

Reduce, Reuse, Recycle: Applying the Principles of Industrial/Organizational Psychology to the Workload Created by Ecocertifications

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Introduction

Ecocertification intends to create market incentives for fisheries sustainability. Certifiers continue to refine the evaluation process, but substantial challenges remain for fisheries agencies faced with the practical aspects of compiling submissions for ecocertification, such as fragmented information, additional workload, and public communication. These challenges are magnified when an agency has to deal with dozens of concurrent certifications, frequent performance audits, and regular re-certifications.

Principles of Industrial/Organizational (I/O) Psychology can be applied to the task of compiling submission materials, improving both the efficiency of the process and the institutional value of the resulting documentation beyond the immediate certification requirements.

The Challenge: Rapid increase in MSC certification processes of Canadian fisheries

Canadian participation in the ecocertification program of the Marine Stewardship Council (MSC) has been increasing rapidly over the last few years (Table 1, Figure 1). There are now 42 evaluation units in the program, spanning both coasts and covering the full spectrum of Canadian commercial fisheries.

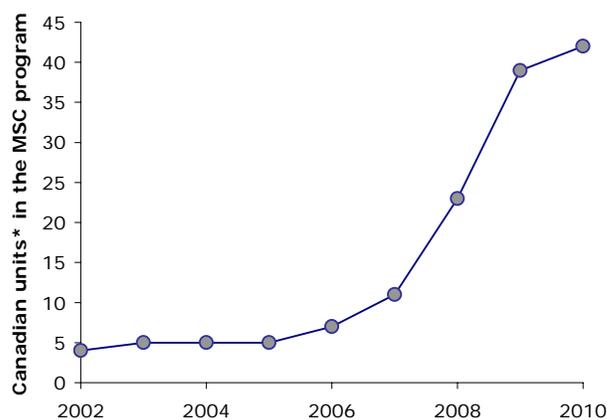
Industry groups apply for sustainability evaluations against MSC standards, and cover any direct costs of the process (e.g. assessment team). However, these processes also create a substantial workload for Fisheries and Oceans Canada (DFO), the federal agency managing Canadian marine fisheries. First, the applicant needs to submit comprehensive reports on the status of target stocks, the management system, and ecosystem impacts of the fishery. Even if these materials are written up by the applicant's consultants, most of the required information is held by DFO and needs to be compiled by DFO staff (e.g. stock assessment data). In addition, the evaluations cover complex and often controversial aspects of fishery management (e.g. reference points, allocation, public consultation), so that the submitted materials need to be carefully reviewed by DFO staff responsible for implementation. The submission is subject to public review, and DFO staff have to be involved in developing responses to any concerns raised by either the assessment team or stakeholders. Finally, MSC certifications usually result in a comprehensive set of conditions. For each certified fishery, DFO must develop an implementation plan to address these conditions, then find the resources to fill information gaps and resolve policy issues that were flagged by the assessment team.

We argue that fisheries agencies such as DFO need a strategic plan to address this rapidly increasing addition to their existing mandate, and illustrate the approach with a case study. The intent is to reduce the additional workload, set up the materials to be easily reusable for annual performance audits, and design them in a way that large parts can be recycled for other purposes (e.g. public consultation).

Table 1: Canadian fisheries in the MSC certification program (Data from MSC 2010a).

Fishery	Units*	Certification	
		Started	Certified
Scotia-Fundy haddock	8	2009	
Northern prawn	2	2006	2009
Offshore northern & striped shrimp	2	2009	
Scotian shelf shrimp	2	2010	
G. of St. Lawrence northern shrimp	2	2007	2009
NW Atl. Cdn. harpoon swordfish	1	2009	2010
Eastern Cdn. offshore scallop	1	2008	2010
Eastern Cdn. offshore lobster	1	2008	2010
NAFO 4R Atl. herring purse seine	1	2010	
NW Atl. Cdn longline swordfish	1	2009	
OCI Gr. Bk yellowtail flounder trawl	1	2009	
BC pink and chum salmon	7	2008	
BC sockeye salmon	4	2002	2010
CHMSF BC N. Pac. albacore tuna	3	2009	2010
Pacific hake mid-water trawl	2	2007	2009
Canada sablefish	2	2008	2010
Canada Pacific halibut (BC)	1	2003	2009
BC spiny dogfish	1	2008	
42		Total	

Figure 1: Timeline of Canadian fisheries joining the MSC program (Data from MSC 2010a).



