CONSEIL CONSULTATIF POUR LES EAUX OCCIDENTALES SEPTENTRIONALES | NORTH WESTERN WATERS ADVISORY COUNCIL | CONSEJO CONSULTIVO PARA LAS AGUAS NOROCCIDENTALES

Minutes

WORKING GROUP 2 (CELTIC SEA & WEST OF SCOTLAND)

14 October 2025

Online via Zoom

1 Welcome and introductions

The Chair Jean Marie Robert welcomed all participants. He confirmed with participants that it was agreed at the meeting in July for him to take over the Chairmanship of this Working Group. This was confirmed by participants. Apologies were received from Pauline Stephan (CNPMEM).

The Chair added that he would like to address the new ICES advice on spurdog under AOB and identify if the AC should draft advice on this. The agenda was adopted.

Action points from the last meeting (03 July 2025, Vigo)

1	Members to send written queries for Joanne Morgan following her presentation to the Secretariat
	Email request sent to members 04 July, no responses received
2	Members to send feedback on the fishing opportunities advice to the Secretariat.
	Email request sent to members 04 July, no responses received
3	WG2 to follow up in more detail on the validity of the 2004 regulation relating to hake fishery in the Celtic Sea at the October meeting.
	Agenda item 2
4	From March meeting: WG2 to further engage with AZTI following the presentation and dissemination of the Northern Hake Stock dynamic
	Agenda item 3
5	From March meeting: Declining SSBs while MSY-fished : members agreed to further dig in regarding the causes of the bad recruitments that several stocks are facing, leading to decreasing SSBs for several important stocks. Though not very specific at this moment, the idea would be to further look at inter-specific predation (boarfish, bluefin tuna..), intra-specific mechanisms (cannibalism), and should include analysis regarding the data collection for food stomachs analysis, that we could encourage to be funded if necessary. Asking the EC to organize a specific request to ICES could be developed.
	Agenda item 3
6	Members to send additional queries for Prof. Döring to the Secretariat for written follow up.
	Email request sent to members 04 July
7	Members to send additional queries for Caroline Alibert-Deprez to the Secretariat for written follow up.
	Email request sent to members 04 July, no responses received
8	Members to send queries for Jonathan White to the Secretariat for written follow up.
	Email request sent to members 04 July, no responses received

2 **Update on hake in the Celtic Sea** - Dorleta Garcia, AZTI, Henrik Sparholt, Fisheries expert on biological reference points and species interaction

The Chair introduced the topic and thanked Dorleta Garcia for joining members to present on this topic. He also welcomed Henrik Sparholt who has joined the meeting to contribute to the discussions with his expertise.

D. Garcia outlined that the presentation related solely to her work in AZTI on the EU funded project VARMER. The objectives of this project are

- Develop a spatial distribution model drive by environmental variables.
- Identify the density-dependent processes in the productivity of the stock.
- Identify the factors that explain the variability in recruitment.
- Identify the causes of variability in the abundance of the northern hake stock.
- Improve stock assessment and management.

The ICES advice shows a steady decrease of catches over the past ten years. Both assessments and surveys show a big decrease in the biomass of the stock due to a lack of good recruitment. Exploitation followed ICES advice and stayed around MSY levels. Catches per area over time show that catches have increased only in area 27.3 since 2023. Area 27.7 has had the highest level of catches, however, they have reduced by 55% in comparison to 2013.

AZTI has developed a spatial distribution model to identify the different variables that affect the stock distribution, e.g. climate change. Data from the scientific campaigns was used. Adults were separated from juveniles, and presence and abundance were also modelled separately.

The variables included in the four models include: depth, phytoplankton seawater potential temperature, oxygen, and salinity. Net primary production, slope and chlorophyll were also taken into account.

D. Garcia explained that these models can be used for forecasting in terms of climate change impacts as well as impacts on the fleets. Catches can be forecasted using effort data. The project also explored factors that drive stock productivity. Certain years have high recruitment successes, while at other times recruitment is very low, like is happening recently.

Several environmental variables from different products available online were used to calculate those variables at different points in time, starting in March, which is the peak of spawning, until recruitment settles in September. If relevant, calculations were carried out for these variables at different depths.

The variable that best explains recruitment success is spawning stock biomass. The greater the biomass, the lower the recruitment success. The goal is then to try and explain the peaks in recruitment that have been observed over time. Wind may have a positive effect on recruitment, e.g. eastward wind in area 8 in June-August. These winds facilitate the retention of larvae on the continental shelf, they then make recruitment more successful.

There are other aspects to recruitment for which there are currently no explanations.

