



## ► Pelagic AC

Blue whiting Focus Group  
26 April 2019  
09:00 – 12:00 hrs  
Parkhotel Den Haag, Molenstraat 53  
The Netherlands

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### Participants

1	Esben Sverdrup-Jensen, chair	Danish Pelagic Producers Organisation
2	Alex Wiseman	Scottish Pelagic Fishermen's Association
3	Anne-Marie Kats	Pelagic AC
4	Benoit Berges	WMR
5	Claus Reedtz-Sparrevohn	Danish Pelagic Producers Organisation
6	Gerard van Balsfoort	Pelagic Freezer-Trawler Association
7	Gonçalo Carvalho	Sciaena
8	Harriet Wilson	Marine Scotland
9	Ian Gatt	Scottish Pelagic Fishermen's Association
10	Jérôme Jourdain	Union des armateurs a la pêche de France
11	Jose Beltran	OPPLUGO
12	Martin Pastoors	Pelagic Freezer-Trawler Association
13	Patrick Murphy	Irish South and West PO
14	Reine Johansson	Swedish Pelagic Federation
15	Sean O'Donoghue	Killybegs Fishermen's Organisation
16	Søren Anker Pedersen	EU Fishmeal

### 1. Opening of the meeting by the chairman, Esben Sverdrup-Jensen

The chairman opened the meeting at 09:10 hrs and welcomed the participants. During this meeting he hoped to start the work on developing a long term management strategy for blue whiting and to come up with concrete recommendations for managers. He indicated Benoit Berges would be late but should arrive in time for his presentation on the blue whiting survey. He asked if there were comments on the meeting agenda. The agenda was adopted.

### 2. Follow-up on action items

The chairman recalled the action items from the last meeting, which took place in September 2017 in Copenhagen. The action item regarding the communication between the secretariat and Dankert Skagen has been followed up on.

The work regarding the explanation for why the ICES Fmsy rule is problematic for a stock like blue whiting is ongoing (**action 1**).



During the last meeting the use of TSB in the long term management plan was discussed. The Focus Group has received no new arguments from Dankert Skagen for the use of TSB rather than SSB. In the meantime, a management plan was agreed that used SSB and this will be further discussed later during the meeting.

There was a request from NEAFC at the time and the Focus Group had the opportunity to look into it. This work has been done and can be removed from the list of action items.

Subsequently, the chairman went through the outstanding action items from Working Group II relevant to blue whiting. The main action item was to develop a management plan, which is now in progress. The secretariat invited North East Atlantic stakeholders and the stock coordinator for the acoustic survey to the meeting, but unfortunately nobody could participate today.

The work regarding the ICES Fmsy rule is in progress and Henrik Sparholt was invited to the Pelagic AC Working Group I meeting yesterday. The chairman added that Sparholt had some interesting insights on the stock calculation for Fmsy values. It's not clear if any elements from this contribution can filter into the discussion today, but any comments or suggestions from the members are welcome. It might be too early in the process to address the concept of the Fmsy project at this stage.

Martin Pastoors found it difficult to take the Fmsy project results onboard, since there currently is no report available with data and methodologies. It would be useful to have a document that describes the analysis as well as its strengths/weaknesses, but it doesn't seem to be available at this stage. The project website Sparholt referred to yesterday is not helpful.

### **3. Follow-up on the last Focus Group meeting by Claus Reedtz-Sparrevohn**

Claus Reedtz-Sparrevohn recalled that Dankert Skagen was hired in 2017 to look into new kinds of harvest control rules (HCRs) that could be used to better manage the blue whiting stock in the future. The different recruitment phases exhibited by blue whiting is the main issue that causes difficulties for managing the stock. Late 2017, a long-term management plan for this stock was agreed, based on a modified ICES HCR. The latest ICES advice indicates that we are entering a 'low productivity phase'.

The conclusion of Skagen's work showed that a two-tier management system, that switches between different harvest rates when moving between different productivity phases was the best way forward. In his conclusions, Skagen suggested that the use of TSB would be better suited than SSB to identify the shift in productivity.