* number of individual units scored for the evaluation (e.g. areas, gear types, jurisdictions)

Case Study: Ecocertification of British Columbia Pink and Chum Salmon Fisheries

The on-going certification of British Columbia fisheries targeting pink salmon (*Oncorhynchus gorbuscha*) and chum salmon (*O. keta*) illustrates the institutional challenges. This process had the potential for ballooning submissions with 47 criteria evaluated for each of 7 distinct certification units, for a total 329 written responses drawing from all branches of the management agency (Figure 2):

- **Complexity:** The two species have markedly different life histories and ecological roles. Also, three commercial gear types harvest salmon along the entire coast (~ 1,000 km), in dozens of distinctly managed fisheries, all of them adapted to local circumstances (e.g. terminal fisheries in an inlet are managed based on observed escapements into the watershed). Seven distinct certification units were identified for the sustainability assessment.
- **Scope:** Sustainability assessments cover all aspects of these fisheries, ranging from the harvest strategy for target species (e.g. how exploitation rates respond to changes in abundance) to broader ecosystem impacts (e.g. salmon contribution to marine mammal diets). The assessment of BC pink and chum salmon fisheries is using 47 distinct indicators, grouped into 3 principles established by the MSC (Tavel 2008). For each of the 47 indicators, the submission materials needed to document both the specific local details for each of the 7 certification units (e.g. observer coverage) and the broader context (e.g. coast-wide framework for catch monitoring).
- **Contributors:** About 100 agency staff needed to contribute and review information to cover all topics relevant to the coast-wide sustainability assessment of these fisheries.
- **New Developments:** Fundamental changes in the management system are on-going (e.g. responding to recent court rulings, treaty negotiations, fleet restructuring programs, and collaborative management initiatives).

