DEPARTMENT OF FISHERIES
SUBMISSION TO
Productivity Commission Inquiry into Marine Fisheries and Aquaculture

Summary

The Department of Fisheries (Department) has jurisdiction for the management of most aquatic biological resources both within the State waters of Western Australian (WA) and under an Offshore Constitutional Settlement arrangement with the Commonwealth, the majority of the fisheries resources located off the WA coast out to the 200 nautical mile Exclusive Economic Zone (EEZ) limit. WA's 12,000km coastline ranging from tropical to temperate environments and covering a variety of habitats (oceanic, coastal, estuarine and freshwater) generates a high diversity of aquatic organisms. These resources support over 40 commercially valuable fisheries plus commercial aquaculture activities which combined have an estimated direct value in excess of around $500m a year, with a total contribution to the State in the order of $800m per year. They also support a significant array of recreational fishing opportunities for the State's 700,000+ recreational fishers which contribute significantly to leisure industries and regional tourism.

The Department has a long and successful history of managing WA's fish resources on a sustainable basis, in partnership with stakeholders. This success has been built on strong leadership from successive Governments that have operated as the regulator and manager on behalf of the community to sustainably manage these 'common pool resources'. As a result of the commitment to high-quality fisheries management, **during 2014/15, 97 per cent of WA's fish stocks that support commercial and recreational fisheries were reported as sustainable and not impacted by fishing**. The remainder are largely impacted by environmental influences and are subject to active management.

Within WA, a governance framework that has seen the integrated delivery of science, public policy, and compliance activities within a single agency has been maintained. **Good fisheries and aquatic resource management is reliant on the combination of sound science, quality management processes including stakeholder engagement, and effective compliance.**

Fisheries management in WA is undertaken using the principles of Ecologically Sustainable Development (ESD) and Ecosystem Based Fisheries Management (EBFM). These principles not only encompass the commercial capture of fish, but consideration of recreational, customary and aquaculture interests plus the broader effect of these activities on the aquatic environment and ecosystems of WA. **WA is one of the only fisheries jurisdictions in the world to have fully implemented a comprehensive and practical EBFM framework.**

To meet the challenges facing fisheries and aquatic resource management in WA including a growing State population, rapidly advancing technology, changes in international and national market conditions, inherent biological variability, the often unpredictable impacts of climate change and shifting community values, the Department has undertaken a number of significant reform processes.

Consequently, many aspects of internal governance, resource management and consultation engagement regimes have been reviewed and updated in recent years.

Significantly, the Department has developed **a risk-based management approach** which has become the underlying basis for the Department's planning and priority setting processes. A full description of the process is provided at Appendix A. Based on risk assessments, identified Department and Government priorities and stakeholder feedback, the Department's proposed program of activities over a five year period are set out in a comprehensive planning document known as *FishPlan*.

There has also been **major reform to industry consultation and funding frameworks**. For commercial fisheries, there has been a shift in licence revenues being obtained from a restrictive cost-recovery approach to the adoption of a more comprehensive and flexible access-fee arrangement, with licence fees based on a percentage (5.75%) of Gross Value of Production (GVP) of each managed fishery. For pearling and aquaculture, fees are based on a per hectare fee for marine lease area(s). For the recreational sector, there has been a broadening of the scope of activities that require a licence, including the introduction of a boat based licence for the recreational sector.

To provide for the legal framework to enable the improved governance that will more effectively deal with emerging issues and more efficiently implement the integrated resource management principles of EBFM, the current fisheries legislation (*Fish Resources Management Act 1994* (FRMA)) has undergone a major review. The outcome of this review has resulted in the drafting of the *Aquatic Resources Management Bill* (ARMB) to replace the FRMA and *Pearling Act 1990*. The ARMB has been introduced into Parliament and is expected to be passed during 2016. Once proclaimed, the **new *Aquatic Resources Management Act* will require development of Aquatic Resource Management Strategies (ARMS) that define, at a regional level, the overall objectives for the coordinated management of each of the State's major aquatic resources.** These ARMS will also incorporate any decisions related to the allocation of access to different sectors plus any associated sectoral harvest use and resource protection plans.

Challenges and Emerging Issues

There are many challenges and drivers affecting the management of aquatic resources in WA. These pressures include the ongoing issues generated by population growth, coastal development and competition for space and resources in the marine environment by a variety of stakeholders and interest groups. Rapidly advancing fish finding, fishing and communication technologies are also increasing the fishing power of both commercial and recreational fishers, thereby increasing the need for management interventions.

The FRMA and *Pearling Act 1990* are both based on the internationally recognised legal concept that fish resources are "common pool" resources[1]. In other words, unlike crown land, mineral resources, or agricultural produce, fish are considered

[1] In English common law jurisdictions fish are considered wild animals – or *ferae naturae* – which are not susceptible of ownership until captured.

"wild". In WA, they are not owned by the State or individuals, and can move freely across jurisdictional and administrative boundaries. Common pool fish resources, in the absence of legislation to the contrary, or private ownership provisions, are subject to the public right to fish.

Fisheries management frameworks across the world have been designed to constrain universal access in the interests of sustainability and economic and social performance and replace it with managed access which allows for sustainable fishing.

In commercial fisheries, the common law right to fish has, over time, largely been circumscribed by legislative prohibitions and effectively replaced by statutory fishing rights of various forms. This has developed into a system of tradeable access rights that are allocated to individuals for commercial purposes. These statutory access rights hold significant value. Commercial fishery management plans control the quantity of fish that can be sustainably caught by the commercial sector and provide ongoing data to assess the health of the fish stocks in question.

