Sharing the fish at a regional level

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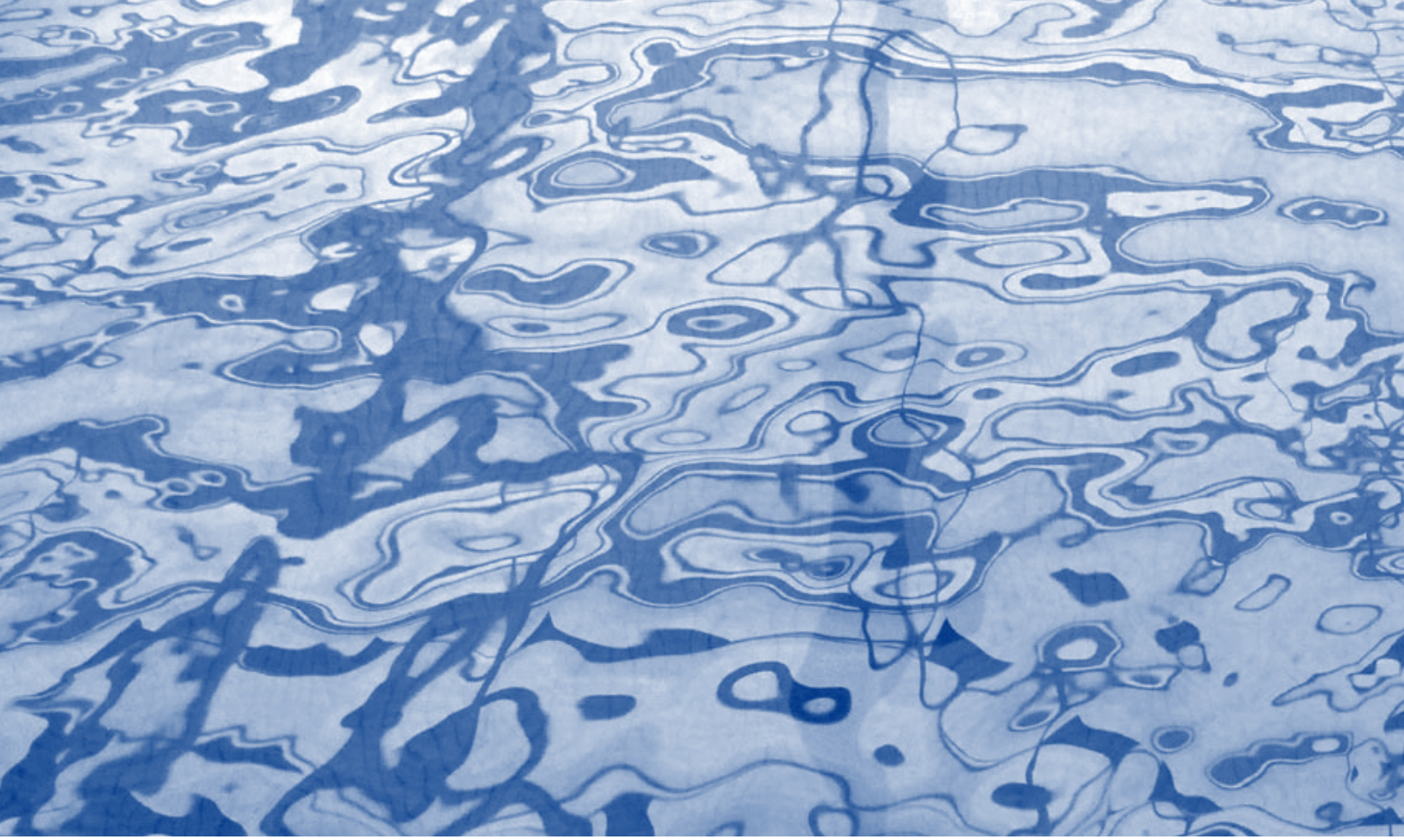

Sharing the fish at a regional level

Sharing the fish, and other resource access issues: how can this be done at a regional level?