Next steps:

- Modify stock assessment model to incorporate densodependence in recruitment (ricker)
- Modify intermediate year assumptions in the STF

D. Garcia continued explaining densodependence at weights at age. Simulations have been carried out including densodependence.

Next steps: SLIDE

- Maturity: calculate northern hake specific time varying parameters
- Weights: include densodependence in the assessment
- Reference pints: account for densodependence in their calculation

The project also looked at hake in the ecosystem context. Preliminary work shows correlations between the species' recruitment and other stocks in the Bay of Biscay and Celtic Sea. A positive relationship in recruitment trends is seen with mackerel in area 8a, b and d. A negative, albeit not very strong, relationship is seen with sardine.

She concluded that the issue with the retrospective in the ICES assessment has been solved and the model has been adjusted.

The Chair thanked D. Garcia for her presentation and expressed his feeling of discouragement at the lack of clear explanation for the consistently bad news in the annual ICES opinions regarding stock status. He noted that while causes like global warming or poor recruitment are cited, there is an impression that not enough effort is being made by scientists to truly understand why the stock is not performing well. He added that while current European regulations effectively manage TACs and quotas, the essential question remains: how to achieve better biomass and recruitment levels? In other words, what is the source of the problems? He praised the VARMERT project for addressing these fundamental questions, specifically climate change, density dependence, and interspecies relationships. In his opinion answers to these factors are fundamental for managing the stocks, and he hoped that the fishing sector can pass on useful information to the scientists. Specifically, the Chair suggested that regulatory aspects that have changed since 2013 (e.g. quota exchanges or fishing authorisations) might explain the differences in catch level variations across different areas which could be important information for AZTI.

Franck Le Barzic referred to the link between recruitment and the SSB. He felt that this information was really important in order to understand the negative relation. He wondered if it was possible to identify the biomass threshold and does it correspond to the reference threshold.

José Beltran expressed his concerns that the observed changes in catch distribution—such as lower catches in Zone 7 and higher catches in Zone 8 —may not solely reflect biological factors but are a direct result of regulatory changes. He added that the longline vessels specifically dedicated to hake have concentrated their effort in Area 8 this year because closures and temporary space restrictions (VMS) in other areas have forced them to abandon their specific

catch zones where hake is usually concentrated. When forced to move to surrounding areas, they encounter other types of vessels making it impossible to develop their efforts. He questioned whether these regulatory dynamics are taken into consideration in the stock evaluations. In his opinion, the presence of closed and prohibited fishing areas for this species means that the scientific community cannot assess the concentration of hake in those specific spots, leading to a lack of data on whether the fish are still there, have disappeared, or have expanded to other areas.

Agreed that the hypothesis behind the trends is related to predation and competition for resources. Regarding the effect of fishing regulations and effort shifts she confirmed that the evaluation model does account for different fishing gears. She felt that the input about effort being forced to shift from one area (like Zone 7) to another (like Zone 8) due to closures and VMS regulations to be very useful. It suggests that the selection pattern (the size of fish caught) by gear like longlining and gillnetting might have changed in recent years due to the shifts in fishing location, which could affect the stock estimates. She proposed to further investigate whether the catch composition for longline and gillnets has changed recently and also suggested a focused meeting to discuss what kind of detailed input the sector can provide to better inform the model.

Emiel Brouckaert asked if the impact of technical measures has also been considered, e.g. effort control and periodically closed areas.

D. Garcia explained that information regarding enforcement measures was not available to the project but could be addressed in a bilateral meeting with industry.

The Chair agreed and stated that changes have been observed for example long-liners turning to gill nets.

The Chair introduced Henrik Sparholt, who was involved in the FMSY project which focused on better integration of density-dependence mechanisms—such as cannibalism and predation—into the estimation of reference points used for managing European fish stocks. He wondered if there was any information available on the extent at which these analyses on density dependence are being discussed within ICES today. He noted that it was previously complicated to integrate these factors into the ICES evaluation models and asks if the situation is changing today. In his opinion, the fundamental question is “why are we fishing at FMSY, yet on many stocks, we are not seeing the predicted high biomass and high quota levels?”

H. Sparholt explained that he had been working on the MSY issue for some time. He explained when the stock density is higher, competition for food increases which leads to the fish growing slower. He explained that the standard, complicated, age-group-based ICES model struggles to explicitly include three critical density-dependent factors, , because each must be specifically modelled:

1. Density-Dependent Growth: When the stock size is high, individual fish compete more for food, leading to food limitations. This results in slower growth.
2. Density-Dependent Maturity: When the stock is high the fish mature at an older age.