Overlaying the statutory commercial access right remains the public right to fish for non-commercial purposes (e.g. recreation). It is in this overlap that many disputes between recreational and commercial fishers arise. Sometimes this conflict is about perceptions of fairness, rather than about actual catch shares. It may also be highly localised e.g. commercial gillnets visibly used in a specific spot popular with anglers, or beach anglers interfering with commercial haul netting operations; or a more general concern about which sector catches the most fish, or who gets there first.

The WA policy solution to this long running dispute (it is mentioned in Hansard in the early 1900s) has been to establish the principles of **Integrated Fisheries Management (IFM) as a basis for sharing the available catch between the fishing sectors**. This policy seeks to set a percentage (or quantum) of the sustainable catch as a ceiling for each sector. When there is good data available on the catches by each sector there has generally been acceptance that this is a fair way of providing for both commercial and recreational benefits, the perception that the other sector is taking all the fish is significantly reduced, and the level of controversy drops away. Where this data is not available, or before the allocations have been decided, the competition between sectors for the lion's share of the fish resource remains and the level of dispute drives an argument in favour of a greater allocation for one sector or another.

It is these resource sharing disputes that drive significant stakeholder angst, and cost and complexity of fisheries management. Arguably, much of the cost associated with fisheries management is linked to addressing fisheries allocation issues rather than stock management issues *per se*. It is critical therefore that **management advice is based on sound science and a weight-of-evidence approach, noting the significant uncertainty in dealing with fish stocks that often cannot be seen nor readily counted**. Surveys and modelling techniques used in WA (and throughout Australian fisheries jurisdictions) are by their very nature expensive and resource intensive but essential to inform management and ensure long term sustainability.

On top of this, there have been significant changes in the oceanographic conditions in many parts of the WA coast (and Australia) in recent years which have driven

changes to the abundance, relative distribution and population cycles of many aquatic species. These complex biological and management problems often exacerbate resource sharing conflicts with Government needing to balance the competing needs and aspirations of various stakeholder groups.

There are other external factors also driving fisheries management. The commercial fishing sector faces significant challenges from a range of complex factors including declining real prices for fish products, escalating business costs, increasing competition from imported products, exchange rate fluctuations, and loss of fishing grounds through, for example, coastal development and marine reserves.

The growing public expectation for improved accountability in the management of natural resources also demands a greater transparency in the assessment of fishery and aquaculture management performance. This includes external scrutiny of fishery outcomes by the Commonwealth Government including assessments for export fisheries under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC) and, more recently, through the market expectation of independent third party assessments such as those undertaken through the Marine Stewardship Council (MSC).

Management Reforms and Initiatives

WA has witnessed significant reform in recent years reflecting emerging issues and Government priorities. The reform agenda as summarised below has been aimed at **more efficient processes and service delivery, greater security and certainty for industry and fishers, and better fisheries and resource management outcomes for the community as a whole.**

Consultation

The extent and types of participatory processes used in WA have evolved substantially over the past 50 years often linked to shifts in funding arrangements. These changes have occurred in response to the management of fisheries progressively shifting from "open access" arrangements through the introduction of limited-entry for commercial fishing and the allocation of transferable fishing rights or units; to the current integrated, resource-based, EBFM framework that covers all sectors (commercial, recreational, customary, aquaculture) and the broader ecosystem. In WA, this evolution has seen both a significant expansion (initially) and (then) contraction in the use of highly formalised consultative structures, and concurrently, the adoption and subsequent removal of cost-recovery funding arrangements (this aspect is discussed in more detail below).

For many years, consultation arrangements in WA were characterised by Ministerial and Management Advisory Committees (MACs) for key fisheries (eg. Western rock lobster, Shark Bay and Exmouth Gulf prawn fisheries, pearl oyster). With the growing recognition of the need to formally manage the recreational sector, a separate recreational fishing MAC also operated for many years. A separate MAC also operated to provide advice on aquaculture development in WA.

MACs were an important vehicle in informing the development, implementation and review of various fishery management plans and facilitated a "co-management

approach" between Government and industry. They also advised on research and compliance requirements.

While presenting many benefits, the operations of MACs were not without their issues. Firstly, with the adoption of cost recovery in the mid 1990's, the MACs became the key vehicle to review the 'purchase' of activities from the Department or external sources. A significant amount of the time and resources of MAC's was therefore focused on operational budget and expenditure issues rather than on strategic management issues.

A second issue was associated with efficient decision making. The FRMA includes the statutory requirement for the Minister to consult with identified advisory committee(s) or person(s) before a management plan is amended or revoked. While the identified consultative body was often the relevant MAC, in reality the process also involved input from many sources either by submissions to the Department or direct representations to the Minister. These could also come from WA's peak fishing body (WAFIC), specific 'sector bodies', professional fishermen's associations, and frequently from individual fishing operators, processors or other interested parties. These representations often did not provide consistent advice and greatly increased the time and difficulties involved in decision making.

Consequently, the benefit of maintaining formal (and, in some cases, statutory) MAC structures was arguably becoming less cost effective given that the main management settings for most fisheries had been established. This also coincided with the need for significant management reform in the State's largest fishery, western rock lobster, as a result of sustained low recruitment into the fishery and a need for significant catch reductions. This high profile issue became the catalyst for significant changes to how the fishery was managed, but also initiated reform of the funding and consultation structures used for all fisheries management in WA.

