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# Interim Report of the Working Group on Data Poor Diadromous Fish (WGDAM)

By correspondence

ICES International Council for the Exploration of the Sea

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## Executive summary

The Working Group on Data Poor Diadromous Fish (WGDAM), a subgroup of the Working Group on the Science Requirements to Support Conservation, Restoration and Management of Diadromous Species (WGRECORDS), started working in autumn 2015. The main task of WGDAM is to update the status and distribution knowledge of poorly understood diadromous fish species for ICES. Diadromous fish are species that have separate feeding and reproduction areas in saline and fresh water and migrate between them.

In 2005 the ICES Diadromous Fish Committee published a report on diadromous fish species (ICES CM 2005/I:02 Ref. ACFM, ACE, G) to report on the status and distribution of recognized poorly understood species. Since the 2005 report, there have been increasing legal drivers to protect and restore these species mainly for biodiversity reasons. These legal drivers and associated science have further highlighted knowledge gaps in the biology of these species. Pressure from development in freshwater, transitional and marine zones continues to threaten the life cycle of these species. More scientific information is required for these data poor diadromous species.

The main threats to diadromous fish are the same as in the previous reporting period: migration barriers (e.g., dams), river construction, inputs to the rivers, lagoons and estuaries (pollution, eutrophication and acidification), habitat loss and overfishing, for example. Many of the diadromous species are still in great difficulty, including the European sturgeon, allis and twaite shad, European eel, river lamprey, and natural stocks of migratory whitefish as well as coastal grayling in the Baltic Sea. Differences between areas and populations are large, e.g., sea trout in some areas are in great danger, but not in other areas. Species that have reproduction cycles dependent on rivers are threatened due to high human pressure applied to coastal areas and riverine habitats, including incompatible land use for the purposes of the forestry and agriculture.

Since the previous reporting period, more data has been collected and knowledge has increased for some species, particularly those species that have been the focus of ICES working groups (eels, lampreys and sea trout). WGDAM work raises the need for better data on other migratory species living in the transition zone of fresh and marine environment, such as unique populations of thin lip grey mullet, smelt, whitefish and coastal grayling.

# 1 Administrative details

**Working Group name**

Working Group on Data Poor Diadromous Fish

**Year of Appointment within the current cycle**

2016

**Reporting year within the current cycle (1, 2 or 3)**

1

**Chair(s)**

Karen Wilson, USA

Lari Veneranta, Finland

**Meeting dates and venue**

By correspondence

# 2 Terms of Reference a) – z)

| ToR | Description | Background | Science Plan topics addressed | Duration | Expected Deliverables |
|---|---|---|---|---|---|
| a | Update the status & distribution of poorly understood diadromous fish species | a) Science Requirements<br>More scientific information required | | 1 year | Review paper/report<br>Map of change since 2005 |
| b | Identify biological knowledge gaps and their importance for key diadromous species. | a) Science Requirements<br>More scientific information required<br>b) Advisory Requirements<br>Better informed advice required | | 1 year | Review paper/report<br>Map of change since 2005 with emphasis on most vulnerable/data poor. |
| c | Recommend species and approaches for systematic monitoring of key diadromous species | a) Science Requirements<br>More scientific information required<br>b) Advisory Requirements<br>Better informed advice required | | 2 years | Identification of current monioring activities.<br>Recommendations for monitoring and evaluation, including periodicity and species |
| d | Identify key stressors on diadromous species & | b) Advisory Requirements | | 2 years | Produce a database of |

| | | | | |
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| | recommend restoration strategies | Better informed advice required<br>c) Requirements from other EGs<br>Impacts from climate and antrophogenic sources poorly understood | | common and significant threats by species (or link to and update existing DIADFISH database), describe current mitigation actions and recommend subsequent actions |
| e | Develop stock assessment Methodologies for key species of interest for which assessments are currently no available or difficult | b) advisory requirements | 3 yrs | Provide guidence on appropriate assessments and example of possible assessments for diadromous fish other than salmon and eel |
| f | Synthesise an Ecosystem Approach for Diadromous fish consistent with ICES Strategy | c) science and advisory requirements relating to enbvironmental drivers | 3 yrs | Produce a Working paper to bring issues relating to diadromous fish under a common umbrella relating to the EAM and IEAs. |

# 3 Summary of Work plan

| | |
|---|---|
| Year 1 | Report of status of Diadromous fish (update from 2005) with exchange of knowledge with North American investigators. Template of ststus of individual species relating to most recent investigations. Update database of information on diadromous fish based on DIADFISH initiative. |
| Year 2 | Provide an overview of monitoring for diadromous fish species and recommendatiosn for monitoring in future years.<br>Produce a template of threats and efective mitigation measures. |
| Year 3 | Progress assessments methods and approaches for diadromous fish other than eel and salmon<br>Progress incorporation of diadromous into the Ecosystem Approach to be sonsistent with ICES Strategy |

# 4 List of Outcomes and Achievements of the WG in this delivery period

- The WGDAM group was established and activated. Group consists of 71 members in 17 countries. Work has been done by correspondence.
- The report of status of Diadromous fish is under preparation. The report: 1) updates current ICES status of selected species; 2) indicates existing national

and international agreements and status classifications; and 3) identifies biological knowledge gaps. Focus is set mainly on species in the European area, but the report can be used as initial guidance for further work. The species of interest were selected for coverage based on their conservation status or needs, plasticity and economical importance. Included are completely migratory and species that have migratory populations.

- The reasons behind the evident recession of the many diadromous fish stocks are manyfold, including river fragmentation and dams, which may prevent the fish to reach their natural spawning sites. Also pollution of rivers and drainage areas may block the access to spawning grounds or prevent egg or larval development. Fishing of commercially important populations has had additional effects on the decline of diadromous populations.
- WGDAM raises the need for more information on the status of current threats and restoration possibilities for data poor species to support viable fisheries.
- WGDAM has made an accepted theme session proposal to ICES ASC 2017: Theme session N, Population status, Life histories, Ecology, Assessment, and Management of Diadromous Fishes.

## 5 Progress report on ToRs and workplan

- **ToR a): Update the status & distribution of poorly understood diadromous fish species**

  Status update report is under preparation and currently ~95% complete including following fish species: Allis/twaite shad, European eel, river lamprey, sea lamprey, sea trout, burbot, coastal grayling, ide, perch, pike, roach, smelt, three and nine-spined stickleback, vendace, vimba bream, whitefish and thin lipped grey mullet.

  The work focuses on North Atlantic and Baltic areas initially, and USA and Canada will remain for future reporting and includes following areas: Mediterranean Sea, North Atlantic Ocean, Bay of Biscay, Celtic Sea, North Sea, Norwegian Sea, Baltic Sea, Barents Sea and Black Sea.
- **ToR b): Identify biological knowledge gaps and their importance for key diadromous species**

  The biological knowledge gaps are identified in the report and their importance discussed.
- **ToR c): Recommend species and approaches for systematic monitoring of key diadromous species**

  The work will be based on report and structure defined in group, extended to the USA and Canada.

## 6 Revisions to the work plan and justification

The work of WGDAM was postponed to start in 2016, otherwise none.

# 7 Next meetings

WGDAM will continue working by correspondence on ToRs a) and b) in 2017.

WGDAM is planning to convene a half-a-day meeting during the Annual Science Conference in Fort Lauderdale, USA (18–21 September 2017). The exact date of the meeting is to be announced.

## Annex 1: List of participants

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## Annex 2: Recommendations

None.