



TERMS OF REFERENCE

PIANC Working Group 163

Management of Ports, Harbours, and Waterways for Fishes and Shellfishes

1. **Background:**

Many ports, harbours, and waterways throughout the world are located in areas that serve as important habitat for fish and shellfish. Fish and shellfish occupation of waterways may conflict with port and waterway operations and management in many ways (e.g., dredging-induced perturbations such as turbidity or noise have been hypothetically linked to hindered access of migratory fishes to spawning habitat and reduced foraging efficiency). There is also legacy contamination of some bottom sediments that may lead to public health concerns if the fish/shellfish are harvested or consumed.

Recent Essential Fish Habitat legislation in the United States has focused attention in the interagency process on consideration of navigation project implications for managed fish species. Likewise, the European Union has embarked on new Directives that stipulate protection of fish and shellfish habitat. Even in countries in transition, sustainable economic development and active port management balanced against long-term protection of the environment presents a formidable problem. The value that local or regional populations assign to fishery resources is often non-monetary, as when linked to tourism. Continued port and harbour development while maintaining commercial, recreational or subsistence fisheries poses complex problems for which existing guidance is vague or inadequate.

Historically, port and harbour development and management has altered the quantity and quality of fish and shellfish habitat. Particularly in coastal and estuarine settings, large proportions of intertidal and subtidal habitat that provided spawning and nursery functions have been filled and converted to upland facilities. Conversion of similar habitats continues unabated in many parts of the world. Prudent management of port activities in relation to remaining fish and shellfish habitat becomes both a controversial and critical challenge. Access to habitat, availability of adequate, un-degraded habitat, and seasonality of fish and shellfish occupation of waterways become issues of grave concern. Risk avoidance has frequently been cited in placing restrictions on construction or maintenance operations (e.g., environmental windows for dredging and/or

dredged material disposal and piling works). Diverse fish assemblages display a broad spectrum of behaviours, life history strategies, habitat dependencies, and tolerances to disturbance, ensuring that the knowledge base for local fish stocks is often inadequate for definitive, effective management decisions. This lack of knowledge and understanding can lead over-precautionary and potentially ineffective protection measures, whilst imposing severe operational and financial constraints on ports, harbours and other waterway users. Regardless, much can be learned from past and present port management and operation activities related to fish and shellfish habitat conservation, protection, restoration, and overall management. New opportunities to mitigate for habitat loss or to restore habitat functions (e.g., via beneficial use of dredged material and artificial reef development) offer promising areas of investigation.

2. Objective:

This Working Group will examine the fundamental issues surrounding conflicts between port, harbour and waterway operations and management, and conservation of fish and shellfishes. Reviews will include both population- and habitat- based techniques. Project will identify management options that effectively address critical issues for species representing exploited/exploitable fisheries and imperiled species. Collection of pertinent literature and case studies will provide material for analysis and integration into a final document. Although an inventory of major conflicts with fish and shellfish habitat management would be given, the emphasis will be on presenting approaches toward management resolution. Success stories will be identified from around the world where fish and shellfish habitat has demonstrably been maintained or enhanced in coexistence with ports, harbours and waterways. Illustrating effective management strategies would be the central theme of the document rather than explicit regulatory guidelines.

Our approach will be a cursory survey of available case histories followed by a detailed description and analysis of selected case histories. Case histories for consideration will be collected by distributing and posting a simple questionnaire. It will consist of 12 questions (short answer, multiple choice) and will be sent to researchers, regulators, and stakeholders, and will be made available on industry-related websites 01 Mar 2012 to 30 Mar 2012. Responses will be collected and reviewed for quantity, content, approaches, and taxonomic representation. A “go/no-go” decision will be made after 30 May and reported to Envicom by 01 Ju1 2012. If at least 6 case histories and contributors are available that adequately represent diversity of the field, work will continue and a final report generated according to the existing timeline.

3. Terms to be Investigated:

The following Terms of Reference provide descriptive tasks to be undertaken by the Working Group:

- Concisely summarize existing regulatory frameworks that pertain to fish and shellfish habitat management.
- Identify sources of knowledge related to interactions between fishery resources and port and harbour operations and management.
- Prioritize those conflicts that are of greatest significance in protection of fish and shellfish habitat, and afford opportunities for filling critical gaps in the state of knowledge that would allow sustainable infrastructure development without unacceptable damage to fish and shellfish habitat.
- Through case studies share the experience and lessons learned in coastal, estuarine, riverine, and freshwater settings.
- Identify Port management measures that can be adopted to minimize threats and risk to fish and shellfish habitat.
- Identify fish and shellfish habitat enhancement techniques that can be explored as construction, operation, and maintenance projects are planned and executed.

The final report should be structured to serve as a succinct source document not only for port or harbour management, but also for regulators whose responsibilities include fishery resource protection but who are unfamiliar with port, harbour, and waterways operations. The report should present a basic understanding upon which more detailed, site-specific knowledge can be assimilated. Aside from the narrow focus on navigation infrastructure and fish and shellfish habitat, the report should be of interest to all stakeholders seeking to understand the problems and solutions associated with sustainable development and protection of the environment.

4. Membership:

The Working Group chairperson should have: 1) experience in port and harbour operations and management as well as a familiarity with environmental issues associated with fish and shellfish habitat; 2) expertise with species vulnerable to such impacts (e.g., sharks, sturgeons, sea turtles) Individual members should be trained or have experience in: 1) conduct of navigation infrastructure construction, operation, or maintenance; 2) population and/or habitat assessment techniques for marine animals. . The Working Group as a whole should be comprised of representatives of port and harbour authorities, the dredging industry, appropriate regulatory agencies, academia, and private consultancies. Active or corresponding members should encompass a broad array of disciplines and geographical areas.

5. Relevance to Countries in Transition:

The work of this group will be relevant to all countries with a basic need to maintain navigation infrastructure while avoiding damage to fisheries of commercial, cultural, subsistence, or ecological value. Of particular interest to developing countries, the working group product should address tradeoffs between short-term economic gains and long-term sustainability of environmental resources.