries which communicate the major findings of research projects. • The Institute for Marine and Antarctic Studies (IMAS) research areas include: Fisheries, Aquaculture, Estuaries and Coasts, Climate Change and Ocean processes, Marine and Antarctic Ecosystems, and Marine Governance. IMAS research publications include: fisheries assessments, and research reports from projects funded by FRDC and various State and Commonwealth environmental management agencies. • Huon Aquaculture provides details of current major research projects and research expenditure via it's Sustainability Dashboard.

SOCIAL VALUES

17 MARINE EDUCATION

IMAS
INSTITUTE FOR MARINE AND ANTARCTIC STUDIES

"showing kids the lifeforms in a rockpool so they gain an appreciation of their marine world, and they take care of it and use it wisely"

SOCIAL VALUES

17 MARINE EDUCATION

Managing Agencies

- Marine education

"the community's understanding of the integrity of marine ecosystems"

Aquaculture Industry

- Opportunities for marine education

"education of local students about aquaculture as an industry and as a future job opportunity"

Community

- Education opportunities for the younger generations to learn about their marine environment and marine industries

"Importance of future generations knowing about their marine environment"

HOW IS IT MANAGED?	HOW IS IT MONITORED/MEASURED?	USEFUL INFORMATION
General:	**General:**	**General:**
• Tasmania's *Resource Management and Planning System* provides the overarching framework for management of natural resources. Its primary objectives include sustainable development while ensuring the maintenance of ecological processes and genetic diversity. • *Living Marine Resources Management Act 1995* (LMRMA) includes the provision to increase the community's understanding of the integrity of the ecosystem upon which fisheries depend. • *National Parks and Reserves Management Act 2002* – one of the management objectives for all reserves declared under the *Nature Conservation Act 2002* is to encourage education based on the purpose of reservation and the natural and cultural values of the reserve, or both. • *Tasmanian Marine Protected Areas Strategy* – a goal of the strategy is to facilitate the interpretation of marine and estuarine systems for the purposes of conservation, recreation and public education.	• The Woodbridge School Marine Discovery Centre gives Tasmanian students of all ages the opportunity to learn about, discover and care for the marine environment through diverse shore and sea based programs. The Centre houses fully equipped teaching areas, an aquarium room, marine pond and touch tanks, as well as displays of marine life, human impacts and fishing technology. • Staff and students at the Woodbridge School Marine Discovery Centre have maintained the Marine Discovery Centre Water Quality Monitoring Program for the past 10 years which has involved sampling biological and physical parameters of the sediments and the water column at nine regular sites in the D'Entrecasteaux Channel in the vicinity of Kettering, Woodbridge and Roberts Point, using their dedicated education vessel RV Penghana. • The Institute for Marine and Antarctic Studies (IMAS) delivers educational courses in marine studies at the undergraduate, honours and postgraduate level. IMAS is a leading education and research centre within the University of Tasmania (UTAS) with a particular focus on developing an applied understanding of temperate marine, Southern Ocean, and Antarctic environments.	• The *State of the D'Entrecasteaux Channel and lower Huon Estuary* (Parsons 2012) provides information on the status of marine education in section 3.9. • The Parks and Wildlife Discovery Ranger program has two components (1) Summer activity program which runs from Boxing Day to early February each year and during Easter at approximately 15 locations around the state and (2) School program where Discovery Rangers visit schools throughout the year. In relation to the D'Entecasteaux region specifically, there has been a discovery ranger on Bruny Island during summer and Easter for the last 20 years. They educate the public about marine conservation and biodiversity (in addition to terrestrial issues) through evening talks and activities about penguins at the Neck, whale a dolphin activities, rockpool rambles and coastal walks. The Discovery Ranger schools program work in schools through the D'Entrecasteaux region, Conningham and Snug being two examples.
Aquaculture Specific:	**Aquaculture Specific:**	**Aquaculture Specific:**
		• Huon Aquaculture has a regular program of (1) engagement with a number of local High Schools (2) practical workplace experience for university students from a range of disciplines and (3) summer placement for Australian Maritime College students. • Seafood industry initiatives: Tassal has a regular program of engagement with the Marine Discovery Centre and a number of local high schools. Tassal and Get Shucked Oysters regularly contribute to the 'Working on the Water' marine careers education program, run in partnership by the Tasmanian Seafood Industry Council and the Department of Education.

Conclusion

Communicating what is valued

The *Your Marine Values* study has been able to map the differing ways key marine values are held by local communities, marine industries and managing agencies. It has also linked the key values to specific governing legislation and policy (both regulatory and operational), and – where appropriate – to relevant scientific monitoring and assessment. The findings show the key values for local communities, marine industries and managing agencies, and have highlighted significant overlap in the values held.

While the main aim of the *Your Marine Values* study was to identify the key values that could be used in the larger project (INFORMD Stage 2), the study has identified that a much broader range of ecological, social and economic values are held by the various communities with a stake in this marine environment.

In response to the level of interest in the study's findings, the *Your Marine Values Report* has been produced in order to report on the values held and the links between those values and management and monitoring information. It is hoped that this report will be a useful public resource which could provide a foundation for future consultation, planning and management of the lower Huon Estuary and D'Entrecasteaux Channel region.

Appendices

Appendix A: Legislative and management arrangements for aquaculture

Resource Management Planning System

Tasmania's environmental planning and management system is guided by a suite of laws, policies and procedures under the Resource Management and Planning System (RMPS). The RMPS is based on the principles of sustainable development that are set out in Schedule 1 of each of the key pieces of legislation. The objectives of the RMPS are to:

a) promote the sustainable development of natural and physical resources and the maintenance of ecological processes and genetic diversity; and

b) provide for the fair, orderly and sustainable use and development of air, land and water; and

c) encourage public involvement in resource management and planning; and

d) facilitate economic development in accordance with the objectives set out in (a), (b) and (c); and

e) promote the sharing of responsibility for resource management and planning between the different spheres of Government, the community and industry in the State.

"Sustainable development" means managing the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic and cultural well-being and for their health and safety while:

- sustaining the potential of natural and physical resources to meet the reasonably foreseeable needs of future generations; and
- safeguarding the life-supporting capacity of air, water, soil and ecosystems; and
- avoiding, remedying or mitigating any adverse effects of activities on the environment.

Specific Legislation Covering Marine Farming Activities

The T*asmanian Parliament passed specific legislation, the Marine Farming Planning Act 1995* (MFPA) and the *Living Marine Resources Management Act 1995* (LMRMA) to plan for and regulate the marine farming industry. Both Acts include the objectives of the RMPS as Schedule 1 of the Acts.

Marine Farming Planning Act 1995

The MFPA makes provision for:

- zoning areas of State waters, by way of marine farming development plans (MFDPs) where future marine farming operations may occur;
- preparation of an Environmental Impact Statement in relation to a draft marine farming development plan or an amendment to a draft plan;
- management controls to regulate marine farming activities within marine farming zones and mechanisms for enforcement; and
- allocation of leases and associated lease conditions over areas within marine farming zones.

Living Marine Resources Management Act 1995

The LMRMA provides provisions for the licensing of marine farming operations to allow for the culture of specified species. Marine farming licences may contain conditions to regulate marine farming operations. Licences are typically renewed on an annual basis. Licence conditions, however, may be varied at any time it is necessary to achieve sustainable environmental management.

The MFPA, marine farming lease conditions, management controls contained within MFDPs and marine farming licence conditions are the principal instruments for managing marine farming activities.

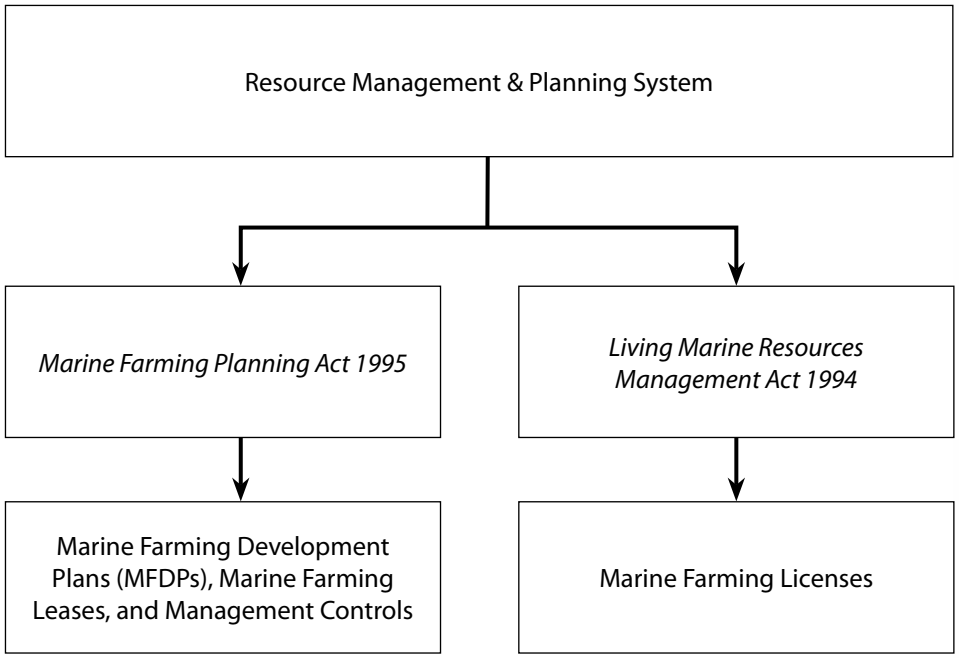

Figure 1. Legislative and management arrangements for marine farming.

Figure 2. Location of marine farming lease areas in the lower Huon Estuary.

