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# SECTION 1

## Workshop Background and Rationale

### Introduction

Given the significant challenges that nations and regions confront in managing fishery resources, it is vital to reconsider the training, education, and working environment necessary for 21<sup>st</sup> century fishery managers. For this reason, the international workshop “Training Managers for 21<sup>st</sup> Century Fisheries” was held in Queenstown, New Zealand, on December 5-7, 2001. This workshop brought together recognized leaders from government, industry, and academic sectors to discuss the challenges for fisheries management and to define the training, education, and professional working environments necessary to produce fishery managers who are problem solvers, leaders, and innovators. Representatives of environmental organizations were also invited but none was able to attend. The 63 invited participants included leading representatives of industry, academia, and government from Oceania, North America, and Europe (Appendix A). This report summarizes workshop outcomes and recommendations in six sections:

1) Workshop Background and Rationale, 2) Challenges for 21<sup>st</sup> Century Fisheries and Broad Vision for Training, 3) Defining the Fisheries Manager: Skills and Knowledge Summary, 4) Review of Current Training Programs, 5) Linking Capacity to Opportunity: Incentives and Rewards, and 6) Consensus Strategies and Recommendations.

### Rationale

Over the last half-century, fisheries have transitioned from unregulated open access to regulated common property. In response, management has broadened to include greater regional, community, and industry participation and developed longer term and broader sets of environmental, social, and economic objectives. New legal mandates under the rubric of “sustainable fisheries” require that fisheries managers achieve challenging and potentially conflicting objectives including rebuilding stocks, reducing by-catch, protecting fish habitat, sustaining fishing communities, maximizing economic benefits, and conducting cost effective research and management. Managers are required to achieve these objectives using precautionary and ecosystem-based management strategies consistent with conserving stocks at levels capable of producing maximum sustainable yield.

Given the enormity of the challenge, traditionally trained fishery managers and policy-makers may not have the requisite skills to advance private and public welfare. Most fishery managers are trained in biological sciences or government administration, fields that may leave them inadequately prepared for the challenges of contemporary fisheries. Some university programs provide interdisciplinary training in marine resource management and policy through courses in biology, economics, law, and policy. Although these programs offer a breadth of training, they rarely provide enough depth or focus to produce graduates equipped to be strategic and accountable managers. Many students of these programs are trained to facilitate a fishery management process, rather than to successfully manage an organization.

Recognizing the limitations of training programs, many government agencies have continued to promote biological scientists to key management positions, and industry typically recruits top managers from business programs. However, few programs exist that are designed to provide professional development training in fishery management and decision making for the working fishery manager. This method of creating managers is insufficient to meet 21<sup>st</sup> century challenges.

Redesigning curricula and training programs, however, may only be part of the solution for improving the skills of fishery managers. Attracting people with intellect and ability requires a work environment that provides appropriate freedoms, responsibilities, and rewards. Talented managers have many opportunities in the global marketplace. Unless provided an enabling and rewarding professional environment, they will seek opportunities elsewhere, leaving fisheries with perfunctory administrators and second-rate managers.

### **Objectives**

The workshop had seven major objectives:

1. Create a vision of fisheries management for the 21<sup>st</sup> century and describe the challenges and opportunities inherent in that vision.
2. Determine the management competencies and individual qualities necessary to meet these challenges.
3. Evaluate the extent to which existing educational and training programs provide for these competencies and qualities.
4. Evaluate the organizational management structure necessary to attract and reward such individuals.
5. Recommend educational and training programs necessary to attract and produce individuals with the appropriate abilities.
6. Communicate workshop results to appropriate educational, management, and industry organizations.
7. Encourage follow-through in instituting change.

### **Workshop Organization**

The workshop was divided into three sessions designed to promote interaction among speakers and other participants (see Appendix B for agenda; see <http://oregonstate.edu/dept/trainfishmngn/action.html> for link to all presentations).

**Day 1**—The focus was on defining a collective vision of fishery management and the skills needed by managers. In Session I speakers presented a vision of fishery management in the 21<sup>st</sup> century with particular focus on the intellectual skills, personal abilities, and working environments necessary to produce competent fishery managers. Session II speakers reviewed existing programs for educating and training fishery managers. These were compared to programs that educate managers in other natural resource and business fields. Following these presentations, participants divided into workgroups by sector (government, industry, academic) to define a collective vision and to develop a list of key skills and capstone courses or opportunities that educators should be emphasizing in their curricula.

**Day 2**—The focus was on linking capacity to opportunity. Session I speakers discussed how organizations can be structured to attract, support, and enable successful managers. Session II speakers reviewed specific examples of flexible learning pathways that provide alternative models of training suitable for continuing professional development. Participants divided into mixed sector workgroups to discuss how to develop professionally rewarding opportunities for people involved in fisheries management and how to create training programs accessible to a wide range of learners.

**Day 3**—The focus was on ideas for the future. Session I speakers presented ideas for future training strategies. Workgroup discussions from the previous two days were summarized. Participants then met in sector workgroups to discuss options for implementing workshop ideas. Each workgroup developed a list of action items, prioritized by the magnitude of likely impact. Participants then reconvened in a final session to discuss approaches for summarizing, communicating, and following-up workshop recommendations to ensure the widest and most significant impact.\*

### **Speakers and Panelists**

Speakers included managers from the private and public sectors in fisheries and other natural resource industries, industry and government decision-makers, university educators and administrators, and NGOs. Speakers represented a cross section of fisheries, management organizations, industries, and educational organizations (Appendix B).

### **Workshop Products**

This workshop produced a website describing fishery manager training programs worldwide and two reports: 1) workshop summary to be distributed to relevant organizations and 2) manuscript analyzing workshop results and recommendations to be published in a leading fisheries journal.

### **Organizers**

The workshop was organized by the New Zealand Seafood Industry Council and the Coastal Oregon Marine Experiment Station, Oregon State University.

### **Sponsors**

This workshop was sponsored by NOAA Fisheries (National Marine Fisheries Service), New Zealand Ministry of Fisheries, New Zealand Seafood Council, Te Ohu Kai Moana, New Zealand Foundation for Research, Science and Technology, and American Fisheries Society (Marine Division).

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\* Originally, workshop organizers planned to have sector oriented sub-groups develop specific ideas for curricula and programs for training and educating fishery managers in 1) government fishery agencies, 2) private fishing and seafood companies, 3) non-profit industry organizations representing groups of firms and/or community interests, 4) non-governmental agencies, and 5) politically-elected fishery decision-makers. While ideas were discussed for specific sectors, workgroups tended to produce strategies relative to all sectors as there was not sufficient time to be more detailed. However, a few sector specific ideas did emerge. In the future, it would be useful to have sector specific workshops to discuss and develop more detailed curriculum for that sector.