

Pearling and Aquaculture

Mussel Farming

Mussel Farming Status Report

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INDUSTRY DESCRIPTION

Production areas

Mussel farms are found in Cockburn Sound and Warnbro Sound (as well as in the Albany harbours and King George Sound in the south coast bioregion). Resource-sharing issues are a major constraint to securing additional sites in protected and productive areas. Additional area has been negotiated in the Southern Flats area of Cockburn Sound to give the Cockburn Sound mussel farmers more secure access to productive growing areas.

Production method

Vertical rope and bag culture on longlines.

AQUACULTURE PRODUCTION

Production current season (1999/2000): 683 tonnes

Number of producers for year 1999/2000: 11

**Production projection next year (2000/2001):
800–1,000 tonnes**

ECOSYSTEM EFFECTS

Low risk because there is no addition of feeds. Faecal wastes are far less likely to cause high organic loadings on the sea bed in Western Australia than in other mussel industries, as mussel lines are more widely separated in response to low food levels.

SOCIAL EFFECTS

Small industry as a direct employer. Few social effects other than to attract recreational fishers for finfish.

ECONOMIC EFFECTS

**Estimated annual value (to producers) for year
1999/2000: \$1.69 million**

INDUSTRY GOVERNANCE

Licence approvals are required and regular site inspections are carried out to ensure farmers are operating within their site coordinates and that their site is clearly marked for marine safety compliance.

The mussel industry must also meet the requirements of the WA Shellfish Quality Assurance Program.

EXTERNAL FACTORS

Production levels for this species are related to dissolved nutrient levels which provide the basis for phytoplankton, the main food of mussels. Productive areas are therefore generally protected waters where nutrients from terrestrial sources raise the food levels above those in coastal waters dominated by the low-nutrient, tropical Leeuwin Current.

Gascoyne Coast Bioregion

Regional Management Overview

The Gascoyne coast bioregion includes the areas of inner Shark Bay (Denham), outer Shark Bay (Carnarvon), and Exmouth Gulf. Whilst the production of pearls and pearl oysters remains the primary coastal aquaculture activity, there has been recent development in the production of a range of aquaculture species.

Culture of marine invertebrates including prawns and sea cucumbers has progressed significantly with the successful production of prawn post-larvae in the Exmouth area. Sea cucumber culture has advanced with the installation of hatchery facilities and the collection of biological data on broodstock.

Research and development of techniques for the aquaculture production of Serranid finfish (e.g. estuary cod) continues in the Gascoyne, with improvements to broodstock handling increasing the yield of gravid females; however, significant impediments to increased production of this species include synchronous production of ripe males and efficient control of environmental parameters such as salinity. The production of ornamental aquarium fish is an important parallel to food fish culture in the Gascoyne.

Hatchery production of *Pinctada maxima* pearl oysters is of critical importance in this region, where recruitment of oysters in the wild is irregular. Two hatcheries, one in Carnarvon and one in Exmouth, are producing significant quantities of spat to supply pearl farms in Exmouth Gulf and the Montebello Islands.

Black pearl production through culture of *P. margaritifera*, *P. albina* and *P. penguin* species has expanded, with farms increasing carrying capacity and also holding greater numbers of 'seedable' shell. Areas that suffered heavy stock and equipment losses during cyclones in recent years have rebuilt farms and stock numbers. Increased levels of technical skill and commercial experience among pearl farmers throughout the Gascoyne are being translated into improved growth rates and lower production costs. The volume and quality of black pearls from trial harvests have improved every six months as the number of suitably sized oysters at these farms accumulates and husbandry skills are gained. Market response to the Western Australian product has been very promising, with premium prices paid for locally mounted value-added product.

Management activities during 2000/2001 included the facilitation of meetings and the development of grower groups in regions with a concentration of aquaculture licensees, and fine tuning and implementation of policy relating to the collection of non-*maxima* pearl oyster spat. Aquaculture licensing advice, and assessment of applications for licences or variations to licences, remained important responsibilities of management in the Gascoyne region. Liaison with growers and the provision to them of information, advice and assistance continued through field visits and remote communication.