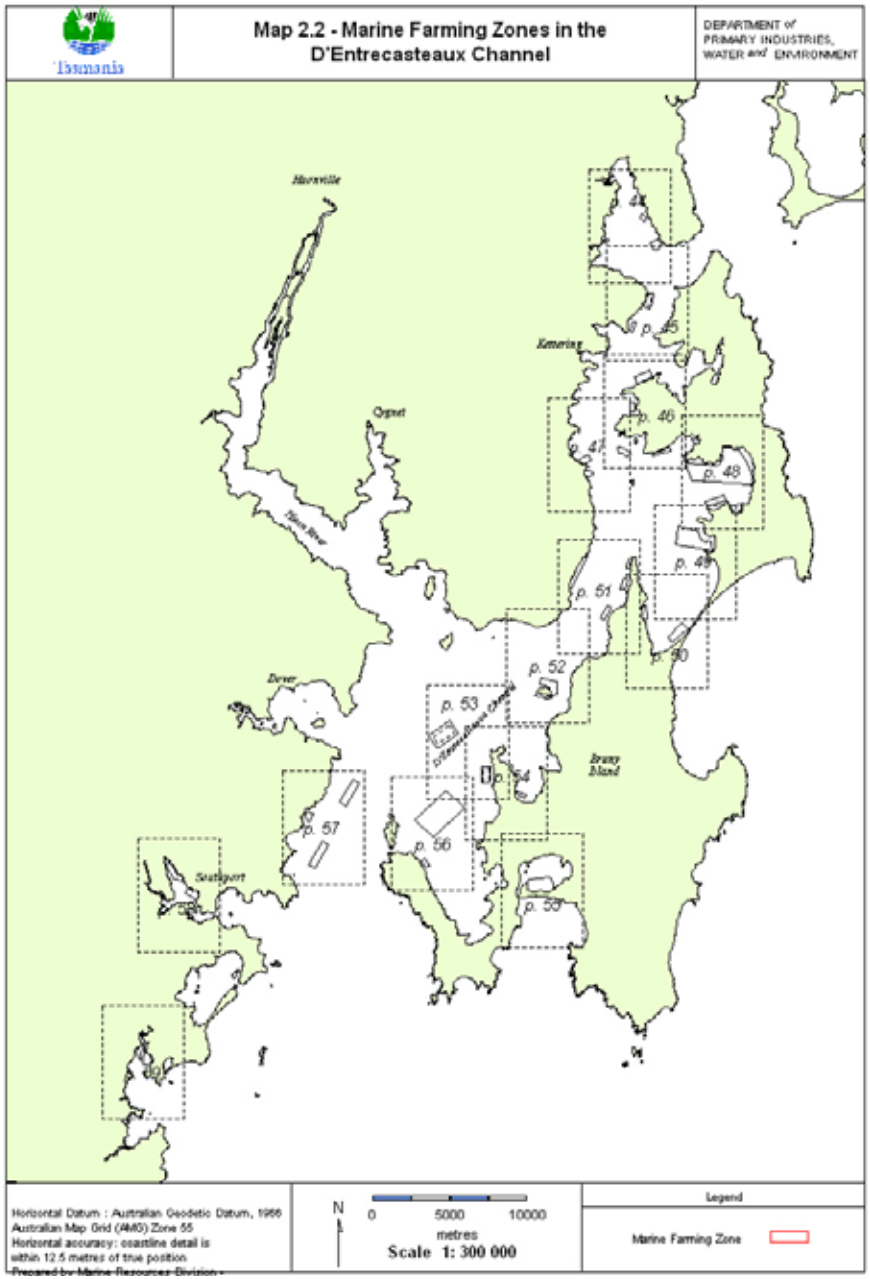

Figure 3. Location of marine farming zones in the D'Entrecasteuax Channel.

Appendix B: Monitoring requirements for aquaculture in the Huon River and Port Esperance and D'Entrecasteaux Channel Marine Farming Development Plan (MFDP) areas

Marine Farming Development Plans (MFDP)

The D'Entrecasteaux Channel and the Huon River and Port Esperance MFDPs outline a range of management controls specific to marine farming operations that are designed to provide for the sustainable development of marine farming..

Common to these plans is the requirement that:

- there should be no unacceptable impact beyond a specified distance from the lease boundary,
- stocking densities of fish/ shellfish should not exceed the particular systems carrying capacity, and
- for finfish farming, dissolved nitrogen inputs may be specified at any time.

MFDPs were finalised in 2002 for the D'Entrecasteaux Channel and the Huon River and Port Esperance regions.

Management Controls

Marine farming licences and management controls contained within MFDPs are the principal instruments for regulating specific marine farming activities.

Management controls are identified in each MFDP and these identify baseline survey and ongoing monitoring requirements specific to water and sediment quality together with controls on:

- nitrogen outputs from fish feed,
- chemical use,
- disease controls,
- waste disposal, and
- carrying capacity of finfish and shellfish.

Marine Farming Leases and baseline environmental assessments

Each MFDP identifies marine farming zones within which the marine farming of specified species may occur. Marine farming lease areas are issued in accordance with the MFPA and must be located within a marine farming zone. Prior to the licensing of a lease area, a baseline environmental assessment of the lease area must be completed and approved before the lease can be licensed. The baseline environmental assessment specifications vary according to the type of species to be farmed. Survey requirements may include but are not necessarily limited to:

- video assessment,
- bathymetric profile,
- current meter deployment and analysis,
- sediment particle size analysis,
- organic carbon content of the sediment,
- redox potential,
- sulphide analysis,
- composition of the benthic community.

Marine Farming Licences and ongoing environmental management

Following approval of the baseline assessment, a marine farming lease area may then be licensed.

A licence authorises the leaseholder to farm a particular species on the lease area and contains specific conditions relating to operational and environmental management that are consistent with management controls, including but not limited to environmental standards, environmental record keeping and reporting requirements.

For finfinfish marine farming operations licences also prescribe environmental monitoring survey specifications relating to ongoing underwater video surveys and broadscale environmental monitoring.

Video assessment of sediment condition under cages and at compliance sites outside the lease area is undertaken annually as part of licence requirements. Non-compliance triggers further assessment with the particular response determined by DPIPWE and based on an adaptive management approach.

In addition DPIPWE receives details of the amount of feed used by each salmon farm on a monthly basis. This information is used to ensure overall nutrient inputs comply with the limits set for the D'Entrecasteaux Channel and Huon River and Port Esperance MFDP areas.

Operational and environmental compliance of marine farming licence holders is regularly assessed and under the provisions of the LMRMA. Specific conditions or monitoring specifications may be varied as required.

See the D'Entrecasteaux Channel and the Huon River and Port Esperance (2002) MFDPs for details.

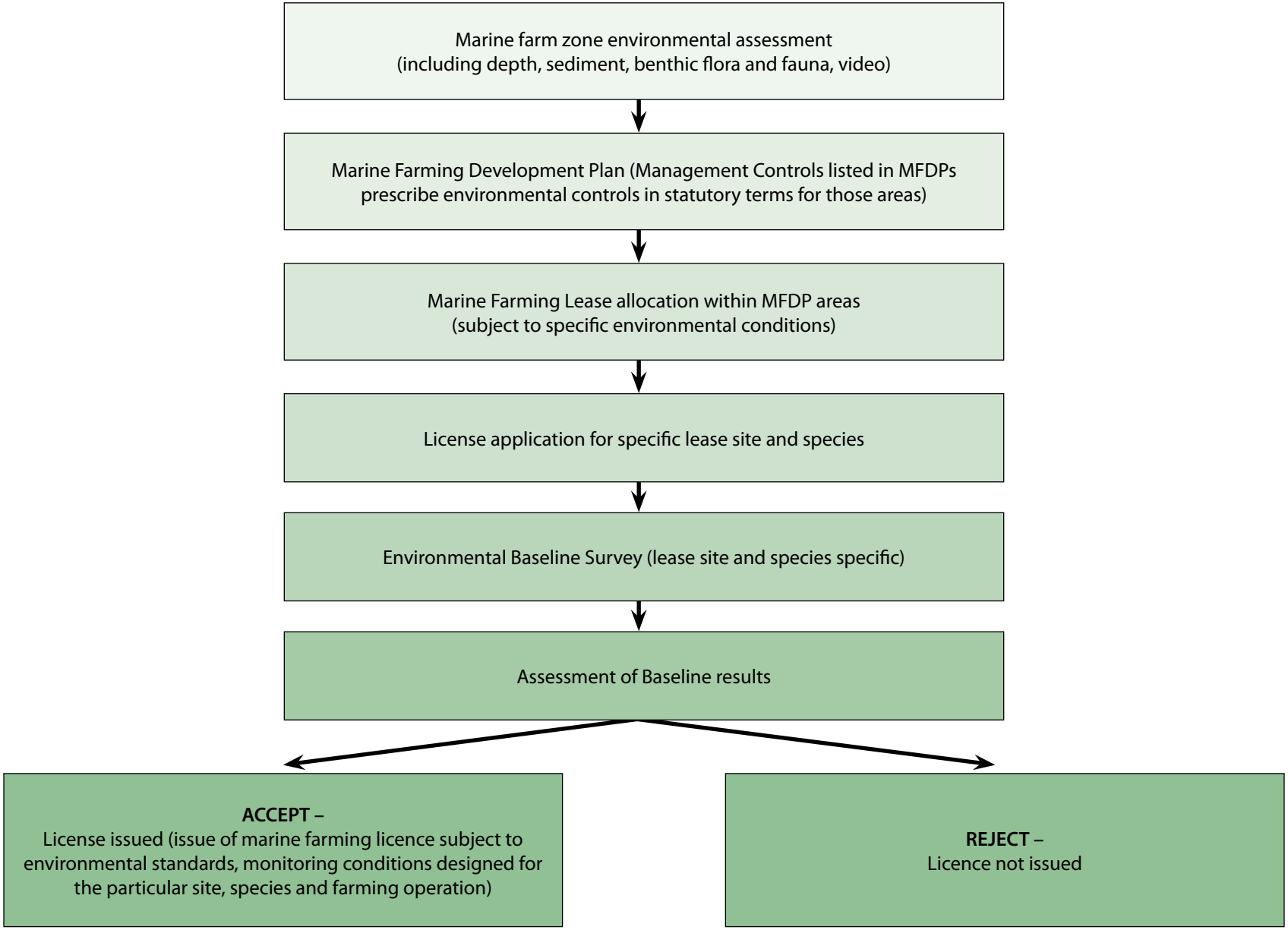

Figure 4. Environmental assessment process for marine farming planning and management in the D'Entrecasteaux Channel and the Huon River and Port Esperance MFDP areas. NOTE: These are the steps undertaken prior to the commencement of any marine farming operations rather than ongoing management (over page).