Skagen's work also showed that the present Fmsy value that has been evaluated to be precautionary (i.e. will not lead to a stock size below Blim with more than 5% probability), will not be precautionary in a low productivity phase. The F value that leads to the stock size falling below Blim depends on the recruitment assumptions used. Depending on productivity, this is not the same value as used by ICES. There are huge differences in the averages of lowest recruitment years and higher phases, depending on the recruitment assumptions. In the lowest recruitment years, you have to decrease F considerably in order to avoid a risk higher than 5% of falling below Blim.

Claus Reedtz-Sparrevohn illustrated that there are high differences in recruitment by dividing the historical recruitment into two. Gerard van Balsfoort asked if it is correct to assume that the two periods are separate? Or are we looking at one period with fluctuations? For a two-tier management plan that's an essential assumption.

The chairman asked that when looking at blue whiting compared to other stocks, are there any other characteristics of the stock that could say something about the fluctuations? Claus Reedtz-Sparrevohn indicated that for some other stocks like horse mackerel, there are also certain years with very high recruitment.



Sean O'Donoghue stressed that Dankert Skagen did a lot of work on the two different recruitment regimes. He suggested the Focus Group should revisit this work, it comes back to the issue around quality assurance. According to Skagen, Fmsy is not correct at low recruitment and ICES should have picked this up. There's an urgency to try and resolve this. Skagen did a lot of projections about the two recruitment scenarios, which got nowhere in the end. We need to revisit this to be prepared, as we may face negative advice.

Gerard van Balsfoort asked: if Fmsy 0.32 is not precautionary, then what alternative does Dankert Skagen propose? Claus Reedtz-Sparrevohn answered that Skagen proposes different possibilities for HCRs. Sean O'Donoghue regrets that nobody from this group, nor the Coastal States, have taken this onboard.

Gonçalo Carvalho mentioned that there's a discussion ongoing at the moment regarding Iberian sardines, and issues with low recruitment and high productivity. He asked if there ways to tell with a good amount of certainty in what scenario you are? It would be comfortable to be able to predict the high and low recruitment phases.

Sean O'Donoghue said that colleagues from the Faroe islands were able to link parameters to high/low recruitment. Is this work available? It would be very useful to look into. Mark Pain was also involved in this and presented other parameters during Working Group II some years ago, which was quite complex. Claus Reedtz-Sparrevohn agreed this could be worth looking into. Martin Pastoors agreed to check who was working on this (**action 2**).

#### **4. Discussion on issues with blue whiting and standard ICES MSY rule and predicted stock decline**

Claus Reedtz-Sparrevohn went on to discuss the issues related to the standard ICES MSY rule when it comes to blue whiting. He showed graphs depicting projections of high and low recruitment phases. A criteria that was used is the risk of falling below Blim by more than 5%.

Sean O'Donoghue insisted that the Pelagic AC and Dankert Skagen have put a lot of work into this, and it should be revisited to see if we can recommend something to managers. If managers want it, then ICES will follow this in their advice. Martin Pastoors said it is unlikely that Dankert Skagen's work could be revived. He has been in touch with Skagen and knows he is not keen to pick this up again, because the work is now outdated.

Claus Reedtz-Sparrevohn said that recruitment is very concerning, since the 2017-2018 estimates have been very low. We should be concerned about the downhill slope and get the best out of our resources now. Sean O'Donoghue recalled that in 2013 ICES advised based on two recruitment scenario's, and this showed our graph. ICES found it to be fully precautionary, and left it up to managers to decide. This advice is worth revisiting.

The chairman remembered a fundamental discussion that took place at the time, regarding the possibility to move above Fmsy values in relation to CFP provisions. Part of the discussion around a two-tier approach could imply that certain years you may end up above Fmsy. This issue was discussed at the time.

Martin Pastoors added that the critical part of that discussion is the Fmsy concept. In an example with WBSS herring, Fmsy is estimated for a longer period but it's not a fixed value. It's a different value according to the productivity phase: It's higher in a high productivity phase and lower in a lower productivity phase. The chairman agreed, but in terms of the principle idea: how far into the future can you look to estimate reference points?