A subsequent consultation review resulted in the removal of statutory MACs and most non-statutory MACs. **MACs were replaced with a framework that saw the Department of Fisheries as the principal source of Government management advice, and the WA Fishing Industry Council (WAFIC) and Recfishwest as the main source of industry advice for the commercial and recreational sectors respectively**. WAFIC and RFW are funded by Government, through licence fees, to provide representation and consultation services including sector and regional consultation processes. Tasked Working Groups are also formed to advise the Minister or CEO on specific issues.

Funding

Commercial sector

In 1995, funding arrangements and mechanisms within the Department adopted a policy of cost recovery for the major commercial fisheries, while licensees in "minor" fisheries paid fees on the basis of a percentage of Gross Value of Product (GVP) of their fishery. There were ongoing issues with this model. From an industry perspective there was the perceived lack of opportunity to assess the efficiency and effectiveness of service delivery through contestability of service provision. From the Department's perspective, the model was inflexible because services (resources)

were effectively tied to the major fisheries (as the payers) rather than to the highest priorities and areas of greatest risk to the resources. The model was also costly to administer and arguably had a negative impact on relationships with industry. It was also inequitable with some fishers paying costs equivalent to less than 1% of GVP and others more than 10%.

With declining revenues based largely on external factors affecting the commercial sector, the use of the cost recovery model was reviewed in 2010. Following this, Government announced new arrangements in which **commercial fishers were required to pay an access fee based on a single, fixed proportion of the GVP for the respective fishery (5.75%) not tied to cost recovery or services delivered**. The reforms have also introduced fees for the pearling and aquaculture sector which require them to pay for their access to marine waters by way of marine water lease fees. The funding reforms are set out in a *Ministerial Policy Guideline* (MPG 21).

WAFIC receives 0.5% of the 5.75% to support its peak body role.

The move to a GVP model to determine access fees was accompanied by a range of other reform outcomes, **including a commitment to strengthen the rights of commercial fishers as part of proposed new fisheries legislation**, a commitment to co-management, mechanisms to improve industry consultation, and opportunity for industry to have annual input into Departmental planning, priority setting and reporting.

The commercial funding model outlined in MPG 21 has been in place for five years and has recently been independently reviewed. The review has confirmed the relevance and adequacy of the current model.

Recreational Fishing

As a consequence of the consultation reform described above there was a corresponding reform of funding for recreational fishing with introduction of a statewide Recreational Fishing from Boat Licence (RFBL). **15% of all recreational fishing licence fees is provided to Recfishwest to support its peak body role.**

There was also a commitment that a further percentage of these funds would be used to provide grant funding for initiatives, projects and research that are aligned with recreational fishing community priorities and enhance recreational fishing in Western Australia.

New Legislation

The *Aquatic Resources Management Bill* is the first major overhaul of fisheries legislation in more than 20 years. The new *Aquatic Resources Management Act*, once proclaimed, will replace the FRMA and the *Pearling Act 1990* and continue the emphasis on ecological sustainable development and **provide an innovative legislative framework for the conservation and management of WA's aquatic resources and fisheries.**

The key tenets of the new legislation are -

Resource-based – A focus on the sustainable use of aquatic resources, aquatic organisms ("fish" and other living things) and aquatic ecosystems with outcome-focused resource use planning provisions to ensure transparency and to achieve a balance between resource use and conservation. Also incorporates new biosecurity measures include emergency responses.

Risk-based – Provision of formal risk-based assessment processes to determine management actions where adequate scientific information is not available. This is consistent with the Department's move to a risk-based approach to assist in planning and priority setting.

Rights-based – Ensuring the long-term business interests of the fishing industry and the community are given structure and security within a legal framework, facilitating investment, innovation and stewardship.

The new Act will also provide for a number of cost and management efficiencies for the Department and for industry, including removal of some licencing requirements and capacity to enter into cooperative arrangements or to delegate responsibilities to non-government organisations to achieve improved outcomes. This will provide opportunity for new and innovative ways for service delivery.

Marine Stewardship Council (MSC) Fishery Assessments

A more recent challenge is the **growing demand from the conservation sector and the retail sector, for commercial fisheries to better demonstrate their sustainability credentials** (often referred to as 'social licence to operate'). The practice of Government and the industry reporting on fisheries management outcomes and status of stocks in the absence of some form of independent validation is no longer considered adequate. Increasingly audit and certification of fishery performance and sustainability through third party processes is becoming a necessary feature of public accountability. This is an international trend and has similar implications for the aquaculture and recreational fishing sectors.

In response to this trend, in March 2012, the WA Government announced an investment of $14.56m over four years to support third party certification of the State's commercial fisheries. The funding will support the costs of assessment processes against the Marine Stewardship Council (MSC) fisheries sustainability standard. **The MSC is internationally recognised as the "gold" standard in fisheries certification, underpinned by strong science and governance**.

WA rock lobster was the world's first MSC certified sustainable fishery. The Marine Stewardship Council acknowledges that Western Australia's fisheries management is 'widely recognised as well-managed' and has **an 'innovative and collaborative approach to managing its marine resources.'** Since 2014 the MSC has located an officer to liaise with Western Australian fisheries as the assessment process evolves.