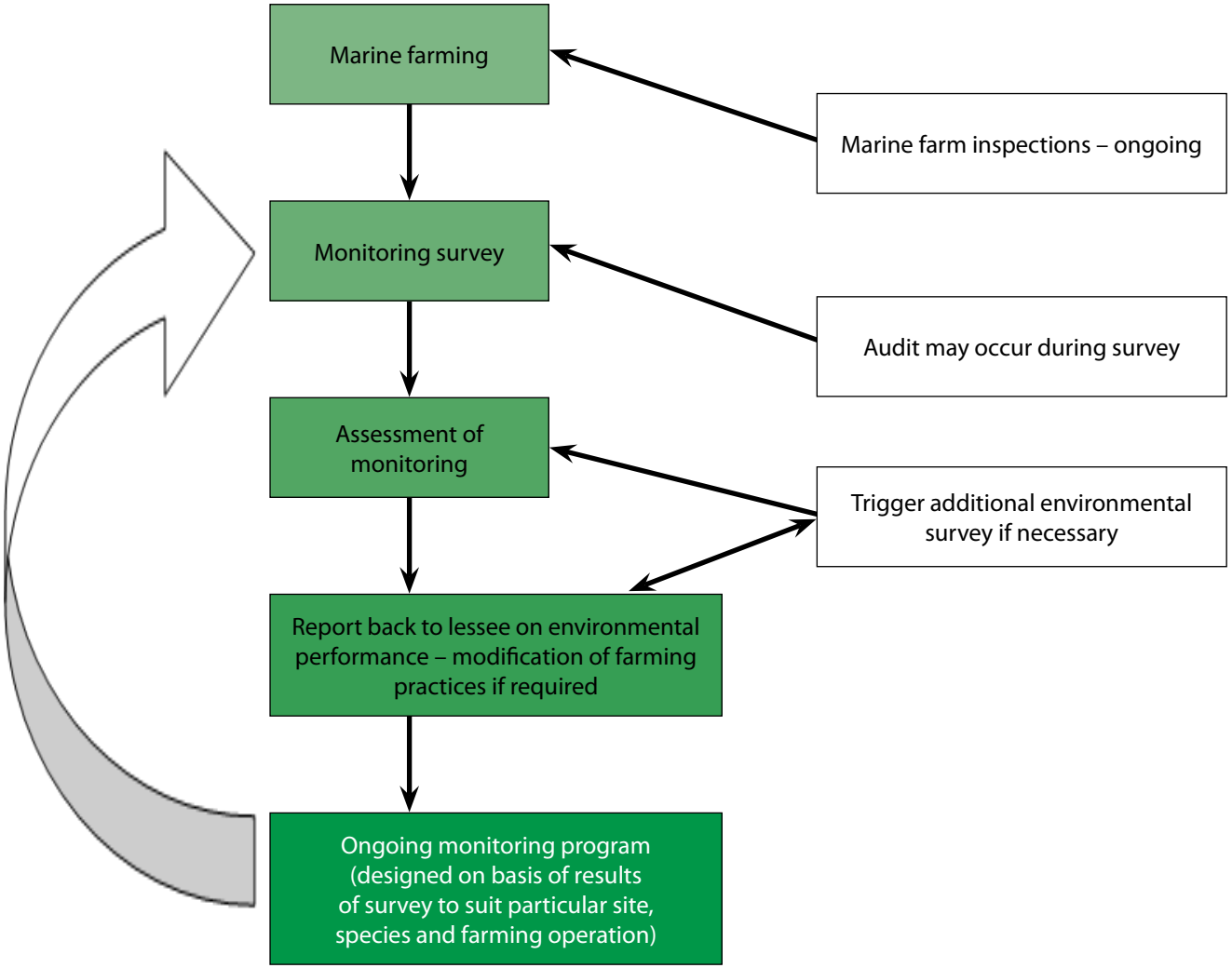

Figure 5. Ongoing environmental monitoring process for marine farming management in the D'Entrecasteaux Channel and the Huon River and Port Esperance MFDP areas. NOTE: This is the regulatory adaptive management framework for marine farming and not industry-based.

Broadscale Environmental Monitoring Program (BEMP)

The BEMP is a system wide water quality and sediment monitoring program in the D'Entrecasteaux Channel and Huon Estuary, required by DPIPWE and undertaken by the salmon aquaculture industry. Samples to test water quality are taken regularly throughout the year at multiple sites (15), which are located outside of marine farm leases and are distributed across different areas of the Channel and lower Huon Estuary.

Sampling is undertaken to measure and assess the following indicators of water quality:

- water column nutrients,
- dissolved oxygen levels,
- temperature,
- salinity, and
- phytoplankton community structure (using both taxonomic and biochemical measures) and abundance.

Sampling for sediment condition (sediment biogeochemistry) is undertaken annually from 15 sites, and infaunal samples are assessed every four years..

An evaluation of the data collected through this monitoring program for 2009-20012 is available here.

Appendix C:
Your Marine Values workshops

A series of stakeholder workshops were held in February and March 2013 in regional locations. The aim of the workshops was to identify what is important and matters most about the marine environment of the D'Entrecasteaux Channel and Huon Estuary. The workshops were widely promoted and targeted local communities in the Channel and Huon-Dover regions, user groups, marine industries, and government agencies with management responsibilities.

Specifically, the purpose of the workshops was to establish for community, industry and managing agency stakeholders:

- regionally relevant environmental values, and
- those values (social, economic and environmental) that affect and are likely to be affected by aquaculture.

Community workshops were held as follows:

1. Dover (Dover Hotel), 18.02.2013 – *15 participants*
2. Woodbridge (Woodbridge Marine Discovery Centre), 19.02.2013 – *60+ participants*
3. Bruny Island (Bruny Island South Fire Station, Alonnnah), 24.02.2013 – *15 participants*

Other workshops included:

4. Managing agencies (Woodbridge Marine Discovery Centre), 21.02.2013 – *12 participants*
5. Seafood industries (University of Tasmania, Sandy Bay campus), 22.02.2013 – *9 participants*

A further cross sector workshop involving representatives from managing agencies, aquaculture and commercial fisheries industries, community and environmental non-governmental organisations, and researchers was held on Monday 6 May 2013. The purpose of this workshop was to refine the values identified at the five initial workshops and through the online survey (see Appendix D), link them to meaningful indicators and best-available science-based information, and identify those values that could be used in evaluating management and planning options for aquaculture.

The workshops were independently facilitated. Values already recognised in public documents and through existing planning processes were presented. Participants were then asked to identify the following:

- What does this marine environment mean to you and your community of interest?
- How, and where, do you interact with this marine environment?
- What are your connections with this marine environment? Past, present and future?

The results of each workshop were circulated to interested participants for feedback and to ensure the accuracy of the recorded values. The values identified at the five initial workshops are provided in Tables 1-5.

The results of each of the workshops are provided in Tables 1-5. The contents of these tables are listed in the same way they were described by participants at the workshops (that is, *verbatim*) and have not been interpreted. These results include aspirations and strategies identified by participants in relation to management of marine values, as well as values.

The final list of values presented in the main body of the *Your Marine Values* report represents the results of the cross-sector workshop, where the list of values was refined and key marine values were identified.

Table 1. Values, Aspirations and Strategies as described by Participants at the YMV Community Workshop, Dover, 18th February 2013

Category	Sub-Category	Value/Aspiration/Strategy
ECOLOGICAL		Diversity of filter feeder species (for example, mussels) in intertidal zone
		Marine biodiversity throughout the region
		Clean water (water quality) - coastal & marine
		Clean water (water quality) - freshwater
		Clean air
		Clean foreshores (free of marine debris)
		Integrity and well-being of marine ecosystems and lifeforms for their own sake
ECONOMIC		Flow of economic benefits of local marne farming into regional communities
		Local employment opportunities
		Fair distribution of costs of managing marine environment across user groups and industries

Table continued next page

Table 1. Values, Aspirations and Strategies as described by Participants at the YMV Community Workshop, Dover, 18th February 2013 (continued)

Category	Sub-Category	Value/Aspiration/Strategy
SOCIAL	**Public health & safety**	Marine waters that are safe for recreational users
		Marine waters that are safe working environments
		Seafood that is safe to eat
		Public notification of water quality levels and food safety status of local seafood
	Quality of lifestyle	Visual beauty of water views (that is, low levels of visual impact due to marine farming)
		Personal well-being (that is, low levels of visual disturbance by marine farming lights)
		Quietness (that is, low levels of marine farming noise)
		Personal relationship with local marine environment (sense of place & identify)
		Extensive public access to the foreshore and marine environment
		Maintaining social structure of regional communities through local employment
		Low levels of housing density and population
	Access for recreation	Access to this world class sheltered waterway for sailing/boating
		Access to the foreshore and near shore for walking and swimming
		Access to the marine environment for recreational fishing
		Access to the marine environment for families to play in and enjoy
	Generating and sharing knowledge	Access to information about the state of the local marine environmental that is current and appropriate
		Access to baseline data to understand changes in water quality and marine biodiversity
		Access to information about local water quality that can be trusted
		Access to information about how the marine environment is managed and planned for that is current and appropriate
		Access to information about resource rents (i.e. access fees) paid by marine farm industry
		Local ecological knowledge
		Opportunity to contribute local ecological knowledge to research
	Inclusion of past, present and future generations	Shared experience of the marine environment across family generations
		Awareness of the role and impact of marine farming of amongst young people
		Intergenerational relationship with the local marine environment
		Opportunity for future generations to access, use and appreciate the local marine environment
		Education of future generations about their local marine environment
	Resource management and planning for sustainability	Opportunity to contribute local ecological knowledge and views to planning and management processes
		Decision-making which is informed by knowledge of the contribution of marine farming to regional communities
		Diversity of values held for the local marine environment and marine farming
		Decision-making which places a high value on the long-term well-being of the marine environment
		Decision-making which acknowledges the high level of uncertainty in knowledge about the state of the marine environment
		Resource rents (i.e. access fees) which take account of full long-term cost of marine farming to marine environment and other users
	Environmental stewardship	Efforts by marine farming companies to "keep their backyard clean"
		Efforts by marine farming companies to reduce impacts on the marine environment as a whole
		Sharing the responsibility amongst all users for keeping local foreshore clean of marine debris
	Relationships	Sharing the responsibility amongst all users for keeping local foreshore clean
		Industry responsiveness to community concerns
		Open relationship between marine farming companies and regional communities
		Interpersonal relationships between local community members and local marine farm company staff
		Recognition of marine farm industry contributions to regional communities