Gonçalo Carvalho expressed some concerns about what data would be used and how quickly the shift from one tier to another would happen. There is a similar discussion now on the Iberian Sardine stock



– on what productivity regime the stock currently is – but in the specific case of the two tier approach to blue whiting, this will be even more relevant to define.

Notwithstanding, Gonçalo Carvalho explained that according to the CFP, Fmsy is based on the best available science. If an approach is considered the best scientific one, including shifting between two different values of Fmsy, it wouldn't go against policy. He considered that the NGO community would probably not oppose this, as long as any assumptions go through the peer review process. Having said all this, what the NGO's wouldn't agree to would be the impossibility of setting 0 TAC at a certain stage.

Gerard van Balsfoort read out the 2013 advice and while it seems precautionary it also says a more rigorous evaluation is needed. This work has not been done, however. Sean O'Donoghue recalled that an external reviewer was assigned at the time but there wasn't sufficient time. Dankert Skagen also submitted additional information. Gonçalo Carvalho agreed that the advice suggests it might be worthwhile to update this work at some point in the process. So any further work that needs to be done might be worth doing.

Claus Reedtz-Sparrevohn noted that the scene has changed. Since then we have now had two cases of low recruitment. High Fmsy is probably not the right strategy if we now face poor recruitment.

Sean O'Donoghue asked whether the Focus Group will pursue this. Nobody, including the Coastal States, followed up on the 2013 advice. It is in our interest to get the Commission interested, now that recruitment is low.

The chairman explained that the Coastal State stakeholders were invited to the meeting today, but it might be easier to convince them to attend if we can present something more tangible. The industry is concerned about the stock and the risks of TAC fluctuations, but if a two-tier approach can address the stock characteristics that could be a way forward. The ICES advice disappeared in the 2013 negotiations, it's worth to try bringing it back to the table.

According to Sean O'Donoghue, the time to act is now. We are now in a high TAC scenario, and the consequences could be severe if we wait for the situation to worsen. He proposed an action point for the Focus Group to follow up on the 2013 advice. The chairman agreed, but it should be clear what the Focus Group will advocate for. He asked for input from the Focus Group: do external resources need to be contracted?

Gerard van Balsfoort suggested to get the industries from other Coastal States onboard and divide some of the work.

Sean O'Donoghue asked if Dankert Skagen updated his work. Martin Pastoors answered that he did some work on the management plan with David Miller. It would be interesting to see how the two-tier rule would behave relative to the existing rule, since both will show jumps.

Sean O'Donoghue asked if this rule can be applied retrospectively to see how it behaves. Perhaps that could give an indication what the advice would look like. Martin Pastoors said the problem with that is that it's dependent on the catches. Rough calculations can be done, but no simulations.

The chairman asked for a clear way forward. To build traction with other Coastal States we need to present something convincing and we need to be quick to make it before the 2020 TAC advice. He asked if TSB is used in other stocks?

Claus Reedtz-Sparrevohn answered that TSB is used in some Icelandic stocks. It can be an accepted approach when presented with the right arguments. Gonçalo Carvalho asked how it is calculated, and Martin Pastoors answered that depends on whether the phase is juvenile or adult.



Sean O'Donoghue argued that Fmsy is not correct at low recruitment, and this should be recognised by ICES and the Coastal States. We are in a better position to bring this forward when we are at level with the stock.

The chairman agreed the timing is right and proposed to look at the 2017 management plan. It was agreed late 2017 and is based on a modified ICES HCR. It includes a TAC stability mechanism,  $F=0.05$  when SSB is below Blim. The stability was needed to avoid uncertainties in the assessment that would avoid falling below Btrigger. But if the next year the assessment is revised and the stock is above Btrigger, than a 25% increase would be possible. The constraints apply both for increases and decreases.

Sean O'Donoghue said this plan took no consideration of the two-tier approach, which is the problem.