The MSC assessment process is well underway with all of the State's 47 commercial fisheries having been subject to a pre-assessment and fisheries now moving into the full assessment process with a number having already certified. The approach of

state-wide assessments is a first for Australia. Outside of Australia only three other fisheries jurisdictions have implemented similar initiatives.

The state-wide pre-assessment information is used by the Department to improve our efficiency and effectiveness by identifying the highest priorities for fisheries improvement across all our commercial fisheries Certification will also likely lead to a greater level of monitoring of non-target species, the habitat and the environment.

The opportunity is also being provided for WA aquaculture enterprises to seek independent certification through the Aquaculture Stewardship Council.

Harvest Strategy Development

Consistent with MSC requirements and 'best practice' guidelines in Australia, the **Department has implemented a Harvest Strategy Policy to be applied over time to all commercial and recreational fisheries**. Harvest strategies establish the explicit 'rules' that determine what the appropriate harvest levels (either catch and/or effort) should be for each fishing sector given the current circumstances to meet the ecological and, where relevant, any economic and social objectives established for the resource. They are designed to maintain an acceptable level of risk (i.e. medium or lower) for each of the objectives for a fishery or, where the risk is currently high or severe, return the risk to an acceptable level. **Harvest strategies provide more certainty for fishers**. They increase efficiencies because when control rules are understood by stakeholders, there is less discussion about whether management action should be taken when agreed threshold and/or limit levels are breached.

Other Matters

Aquaculture

In recent years, the assessment and management process for new aquaculture licenses and leases has been reformed and streamlined in WA. Under a Memorandum of Understanding (MoU) with the Department of Environment and Conservation (now Department of Environmental Regulation) the Department has assumed responsibility for aquaculture environmental approvals including the associated operational and compliance activities.

The Department manages the environmental impact of aquaculture through a requirement for licensees to establish a Management and Environmental Monitoring Plan (MEMP). The MoU requires that MEMPs are consistent with codes of practice developed for the marine finfish, land based finfish and prawn aquaculture sectors. The FRMA was amended to require a MEMP to be submitted as part of an aquaculture licence application for those aquaculture activities in the marine or estuarine environment, and those on public land.

In addition, as a priority of Government, the Department has progressed the establishment of two aquaculture zones for marine finfish in Western Australian coastal waters. The project has already seen a zone established in the Kimberley with planning for a second zone in the Mid-West region of WA well advanced. **The**

identification and establishment of zones will streamline the environmental approval process for commercial projects within zoned areas and provide an "investment ready" platform for investors. The creation of zones that have already been assessed for environmental impact will reduce the time involved in approvals for future large-scale marine finfish aquaculture projects from two or more years to six to eight weeks.

The key factors outside the regulatory environment that have limited the competitiveness of aquaculture production in WA are the lack of sheltered offshore sites suitable for marine finfish production in sea cages, the limited area of nutrient-rich waters suitable for marine shellfish production and, generally, the high cost environment prevalent through much of the State.

There is a requirement for a regulatory framework for aquaculture in Commonwealth waters to allow for the expansion of this sector of the industry. The Australian Government is looking to progress a framework for managing aquaculture in Commonwealth waters as part of the work on the national aquaculture strategy.

Jurisdictions have previously supported an approach to develop arrangements that provide for the state and Northern Territory governments to regulate aquaculture in Commonwealth waters adjacent to each state/Northern Territory, while maintaining some level of Australian Government oversight. This approach is consistent with feedback from a range of stakeholders during consultation on the national aquaculture strategy. The Commonwealth Department of Agriculture and Water Resources is currently progressing this issue in consultation with the jurisdictions.

Commonwealth Environment Protection and Biodiversity Conservation Act 1999

The relationship between the Department and the (now) Commonwealth Department of the Environment (DotE) with regard to dealing with EPBC Act requirements has generally been positive. While development of the submissions to DotE to achieve certification (Exemption or Wildlife Trade Operation certification) has required significant resources, the outcomes of the process have generally been positive in that it has resulted in a form of third party certification for many Western Australian fisheries.

The recent decision by DotE to move 18 WA fisheries to 10 year certifications has significantly reduced the demand on resources required under the former (maximum) 5 year certification period, although it may demand a high level of resourcing when all these fisheries come up for recertification in 2025. However, by then the matter of EPBC/Marine Stewardship Council certification equivalence (see later) is likely to have been settled and the need for a separate EPBC certification may have fallen away.

One particular area of concern with respect to the implementation of the EPBC Act is the matter of interactions with Threatened, Endangered and Protected species (TEPs). Dealing with TEP interaction is of utmost importance in fisheries management and aids industry's 'social licence' to operate. DotE has been unwilling to express a view on, or specify 'acceptable levels' of interaction with TEP species. This has caused tension in fisheries where solutions to TEP interactions have proved

difficult (particularly where the interactions are seen as having no biological or ecological impacts), with DotE wanting interaction rates to continue to decrease (if not become zero) and industry feeling that it has done all that it reasonably can. In the case of Australian Sea Lions in the temperate shark fisheries (see case study at Appendix B), industry also feel that little or no consideration given to other possible sources of mortality (e.g. increased levels of shark predation) as possible reasons for the (perceived) issues with Sea Lion populations – particularly noting that the available data indicates very low levels of interaction. They are also critical of the financial impact of the required changes on their operations to deal with Sea Lion issues while at the same time there is no active program to ascertain the real status of Australian Sea Lion populations.