Table 2. Values, Aspirations and Strategies as described by Participants at the YMV Community Workshop, Woodbridge, 19th February 2013

Category	Sub-Category	Value/Aspiration/Strategy
ECOLOGICAL		Water quality (that is, free of pollution and elevated nutrient levels)
		Water clarity
		Functionality and integrity of the marine ecosystem (that is, ability to function as it is supposed to)
		Marine biodiversity
		Marine habitats
		Natural state of foreshore (that is, undeveloped)
		Clean water (that is, absence of marine debris)
ECONOMIC		Natural values of wetlands and the salt/freshwater interface
		Marine environment for its own sake
		Diversity of natural coastal and marine habitats, communities and ecosystems from the river to the Channel
		Natural state of seabed (that is, absence of recently observed slime and high levels of silt)
		Carbon-sink capacity of marine environment
		Contribution of marine environment to air quality
		Healthy seabird populations
		Marine life (benthic habitat and communities) below marine farm cages
		Seagrass communities
		Whole-of-system view of marine environment
		Protection of coastal habitat
		Healthy Australian fur-seal populations
		Maintenance of a viable, healthy coastal-marine ecosystem
		Diversity of marine industries
		Working marine environment
		Sustainable foreshore development
		Access to foreshore for coastal and marine industries and businesses
		Marine industrial and commercial activity and growth where impact on marine environment is maintained at or below acceptable levels
		Long-term employment opportunities in, on and around the water in sustainable industries
		Opportunities for local employment
		Access for marine tourism operators
SOCIAL	**Public health & safety**	Safe foreshore and intertidal zone for recreational enjoyment (that is, absence of feral oysters)
		Lighting of marine farms to reduce navigational hazard
		Seafood that is safe to eat (that is, not affected by harmful algal blooms)
		Safety of marine waters for swimming/diving/sailing (that is, water quality)
		Safety of marine waters (that is, physical safety from interactions with jetskis, other vessels)
		Access to safe all-weather anchorages

Table continued next page

Table 2. Values, Aspirations and Strategies as described by Participants at the YMV Community Workshop, Woodbridge, 19th February 2013 (continued)

Category	Sub-Category	Value/Aspiration/Strategy
SOCIAL	**Quality of lifestyle**	Natural and scenic water views (that is, low visual presence of marine farming)
		Livelihood (that is, being able to make a living from the marine environment)
		Serenity (that is, low levels of noise pollution)
		Night-time visual amenity (that is, absence of lights)
		Visual enjoyment of foreshore (that is, absence of marine debris)
		Planning which protects the sense of place of fishing villages
		Opportunities to work locally
		Recognition of lifestyle values of local residents adjacent to marine farm leases
		Clean air (that is, low levels of odour from marine farming)
		Industrial water views (that is, views of marine farming and other marine industries' operations)
		Low levels of housing density and population
	Access for recreation	Diversity of ways people use and interact with the marine environment
		Access to beaches for walking, swimming and family enjoyment
		Access to marine waters for recreational diving (non-extractive)
		Access to foreshore for recreational fishing from beaches and rocky coasts
		Access to marine waters for recreational fishing (boat-based, from dinghies and row boats through to powered vessels)
		Access to marine waters for recreational fishing (dive)
		Access to marine resources to feed families (that is, mussels, scallops, flathead, crayfish, flounder)
		Access to sheltered waterways for recreational boating/sailing
		Access to waterways for sailing clubs and events
		Access to free moorings
		Access to anchorages
	Generating and sharing knowledge	Public notification (signage) of water quality at local high-use sites
		Environmental monitoring that can detect changes over time in the state of natural values
		Understanding of interactions and feedbacks between inputs and activities
		Knowledge of the state of the marine environment
		Access to marine monitoring data and interpretation for multiple users
		Knowledge which supports management to prevent introduction and spread of feral species
		Monitoring of changes in the environment which draws on appropriate scientific and community-based knowledge
		Identification of gaps in governance of marine environment

Table continued next page

Table 2. Values, Aspirations and Strategies as described by Participants at the YMV Community Workshop, Woodbridge, 19th February 2013 (continued)

Category	Sub-Category	Value/Aspiration/Strategy
SOCIAL	**Inclusion of past, present and future generations**	Opportunity for future generations to harvest and eat mussels and wild oysters from the intertidal zone
		Multi-generation employment opportunities in, on and around the water in sustainable industries
		Sustainable levels and scale of marine resource use and extraction which ensure the availability and health of these resources for future generations
	Resource management and planning for sustainability	Planning and management which takes account of scenic and amenity values for marine environment
		Planning and management which supports the diversity of uses of the marine environment
		Planning and management which allows for a continuum of natural through to highly used/developed states of the marine environment
		Planning and management processes which learn from past mistakes and legacies and continuously improve
		Regulation of marine activities and uses which is fair and consistent across all uses and with equivalent land-based activities
		Integrated planning and management of marine activities and uses
		Planning and management which takes account of level of stress marine environment already under due to the impact of past activities (that is, legacies of feral oysters, scallop dredging, net fishing, carbide and silica works, run-off from land based activity)
		Balance between marine conservation and sustainable recreational fisheries
		Exit strategies for marine industries which include remediation of legacy impacts
		Opportunities for people to actively participate in management and decision making for the marine environment
		Recognition of communities as viable stakeholders
		Incentives/disincentives to ensure sustainable development of appropriate marine industries
		Valuation of positive/negative impacts of marine industries
		Regulation of use levels of marine resources which allow regeneration of natural values
		Planning and management which takes account of rising water temperatures when assessing acceptable environmental impacts of marine farming
		Marine environment as a shared community resource which cannot be owned by individuals
		Planning and management which takes account of the negative and positive interactions between the built environment and the natural
		Innovative approaches to planning and management which take account of the full range of values, threats and opportunities
		Greater inclusiveness of the full range of values and stakeholders
		Planning and management which take a complex systems approach
		Funding to enable effective planning and management of the marine environment
		Acceptance of the level of change which has already occurred to the marine environment
		Integration between National, State, regional and local scale strategies and marine policies

Table continued next page

Table 2. Values, Aspirations and Strategies as described by Participants at the YMV Community Workshop, Woodbridge, 19th February 2013 (continued)

Category	Sub-Category	Value/Aspiration/Strategy
SOCIAL	**Taking responsibility for the state of the environment**	Respect and responsibility held by regional community and users for the natural environment
		Responsible management of septic waste by residential property owners
		Open dialogue between all stakeholders about what levels of impact on the marine environment which are acceptable
		Responsible management of agricultural run-off (fertiliser and pesticide use) by land-based industries
		Education of locals, newcomers and visitors of the environmental values of the marine environment
		Balance between use and protection of the marine environment that is socially-negotiated
		Responsible management of recreational boat effluent/sewage (that is, where this is pumped out)
		Low-impact methods of recreational fishing
		Accountability for remediation of past environmental impacts by perpetrators (that is, industry operators leaving the environment as they found it)
		Education of locals, newcomers and visitors of the environmental values of the marine environment
		Opportunity for community to participation in remediation work
		Protection of marine environment from further introductions of exotic marine pest species
	Building relationships	Opportunities for diverse stakeholders to interact and reduce barriers
		Marine environment as a setting for meeting and making social connections with people
		People's connection to local marine environment and bond to local community
		Corporate social responsibility
		Dialogue about the marine environment and marine farming that includes all stakeholders
		Active demonstration by industry and government agencies that the values of local communities and users have been considered
	Tasmanian Aboriginal cultural heritage	Tasmanian Aboriginal cultural heritage
		Acknowledgement by other users and managers of Tasmanian Aboriginal cultural heritage values
		Understanding of the contribution of sustainable use of the marine environment by Aboriginal communities over thousands of years

Table 3. Values, Aspirations and Strategies as described by Participants at the YMV Managing Agencies Workshop, 21st February 2013

Category	Sub-Category	Value/Aspiration/Strategy	Legislation/policy/strategy (refer to key below)
ECOLOGICAL		Water quality	EMPCA, MFPA, SPWQM, SSS
		Air quality	EMPCA
		Audio quality	EMPCA
		Visual quality	EMPCA
		Maintaining physical, biological and ecological processes and functions of marine environment at acceptable level	EMPCA, MFPA, LMRMA
		Assimilative capacity of marine environment (that is, ability to cope with waste)	MFPA, EMPCA
		Capacity of marine environment to support a variety of social, economic and environmental uses	MFPA, LMRMA
		Diversity of marine ecosystems, communities, habitats and species	TSPA, NCA, TMPAS, LMRMA, EPBC
		Ecological health of the benthos	EMPCA, MFPA, LMRMA, EPBC
		Sediment health	EMPCA, MFPA
		Quality of foreshore/coastal environments	KPS, HVCPS, LUPPA
		Geomorphological and geological marine features of conservation significance	TMPAS, NCA
		Unimpacted marine areas (Marine Protected Areas and Marine Conservation Areas)	TSPA, TMPAS, NCA, LMRMA, NPRMA
		Marine environment for its own sake	TMPAS, NCA
		Connectivity of marine protected area system (spatial and temporal)	TMPAS
		Unique marine ecosystems, communities, habitats and species	TSPA, TMPAS, NCA, LMRMA, EPBC
		Viable populations and communities of threatened marine species and habitats	TSPA, TMAS, LMRMA, EPBC
		Biosecurity	TSPA
		Resilience of coastal environment	KPS, HVCPS
ECONOMIC		Productivity of marine ecosystems to support commercial activity	MFPA, LMRMA
		Proximity of suitable marine farm lease areas to shore-based infrastructure and fresh water supply	MFPA
		Economic benefits of marine farming to the Tasmanian community	MFPA
		Economic benefits of commercial fisheries to to the Tasmanian community	LMRMA
		Economic benefits of recreational fisheries to to the Tasmanian community	LMRMA
		Employment opportunities generated by marine resource-based industries in regional communities	MFPA, LMRMA

