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

20 September 2017

Fort Lauderdale, USA



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Contents

Executive summary	2
1 Administrative details	3
2 Terms of Reference a) – z)	3
3 Summary of Work plan	4
4 List of Outcomes and Achievements of the WG in this delivery period	5
5 Progress report on ToRs and workplan	5
6 Revisions to the work plan and justification	6
7 Next meetings	6
Annex 1: List of participants.....	7

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. Diadromous fish are species that have separate feeding and reproduction areas in saline and fresh water and migrate between them. The main task of WGDAM is to update the status and distribution knowledge of poorly understood diadromous fish species for ICES. The name of the WGDAM group was updated to The Working Group on Data Limited Diadromous Fish in meeting that was held at ICES ASC 2017.

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 theme session proposal of WGDAM for ICES ASC 2017 was accepted. The theme session highlighted the threats of diadromous species, which are identical to reporting period in 2005: 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 is in the process of organizing a workshop (2018) that will focus on monitoring and assessment methodologies to help with monitoring other, less-studied diadromous species. 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

<p>Working Group name Working Group on Data Poor Diadromous Fish (WGDAM)</p> <p>Year of Appointment within current cycle 2016</p> <p>Reporting year within current cycle (1, 2 or 3) 2</p> <p>Chair(s) Karen Wilson, USA Lari Veneranta, Finland</p> <p>Meeting dates 20 September 2017</p> <p>Meeting venue Fort Lauderdale, USA</p>

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 More scientific information required		1 year	Review paper/report Map of change since 2005
b	Identify biological knowledge gaps and their importance for key diadromous species.	a) Science Requirements More scientific information required b) Advisory Requirements Better informed advice required		1 year	Review paper/report 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 More scientific information required b) Advisory Requirements Better informed advice required		2 years	Identification of current monitoring activities. Recommendations for monitoring and evaluation, including periodicity and

				species
d	Identify key stressors on diadromous species & recommend restoration strategies	b) Advisory Requirements Better informed advice required c) Requirements from other EGs Impacts from climate and anthropogenic sources poorly understood	2 years	Produce a database of 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 not available or difficult	b) advisory requirements	3 yrs	Provide guidance 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 environmental 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 status 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 recommendations for monitoring in future years. Produce a template of threats and effective mitigation measures.
Year 3	Progress assessments methods and approaches for diadromous fish other than eel and salmon Progress incorporation of diadromous into the Ecosystem Approach to be consistent with ICES Strategy

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

- The WGDAM group was established in 2015 and activated in 2016. The working group consists of 78 members in 17 countries. Work has been done by correspondence.
- WGDAM organized a theme session at the ICES Annual Science Conference 2017, held in Florida, USA. The theme session “Population status, life histories, ecology, assessment and management of diadromous fishes” had 16 oral and 8 poster presentations.
- An in-person chair meeting of WGDAM was also held at ICES ASC 2017.
- 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. Since 2016 the report draft has been edited and the number of species increased, with contributions from over 57 authors.
- 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 limited species to support viable fisheries.

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 at final editing. The report includes following fish species: Allis/twaite shad, European eel, river lamprey, sea lamprey, sea trout, burbot, flounder, European, Atlantic, shortnose and Adriatic sturgeon, 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 (USA and Canada will remain for future reporting) and includes the following areas: Mediterranean Sea, North Atlantic Ocean, Bay of Biscay, Celtic Sea, North Sea, Norwegian Sea, Baltic Sea, Barents Sea and Black Sea. The output will be a report with species sheets.

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

A WGDAM meeting will be held in 2018 in Copenhagen to discuss the assessment methodology and most relevant knowledge gaps, with additional contributions from the US and Canada regarding experience monitoring similar fish species in North America.

6 Revisions to the work plan and justification

None.

7 Next meetings

WGDAM will continue working by correspondence and webinars on ToRs b) and c) in 2018.

WGDAM will meet on 12–16 March 2018 at ICES Headquarters, Copenhagen, Denmark. The meeting will focus on ToR c, especially on approaches and methods for monitoring of key diadromous species.

Annex 1: List of participants

List of WGDAM participants and remote contributors

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