Terms of Reference for the [joint ICES] HELCOM Expert Group on Bird Migration (EG Birdmove)

Adopted by HOD 61-2021

Background

These [ToR] provide a thematic overview of the work carried out by the [joint ICES] HELCOM expert group on bird migration.

As a result of increasing anthropogenic pressures on marine ecosystems, waterbirds have become the world's most threatened bird group. Average European waterbird population trends are either stable or declining. Approximately 33% are slightly declining and another 22% are regarded as threatened (BirdLife International, 2015). In the Norwegian Arctic, the Greater North Sea and the Celtic Seas, there has been an overall drop of 20% in waterbird populations over the last 25 years for more than one quarter of the species assessed (OSPAR, 2017). Similar information for the Baltic Sea is not available.

Currently, all bird related matters within HELCOM are considered under the HELCOM-OSPAR-ICES Joint Working Group on seabirds (JWGBIRD), which provides a platform for experts from the Baltic Sea and Northeast Atlantic regions to work on waterbird issues. While many aspects of bird migration (such as securing staging and wintering areas) are dealt within JWGBIRD, specific expertise on topics relating to the active flight stage of migratory birds has been lacking. The overarching aim of the expert group is to harness expertise on bird migration to support improved conservation of migratory birds in marine areas.

Use of the marine environment, including generation of renewable energy, is likely to further increase in the near future. This will affect birds migrating over sea areas, with an increased risk of direct collision with wind turbines, as recognized in the HELCOM Recommendation 34E/1. Under the Habitats and Birds Directives Contracting Parties who are EU Member States need to designate specific areas as marine Natura 2000 sites to implement the aforementioned Directives. In order to secure an improved status of migratory bird species, the requirements inherent from migratory behaviour need to be included in management and conservation efforts through both securing barrier-free airspace for the migratory flight and securing stopover (and wintering) habitats.

However, the migratory behaviour of birds migrating over sea areas is still poorly understood, presenting a significant barrier to strategic planning and conservation efforts, especially at a trans-boundary scale. These knowledge gaps partially stem from the spatial and temporal limitations in the tracking information available to elucidate on species behaviour. While data on migration are available from tracking studies, migration counts, and radar observations access to the data and information, as well as the data itself, are often insufficient to draw conclusions. Where sufficient data are not available, the CP's should strive to implement additional monitoring.

Sensitivity mapping is a key tool in understanding the sensitivity of marine areas to human pressures based on the presence of species that are expected to be affected by these pressures. This information can help decision-makers to arrange effective planning and management, e.g., by limiting specific activities to ensure that negative impacts are avoided or minimised. In order to create sensitivity maps, it is necessary to enhance the collection and processing of data on the spatial-temporal distribution and abundance of species.

Information on sensitivity, migratory behaviour, and spatiotemporal data on migration, as well as information and guidance on how it should be interpreted and best used, are key components of future planning and management efforts in Strategic Environmental Assessments (SEA) and Environmental Impact Assessments (EIA), further supporting sustainable use of marine areas through spatial planning.

Purpose

The overall purpose of the group is to facilitate regional cooperation in relation to bird migration with respect to safeguarding bird migration from negative effects of wind and wave energy production at sea, in close cooperation with other existing relevant frameworks and programmes working on bird migration.

It is to function as a coordinating framework and a platform to harness the expertise of leading scientists on bird migration, and to make this expertise available to policy makers and planners. In addition, the group will work on improving functioning dataflows and availability of data on bird migration. Through this, the sub-group helps ensure that up to date information on bird migration is accounted for in regional processes through JWGBIRD and subsequently in the advice and decision-making of the three organisations.

Scope

The expert group's work will focus on bird migration over sea areas. This information will support collecting the data necessary to inform and guide management measures. The group's work focuses on risks to migratory birds from renewable energy generation (wind, wave, and tidal power), including infrastructure, and may be extended to other human activities deemed relevant for active migration over sea areas.

The expert group will handle the development and delivery of the scientific products of the dedicated work on bird migration, e.g., related to data collection and collation, developing methodology and guidance for monitoring, guidance on the use of produced data to inform spatial planning, as well as other agreed tasks assigned to the group. The work includes producing maps on species migration areas and sensitivity to human pressures, transferring quality assured science to end users, and providing clear guidance on the level of confidence in the presented information. The work can also support the identification of knowledge gaps and possible future research priorities. Due to limited data, it can be necessary to classify the selected migratory bird species in groups.

The work is transregional by nature and aims to cover the ecologically relevant geographical scope of bird migration in the Baltic Sea region [and across the NE Atlantic, and the Arctic].