Table continued next page

Table 3. Values, Aspirations and Strategies as described by Participants at the YMV Managing Agencies Workshop, 21st February 2013 (continued)

Category	Sub-Category	Value/Aspiration/Strategy	Legislation/policy/strategy (refer to key below)
SOCIAL	**Public health & safety**	Safe anchorages for boat users	MSSA
		Safety of all marine users in and on the water (that is, absence of navigational hazards)	MSSA
		Food safety of seafood products harvested from the region	PPPSS
		Availability of local seafood for the Tasmanian community through commercial fishing	LMRMA
		Availability of local seafood for the Tasmanian community through marine farming	LMRMA
		Availability of local fish stocks as a food source for recreational fishers	LMRMA
	Recreational amenity	Access for recreational fishing activities	LMRMA
		Access for recreational activities generally	LMRMA, MFPA, TMPAS
		Social benefits (various) of recreational fisheries to regional communities	LMRMA
	Resource management and planning for sustainable development	Availability and quality of marine resources for future generations	MFPA, LMRMA, EMPCA
		Diversity of uses of the marine environment	MFPA, LMRMA
		Fair and balanced allocation of access to marine resources	MFPA, LMRMA
		Public involvement in management and planning for marine resources	MFPA, LMRMA
		Sustainable development of marine farming	MFPA
		Sustainable development of commercial fisheries	LMRMA
		Shared responsibility for management of the marine environment between the State Government, industry and the Tasmanian community	MFPA, LMRMA
		Integrated management of coastal and marine environments	MFPA, EMPCA, KPS, HVCPS
	Tasmanian Aboriginal heritage	Places of Tasmanian Aboriginal cultural significance	ARA, AHPB (draft)
		Direct voice of specific and particular Tasmanian Aboriginal communities in relation to management and planning for marine environment	AHPB (draft)
	European cultural heritage	Protection of maritime heritage of shipwrecks in State Waters	THCHA
	Generating and sharing knowledge	Understanding interactions between biophysical and biochemical processes and functions in the marine environment	EMPCA, MFPA
		Capacity to differentiate natural variability from change caused by human activities	EMPCA, MFPA, LMRMA
		Capacity to identify cumulative impacts (multi source, long-term)	EMPCA, MFPA, LMRMA
		Understanding assimilative capacity of the marine environment	MFPA
		Understanding threatening process (biosecurity risks, climate driven change)	MFPA, TSPA, LMRMA
	Other Social Values	Resilience of coastal environment (built) and marine infrastructure to climate change	KPS, HVCPS, MSSA, LUPPA
		Protection of individual property rights in the coastal zone	KPS, HVCPS, LUPPA
		Aesthetics of waterways (that is, absence of visual pollution or views of unimpacted natural waterways)	TMPAS
		Spiritual connections/links with marine environment	TMPAS
		Unimpacted marine areas for their own sake	TMPAS
		Relationship between marine farms and adjacent local communties	MFPA

AHPB	(Draft) *Aboriginal Heritage Protection Bill 2012*
ARA	*Aboriginal Relics Act 1975*
EMPCA*	*Environmental Management & Pollution Control Act 1994*
EPBC	*Environmental Protection & Biodiversity Conservation Act 1999 (C'mwlth)*
HVCPS	(Draft) *Huon Valley Council Planning Scheme*
KPS	(Draft) *Kingborough Planning Scheme*
LMRMA*	*Living Marine Resources Management Act 1995*
LUPAA*	*Land Use and Planning Approvals Act 1993*
MFPA*	*Marine Farm Planning Act 1995*
MSAA	*Marine and Safety Authority Act 1997 & Marine and Safety Regulations (various)*
NCA	*Nature Conservation Act 2002*
NPRMA	*National Parks and Reserves Management Act 2002*
PPPSS	*Primary Production and Processing Standard for Seafood, Standard 4.2.1*
SPPA*	*State Policies and Projects Act 1993*
SPWQM*	*State Policy on Water Quality Management 1997*
SSS*	*State Stormwater Strategy 2010*
THCHA	*Tasmanian Historic Cultural Heritage Act 1995*
TMPAS	*Tasmanian Marine Protected Area Strategy 2001*
TSPA	*Threatened Species Protection Act 1995*

* *Legislation and policy which is subject to the objectives of Tasmania's Resource Management and Planning System (RMPS). Refer to Appendix A for details about the RMPS.*

Table 4. Values, Aspirations and Strategies as Identified by Participants at the YMV Industry Workshop, 22nd February 2013

Category	Sub-Category	Value/Aspiration/Strategy	Operational Value/ Indicator
ECOLOGICAL		Specific environmental parameters which enable salmon to be farmed	Water temperature
			Water quality
		Specific environmental parameters which enable shellfish to be farmed	
		Inter-tidal and sub-tidal benthic habitat	
		Clean water / water quality for healthy shell/fish production	
		Clean water / water quality for healthy supportive marine ecosystems	
		Biosecurity (pathogens and introduced diseases)	Prevention of introduction and spread
		Biosecurity (marine pests)	Prevention of introduction and spread
		Biosecurity (biotoxins)	Prevention of introduction and spread
		Respect held by industry for the marine environment (inclusive of water quality, sediment and living systems)	
ECONOMIC		Access to suitable marine areas for shellfish farming	Sub-tidal and inter-tidal areas
		Access to suitable marine areas for salmon farming	TBA
		Security of continuing access to marine farm lease areas	Annual renewal of leases
		Access to foreshore for shore-based facilities	
		Security of continuing access to foreshore for shore-based facilities	
		Exclusivity of use of marine farm lease areas	No unauthorised access other than the Minister for Fisheries delegate
		Security of operating environment	
		Clarity of regulations and operational context	
		Capacity to produce high yield from small area of these waterways	
		Cost savings in good farming practices	
		Brand image ("clean, green" and social licence) for access to markets and product differentiation	
		Sustainable growth	
		Security and continuity of supply of skilled workforce	
		Ability to innovate	
		Continuous learning and improvement	

Table continued next page

Table 4. Values, Aspirations and Strategies as Identified by Participants at the YMV Industry Workshop, 22nd February 2013 *(continued)*

Category	Sub-Category	Value/Aspiration/Strategy	Operational Value/ Indicator
	People's health & safety	Production of high quality seafood that is safe to eat	
		Production of important protein source for human consumption and health	
		Safe working conditions for staff	
		Professionalism and skill levels of staff	
	Place in Tasmanian community	Acceptance of Tasmanian community to use public marine resource	
		Ability to use public marine resource to make high value product	
		Tasmanian-based industry at all levels of operation	
		Contribution of industry to regional Tasmanian communities through employment opportunities and social stability	
		Pride in industry	
	Resource management and planning for sustainability	Integrated management of catchments, coastal and marine environments and activities	
		Recognition of the high level of monitoring and accountability of environmental inputs of marine farming comparative to other terrestrial and marine resource users	
		Equitable identification of responsibility for inputs into marine waterways across marine and terrestrial industries	
		Level of regulation that is commensurate with level of risk of environmental change	
		Consistent and equitable application of regulations and management controls	
		Knowledge of industry's standing with decision-makers	
	Taking responsibility for the state of the environment	Industry's role as environmental stewards of waterway	
		Industry's role in observing and recording changes in marine environment as part of farm monitoring programs	TASQAP, BEMP
		Good marine farming practices	
		Wider recognition of the important of clean marine waters for marine farming	
		Non-extractive use of public marine resources	
	Building relationships	Being part of the Tasmanian community	
		Respect between marine industries (different sectors)	
		Respect between aquaculture companies	
		Respect held by industry for local communities	
		Trust between valid marine stakeholders	
		Consistent industry approach to community concerns	
		Transparency and honesty about environmental performance and change	
		Being good neighbours (that is, responsive to needs and concerns of people living close to marine farms)	
		Effective communication with regulators	
		Dialogue with both those who share waterway and those who input into waterway	
		Reciprocity and collaboration between sectors, companies, regulators, planners, and researchers	

Table 5. Values, Aspirations and Strategies as Identified by Participants at the YMV Community Workshop, Bruny Island, 24th March 2013

Category	Sub-Category	Value/Aspiration/Strategy
ECOLOGICAL		Environmentally sustainable aquaculture industry
		Marine environment free from marine pests (introduced sea stars in particular)
		Water quality
		Water clarity
		Squid stocks
		Flathead stocks
		Abalone stocks
		Rock lobster stocks
		Healthy marine mammal populations (seals, in particular)
		Healthy sea bird and shore bird populations
		Healthy marine ecosystems (free from monofilament marine debris)
		Diversity of marine species
		Diversity of marine and coastal environments and habitats
		Australian salmon stocks
ECONOMIC		Tourism potential associated with recreational fishing and boating
		Opportunities for marine industries
SOCIAL	**Public health & safety**	Access to sheltered waters for anchorages
	Quality of lifestyle	Natural skyline
		Natural water views
		Viewing marine mammals
		Undeveloped coastline
	Access for recreation	Access to in shore coastal (i.e. sheltered) waters for recreational fishing
		Access to recreational fisheries to catch a feed
		Access to sheltered waters for anchorages
		Marine infrastructure which enables people to fish who don't have boats (e.g. jetties and pontoons)
		Access to marine waters for snorkelling and SCUBA diving
		Access to marine waters for kayaking and swimming
		Beaches for walking and swimming

Table continued next page

Table 5. Values, Aspirations and Strategies as Identified by Participants at the YMV Community Workshop, Bruny Island, 24th March 2013 *(continued)*

Category	Sub-Category	Value/Aspiration/Strategy
SOCIAL	**Generating and sharing knowledge**	Using best-available scientific knowledge to inform decision-making
		Using local ecological knowledge to inform decision-making
		Publicly available information about marine protected areas and their planning
		Access to latest and best-available scientific information about the marine environment in comprehendable formats
	Inclusion of past, present and future generations	Family times on the water
		Ability to share and experience the marine environment across generations
	Resource management and planning for sustainability	Balance between marine industries, recreational uses and conservation
		Sustainable recreational fisheries (can still catch a feed)
		Sustainable aquaculture
		Flexible and adaptive management of marine farming
		Proactive planning for the marine environment
	Environmental stewardship	Support from government for community efforts to eradicate marine pests (in particular, sea stars)
		Industry efforts to minimise marine debris being generated
		Industry efforts to clean up existing marine debris
		Recreational boat users taking responsibility for minimising marine debris
		Recreational boat users taking responsibility for managing effluent and sewage waste
	Relationships	Genuine and full public consultation about creating marine protected areas

Appendix D:
Your Marine Values survey

The *Your Marine Values* survey was offered to any interested members of the general community (D'Entrecateaux Channel and Huon-Dover), managing agencies and marine industries. The aim of the survey was to identify what is important to people about the marine environment of the D'Entrecateaux Channel and lower Huon Estuary. The specific purpose of the survey was to capture values held by individuals and groups (for example, people under the age of 40) who did not participate in the *Your Marine Values* workshops (see Appendix C for more details).