3. Density-Dependent Natural Mortality: Natural mortality increases when the stock is high because smaller, slower-growing fish are more vulnerable to disease and predation.

The failure to include these factors lead to an underestimation of FMSY, sometime a significant underestimation.

H. Sparholt outlined that cannibalism in hake is high, with stomach content suggesting up to 10% of their food items. This means that if the stock increases too much, too many of its own juveniles will be eaten. He suggested that availability of more stomach could contribute to a multi-species model. A more age-based model could be used. However, all of this means a lot of additional work which would take years.

The FMSY project, which highlighted this problem five to six years ago, suggests using surplus production models as an alternative method for estimating FMSY. The advantage of this method is that it does not split data into age groups and implicitly includes all the density-dependent factors. By applying this model to 60 ICES stocks, including hake, the project calculated an FMSY of 0.64. This is more than double the current FMSY for hake.

The research suggests a pragmatic approach that can be used almost immediately. The suggested FMSY is very close to the existing FPA (Precautionary Approach Fishing Mortality).

Managers could essentially apply FPA each year and ensure they watch out for the stock size dropping below BPA (Precautionary Approach Biomass). Staying above BPA is important because it is a precautionary approach that ensures a very high likelihood of staying far above the Blim (Biomass Limit), preventing recruitment from being impaired.

H. Sparholt commented on the complex research into recruitment variability. Fishery scientists have been trying for over 100 years to find the driving factors for recruitment variability in global fish stocks and have not succeeded in any single case. While science and data are improving, finding success in this research is highly ambitious and could take 10 to 20 years. Even if successful, the knowledge may be hard to use for management since factors like wind (a potential driving factor) cannot be managed. The focus should remain on managing the stock size.

The paper detailing the suggested FMSY approach was published in the ICES Journal of Marine Science and is peer-reviewed.

The Chair thanked H. Sparholt for his contributions and acknowledged that debates on stock modelling are primarily the role of scientists but expressed concern about the practical results of current management. He flet that the core of the issue related to the CFP objective of achieving MSY. Pre-MSY (2011–2013) most stocks were fished well above MSY, a period that generally corresponded to low recruitment. During a transition Period (2015–2018), TACs were reduced to move towards the MSY objective. During this time, when fishing mortality was estimated to be slightly higher than MSY, stocks experienced the best recruitment and highest biomass levels. Once stocks were set at the current MSY level, the general observation has been low, or very low, recruitment. The Chair noted that MSY management, as implemented at the European level, is proving unsatisfactory for fishing opportunities. He felt that this failure to achieve the expected benefits will likely lead to a major European debate on whether to fish

more or fish less. He emphasised that questions around density dependence will be key for the future of management. While integrating these complex mechanisms into ICES models is difficult and will take years, possibly requiring an ICES benchmark, it is an essential and "very interesting" area to explore. They suggest this topic should be raised in discussions with the Commission.

Patrick Murphy asked about the reasoning for using larger mesh sizes which target larger individuals, however, this is being criticised.

D. Garcia felt that any measures should be investigated specifically for the stock regarding the impacts in the short and long-term.

3 **ICES presentation on the recent delivered TAC Advice 2026 for Cod** – Dorleta Garcia, ACOM Vice-Chair

D. Garcia presented the ICES advice on Cod (*Gadus morhua*) in Subarea 4, divisions 6.a and 7.d, and Subdivision 20 (North Sea, West of Scotland (link). She explained that consensus on the ICES advice was difficult to reach, requiring special meetings and modified headline advice. There are criticisms regarding the complex model's behaviour. A dedicated team has been set up to improve the model in the short term, and a special request is ongoing to use genetic data for a better understanding of the stock in the medium term.

Northern shelf cod consists of three substocks (Northwestern, Southern, and Viking) which mix and are caught together. ICES advises that when the maximum sustainable yield (MSY) approach and precautionary considerations are applied, there should be zero catch in 2026 for all substocks.

D. Garcia outlined that recruitment for the southern sub stock has been very low especially since 2010. The exploitation level is above FPA and increasing in the last two years. There has also been a big revision downwards of the SSB, suggesting an overestimation of catch advice every year.

The northern substock is also low though not as low as the southern component. Fishing mortality is Between FMSY and FPA with an increasing trend, while SSB shows a decreasing trend in the last 3-4 years and has now reached the MSY Btrigger value. The retrospective pattern has been revised downwards, but to a lower extent than the southern subcomponent.

Regarding the Viking stock, recruitment has been very low in the past two years while the exploitation level has increased over the last three years.