The principal benefits of the sub-group are to have:

a) Enhanced use of existing knowledge and improved dataflows for various data types, e.g., radar, telemetry and tracking data, and migration count data, with a focus on encouraging data sharing
b) Improved access to information on migratory behaviour of birds migrating over sea areas
c) Improved monitoring practices for birds migrating over sea areas
d) Improved map products and appropriate use of data and map products in spatial planning
e) Improved transfer of research results and products between planners and to the policy level
f) Improved advice on necessary actions and measures and on how regional policies could be adapted to better account for bird migration in spatial planning

Objectives

The objectives of expert group are to:

a) Map the overall knowledge level of bird migration in the Baltic Sea, [NE Atlantic, and the Arctic]. region[s] based on existing data, expert knowledge, and ongoing research and post-consent monitoring, including gaps and recommendations for the relevant species (including whether the species is relevant for planning and why, altitude information etc.)
b) Improve joint data management on a trans-regional level
c) Produce detailed recommendations on how to conduct monitoring of birds migrating over sea areas to support the existing monitoring guidelines, possibly producing best-practice guidelines and harmonizing monitoring practices for e.g., citizen science observations and visual migration counts

d) Produce and regularly update more specific species and sensitivity maps of a given area to e.g. renewable energy installations, in a way that allows inclusion of multiple types of data sources
e) Cooperate with other initiatives (e.g. CMS and AEWA) to find synergies and to avoid duplication of ongoing work
f) Cooperate closer with the planners, e.g., through scoping workshops to share information, challenges and needs
g) Compile/define a list of priority species/species groups
h) Identify funding possibilities for dedicated projects to support further work on bird migration and look into possibility to form a consortium, potentially in collaboration with [ICES,] HELCOM, and [OSPAR], to prepare and submit an application

Reporting

The Chair of the Expert Group will report to State and Conservation WG [as well as the relevant OSPAR and ICES WGs] once a year on the Group's activities. Products developed and delivered intersessionally shall be appended to the report. The products stemming from the groups work will be handled at HELCOM workspaces dedicated to this purpose.

The group may also, where possible and appropriate, submit some products for publication in scientific journals or to be presented at conferences.

Membership

Membership of the Expert Group is obtained either by experts seeking nomination from their national delegation, or via direct nomination by the Contracting Parties. It is important that all members of the Expert Group have a firm connection to their national delegations. The Expert Group Chair can also invite non-members to attend individual meetings or to take part in intersessional work as deemed relevant. Invited experts should demonstrate particular skills that are relevant to the delivery of a specific request.

Temporary involvement of other expertise within the respective organizations' structures can be further explored based on the list of tasks as the work progresses. The HELCOM Secretariat, together with the Group's Chair will evaluate the coverage of required technical expertise and communicate with the respective organisation on any additional need for expertise in the group. The aim is to ensure sufficient expertise for all identified tasks.

Work plan

Concrete tasks for the group will be presented in the work plan included in Annex 1. The work plan is valid for a three-year period but should be reviewed and updated on an annual basis to ensure that the timeline and planned work remains relevant. This task list enables long-term planning and delivery of significant products that may require several components to be developed during consecutive years.

Validity of [ToR]

The work of the group is open ended. The Terms of Reference are to be subjected to review and, as appropriate, revision by the expert group, every 3 years and endorsement by the HELCOM State and Conservation Working Group.

Organization of work

The mode of work for the expert group will include correspondence and online meetings facilitated by HELCOM with physical meetings taking place as needed. Expert opinion will be required at more frequent intervals than annual, and the annual meeting cycle and reporting format of the group may not necessarily be the most appropriate forum in which to deal with such requests (e.g. due to mismatched deadlines). Correspondence and intersessional work between relevant group members should be used to provide a timely delivery of required outputs. Contracting Parties of the various conventions will need to be made aware of the resources (i.e. time of experts) that will be required for all aspects of the Group's work.

Given the extensive expertise and workload required to carry out the work related to bird migration, specific actions carried out by the expert group can be resourced through designated project funding. The possibilities of acquiring funding for the group's tasks through forming a consortium may subsequently affect the timing of completing actions in specific years or months. Whenever a project-funded activity is planned, the group will communicate details on the planning to HELCOM well in advance of the activity to enable dissemination of the information to all possibly concerned parties.

The group is encouraged to connect with other relevant bird groups and networks. The Expert group is particularly encouraged to actively communicate with JWGBIRD, as well as other initiatives (e.g. CMS and AEWA) and to enhance collaboration to the extent possible.

Annex 1: Preliminary Task list of the Expert Group on Bird Migration

This task list is valid for a 3-year period (beginning 2022) and is to be reviewed and revised by the group and approved by the HELCOM State & Conservation WG. The task list should be considered as a reference document to help guide the group's work, rather than a definitive list of tasks that must be carried out.

