

STATEWIDE BIOREGION

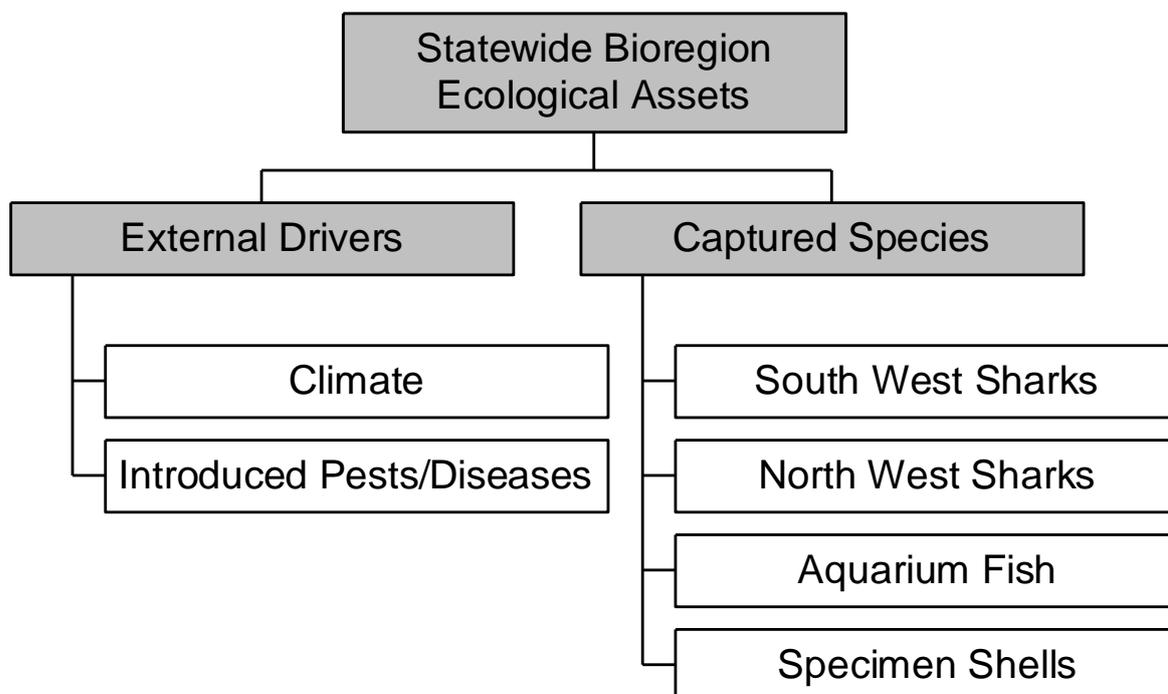
ECOSYSTEM BASED FISHERIES MANAGEMENT

Identification of Statewide Ecological Assets using the EBFM framework

While the bioregional scale of management has been adopted by the Department through the implementation of an Ecosystem Based Fisheries Management (EBFM) framework (see How to Use section for more details), due to their life histories or broader impacts, a small number of ecological assets cannot realistically be managed at a single bioregional level but need to be considered at either a Statewide or at a multiple bioregional level.

Risk Assessment of Statewide Ecological Assets and External Drivers

The EBFM process identifies the ecological assets in a hierarchical manner such that the assets outlined in Statewide Ecosystem Management Figure 1 are often made up of individual components at species or stock level. The risks to each of the individual stock or lower level components are mostly detailed in the individual fishery reports presented in this document. The following Ecosystem sections provide an overview and cumulative assessment of the current risks to those ecological assets that function at a Statewide level and provides a mechanism for reporting on their status and the fisheries management arrangements that are being applied. These level risks are now used by the Department as a key input into the Department's Risk Register which, combined with an assessment of the economic and social values and risks associated with these assets, is integral for use in the annual planning cycle for assigning priorities for activities across all Divisions for Statewide issues.



STATEWIDE ECOSYSTEM MANAGEMENT FIGURE 1

Component tree showing the Statewide ecological assets and external drivers identified and separately assessed.