ICES advises that when the MSY approach is applied to the Northwestern and Viking substocks without precautionary considerations, and the MSY approach with precautionary considerations is applied to the Southern substock catches in 2026 should be no more than 8670 tonnes, 3610 tonnes and 0 tonnes respectively. As the three substocks are caught together, this will result in a higher probability (67%) for the Southern substock of remaining below Blim. The available evidence suggests this risk to the Southern substock may be reduced by fishing in quarter one (January-March), when the three stocks are thought to mainly separate

to the areas shown in Figure 2. ICES is not able to quantify the degree of mixing between substocks in quarters 2-4 and any level of catch of Southern substock will increase the probability of being below Blim in 2027, predicted to be 44% even with zero catch. However, the indirect effects of more intensive fishing in Q1 have not been quantified and may lead to undesirable outcomes, such as alterations in the selection pattern.

Issues relevant for the advice:

- ICES is not in a position to provide area-specific catch advice without additional stock composition samples, data with a high spatial resolution…
- Given that ICES is not in a position to quantify the degree of mixing between substocks, an approach to protect the weakest substock was taken.
- The forecast for 2026, assuming low productivity in terms of recruitment, even with zero catch, gives a probability of 44% of the SSB in 2027 being below Blim. This is highly dependent on the uncertain and low recruitment in 2025–2027, which would contribute ~42% of the 2027 SSB for the Southern substock.
- Survey data for quarters 3 and 4 in 2024 and quarter 1 in 2025 show very low abundances of cod, with particularly low values in the southern North Sea and no sign of improved incoming recruitment.

The Chair thanked D. Garcia for her presentation and opened the floor for questions.

Dominic Rihan felt that ICES have invested a lot of time in the assessment but was wondering if the assessment was better now that the stock has been split into three substocks or has that created additional issues for which no answers are available.

D. Garcia explained that in the benchmark there years ago the multi-stock approach showed that the statistical probabilities of the model were better. However, it is not a full multi-stock model as the dynamics of mixing are not known. She felt that the estimates provided were quite similar to the single stock assessment but acknowledged concerns regarding the provision of substock advice that is not possible to implement in practice. To address these concerns, ICES has set up a specific team to work on improving the assessment as well as the advice.

D. Rihan thanked D. Garcia for the explanation and wondered what the next steps are for ICES to progress the advice on this important stock.

The Chair asked for more information regarding scientific work which was taking place during Q 2, 3, 4 in the areas as to where the fish were coming from the management side.

D. Garcia explained that two parallel processes are currently happening. The first one involves a closer look at the mixing of the three stocks in relation to a special request made to ICES. The second one, the tiger team, will be carrying out both a multi-stock assessment as well as a single-stock assessment in parallel. The special request is a more medium-term process related to genetic data, they will sampling protocols that in the medium-long-term that can provide better information on the dynamics of the stock to develop the multi-stock assessment further and can help on implementing area based management. The advice related to the special request will be released in February 2026.

4 AOB & Summary of actions agreed and decisions adopted by the Chair

Referring to the recently released ICES advice on spurdog from 07 October, the Chair referred to the maximum size and survival. In the framework of the bilateral discussions, last year work was committed to regarding the maximum size. The European Commission was specifically mandated to analyse alternatives to the maximum size. He described the recent ICES opinion as quite complex. He recommended that the Secretariat could circulate the ICES advice to WG members and ask for feedback.

The Secretariat explained that the issue of spurdog was going to be addressed by the Commission speaker at the meeting of the Executive Committee and that this could form the basis of a decision on how to progress the topic within the AC.

Action points

1	Discussion on 2004 hake regulation with the Commission in January
2	Meeting to be organised on hake between scientists and industry, either as part of the VarmMer project or by NWWAC
3	Secretariat to circulate main articles of FMSY project and members to identify next steps
4	WG to hold discussion on spurdog and potential recommendations to be developed by the AC

Participants

NWWAC members	
José Beltran	OPP-7 Burela
Emiel Brouckaert	Rederscentrale
Manu Kelberine	CRPM de Bretagne
Julien Lamothe	ANOP
Franck Le Barzic	COBRENORD
John Lynch	ISEFPO
Patrick Murphy	ISWFPO
Irene Prieto	ARVI
Dominic Rihan	KFO
Jean-Marie Robert	Les Pecheurs de Bretagne
Arthur Yon	FROM Nord
NWWAC observers	
Alexandra Philippe	EBCD
Experts & observers	
Dorleta Garcia	AZTI
Lynda McCall	
Mike Park	
Henrik Sparholt	
NWWAC Secretariat	
Ilaria Bellomo	Fisheries Strategy & Administration Officer
Mo Mathies	Executive Secretary