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Abstract

The Department of Fisheries has begun a process to address the allocation issues amongst the various catching sectors associated with individual fisheries through its integrated fisheries management (IFM) initiative. However, the need to resolve access arrangements is not solely confined to conflicts between recreational and commercial fishers but, increasingly, between the entire wild capture fishing sector and other stakeholders and industries. Such issues, which include the establishment of marine protected areas, coastal developments and aquaculture precincts, are usually regionally based rather than being associated with a particular resource and require, therefore, different processes to achieve effective outcomes. One of the key implications associated with regional level processes is the multitude of stakeholders and government agencies involved in agreements for appropriate allocations of access. This can highlight competing government objectives and differing criteria to assess performance. Consequently, it is not surprisingly that attempts to complete regional level marine planning are often less than successful. To help bridge the gap between the successful implementation of systems that were designed to operate at the individual fishery level with systems for use with regional planning we outline the progress that has been made in implementing an Ecosystem Based Fishery Management framework. We show how this process assists to identify the key ecological attributes of the entire region, develop regional level objectives and performance measures and discover whether the current management arrangements of all fishing related activities are generating appropriate regional outcomes. We also present how this system could be expanded to include other stakeholders such as aquaculture, marine conservation reserves and other sectors, to facilitate the development of a shared understanding of the overlaps and gaps in policies. This should be the first step in the process to generating whole of government marine policy objectives and optimal regional outcomes.

Introduction

During the last decade there has been a significant shift in opinion about the management of natural resources towards the concept known in Australia as 'ecologically sustainable development' (ESD) (CoA 1992). This concept, which (includes "whole of ecosystem" and "bioregional approaches") is based on ecosystem boundaries rather than sectoral or jurisdictional boundaries and is now considered to be the appropriate way to deal with the environmental and ecological issues that flow from growing human population pressure and society's expectations. In Australia, where the majority of the population resides in coastal regions, the increasing pressure from users of the marine environment requires better planning to ensure that it remains in an acceptable state for future generations.

The management of individual fisheries in Western Australia is already based on ESD principles that require, for each individual fishery, that the impacts on target species, by-catch species and habitats, plus any potential indirect impacts of these removals on the broader ecosystem are all managed using a risk based framework (Fletcher 2002; 2005). In implementing this policy, and to meet the requirements of the Australian government's Environmental Protection Biodiversity and Conservation requirements (CoA 2001), separate ESD based assessments have now been completed for each of the major fisheries by the Department of Fisheries, Western Australia (e.g. Kangas *et al.* 2006).

Although this ESD based process is comprehensive at an individual-fishery level and is generally seen as being successful, these assessments do not address the combined effects of all fisheries within the same area nor do they cover the cross fishery allocation issues. Consequently, some environmental groups have stated that the fishery-level ESD reports are still insufficient to meet their desire for fisheries to be managed according to the concept of "ecosystem-based management" (Dunlop 2003).

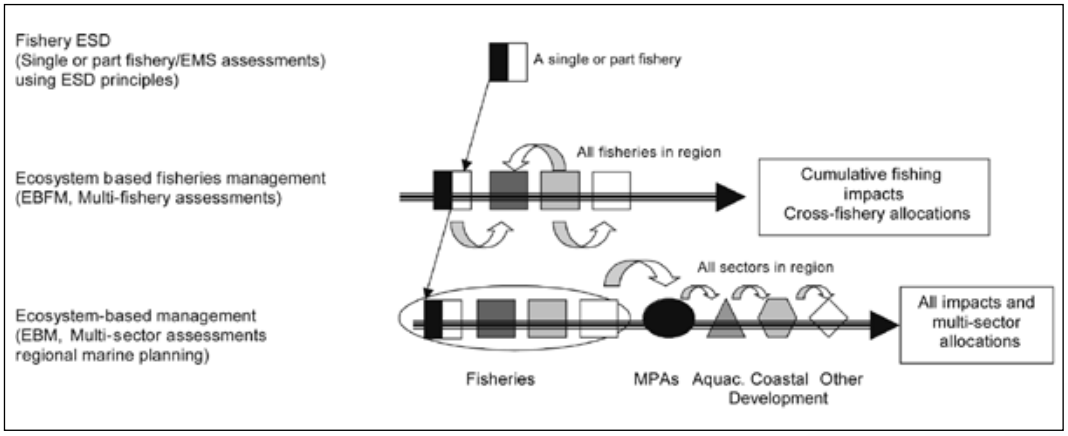
To manage the increasing human pressures on the statewide marine environment, additional initiatives being implemented by the department include Integrated Fisheries Management (IFM). This seeks to limit overall harvest of target species to sustainable levels by establishing specific levels of access to these fish resources by the various catching sectors (see DoF 2002). These allocation processes cover the sharing issues amongst commercial fisheries, recreational, and indigenous sectors (DoF 2005).