Equivalence between MSC and the EPBC export approval certifications.

The Commonwealth Department of the Environment requested the Department provide a report on **the suitability and practicality of using independent third party certification as a proxy for the EPBC Guidelines for the Ecologically Sustainable Management of Fisheries**. Such a proxy would potentially allow those fisheries being assessed by both the MSC standard and the EPBC guidelines to reduce compliance cost and effort by only having to meet the MSC standard.

An analysis of Western Australian fisheries complying with both the MSC standard and the EPBC Guidelines suggests **there is a high level of technical equivalence between the two frameworks**. There are a number of governance issues that may require consideration by the Department for the Environment before a final decision could be made on using the MSC standard as a proxy for EPBC Guidelines. Work is progressing in this regard.

Indigenous Fishing

The Department has two policies that deal with indigenous fishing, the customary fishing policy and the Aboriginal fishing initiatives which provide for commercial fishing arrangements for Aboriginal economic development.

Customary Fishing

The Department considers that customary fishing rights pre-date the introduction of common law (and property concepts) to Australia. As a result, the underlying nature of customary fishing/native title fishing rights is fundamentally different to the commercial and recreational fishing property (access) rights enjoyed under Australian common law.

Where customary fishing rights (non-property rights) exist their nature precludes them from being traded, used for commercial gain, or quantified within a harvest limit or "total allowable catch". Consequently, management or allocation decisions must not unnecessarily restrict customary fishing rights. However, conservation principles/sustainability requirements represent a legitimate limitation on customary fishing rights.

These principles are consistent with the treatment of customary fishing rights under the FRMA and the upcoming ARMA. The fisheries allocation model contained in the ARMA is in 2 parts, resource sustainability (sustainability framework) and Total Allowable Catch (TAC) (rights based framework.

The ARMA allocation model recognises customary fishing as part of the sustainability framework (i.e. the initial resource sustainability allocation), which includes an amount to meet the primary needs of conservation/biological sustainability, customary fishing and public benefits (e.g. amounts used for research purposes). This amount is to be set aside prior to making allocations for property rights associated with recreational and commercial fishing (i.e. TAC setting).

Under the ARMA, as under the FRMA customary fishing rights are not property rights and therefore cannot be included in a quantified "total allowable catch" or be traded in the same manner as commercial or recreational fishing access rights. Also, the TAC setting must not unnecessarily restrict customary fishing, sustainability or public benefit requirements.

Aboriginal fishing arrangements for economic development

WA is transitioning existing Aboriginal commercial fishing arrangements into more secure licensing arrangements that carry a greater level of access right. These licence arrangements support greater participation of Indigenous Australians, as they are open to Aboriginal corporations or individuals, particularly in the north of the State to access mud crab, trochus and beche-de-mer fisheries, without having to buy existing commercial licences and can incorporate traditional management practices and fishing methods.

Opportunities for partnerships with organisations that have expertise in Aboriginal Economic Development are presently being explored in an effort to develop opportunities to support Aboriginal interests in breaking into the marine fisheries and aquaculture industries.

A number of aquaculture licences have been granted to Aboriginal Corporations in the north of the State.

Several charter fishing operations are run by Aboriginal people in WA, and the requirement to hold a charter licence for land-based fishing tours was recently revoked easing the administrative burden of many of these Aboriginal-owned charter fishing companies. There are several commercial fishing businesses that have been established by Aboriginal people without any direct support provided by WA Fisheries. Analysis of opportunities for training, job creation and joint ventures involving Aboriginal communities and possible investment avenues (including overseas investment) would be useful.

Offshore Constitutional Settlement

Under Offshore Constitutional Settlement (OCS) arrangements with the Commonwealth, Western Australia has jurisdiction over the vast majority of fisheries adjacent to the Western Australian coast out to the 200nm exclusive economic zone. **These arrangements have been in place for many years and are working well with respect to fisheries resource management**. Under the OCS, two fisheries

are managed by the Western Australian Fisheries Joint Authority (JA) – the JA Southern Demersal Gillnet and Demersal Longline Fishery and the JA Northern Shark Fishery. Discussions are underway with the Commonwealth about future jurisdictional arrangements for these fisheries with a view to ensuring streamlined approaches and complementary management approaches.

A small number of Commonwealth managed fisheries operate off WA, but there are only very low levels of interactions between WA managed and Commonwealth managed fisheries.

From a WA perspective, future priorities in respect of OCS include settling a position on the JA fisheries and ensuring complementary harvest strategies where necessary. A change to the OCS arrangements in respect to the Commonwealth's deepwater trawl fisheries and adjacent WA fisheries, to deal with one of the few areas of interaction is also being progressed, to reflect recent Ministerial agreement on revised fishery boundaries.

Fisheries Compliance

The Department works closely with the Australian Fisheries National Compliance Committee (the National Compliance Committee) which aims to achieve an optimal level of compliance that holds the level of non-compliance at an acceptable level at a reasonable cost while not compromising the integrity of management and resource sustainability. The National Compliance Committee accepts differences in legislation, policy and management apply across Commonwealth, State and Territory fisheries due to their varied nature and location, although generally operate to common principles and approaches.

The various activities of **commercial, recreational and indigenous fishers and the aquaculture sector often have different management approaches and operating environments requiring flexible compliance methodologies.** There is a high level of community expectation that aquatic resources will be maintained at sustainable levels and aquatic habitats will be protected. With respect to compliance, the community wants to be assured that incentives for illegal activity are minimised and that there is appropriate legislation to this effect.