The survey was anonymous and confidential. Respondents were not asked to identify themselves in any way. The survey was conducted from 11 - 24 March 2013. Ways to complete the survey included:

1. Online (links were made available via the IMAS *Your Marine Values* webpage and *Your Marine Values* Facebook page); and
2. By post.

The total number of survey responses was 137.
A profile of the age, locality and interest of respondents is provided in Tables 1-3.

The values and places identified by survey respondents are provided in Tables 4-9. The final list of values presented in the main body of the *Your Marine Values Public Report* represents the results of a cross-sector workshop (see Appendix C for more details), at which the results of the *Your Marine Values* survey were combined with the initial *Your Marine Values* workshops.

Figure 6. Map showing location identified by respondents to the YMV Survey

Table 6. Age Brackets of Respondents

Age	Number of respondents	% of total Respondents
Unspecified	2	1
18 - 29	7	5
30-49	40	29
50-69	76	55
70+	12	9
TOTAL	**137**	**99**

Table 7. Postcodes of Respondents

Postcode	Number of respondents	% of total Respondents
Unspecified	34	25
7000	2	1
7004	1	1
7005	2	1
7011	1	1
7018	1	1
7050	3	2
7052	6	4
7053	2	1
7054	11	8
7109	6	4
7112	13	9
7113	1	1
7116	1	1
7117	10	7
7119	1	1
7150	13	9
7155	9	7
7162	13	9
7163	4	3
7170	2	1
7215	1	1
TOTAL	**137**	**100**

Table 8. Interest Categories of Respondents (multiple answers permitted)

	Interest category	Number of respondents
	Local resident	103
	Recreational user	89
	Aquaculture industry member	13
	Other marine industry member	16
	Government decision maker	1
	Local business	11
Other – as specified by respondent	Maritime welfare	4
	Retiree	1
	Seafood processor	1
	Commercial fisher	1
	Commercial abalone fisher	1
	Regional community groups	2
	Ex-local resident	2
	Marine student/educator	2
	Land owner (not resident)	1
	Property owner	1
	Community based conservation organisation	2
	Environmental scientist	1
	Carer of the Marine environment	1
	TOTAL	**253**

Table 9. Ecological values identified by respondents

	1.0 Ecological Function and Integrity																	
				1.3 Marine Habitats and communities									1.4 Marine species						1.5 Geological & geo-morphological features
	1.0 Unspecified	1.1 Water Quality	1.2 Sediment Quality	Unspecified	Estuaries	Wetlands	Reefs	Beaches & Foreshore	Seagrass communities	Filter-feeding communities	Macroagal communities	Tannin-influenced communities	Unspecified	Fish	Marine mammals	Birds	Endemic species	TEPS	
Number of respondents that identified value	17	93	14	29	2	1	1	13	2	0	3	0	59	28	4	6	11	3	0

Table 10. Economic values identified by respondents

	2.0 Economic									
		2.1 Aquaculture								
	2.0 Unspecified	Unspecified	Access to marine resources	Growth, productivity and profitability	Employment	Workforce safety	Cost-recovery for environmental management	Seafood production and safety	2.2 Commercial fishing	2.3 Marine tourism
Number of respondents that identified value	13	7	9	7	24	0	10	10	6	6

Table 11. Social values identified by respondents

	3.0 Social																			
	3.0 Unspecified	3.1 Recreational use (access/opportunity)								3.2 Seascapes	3.3 Coastal landscapes	3.4 Marine environment for its own sake	3.5 Quality of lifestyle					3.6 Aboriginal heritage	3.7 Maritime heritage	3.8 Marine research	3.9 Marine education
		Unspecified	Boating	Recreational fishing	Swimming	Beach/coastal walking	Kayaking	Diving/snorkelling	Water skiing				Unspecified	Serenity (incl. low noise and light disturbance)	Recreational opportunities	Local employment	Place and community				
Number of respondents that identified value	**5**	**49**	**33**	**48**	**30**	**26**	**17**	**17**	**1**	**42**	**31**	**23**	**2**	**16**	**28**	**20**	**7**	**2**	**1**	**7**	**6**

Table 12. Locations of Ecological values identified by respondents

	1.0 Ecological Function and Integrity																	
				1.3 Marine Habitats and communities									1.4 Marine species						1.5 Geological & geo-morphological features
	1.0 Unspecified	1.1 Water Quality	1.2 Sediment Quality	Unspecified	Estuaries	Wetlands	Reefs	Beaches & Foreshore	Seagrass communities	Filter-feeding communities	Macroagal communities	Tannin-influenced communities	Unspecified	Fish	Marine mammals	Birds	Endemic species	TEPS	
Abels Bay										1			1						
Adams Bay													1			2			
Alonnah							2						2						
Apollo Bay														1		1			
Barnes Bay		1						1								2			
Blackmans Bay Beach																			
Birchs Bay													1						
Butt's Reef				1			2						1						
Cairns Bay																			
Charlotte Cove													1						
Coningham		1						5											
Deep Bay														1					
Eggs & Bacon Bay				1									1						
Esperance Narrows		1																	
Fancy Bay		1											1			2			
Fossil Cove Tinderbox																			1
Franklin																			
Garden Island														1					
Gordon																			
Gourlays Bay																			
Great Bay													1			1			
Great Taylor's Bay		1					2						4	1					
Helms Bay																			
Hospital Bay																			
Huon Island													1	1					
Huon Point													1						
Huonville																			
Isthmus Bay				1												2			
Kent Beach																			
Killora Bay														1		1			
Little Fancy Bay																1			
Little Oyster Cove													1			1			
Little Peppermint Bay													1						

Table 12. Locations of Ecological values identified by respondents (continued)

	1.0 Ecological Function and Integrity																	
	1.0 Unspecified	1.1 Water Quality	1.2 Sediment Quality	1.3 Marine Habitats and communities									1.4 Marine species						1.5 Geological & geo-morphological features
				Unspecified	Estuaries	Wetlands	Reefs	Beaches & Foreshore	Seagrass communities	Filter-feeding communities	Macroagal communities	Tannin-influenced communities	Unspecified	Fish	Marine mammals	Birds	Endemic species	TEPS	
Little Taylors Bay							2						3			1			
Long Bay Shoal													1	1					
Lune River																			
Margate																			
Mickeys Bay																			
Missionary Bay													1			1			
Nabraska Beach, Dennes Pt																			
Ninepin Point		1		5								1	7				6		
North West Bay		1		1		1		1								1			
Oyster Cove		1																	
Partridge Island		1					2						2						
Peppermint Bay													2			1		1	
Petchey's Bay		1	1																
Port Cygnet						1							2			1			
Port Esperance							2						2						
Port Huon																			
Randalls Bay				1									1						
Recherche Bay																			
Roaring Bay		1		1									1						
Rocky Bay																			
Satellite Island																			
Sheepwash Bay													2			1	1		
Simpsons Bay				1									2			2			
Simpsons Point							2						2						
Snug Bay								2	1				1	1	1	1			
Southport		1					2						4						
Surges Bay																			
Surveyors Bay																			
Tinderbox Bay		2									1		6	1					
Trial Bay		1														1			
Ventenant Point/Quarry Bay														1					
Verona Sands				3				1				1	2	2					

Table 13. Locations of Economic values identified by respondents

	2.0 Economic												
	2.0 Unspecified	2.1 Aquaculture									2.2 Commercial fishing	2.3 Marine tourism
		Unspecified	Access to marine resources	Growth, productivity and profitability	Employment	Workforce safety	Cost-recovery for environmental management	Seafood production and safety				
Abels Bay								1				
Adams Bay												
Alonnah			2	2				2			2	
Apollo Bay		1										
Barnes Bay												
Blackmans Bay Beach												
Birchs Bay												
Butt's Reef												
Cairns Bay												
Charlotte Cove												
Coningham												
Deep Bay												
Eggs & Bacon Bay								1				
Esperance Narrows												
Fancy Bay												
Fossil Cove Tinderbox												
Franklin												
Garden Island								1				
Gordon												
Gourlays Bay												
Great Bay					1							1
Great Taylor's Bay			3	2				2			3	1
Helms Bay												
Hospital Bay												
Huon Island												
Huon Point												
Huonville					1							1
Isthmus Bay												
Kent Beach												
Killora Bay												
Little Fancy Bay												
Little Oyster Cove												
Little Peppermint Bay												

Table 13. Locations of Economic values identified by respondents (continued)