External Drivers

External Drivers	Current Risk Status
Introduced Pests	HIGH
Introduced Disease	HIGH

There is a high risk that some exotic species will be introduced into the state through the increasing levels of international shipping that is occurring at ports around the country. Many of these pest species are capable of invading beyond a single bioregion. Marine pest monitoring programs are being implemented at high risk port locations throughout the State.

Captured Species

Captured Species	Aquatic zone	Ecological Risk
Sharks	South and lower west	MODERATE
	Mid West – North	MODERATE

The stock levels of most sharks in the south and lower west regions are now either at acceptable levels or are deemed to be recovery at acceptable rates following management intervention.

The stocks levels of some sharks in the mid west and north regions are now considered to be recovering. The State based fisheries for this asset is currently being reviewed and no catches by these fisheries were recorded during the past season.

Captured Species	Aquatic zone	Ecological Risk
Aquarium Fish	Marine	MODERATE

The level of capture is low and the management restrictions are such that that these species are not at risk.

Captured Species	Aquatic zone	Ecological Risk
Specimen Shells	Marine	MODERATE

The level of capture is low and the management restrictions are such that that these species are not at risk.

STATEWIDE MARINE AQUARIUM FISH AND HERMIT CRAB RESOURCES STATUS REPORT 2016

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OVERVIEW

The Marine Aquarium Fish Managed Fishery (MAFMF) is able to operate in all State waters (between the Northern Territory border and South Australian border). The fishery is typically more active in waters between Esperance and Broome with higher levels of effort around the Capes region, Perth, Geraldton, Exmouth and Dampier. The MAFMF resource potentially includes more than 950 species of marine aquarium fishes under the Marine Aquarium Fish Management Plan 1995. Operators in the MAFMF are also permitted to take coral, live rock, algae, seagrass and invertebrates under the Prohibition on Fishing (Coral, 'Live Rock' and Algae) Order 2007 and by way of Ministerial Exemption.

The Hermit Crab Fishery (HCF) specifically targets the Australian land hermit crab (*Coenobita variabilis*) for the domestic and international live pet trade. The fishery operates throughout the year and is the only land-based commercial fishery in Western Australia. The HCF is currently permitted to fish Western Australian waters north of Exmouth Gulf (22°30'S).

There are no documented recreational fisheries.

Both the MAFMF and HCF underwent pre-assessment for Marine Stewardship Council certification in 2014, but have not progressed to full assessment.

SUMMARY FEATURES 2016

Fishery Performance	Commercial	Recreational	
Total Catch 2016	Fish (n) - 20,993; Syngnathid (n) – 257; Invertebrates (n) - 52,386; Hard coral (kg) - 4,461.92; Soft coral (kg) - 6,881.00; Living rock & Living sand (kg) - 15,749.00; Sponges (n) - 3,533; Algae/Seagrasses (l) - 310.00; Hermit crabs (n) - 93,654	NA	
Fishing Level	MAFMF: Acceptable HCF:Acceptable	NA	
Stock/Resource Performance	Stock Status	Assessment Indicators	
Statewide MAFMF & HCF	Sustainable - Adequate	Annual: Small numbers of individual species taken annually.	
EBFM Performance			
Asset	Level	Asset	Level
Bycatch	Negligible Risk	Listed Species	Low Risk
Habitat	Negligible Risk	Ecosystem	Negligible Risk
Social	Low Risk	Economic	Level 2 (\$1-5 million)
Governance	Stable	External Drivers	Negligible Risk

CATCH AND LANDINGS

A total of 13 licences were active in the MAFMF (8) and the HCF (5) in 2015. The total catch in the MAFMF and the HCF in 2015 was 171,133 fishes, 27.1 t of coral & sand and 310 L of marine plants. This is similar to the catches over the past several years. MAFMF fish catches were dominated by glassfish (*Ambassis vachelli*, n = 5,245), black-axil chromis (*Chromis atripectoralis*, n = 2,400), spotted blenny (*Istiblennius meleagris*, n = 1,680) and scribbled angelfish (*Chaetodontoplus duboulayi*, n = 1,668), with an additional 160 fish taxa also reported. In addition, more than 180 invertebrate taxa were also landed in the MAFMF dominated by crabs, gastropods and soft coral.