Through **compliance planning and risk assessment processes**, the Department uses an appropriate mix of high profile uniformed compliance (mobile patrols, District Office compliance land and sea patrols) combined with specialist targeting of high level and organised offending (covert methodology, sophisticated surveillance, investigative capacity). There is also a focus on voluntary compliance through targeted education and community engagement programs.

A Fisheries Research and Development Corporation (FRDC) project on Fisheries Compliance Outcomes Measurement is currently being undertaken by the Department (in conjunction with the National Fisheries Compliance Committee) and is attempting to look beyond compliance efficiency indicators and **move to effectiveness indicators**. The project aims to create a unified view of best practice and find meaningful metrics of performance. Extension work has begun to develop those structures for fisheries compliance and apply them to local fisheries.

APPENDIX A

ECOSYSTEM-BASED FISHERIES MANAGEMENT

Following the success of the Ecologically Sustainable Development (ESD) framework for individual fisheries, a practical, risk-based framework for use with regional-level management of marine resources was developed by the Department to enable cross/multiple fishery management at the bioregional level to fully implement Ecosystem Based Fisheries Management (EBFM). EBFM is a single, coordinated risk-based system that generates efficiencies for the use of Departmental (government) resources. The simple set of steps developed has enabled adoption of a fully regional, 'ecosystem-based' approach in WA without material increases in funding.

EBFM recognises that ecosystems work at a regional level and it fits better with the global shift towards holistic, regional-based natural resource management. EBFM takes into account the impacts of all aquatic resource use on species targeted by fishing, as well as non-target species and the environment (all of which are regarded as ecological assets) and the social and economic impacts of the resource use. It recognises that while fishing activity affects ecosystems, providing the impacts are risk-assessed and managed, fishing can also create social and economic benefits.

EBFM is based on using the best global standard for risk assessment and risk management. The levels of risk are used as a key input to the Department's Risk Register which, combined with the assessment of the economic and social values and risks associated with these assets, is an integral component of the annual planning cycle for assigning activity priorities (e.g. management, research, compliance, education, etc.) across each Bioregion.

A summary of the Department's risk-based planning annual cycle that is delivering EBFM in the long-term is provided in Figure1.

The Risk Register informs Fish Plan (current version 2011/12 – 2015/16), which sets out baseline management activities over a five year period. The extent to which the Department is effective in achieving its Agency Level Outcome is measured by the Department's Key Performance Indicators (KPI's), which are published in the Department's *Annual Report* to Parliament.

Fish Plan assists the Department in achieving its desired Agency Level Outcome by providing a planned and structured approach to management of capture fishery resources (assets), including review of management arrangements for fish stocks, assessment and monitoring of fish stocks and compliance planning. This process provides the Department with a basis or framework for allocating resources to individual capture fishery assets and to provide greater certainty to peak bodies and industry participants on the timelines for management reviews, etc.