	2.0 Economic										
	2.0 Unspecified	2.1 Aquaculture								2.2 Commercial fishing	2.3 Marine tourism
		Unspecified	Access to marine resources	Growth, productivity and profitability	Employment	Workforce safety	Cost-recovery for environmental management	Seafood production and safety			
Little Taylors Bay			2	2				2		3	
Long Bay Shoal			1								
Lune River											
Margate											
Mickeys Bay											
Missionary Bay											
Nabraska Beach, Dennes Pt											
Ninepin Point											
North West Bay											
Oyster Cove											
Partridge Island			2	2				2		3	
Peppermint Bay											
Petchey's Bay											
Port Cygnet											
Port Esperance			**2**	**2**				**2**		**2**	**2**
Port Huon											
Randalls Bay											
Recherche Bay											
Roaring Bay											
Rocky Bay											
Satellite Island											
Sheepwash Bay											
Simpsons Bay			**1**	**1**				**1**			
Simpsons Point											
Snug Bay											
Southport			**2**	**2**				**2**		**2**	
Surges Bay											
Surveyors Bay											
Tinderbox Bay											
Trial Bay											
Ventenant Point/Quarry Bay											
Verona Sands								**1**			

Table 14. Locations of Social values identified by respondents

	3.0 Social																							
	3.0 Unspecified	3.1 Recreational use (access/opportunity)								3.2 Seascapes	3.3 Coastal landscapes	3.4 Marine environment for its own sake	3.5 Quality of lifestyle					3.6 Aboriginal heritage	3.7 Maritime heritage	3.8 Marine research	3.9 Marine education
		Unspecified	Boating	Recreational fishing	Swimming	Beach/coastal walking	Kayaking	Diving/ snorkelling	Water skiing				Unspecified	Serenity (incl. low noise and light disturbance)	Recreational opportunities	Local employment	Place and community				
Abels Bay			2	2	5	3	3	1		1	2		2				2				
Adams Bay			2							1	1	1		1	1						
Alonnah			1	2	1								1				1				
Apollo Bay		1	7	1	1					2	3			1							
Barnes Bay		4	12	2	1	2	2	1		2	4			1					1		
Blackmans Bay Beach		1		1	1			1													
Birchs Bay					2					2	3						2				
Butt's Reef								1													
Cairns Bay		1																			
Charlotte Cove		1			1	1	1			1		1	1		1		2				
Coningham		1	3		6	8	1	2			2		1				4				
Deep Bay		1	1	2	3	2	1	1		1	1		1				1				
Eggs & Bacon Bay			2	4	5	2	2	2		3	3	1	1				2				
Esperance Narrows			1	3			1										1				
Fancy Bay			2		1	2				4	1	1		2							
Fossil Cove Tinderbox											1										
Franklin			2	3	2	1		1		1	1						1				
Garden Island				1								1									
Gordon			1	2		1				1											
Gourlays Bay		1	1	1	1			1							1						
Great Bay		1	5	9	3	1		3	1	2	3			1			1				
Great Taylor's Bay		2	3	9	3	4	3	1		2	3			2	1		2				
Helms Bay			1			1											1				
Hospital Bay			1	1	1			1													
Huon Island				1						1		1									
Huon Point										1											
Huonville			1	1	1	2				1	1					1	1				
Isthmus Bay			3	1	1	1											1				
Kent Beach				1	1	1							1								
Killora Bay			2	3	4	1	1	2		1	1										
Little Fancy Bay			2							1											
Little Oyster Cove		2	9			1	1			2	1		1		1						
Little Peppermint Bay				1	2	1	1			1			1								

Table 14. Locations of Social values identified by respondents (continued)

	3.0 Social																					
	3.0 Unspecified	3.1 Recreational use (access/opportunity)								3.2 Seascapes	3.3 Coastal landscapes	3.4 Marine environment for its own sake	3.5 Quality of lifestyle					3.6 Aboriginal heritage	3.7 Maritime heritage	3.8 Marine research	3.9 Marine education
		Unspecified	Boating	Recreational fishing	Swimming	Beach/coastal walking	Kayaking	Diving/ snorkelling	Water skiing				Unspecified	Serenity (incl. low noise and light disturbance)	Recreational opportunities	Local employment	Place and community				
Little Taylors Bay				3	2	3	2								1		1				
Long Bay Shoal		2	2	1	1	2	1			3			1		2						
Lune River				1																	
Margate		1	1																		
Mickeys Bay		1	1											1	1						
Missionary Bay		2	1					1		1					1						
Nabraska Beach, Dennes Pt			1	1	1	1															
Ninepin Point		2			1	1	1	12					1								1
North West Bay		3	6	5	1	1	1			2	1			1	2	1	1				
Oyster Cove			4		2	2	2			3	1		1				1				
Partridge Island				2		1	1														
Peppermint Bay		1	3	1	1	2	2	1		6	1		1		1	2	6	1	1		4
Petchey's Bay			1	1	1			1		1											
Port Cygnet		1	5	1		1				1					1		3				
Port Esperance		4	3	6	1	3		2		5	2			1		4	3				
Port Huon			1	1	1			1					1								
Randalls Bay		1	3	5	8	6	2	2	1	4	3		2	1	1		3				
Recherche Bay				2		1		1										2	1		
Roaring Bay		1		3	5	1		1			1										
Rocky Bay																		1			
Satellite Island			1	2						1	1										
Sheepwash Bay		3	1	1				1		3	1	1		1	3						
Simpsons Bay			3	4				2		2	1						1				
Simpsons Point								2													
Snug Bay		1			5	4	1			2	1			2			2				1
Southport			1	2	1	2	1			2	3		1				2	2	2		
Surges Bay			1	1	1			1									1				
Surveyors Bay					1	1															
Tinderbox Bay		4	5	1	1	3	3	12		2		1			3		1				
Trial Bay		1	6	2	3	7	3	1		1		1	1				1				
Ventenant Point/Quarry Bay		1	1	1						1	1			2			1	1			
Verona Sands		2		1	2	4	1	2		2		1	1								

Appendix E:
INFORMD Stage 2
(FRDC project 2012/024)

The *Your Marine Values* study is a key component of the broader INFORMD Stage 2 project funded by the FRDC, and undertaken by CSIRO and the Institute for Marine and Antarctic Studies (IMAS), University of Tasmania.

INFORMD Stage 2 will integrate the marine values and associated monitoring into a new computer simulation tool to support management of risks facing the coastal marine environment in southeastern Tasmania. The simulation tool will enable regulators, communities and aquaculture industries to better understand, anticipate and mitigate the effects of proposed changes on key marine values. For example, many aquaculture lease distributions can be tested to help identify those that satisfy industry needs while minimizing impacts on the environment and other users of the marine system.

While the initial focus will be on planning and management of aquaculture development, the proposed computer-simulation tools will have much broader application and benefit multiple sectors over the longer term.

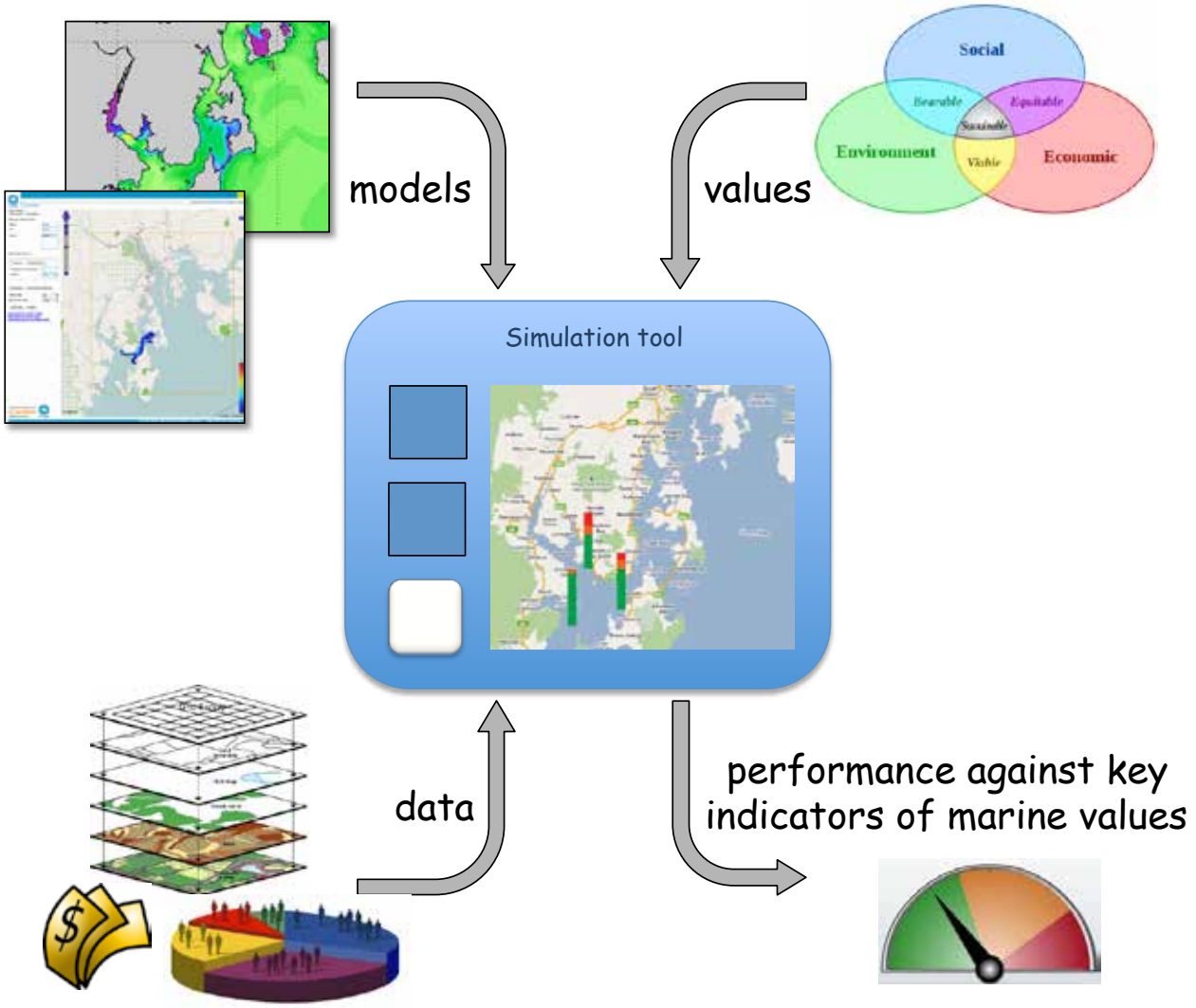

Figure 7: Simulations use existing data and models to evaluate the effects of proposed changes on marine values, and to test the effectiveness of mitigation strategies.