Gonçalo Carvalho highlighted an example with the LTM plan for Southern horse mackerel. There's a stronger case to get the attention of Coastal States by developing a two-tier approach that satisfies both industry and NGO views. This would be a way forward for the work of the Focus Group. But the NGO's would need to see an inclusion somehow that in cases of very low biomass, a closure of the fisheries is not an impossibility.

The chairman suggested to take a break and move on with Benoit Berges' presentation on the blue whiting acoustic survey. The discussion with regard to next steps can be continued subsequently.

## **5. Presentation on blue whiting survey progress by Benoit Berges**

Benoit Berges from WMR presented the progress of the international blue whiting survey (IBWSS).

He explained that the survey is an acoustic survey recording data for blue whiting marks using acoustic equipment. Classifying a layer requires some precision, as sometimes mixing can happen. Around the blue whiting layer, you might find other species so the allocation of different species needs to be done correctly. The survey covers four different countries: Ireland, the Netherlands, Faroese islands and Norway.

Acoustic surveys give a measure of abundance. Knowing how much echoes blue whiting give, this can be translated into an abundance index. The team is also interested in length, maturity and age. This information needs to be derived from catches.

A typical vessel is equipped with sonar equipment, and tracks schools. Echosounders in the net indicate if fish are entering the net so they can be brought up and species are then sorted thoroughly. This information is fed into the data analysis. If strong marks are seen, fish are caught twice a day.

Echosounders have existed since the 1990's. The equipment is reliable and able to give absolute measures, collect data in different countries and harmonize this data. EK (60) is relatively new, and works with up to 6 frequencies. Fish schools can be measured at different frequencies, to identify different organisms. Species scatter differently at high or low frequencies, so depending on where you are the species can be determined.

The survey started in 2004, in the blue whiting spawning area. Initially, the survey suffered from countries not willing to participate in the survey. For consistency in the coverage, this is problematic. There were also issues with the coordination in the past, but the structure is much better now.

2010 was a disaster year: Russia did not show up, and the Netherlands returned to ports very often. The main location of the stock was therefore missed. This affected this assessment dramatically. In 2012 WGIPS set up a strict coordination, combining the surveys and a designated coordinator of the survey was assigned. There was regular communication between vessels to keep track of the survey progress. 2015 was the last year Russia participated.

Nevertheless, mistakes can still happen. Once Dutch and Irish vessels covered the same (small) transect, but overall the coverage was good. The seasonal shift goes from South to North, ideally this would be better from North to South but that's difficult logistically.

Some current developments include efforts in sorting bycatch, notably mesopelagic species. This is of importance to determine food availability. Sean O'Donoghue asked whether acoustics can pick up mesopelagics? Benoit Berges answered this was possible to identify with the frequencies.

Sean O'Donoghue mentioned an issue he faced in relation to this with boarfish. MRI was needed from scratch. He wanted to know how the target strength was done in practice with EK 60, whether on land or on site. Benoit Berges answered this is derived from literature. Sean O'Donoghue argued that by changing the equipment, the target strength trend may be lost. How is quality assurance applied? Benoit Berges said the system is reliable but the robustness is not there yet as the software has a few bugs.

The chairman asked how the image seen with EK 60-80 compares with equipment used on board fishing vessels. Alex Wiseman said the equipment is mostly similar on SPF vessels. Benoit Berges confirmed that with calibration, both can give comparable data sets.

Sean O'Donoghue asked that if the same equipment is used, have fishing and survey vessels ever been correlated? Martin Pastoors replied that the surveys transects, and fishing vessels stay on the fish. Survey vessels cover the whole area. Benoit Berges agreed with Pastoors that this is the main problem. Looking for fish gives a strong bias.

Martin Pastoors noted that in Iceland the survey is done by commercial trawlers. The level is very different, since stations selected by the fishermen have more fish, but the trend over time is similar. Benoit Berges agreed it's not impossible, and there could be potential value, but this would need to be looked at very carefully.

Martin Pastoors took the opportunity to announce that a fish guide for meso pelagic species was published yesterday. The guide is intended to help fishermen identify mesopelagic species, based on the survey work. Søren Anker Pedersen added that EU fishmeal is partner in a new horizon 2020 project MESO that will investigate mesopelagic species as a potential resource.