A number of other sectors, which utilise, impact or have an interest within the marine environment are not covered by fisheries legislation (e.g. shipping, coastal development, marine parks, tourism). Thus, the need to resolve conflicts associated with access arrangements is not solely confined to conflicts between recreational and commercial fishers but, increasingly, between the entire wild capture fishing sector and other stakeholders and industries (Fletcher 2003). Such issues are usually regionally based rather than being associated with a particular resource and require different processes and frameworks to achieve effective outcomes. Consequently, the Western Australian Government has committed to developing a policy for regional marine planning to facilitate the development of a strategic plan for sustainable management of each region for which the following conceptual framework may be relevant.

CONCEPTUAL FRAMEWORK

Within Australia, it has been recognised that ESD should be seen as the overall goal for government and that other ecosystem related terms (e.g., EBFM, EBM, EAFM etc.)[1] describe strategies that should be used by various sectors and agencies to work toward the overall goal of ESD (see Fletcher 2006a for details). All such terms are variations on a theme with the main differences between them being the scope of issues managed. The various management systems should form a hierarchy within an overall ESD context, with each level providing the building blocks for the next level (Figure 1).

Figure 1. A diagrammatic representation of the relationships between three levels of the ecologically sustainable development (ESD)-related frameworks (from Fletcher 2006).

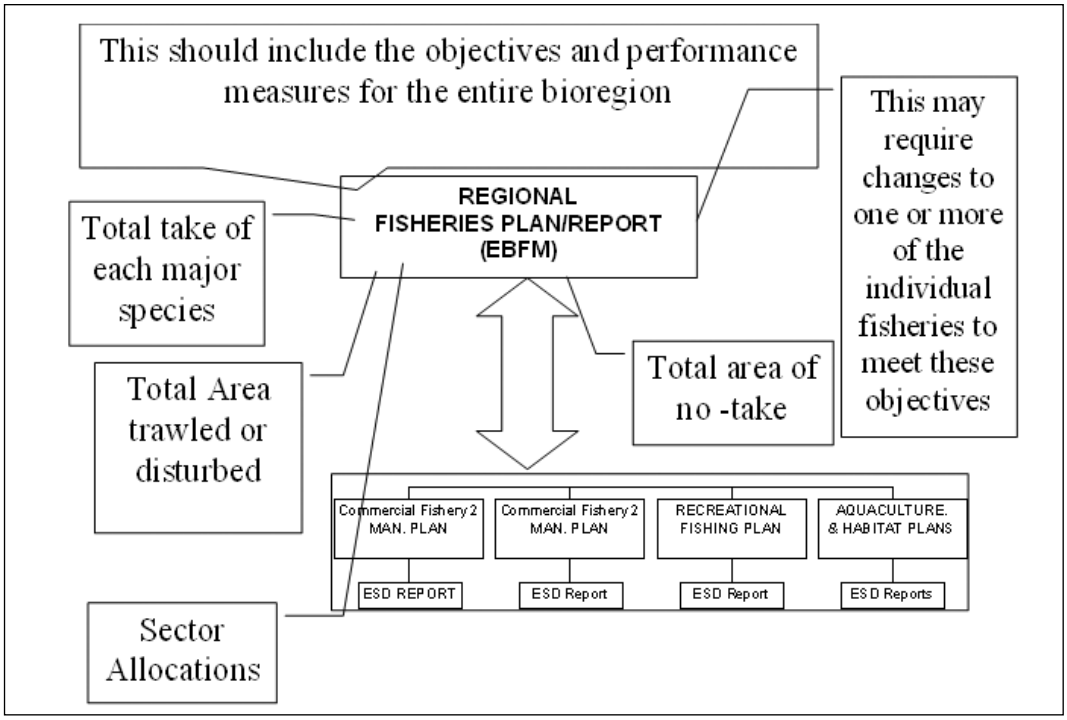


Within Western Australia, now that the fishery-level assessments have been completed, the current initiative is to expand the scope of the ESD assessments up to the level of Ecosystem Based Fisheries Management. This