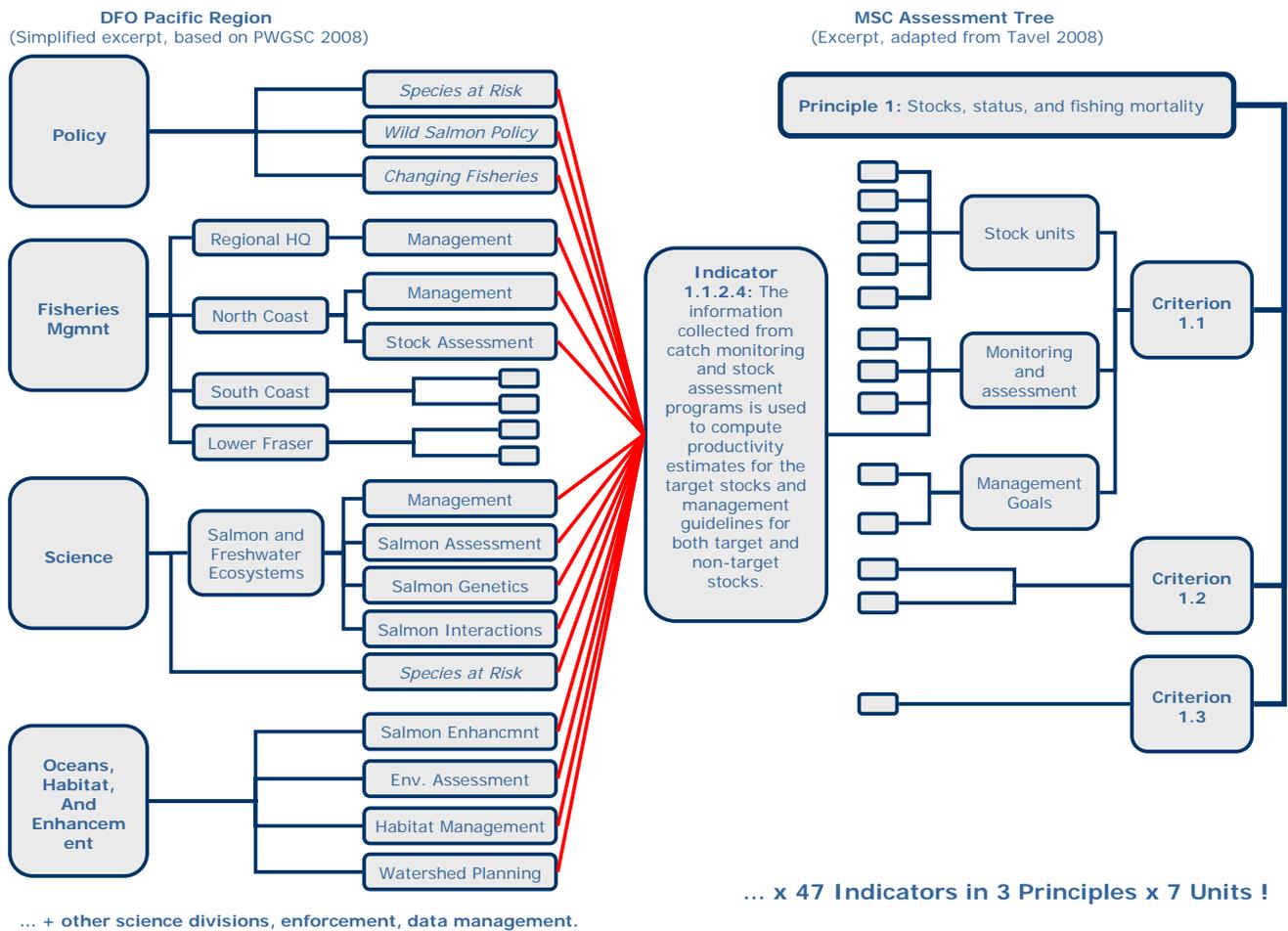


Figure 2: Matching MSC indicators to agency contributors.

Applying I/O Principles to Certification Processes

I/O Psychology deals with the different elements of human performance in the workplace, ranging from employee selection to organizational structure. Task analysis is an I/O technique for streamlining onerous and repetitive deliverables, such as compiling the information for ecocertification and re-certification. For this case study, we adapted the principles of task analysis as follows:

- *Task Inventory*: Review the 47 indicators to identify and catalogue distinct pieces of information required for the certification process (e.g. description of catch monitoring program in each area). This splits the total deliverable into more manageable sub-tasks.
- *Task Matching*: Align sub-tasks closely with the regular responsibilities of contributors and reviewers to minimize the additional workload due to the certification process.
- *Task Clarity*: Clearly identify sub-tasks for each contributor in detailed templates to minimize inconsistencies across contributors.
- *Task Efficiency*: Organize the required materials to minimize repetition (i.e. task clusters) and minimize the workload associated with review and updating.

Document Structure

We organized the relevant information into a regional *Management Summary* (MS) and a set of companion documents called *Certification Unit Profiles* (CUP), as summarized in Figure 3.

The MS contains generally applicable material and includes extensive examples that illustrate the big-picture linkages among different elements of the management system. For example, specific management measures in a local fishery need to be evaluated in the context of all fisheries harvesting the target stocks, coast-wide conservation and recovery measures, and emerging policy initiatives such as the changing structure of Canada’s Pacific salmon fisheries. The MS is based mostly on contributions from regional agency staff, and includes most of the information relevant to MSC Principles 2 and 3 (Pestal et al. 2009).

The CUPs contain more detailed information about stock status, management reference points, management approach for fisheries in the area, assessment programs, and specific conservation measures. These profiles were developed for each of the 7 certification units in this sustainability assessment based on contributions from local agency staff, and mainly include the information relevant to MSC Principle 1 (e.g. Grant and Pestal 2009, Spilsted and Pestal 2009).