Benoit Berges continued with his presentation to explain the switch from EK 60 to EK 80 equipment. EK 80 generates much more data, also in single frequency mode. This requires more storage space. There are issues with the stability of the EK 80 software however, and additional post-processing is also required before analysis is possible.

He went on to cover the preliminary 2019 survey results. No blue whiting was found on Rockall. High biomass is found where there is commercial fishery. There is a high concentration on the Eastern line. The transects are defined at the end of the survey, it could be information acquired from fishing vessels.

In terms of biomass the level is more or less the same, though the abundance is a bit lower. There's a dominating year class from 2014. No young fish/n recruitment is seen, so nothing new is coming in. The chairman said this confirmed the picture the Focus Group was expecting, although the result was maybe slightly higher than the forecast. The lack of young fish is a concern.

Martin Pastoors added that there is a survey in the northern area, that is used to calculate the recruitment estimate. This is the main point of information. In the length frequency, a shift to the right can be seen.

The chairman thanked Benoit Berges for the presentation, and noted the potential for the mesopelagic issue, which the blue whiting survey could benefit from. He asked when the report is expected to be



released. Benoit Berges replied that it is usually published in the WGIPS report, and should be available not too long from now. The chairman asked what the impact on the TAC is expected to be.

Martin Pastoors guessed that these results suggest a -30% TAC reduction at least, because no new fish are coming in. Sean O'Donoghue argued that the assessment is usually lower than the acoustics, he would expect something more in line with a -50% reduction. That is why the discussion at the start of the meeting is so relevant.

#### *Presentation PFA and WHB survey comparison*

Martin Pastoors was asked to present some extra slides on the PFA and WHB survey comparison. He explained that the Tridens vessel transects with catch data from the PFA fishery, covered weekly. It would be interesting to do the same for the whole survey to see how the survey compares to the fishery.

Length and depth distributions by division are looked at to compare how the commercial fishery relates to the survey information. The question is whether acoustic data from the fishing vessels can be used. Both biological data as well as acoustic data from the fishing vessels are looked at, but that's opportunistic data: There's no transect, but it's where the vessels are fishing. There are issues with data storage and transfer, and the echosounders of the vessels need to be calibrated. The PFA is trying out two calibration systems. When the ball is under the echosounder, the pattern is automated. It has been tried on a number of vessels, it's efficient and reduces time for calibration.

Trials with an 'ocean box' is used on three vessels: a device that stores data from fishing vessels. It collects all the sensor data (GPS info, weather, temperature from nets...) and processes it on board. Scientific standards are applied to link the data to a shore system: the info can thus be sent back to shore giving a live view of what is happening on the vessel.

The acoustic element tries to recognize fish schools from the echo information automatically. The school is detected and biomass in those schools is calculated. The summary is transported to shore-based systems capturing the information and processing it in reports/overviews. The storage capacity of the information is large, enabling storage up to a year before it needs to be transferred.

When considering acoustics and fishing vessels, this is how the survey could be expanded: a multitude of vessels that cover the area can collect extra information to complement the survey. Martin Pastoors added he is now working on a history of scientific advice, comparing scientific advice and catches/landings for several species. But part of the issue is that some catches are higher than the advice. A management plan and a sharing agreement needs to be developed. The blue whiting survey is not on the acoustic database yet, so it's hard to get a hold of that data. We do have all the information from fishing vessels.

Sean O'Donoghue asked why there are young fish in Martin's survey, while there aren't any in Benoit Berges' results. Martin Pastoors answered that he is showing area 7b: there's more young fish in that area and also in 8a. Sean O'Donoghue asked how many samples were taken. Martin answered 1800 fish and 4500 fish in 6a. From this picture it's clear the median length is 26-27 cm in 2018 and 30 cm now. The fish are bigger, which is consistent with the year class going into the fishery.

Martin Pastoors continued that this method could be scaled up to all vessels, to generate more information on fish distribution. This would be interesting for companies as well.