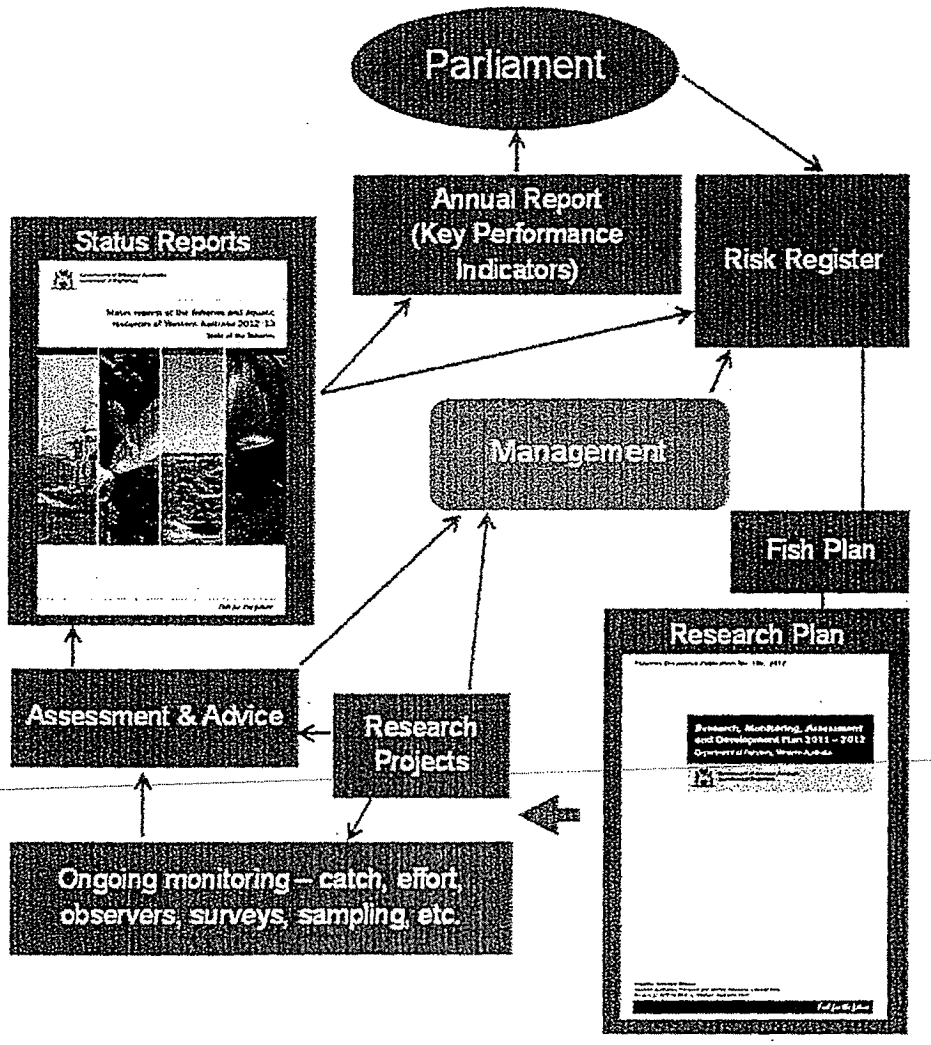

Figure1. An outline of the risk based planning cycle used for determining Departmental priorities and activities

Fish Plan in turn informs the Research, Monitoring, Assessment and Development Plan 2015-2020 (RMAD Plan; Department of Fisheries 2015), which sets out the associated research projects over a five year period. The research projects and activities address ongoing monitoring requirements, as well as generating assessments and advice, which then drive reporting and management activities.

EBFM has been applied to the ecological assets recognised in each of the Integrated Marine and Coastal Regionalisation of Australia (IMCRA v4.0; CoA 2006) regions within each bioregion in WA. Those ecological assets include:

- Ecosystem structure and biodiversity (on a meso-scale basis);
- Captured fish species;
- Protected species (direct impact – capture or interaction);
- Benthic habitats; and
- External impacts.

It is important to note that the levels of knowledge needed for each of the issues only need to be appropriate to the risk and the level of precaution adopted by management. Implementing EBFM does not, therefore, automatically generate the need to collect more ecological, social or economic data or require the development of complex 'ecosystem' models, it only requires the consideration of each of these elements to determine which (if any) required direct management to achieve acceptable performance.

As part of ensuring that it was implementing EBFM effectively, the Department undertook a study to:

1. Test the robustness of statistical procedures to identify impacts of multi-sector fishing on community composition using existing fishery data;
2. Assess the level of change in community composition in each bioregion of WA during the previous 30 years;
3. Identify key data to which ecosystem structure and management strategies are most sensitive and which should be collected in the future;
4. Identify critical changes in exploitation and/or environment that would impact marine ecosystems markedly; and
5. Identify areas where more detailed research and / or monitoring are needed.

The results from the study are published in Fisheries Research Report Number 215 (2011) *Development of an ecosystem management approach to the monitoring and management of Western Australian Fisheries*[2].

[2] http://www.fish.wa.gov.au/Documents/research_reports/frr215.pdf

APPENDIX B

Proposed changes to Western Australia's Temperate Demersal Gillnet and Demersal Longline Fisheries to address Australian Sea Lion conservation concerns: A case study into the impacts of Commonwealth environment legislation on Western Australian fisheries productivity

Productivity

The Western Australian (WA) Temperate Demersal Gillnet and Demersal Longline Fishery (TDGDLF) comprises two managed fisheries: one on WA's west coast and another on WA's south coast.

The TDGDLF is the third largest producer of fresh finfish product in WA, taking on average around 1000 tonnes of shark and scalefish per year. Gummy, dusky, whiskery and sandbar sharks account for approximately 80% of the TDGDLF catch. The TDGDLF primarily use demersal gillnet and the shark and scalefish taken supplies domestic and local markets (fish and chip shops, fish retailers and restaurants), with the exception of fins which have, until recently, been exported.

In 2013/14 the Gross Value of Production (GVP) for the TDGDLF was in excess of $5 million.

There are currently 77 authorisations in the TDGDLF and in 2013/14 there were 26 vessels active in the fishery with and an estimated 97 crew employed in TDGDLF fishing. This is similar to the levels of participation in the TDGDLF over the last five years.

Additional information on the TDGDLF can be found in the Department of Fisheries (Department) publication "*Status Reports of the Fisheries and Aquatic Resources of Western Australia 2014/15*" at

http://www.fish.wa.gov.au/Documents/sofar/status_reports_of_the_fisheries_and_aquatic_resources_2014-15.pdf

Commonwealth Part 13 Accreditation of the TDGDLF

In 2006 the TDGDLF was first approved by the Commonwealth Minister for the Environment as a Wildlife Trade Operation (WTO) under the *Environment Protection and Biodiversity Conservation Act 1999 (C'wealth)*. It was re-approved as a WTO in 2009.

In August 2012 the TDGDLF was reapproved as a WTO with conditions. The conditions, placed on the TDGDLF by the Commonwealth Minister for the Environment, related to developing strategies to mitigate interactions between the TDGDLF and Australian sea lions (ASL).

ASL range is restricted to WA and South Australia (SA) with a population of 13,000 to 15,000 individuals. Goldsworthy *et al.* (2009) estimated that, in recent years, a

minimum of 3610 pups were born per breeding cycle, of which 86% were in SA and 14% in WA[3].

ASL colonies are inherently difficult and expensive to monitor. It is difficult to get accurate estimates of colony size and change. In WA there are few ASL colonies with accurate, long-term trend data in population estimates or pup production, and of the colonies that do have sufficient long term data, it appears that ASL pup production amongst the west coast colonies is stable (Friedman and Campbell, 2014)[4]. Data across WA's south coast ASL colonies have been collected more sporadically and there are few colonies with long-term datasets.