1 Ecosystem Based Fisheries Management (EBFM); Ecosystem Based Management (EBM); Ecosystem Approaches to Fisheries Management (EAFM).

will be done by collectively assessing all fisheries related activities within each of the four marine bioregions in WA[2], to ensure that their cumulative impacts meet regional objectives and that the allocation of access amongst the various sectors is managed in an explicit fashion. This will require the development of regional fisheries plans that include regionally based objectives and performance measures. These could cover issues such as the total acceptable take of each major target species, the total area that can be disturbed (e.g. through trawling or netting etc.), and the required area of no-take (Figure 2). It is expected that once these regional objectives have been generated and their status assessed, a re-examination of the management arrangements for some of the individual fisheries may be needed to meet the regional objectives.

Figure 2. Outline of what would be contained within an EBFM report/plan.



The EBFM/regional fisheries plans could also be used as the basis of negotiations for the development of EBM/regional marine plans by the entire fisheries sector through incorporating all their requirements in a coordinated and efficient manner (Figure 3a). If each of the other sectors also generated a consolidated, regionally based set of objectives and aspirations the process of marine planning would be much cleaner and efficient. This contrasts with the current system where responses and inputs required for each new development in a region (e.g. aquaculture development, marine parks, coastal development, dredging channels etc) are usually handled individually and

2 each of which generally reflect the IMCRA (1997) boundaries.

separately by each fishery and stakeholder group and mostly in isolation of any other activities or developments within the region. This generates an inefficient web of consultation with significant duplication in processes, overloading of sector representatives and produces uncoordinated and probably suboptimal outcomes (Figure 3b).

Figure 3. A. Proposed outline for completing regional marine plans using the EBFM process.

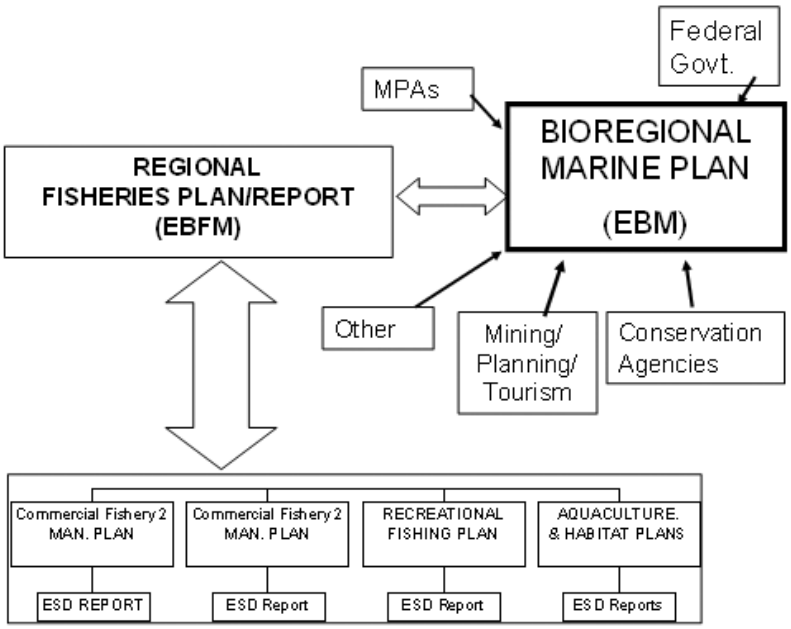
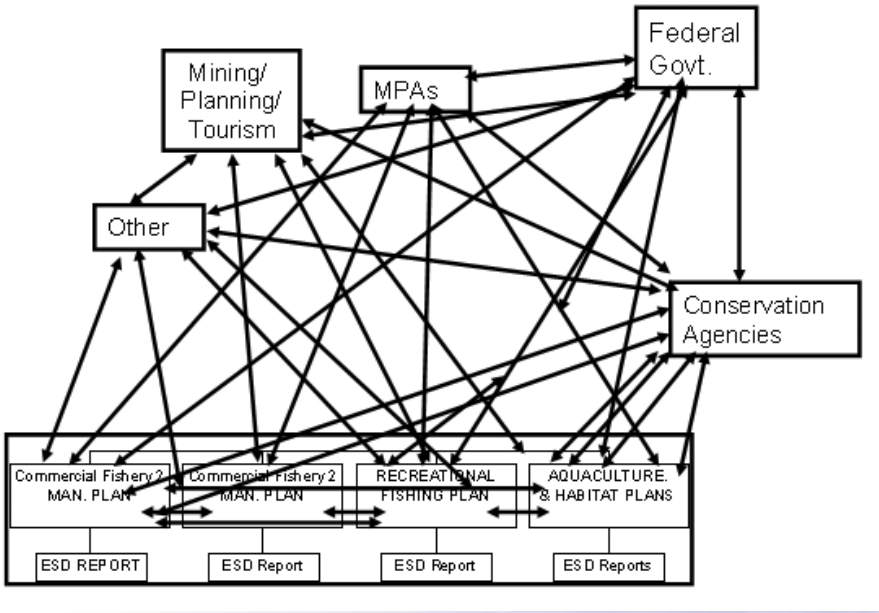