The chairman said this is an interesting idea, and would help to manage the amount of data.

## **6. Discussion on LTMP/MSE for blue whiting**



The chairman wanted to return to the first discussion on the two-tier management plan and asked how to advance: Who will describe in detail what we want, in what timeframe, how do we divide the work and what resources would we need for this?

Gerard van Balsfoort returned to the proposal that was mentioned for a retrospective analysis. He suggested this could partly be done by Martin Pastoors, perhaps together with Dankert Skagen. For all our stocks we have external people with specific skills that help us with the work. He thought that if we want to make a real point of this, we need to present more than what we have now, since we haven't managed to convince managers and Coastal States before.

Martin Pastoors mentioned a scientist that has worked for ICCAT for many years who now works independently. His name is Laurie Kell and his company is called Sea ++. He knows the software used for MSE, R and he knows the concepts well. Martin Pastoors believed this could be a simple exercise and that this scientist could easily help with it.

The chairman asked if the AC could contract someone for a limited task. Or should this be done by the industry? The secretariat will check to see what room there left is in the AC budget (**action 3**).

Sean O'Donoghue proposed to make a new draft LTMP with new reference points, and the retrospective analysis. These drafts need to go to Working Group I and the Executive Committee. He asked whether Martin Pastoors or Claus Reedtz-Sparrevohn would be able to produce a draft for the next Working Group. The chairman said a TOR is needed for the assignment, and this needs to be done ahead of the July meeting since it will need Working Group and ExCom approval. But it can also be funded from the industry since it is urgent.

Gonçalo Carvalho proposed to fast track the drafts by written procedure, he expects there would be agreement.

The chairman proposed to agree on a TOR within the Focus Group (**action 4**). The management plan can be drafted within the Focus Group and subsequently presented to the AC.

Martin Pastoors is unclear on the timeframe for the delivery of the work. He doubted whether July would be feasible for a number of reasons. October may be more likely but that's too late.

The chairman asked if the drafting of the management plan would require the work on retrospective analysis. Martin Pastoors answered that this calculation is indeed required if you want to include the values. Sean O'Donoghue said a lot of work has already been done, he couldn't understand why it would need so much time to complete. Martin Pastoors indicated that the work is not readily usable. It would require exchanges with Dankert Skagen. The approach needs to be demonstrated more convincingly than the current approach. The work of Laurie Kell will provide proof the new approach works better.

The chairman proposed to have a TOR, cost indication and timescale agreed by the Focus Group as soon as possible (**action 5**). The TOR will cover the following request:

1. Carry out a hind-casting analysis of two different potential harvest control rules that could have been applied to the blue whiting stock:
  - a. Standard ICES MSY rule
  - b. Two-tier approach as evaluated by Dankert Skagen (2012) and advised upon by ICES (ACOM 2013, section 9.3.3.7).

The analysis would need to be based on the starting population in a certain year (e.g. 2000) and the observed recruitments, both taken from the most recent assessment.



2. Carry out an update of the work carried out by Dankert Skagen (2012, 2013) on a two-tier HCR for blue whiting with updated reference points.

Martin Pastoors said the TOR can be agreed and decided on by July but it will still be unclear when the work will be finalized. The chairman still has the ambition of presenting this work, with convincing arguments that can feed into ICES and Coastal States, at our July meeting for the ExCom.

## 7. AOB

There were no any other business. The chairman closed the meeting at 12.10 hrs.

### Action items:

Action	What	Who
1	Draft explanation why the ICES standard MSY rule is problematic for a stock like blue whiting – <i>carried over</i>	Claus Reedtz-Sparrevohn, Dankert Skagen
2	Look into previous work from Faroese islands (involving Mark Pain) linking parameters to high/low recruitment	Martin Pastoors
3	Check PELAC budget for available resources for limited task FG on contract basis	Secretariat
4	Draft TOR for Laurie Kell	Martin Pastoors, Claus Reedtz-Sparrevohn
5	Circulate TOR to FG members and agree on it as soon as possible	Secretariat, Focus Group members