Theme	Task	Specifications	Timeline
Supporting information	Produce a list of relevant migratory birds for each region in cooperation with representatives from national planning authorities, responsible for spatial planning to ensure that the information is relevant for planning purposes. Make the information accessible e.g. through species information sheets or a database.	Develop structure and relevant content for supporting information, including but not limited to:	
		Name and relevant ecology of species	
		Timing and drivers of migration	
		Temporal aspects of migration, including seasonality, monthly and time of day	
		Information on flight altitude	
		Species distributions	
		Species movements in space and time	
		Drivers that control patterns in distribution and movement	
		Identify species that are clear broad-front migrants vs. those for which tracking would yield good results	
		Bird behavior when facing barriers or obstacles (e.g. windfarms)	
		Bird behavior under varying weather conditions etc.	
		Is a species relevant for planning and why	
		Migration occurring at night and daytime	
Monitoring, data, and information flows	Data management infrastructure	Perform gap analyses for data, e.g. low amount and narrow spatial distribution of data for several species migrating over sea areas	
		Agree on the use of a trans-regional data format drawing on	

		existing data formats (e.g. MoveBank)	
		Establishing data flows	
		Establishing long term consistent data hosting	
		Ensure that data is accessible	
	To map the overall level of available knowledge for the relevant bird species (as defined by the sub-group) in order to produce an overview and a gap analysis		
	Produce detailed monitoring guidelines on how to conduct monitoring of migratory [birds/waterbirds]	Tracking, for the recording devices to collect increasing number of fixes and register additional information, e.g. flight altitude	
		Recommend species for monitoring to broaden spectrum to ensure the data is useful for also for planning purposes	
		Calculate and recommend the required number of taggings in order to get proper coverage for statistical analyses	
	Explore and provide guidance for citizen science relating to migratory [birds/waterbirds]	Ensure that effort is logged (hours etc) when conducting and including citizen science in the information, guidance to ensure quality-checking and quantifying the data is available	
	Plan and recommend how to best implement joint surveys (e.g. interlacement of existing national monitoring programmes) on migratory waterbird species' to further identify and gain knowledge on migratory [bird/waterbird] species	Monitoring using tracking data and for the tracking efforts to be spread out across the distributional range of the species (to account for that sub-populations might have different migration behavior)	
	Prepare guidelines for collection of post-construction investigations of actual effects from wind		

	and wave energy, based on before/after comparison studies		
	Develop a digital catalogue with GIS-maps concerning migration routes, moulting areas, staging areas, and other features that influence the distribution of waterbirds in space and time	Make the catalogue publicly available	
		Communication/ outreach about the developed GIS-maps	
Maps on waterbird migration and staging	To produce species specific migration maps using a gridded approach in order for the final maps to meet the requirements of planning	Develop common methodology for producing species specific migration maps	
		Prepare information in approximate numbers of individuals of waterbirds using the routes	
		Set definitions for how to evaluate confidence and uncertainty (whether data is based on expert judgment and/or data, and the size and quality of the dataset)	
		Provide uncertainty estimates as an integrated component of the maps	
		Develop and agree on how to, in addition to numbers of individuals of species using a given route, also consider rarity of the species	
		Consider if and how to best include buffers, sensitivity scores or weighting to the layers and tracks	
		Agree on an appropriate approach for including buffer zones around the area with the highest density of /individuals	
		Set definitions for how to weigh the tracks	
		Link relevant information collated under X with the maps, e.g. as part of the metadata information	

	Preparing large scale sensitivity mapping through aggregating species layers	Develop common methodology for producing aggregated sensitivity analysis maps for resting areas and migratory routes of birds migrating over sea areas	
		Approximate numbers of species and individuals of waterbirds using the route	
		Consider if and how to best include buffers, sensitivity scores or weighting to the layers	
		Agree on an approach for including buffer zones around the area with the highest density of species/individuals	
		Develop and agree on how to, in addition to numbers of individuals of species using a given route, also consider rarity of the species	
		Set definitions for how to evaluate confidence and uncertainty (whether data is based on expert judgment and/or data, and the size and quality of the dataset)	
		Provide uncertainty estimates as an integrated component of the maps	
		Develop and / or update of the mathematical factor (coefficient) that presently are used widely for calculated mortality due to collision and displacement at wind farms and it should be investigated whether bio-geographical adjustments are needed.	
	A compiled description of the effects on selected migratory bird species from human activities at sea,	Addressing the subject of cumulative effects from human activities in space and time.	

	Comprising gaps of knowledge	Evaluation of potential impacts on the flyway population level as well as development of methods to address potential cumulative impacts from these effects.	
	Complement the information on migration with similar information on resting/staging waterbirds, to be presented as separate sensitivity maps (for reasons of transparency and detail).	Develop maps	
		Link routes to staging areas	
	Prepare a publication of migration in the Baltic Sea, including gaps and recommendations, for submission to a scientific journal.		
	Prepare recommendations for actions based on the results of the migration and sensitivity mapping.		
	To complement the list of species information with a non-exclusive list of non-waterbird priority species		