Figure 3. B. Current spider web approach to planning within the marine environment.



To help bridge the gap between the successful implementation of the systems designed to operate at the individual fishery level with systems for use with multi-sector regional planning, the initial progress that has been made in completing fisheries management at a regional level (EBFM) is described. For the purposes of illustration, specific information already generated using this system for the Gascoyne region of Western Australia is used.

EBFM REGIONAL FISHERIES ASSESSMENTS

The EBFM regional assessments will use a modified version of the ESD framework that was used to report and assess individual fisheries (Fletcher *et al.* 2002; Fletcher 2006b). These steps are consistent with all standard risk management systems used widely by companies, industries and other sectors and are summarised below.

1. Determine the scope of the assessment. Having a clear and agreed description of the boundaries of the region and activities that are to be covered by the assessment is vital. If there is not a clear understanding at the beginning of the assessment, there is a high probability that confusion will continue to spread through the rest of the process and it is very unlikely that a sensible outcome will be generated. In some cases the entire process will fail completely.

   The geographic boundaries used may be a predetermined region and, depending upon the assessment, could include state waters, the EEZ, specific depth strata, specific distances from land etc. Both the geographic area and the specific activities included should reflect management responsibility. It is not possible to effectively manage something or be held responsible for the outcomes if you do not have any authority or effective control. This does not mean, however, that these elements are ignored in the process, it just means that they must be taken into consideration for the planning of issues over which you do have control.

2. Identify and agree on the relevant issues and outcomes. The scope of the assessment that is being done will affect what issues need to be examined. Each region will have its own unique set of issues. To help determine these issues, we use a set of component trees that cover each of the ten key areas of EBFM (Figure 4) and covers all the ecological, social, economic and governance issues. For each of these elements a comprehensive set of components has been developed as starting points, and are used as aids in the identification and cataloguing of issues. These are, however, only the

starting point, each fishery needs to tailor the trees to suit its individual circumstances. This can include splitting some of the issues to have greater detail, adding issues that were not there, or removing those that are not relevant (see Figure 5 for examples).

Figure 4. Overview of the EBFM framework. Each of the ten main EBFM components has a detailed component tree that can be used to help identify specific issues for each region.