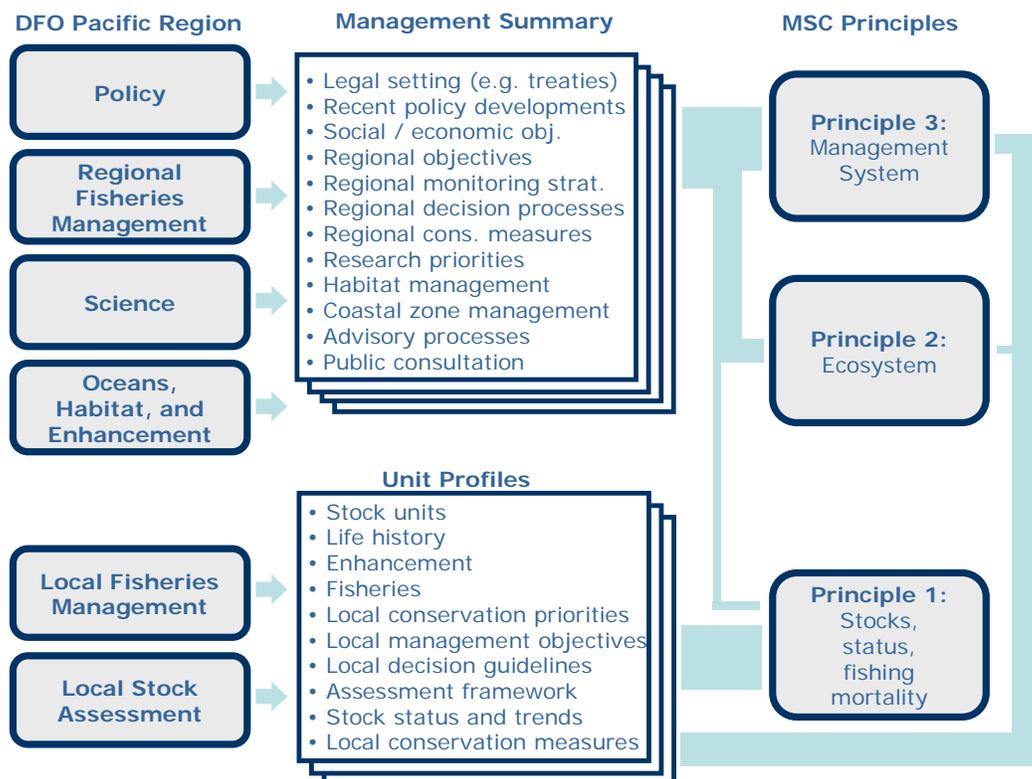


Figure 3: Structure of BC Pink & chum salmon submission to MSC.

Outcomes

Our approach yielded several institutional benefits, both in terms of content and process. The cross-referenced set of reports brings together a wealth of information that was previously spread across many documents and agency staff. The *Management Summary* shows how the elements of the system fit together (e.g. explaining the link between harvest strategy and assessment strategy). Process-related benefits can be prioritized according to the 3R hierarchy:

- **Reduce:** Drafting and review of the initial submission was efficient, because document sections were matched with existing staff responsibilities. Any future transition to different evaluation criteria (e.g. MSC 2010b) is simplified, because agency staff only need to revise the index that matches sections to indicators.
- **Reuse:** Updating the submission is streamlined, because only Unit Profiles need to be amended with new data. The Management Summary only needs to be updated every 5 years for recertification
- **Recycle:** The assembled reports serve as a comprehensive template for other certifications (e.g. other species, different third-party certifiers). The reports are organized for internal coherence, not according to MSC indicators. In this format large parts can be recycled as reference material for new agency staff or as resources for public consultation and collaborative planning.

Conclusions

Third-party sustainability assessments can bring valuable contributions to the management of commercial fisheries, but also have the potential to overwhelm agency staff with additional workload.

Not all fishery assessments are as complex and lengthy as the B.C. salmon example used in this case study. However, in simpler management settings there are fewer agency staff to provide the required information, and workload issues are similar relative to available agency resources. An agency-wide approach is needed to deal with the information requirements of certification processes.

References

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