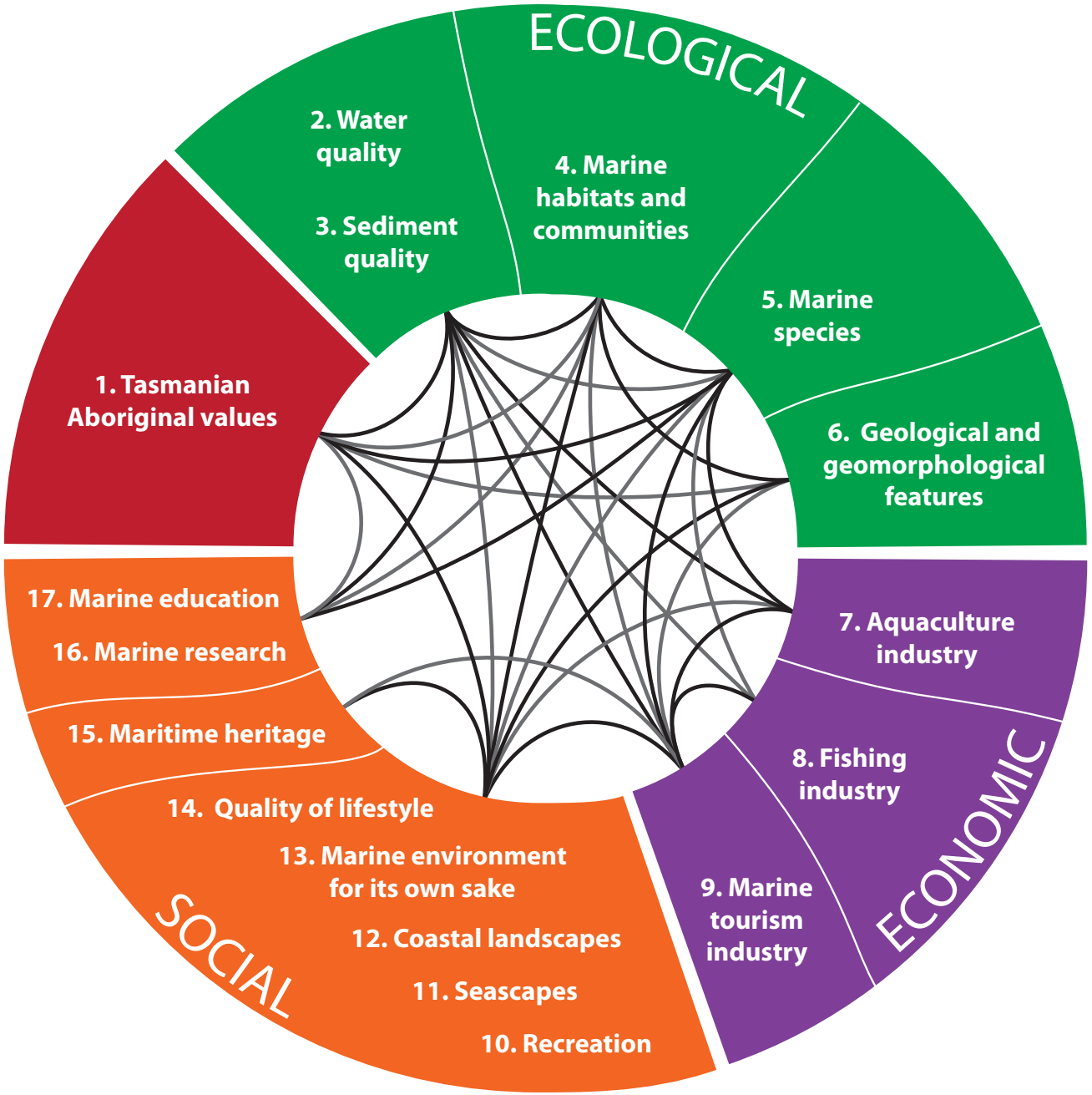

Figure 8. Conceptual model of links between Ecological, Economic and Social Values for the D'Entrecasteaux Channel and lower Huon Estuary.

Appendix F: References and Online Resources

Legislation, Regulations and Policies

Aboriginal Relics Act 1975
http://www.thelaw.tas.gov.au/tocview/index.w3p;cond=phrase;doc_id=81%2B%2B1975%2BAT%40EN%2B20040310000000;histon=;prompt=;rec=;term=Aboriginal%20Relics%20Act%201975
For further information contact Aboriginal Heritage Tasmania (a division of the Dept. of Primary Industries, Parks, Water and Environment).

Crown Lands Act 1976
http://www.thelaw.tas.gov.au/tocview/index.w3p;cond=phrase;doc_id=28%2B%2B1976%2BAT%40EN%2B20040310000000;histon=;prompt=;rec=;term=Crown%20Lands%20Act%201976
For further information contact Crown Lands Services (a branch of the Dept. of Primary Industries, Parks, Water and Environment).

Environmental Management and Pollution Control (EMPC) Act 1994
http://www.thelaw.tas.gov.au/tocview/index.w3p;cond=;doc_id=44%2B%2B1994%2BAT%40EN%2B20131008000000;histon=;prompt=;rec=;term
For further information contact the Environmental Protection Authority (EPA) of Tasmania.

Environmental Management and Pollution (Miscellaneous Noise) Act 1994
http://www.thelaw.tas.gov.au/tocview/index.w3p;cond=;doc_id=%2B50%2B2004%2BAT%40EN%2B20131106000000;histon=;prompt=;rec=;term=
For further information contact the Environmental Protection Authority (EPA) of Tasmania.

Environmental Protection and Biodiversity Conservation Act 1999 (Commonwealth legislation)
http://www.austlii.edu.au/au/legis/cth/consol_act/epabca1999588/
For further information contact the Department of Environment (Commonwealth).

Fisheries (General and Fees) Regulations 2006
http://www.thelaw.tas.gov.au/tocview/index.w3p;cond=;doc_id=%2B34%2B2006%2BAT%40EN%2B20131026000000;histon=;prompt=;rec=;term=
For further information contact Wild Fisheries Management (a branch of the Dept. of Primary Industries, Parks, Water and Environment).

Litter Act 2007
http://www.thelaw.tas.gov.au/tocview/index.w3p;cond=;doc_id=38%2B%2B2007%2BAT%40EN%2B20131105000000;histon=;prompt=;rec=;term=
For further information contact the Environmental Protection Authority (EPA) of Tasmania.

Living Marine Resources Management (LMRM) Act 1995
http://www.thelaw.tas.gov.au/tocview/index.w3p;cond=;doc_id=25%2B%2B1995%2BAT%40EN%2B20131008000000;histon=;prompt=;rec=;term
For further information contact Wild Fisheries Management (a branch of the Dept. of Primary Industries, Parks, Water and Environment).

Marine Farming Planning Act 1995
http://www.thelaw.tas.gov.au/tocview/index.w3p;cond=phrase;doc_id=31%2B%2B1995%2BAT%40EN%2B20040310000000;histon=;prompt=;rec=;term=Marine%20Farming%20Planning%20Act%201995
For further information contact Marine Farming (a branch of the Dept. of Primary Industries, Parks, Water and Environment).

Marine and Safety Authority Act 1997
http://www.thelaw.tas.gov.au/tocview/index.w3p;cond=;doc_id=15%2B%2B1997%2BAT%40EN%2B20131112120000;histon=;prompt=;rec=;term=
For further information contact the Marine and Safety Authority (MAST) of Tasmania.

National Parks and Reserves Management Act 2002
http://www.thelaw.tas.gov.au/tocview/index.w3p;cond=;doc_id=62%2B%2B2002%2BAT%40EN%2B20131105110000;histon=;prompt=;rec=;term=
For further information contact the Parks and Wildlife Service (a unit of the Dept. of Primary Industries, Parks, Water and Environment).

Nature Conservation Act 2002
http://www.thelaw.tas.gov.au/tocview/index.w3p;cond=phrase;doc_id=63%2B%2B2002%2BAT%40EN%2B20040310000000;histon=;prompt=;rec=;term=Nature%20Conservation%20Act%202002
For further information contact the Parks and Wildlife Service (a unit of the Dept. of Primary Industries, Parks, Water and Environment).

Pollution of Waters by Oil and Noxious Substances Act 1987
http://www.thelaw.tas.gov.au/tocview/index.w3p;cond=;doc_id=95%2B%2B1987%2BAT%40EN%2B20131014000000;histon=;prompt=;rec=;term
For further information contact the Environmental Protection Authority (EPA).

Public Health Act 1997
http://www.thelaw.tas.gov.au/tocview/index.w3p;cond=;doc_id=86%2B%2B1997%2BAT%40EN%2B20131112130000;histon=;prompt=;rec=;term=
For further information contact the Public and Environmental Health Service (Dept. of Health and Human Services).

State Coastal Policy 1996
http://www.dpac.tas.gov.au/__data/assets/pdf_file/0006/91392/State_Coastal_Policy_1996.pdf
For further information contact Land Conservation (a branch of the Dept. of Primary Industries, Parks, Water and Environment).

State Policy on Water Quality Management 1997
http://epa.tas.gov.au/documents/state_policy_on_water_quality_management_1997.pdf
For further information contact the Environmental Protection Authority (EPA) of Tasmania.

Threatened Species Protection Act 1995
http://www.thelaw.tas.gov.au/tocview/index.w3p;cond=;doc_id=83%2B%2B1995%2BAT%40EN%2B20131029000000;histon=;prompt=;rec=;term=

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15 Maritime Heritage

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16 Marine Research

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17 Marine Education

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