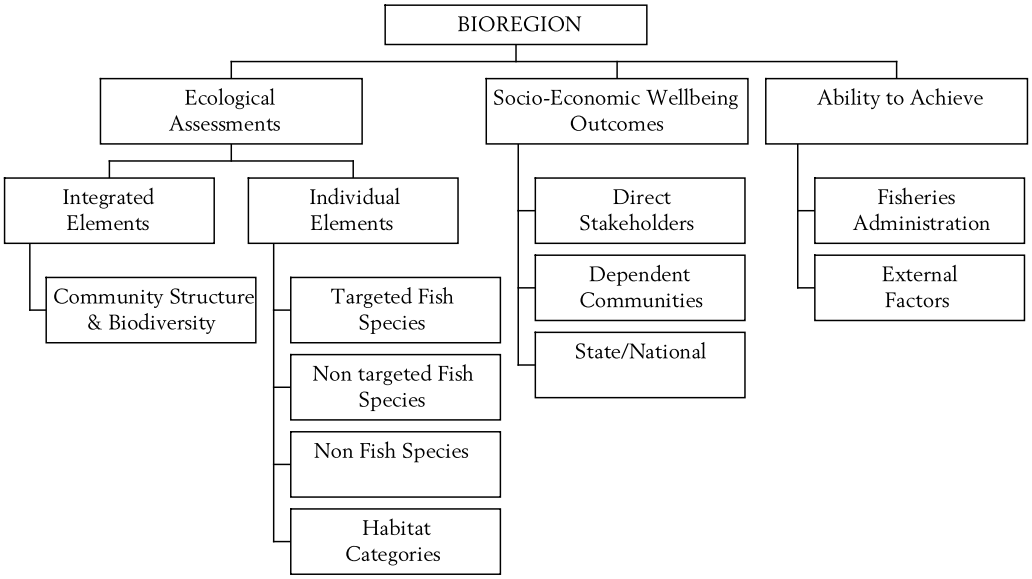


Figure 5. A. The generic component tree for targeted species.

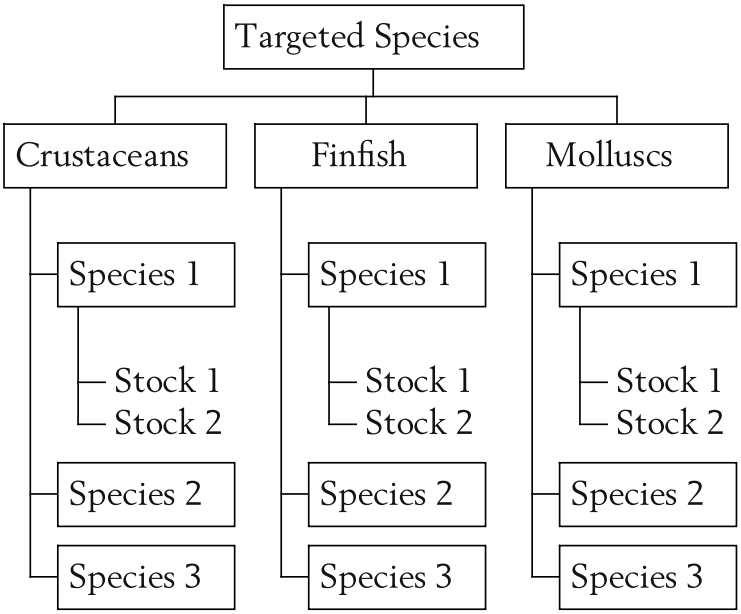
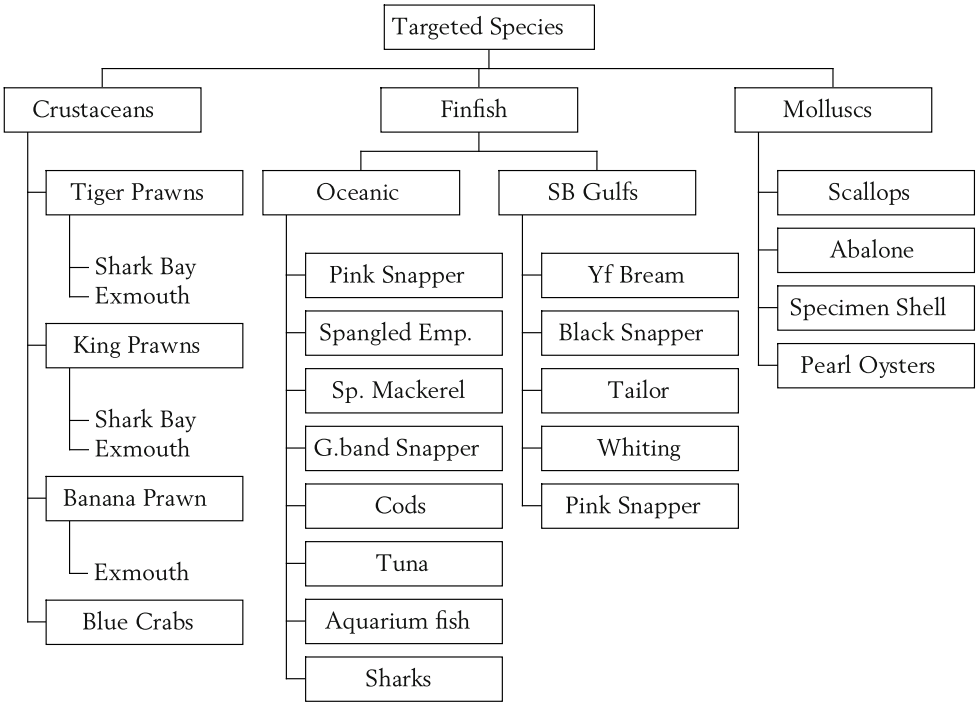