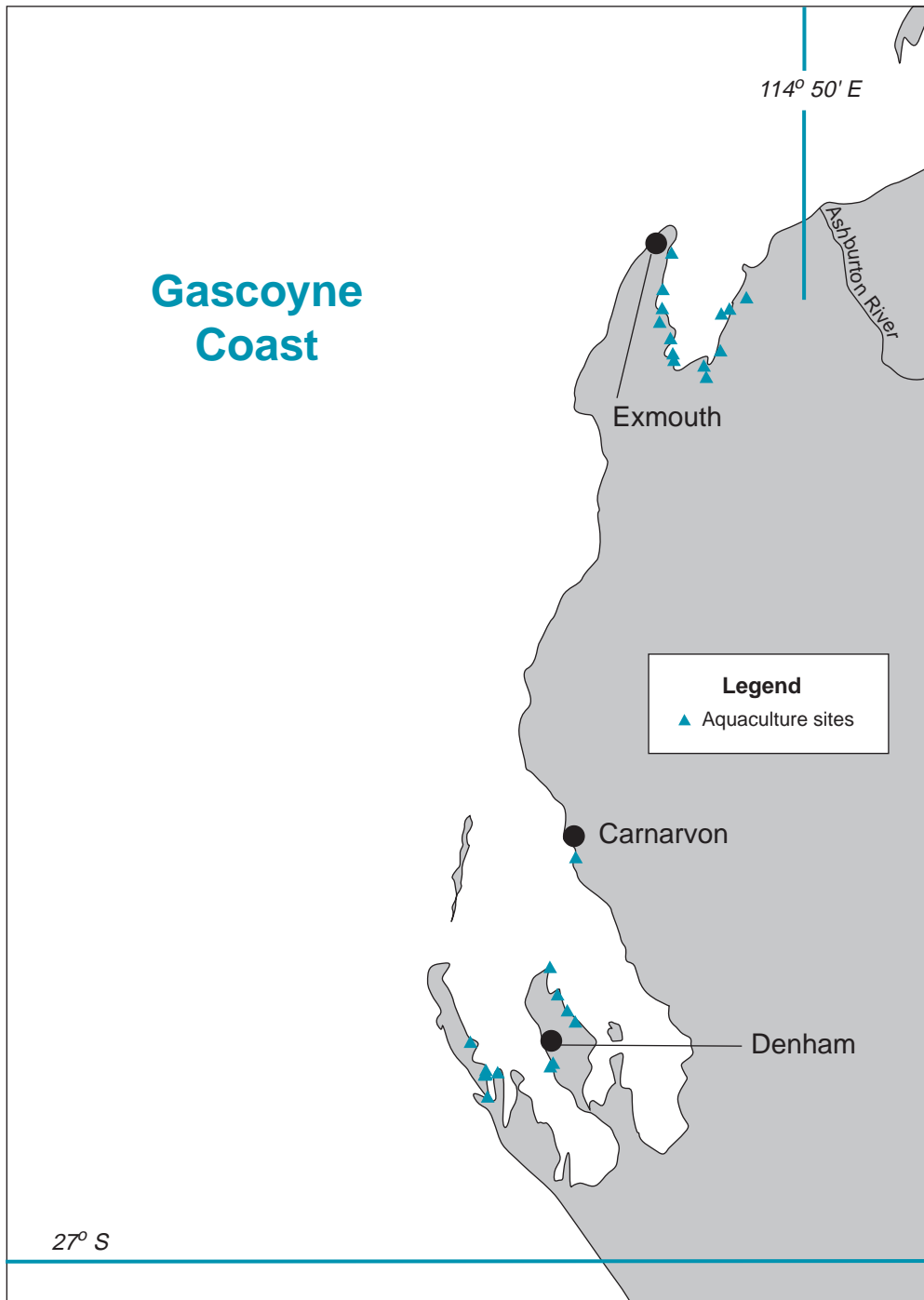
Gascoyne Coast Aquaculture Figure 1 shows the major licensed aquaculture sites in this bioregion.

Regional Compliance and Extension Overview

Compliance activities were focused primarily on site inspections to ensure compliance with licence conditions. Extension work included assistance in relation to the identification of a site for pearl production in Shark Bay.

Regional Research Overview

Collaboration has been initiated on tropical marine aquarium fish and sea cucumber research near Exmouth.



GASCOYNE COAST AQUACULTURE FIGURE 1

Map showing the major licensed aquaculture sites of the Gascoyne coast bioregion.