INDICATOR SPECIES ASSESSMENTS AND STOCK STATUS

Statewide MAFMF & HCF (Sustainable-Adequate)

Due to the large number of species captured in the MAFMF and the relatively low numbers per species, traditional stock assessments are not undertaken. Catches at the lowest taxonomic level are annually monitored based on fisher returns. A new risk assessment was undertaken with industry and other marine management groups in 2014/15 which determined that the risk these fisheries are imposing on the stocks is **low**.

This is a result of all specimens being collected for the live market. Therefore, fishers are restricted in the quantities that they can safely handle and transport (for example, by boat to shore, by vehicle to the holding facility and then on to the retailer) without impacting on the quality of the product. The size of the holding facility and access to regular freight and infrastructure services (such as airports, particularly in the remote northern locations of Western Australia), restricts the levels of effort that can be expended in the fishery at any given time.

BYCATCH AND PROTECTED SPECIES INTERACTIONS

There is no bycatch in either fishery as both fisheries target specific taxa by hand. The potential for ETP interactions is limited due to low fishing effort and small areas accessed on each trip. The MAFMF has a small take of syngnathids under a WTO from the Commonwealth. However, there is a prohibition on the take of leafy sea dragons (*Phycodurus eques*).

HABITAT AND ECOSYSTEM INTERACTIONS

Habitat and ecosystem impacts are considered **negligible**. This is due to the small scale of the fisheries and the hand collection methods. While the fisheries can potentially operate over large areas catches are relatively low due to the special handling requirements of live fish. Fishing operations are also heavily weather-dependent due to the small vessels used (MAFMF) and beach access (HCF). This results in a **negligible risk** to the overall ecosystem from the fishery.

SOCIAL AND ECONOMIC OUTCOMES

Social

Thirteen licences were active in 2015. Collections are undertaken on SCUBA from small vessels typically in small teams of 2 – 3 people.

Economic

The value per individual aquarium fish and hermit crab licence is relatively high. The value of these fisheries is difficult to estimate as operators can sell direct to the public, sell to wholesalers or have vertically integrated businesses including export. It is likely the combined value of both fisheries exceeds several million dollars. There is currently a **low** level of risk to these values.

GOVERNANCE SYSTEM

The current effort level in these fisheries is low and relatively constant from year to year. The impact of the fisheries is very low relative to the widespread distribution of the numerous species targeted. No other fisheries exploit these species and therefore there is extremely limited potential for any impact on breeding stocks. Therefore the current level of fishing activity is considered **adequate**.

There is a specific performance measure for syngnathids in the MAFMF, with a limit of 2,000 individuals per year. In 2015, a total of 257 syngnathids were landed, well below the limit.

Harvest Strategy

Draft harvest strategies were developed for both fisheries in 2014 as part of the MSC pre-assessment process. An updated risk assessment was completed on 2014/15 for the MAFMF.

Compliance

Statutory returns are required to be submitted by the 16th of the following month. The low risks to the sustainability of the stocks imposed by these fisheries results in a **low risk** and low level of compliance.

Consultation

Consultation with licensees occurs directly on operational issues and through industry Annual General Meetings convened by the West Australian Fishing Industry Council (WAFIC) under a Service Level Agreement with the Department.

Management Initiatives/Outlook Status

Major management reviews were undertaken in 2015 and 2016, in addition to an updated risk assessment. There are no management initiatives currently planned in the next few years.

EXTERNAL DRIVERS

Fishers are typically limited by sea and weather conditions, and access to beaches. Consumer demand and unit prices also influence the target species and numbers landed. The external drivers pose a **low risk** to these fisheries.

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