Figure 5. B. The revised component tree for targeted species using the Gascoyne bioregion as an example (i.e. one of ten trees already developed for this bioregion)



3. Generate bioregional level objectives. For each identified issue, regional values and operational objectives need to be developed to reflect the expected outcomes. For example, species that are the target of commercial, recreational, charter, and indigenous fishers and are also of interest to "no-take" groups may not only require management objectives associated with the maintenance of an appropriate spawning-stock size. Supplementary objectives could address the need for areas with higher local abundances for viewing by divers or larger fish for trophy fishing.

4. Complete a risk analysis. A large number of issues can be identified for a region but their importance will vary greatly. Consequently, it is necessary to have some way of prioritising amongst the issues so that the level of management received is appropriate. To determine the priority of issues and therefore the appropriate level of management response, the process uses risk analysis methods. Importantly, this assessment must also include appropriately detailed justifications for why each of the levels of risk were chosen.

Most importantly, this is a tool to help you decide what you should and should not be spending your resources on. Thus, for issues you are not currently addressing directly:

- should you continue to do nothing or,
- do you really need to be doing something?

For issues that are currently being managed or investigated:

- are you doing an appropriate amount?
- not doing enough?
- or doing too much?

1. Determine management to meet objectives. The three most critical elements in the EBFM system are the operational objective – what specifically do you want to achieve for this issue and this region; the performance measure (what levels define acceptable performance); and the indicator (how will you actually measure performance). These three components make up the package; one has no value without the others. The management responses developed should be directly related to trying to achieve each of the objectives and this reinforces the need to have control of the activities required to enable this to occur.

2. Monitor outcomes and review performance. Where a full management system is required, this must contain the monitoring and review of performance and what will happen if performance is found to be unacceptable. It must also, where relevant, specify how the management systems of any of the separate fisheries impacting on the issue are to be combined.

Linking to other sectors to generate a regional marine plan

If each sector (eg. fishing, mining, transport, tourism etc.) provided their view of the region by developing their own regional plan based on this approach including generating a set of component trees (and hopefully objectives) for both the ecological and socio-economic issues, it would provide a consistent set of information that used similar terminology. This would make simplify the process of developing an integrated view of the region.

Discussion

The EBFM approach outlined above builds on the successful implementation of ESD assessments at individual fishery level and has a number of benefits that operate at different levels. First, for the fisheries management agency it should assist in outlining whether all their individual management arrangements are combining to achieve regional objectives. It also allows for the specific inclusion of values from any non-extractive fishery activities and conservation outcomes required within the region. Consequently, it helps to identify where there are competing objectives and aspirations amongst groups which may require discussions as to how best to achieve multiple objectives. The system can also be used to document the socio-economic outcomes that would be generated within the region given either the current or any proposed allocations of access amongst sectors and activities. This may be of value as the basis for negotiations about how allocation and reallocations can be made.

In initial trials of the system it became readily apparent that it will not be easy to develop clear 'ecosystem' or biodiversity operational objectives. There was considerable discussion about what each of these constituted and this is likely to become more problematic when developing specific and measurable objectives. It is obvious that to make progress, a high level of pragmatism will be needed.

In addition to the benefits at the management agency level, this system provides a sound basis for negotiations with other sectors as part of a regional planning process. Whilst it is not expected to be easy to get adoption across other sectors, the EBFM framework provides a practical way of linking actions, finding gaps, overlaps, and lack of clarity. Moreover, any difficulties must be compared against the alternative which is to continue the current spider web approach of dealing with regional issues. This is neither efficient nor effective in producing sensible regional outcomes.

It must, however, be acknowledged that during the last ten years there has been a big increase in the development and promotion of various 'ecosystem approaches' which purport to assist with the management of natural resources. Despite the plethora of papers outlining what could be done, few actually demonstrate any real outcomes that have been achieved and it could be said that "after all is said and done – more is said than done!" We need to ensure this is not the outcome and that tangible progress is made, otherwise we will remain in the tangled web of consultation and ambiguity associated with the current systems used for marine planning.

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