There is little to no independent research on the impacts of gillnet fishing on ASL in WA. Between 1994 and 1999 the Department undertook monitoring of TDGDLF operations. The monitoring utilised on-board observers and covered approximately 13% of all fishing trips undertaken during that period. The on-board monitoring witnessed only a single ASL mortality.

Further information on ASL interactions and mortalities is sourced from TDGDLF fisher returns. Returns are a statutory requirement and submitted to the Department monthly. TDGDLF fishers use the returns to record interactions with TEP species (threatened, endangered and protected), including ASLs. The highest number of ASL mortalities recorded in TDGDLF fisher returns in a single year is 3 (in 2011/12).

The extremely low incidence of ASL mortalities throughout the observer period and in statutory returns suggests the risk of ASL mortalities resulting from TDGDLF operation is likely to be extremely low. Note also that the current level of fishing effort in the TDGDLF is only half of what it was when the observer work was undertaken.

In an attempt to better understand the ASL science in WA and the situation faced by the TDGDLF as a consequence of the Commonwealth Minister for the Environment's 2012 WTO approval, and more specifically the accompanying conditions, in 2013 the Department established the ASL Working Group (Working Group). The Working Group was established to facilitate the development of strategies to address the 2012 WTO conditions and comprised representatives from the Department, the Western Australian Fishing Industry Council (WAFIC), TDGDLF authorisation holders, the Department of Parks and Wildlife (DPaW) and the Conservation Council of WA. The Working Group invited Dr Simon Goldsworthy (ASL specialist from the South Australian Research and Development Institute [SARDI]) to WA to engage with the Working Group regarding ASL science, experiences in other states where similar conditions have been imposed on fisheries, and options to address the conditions.

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[3] Goldsworthy SD, McKenzie J, Shaughnessy PD, McIntosh RR, Page B, Campbell R (2009) An update of the report: understanding the impediments to the growth of Australian sea lion populations. Report to the Department of the Environment, Water, Heritage and the Arts. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. 88pp

[4] Friedman, K. and Campbell, R. (2014) Developing and implementing standardised monitoring protocols for the Australian Sea Lion (ASL) across its range in Western Australia. Final Report to the Australian Marine Mammal Centre, Australian Antarctic Division, Hobart. 16pp.

Additionally, in an attempt to get a better scientific understanding of ASL in WA, in 2013 the Department contributed approximately $17,000 to ASL tagging research being undertaken by SARDI (Dr Simon Goldsworthy) by purchasing 10 tracking tags. The tags were used to gather ASL foraging data that was subsequently used by the Department to investigate options to address the 2012 WTO conditions.

Following 18 months of consultation with stakeholders through the Working Group, in 2015 the Department submitted its WTO application to DotE. The application included the findings from the Department's investigation of options to mitigate TDGDLF/ASL interactions, including on board cameras, on-board observers and spatial closures. Importantly, the application provided the outcomes of modelling undertaken by the Department. The model, which used real WA ASL foraging data and real WA TDGDLF fishing effort data, showed that exclusion distances of 25km around the ASL colonies in the west coast fishery and 20km around the ASL colonies in the south coast fishery would result in a 75% (or greater) reduction in possible encounters (not entanglements) between ASL and gillnets.

In August 2015 the Commonwealth Minister for the Environment re-approved the TDGDLF with new conditions that require the Department to implement an effective network of gillnet exclusion zones to protect foraging ASL by no later than mid-2016.

Impacts on the TDGDLF

Implementation of gillnet exclusion zones around the ASL colonies will close a total of 25,045km^2 to gillnet fishing from 1 June this year. The closed area includes 669km of coastline across the whole of the TDGDLF. This total includes three closures on the west coast and four closures on the south coast comprising:

- West Coast Fishery - a total area of 7,110km^2 including 159km of coastline
- South Coast Fishery - a total area of 17,930km^2 including 510km of coastline

Conclusion

The Department's 2012 application highlighted that there is no information available on current ASL population numbers to assess the potential impacts and specifically to determine if (any) mitigation measures imposed on the TDGDLF will work.

Implementing (and funding) programs to provide scientifically robust baseline information is critical for the effective monitoring and assessment of any measures introduced in the TDGDLF. This is not within the Department's direct jurisdiction and needs to be undertaken and funded by the appropriate State and Commonwealth agencies (with responsibility for marine mammals). Note given ASL life history, it is likely that any improvement in ASL population will take place on a decadal scale (and take 1-2 decades to detect).

Despite this, the Department has directed significant time and effort, contributed funding to tagging research, attended interstate ASL workshops and conferences and consulted extensively with stakeholders to ensure encounters with ASLs were minimised.

The Department's 2015 WTO application also noted that managing to a zero (0%) risk of ASL interactions is not a cost effective, practicable or realistic option.

Notwithstanding this, the gillnet exclusion zones to be implemented for 1 June 2016 will undoubtedly impact on the TDGDLF, given the overlap between the proposed closures and TDGDLF fishing effort. The WTO condition will impact the commercial viability of the TDGDLF and consequently, the supply of sustainably caught and well managed, fresh, affordable and high quality fish to the WA and Australian community.

The TDGDLF is one of only three WA fisheries that takes in excess of 1000 tonnes of finfish per annum. The fish is almost entirely consumed locally and domestically.

This example illustrates the importance of a risk-based approach to decision making and the need to weigh costs and benefits of management requirements.