



▶ Pelagic AC

Via herring meeting
6 October 2015
11:30-14:00 hrs
Apex International Hotel
31-35 Grassmarket
Edinburgh EH1 2HS, United Kingdom

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Participants

Sean O'Donoghue (KFO, Ireland), Anais Mourtada (Pelagic AC), Anna O'Sullivan (Department of Agriculture, Food & the Marine, Ireland), Ben Dipper (Marine Scotland, UK), David Hutchison (SPFA), Ed Farrell (University College Dublin, Ireland), Emilien Segret (Pelagic AC), George West (SPFA), Gerard van Balsfoort (PFA, Netherlands), Ian Gatt (SPFA, UK), Martin Pastoors (PFA, Netherlands, arrived later), Maurice Clarke (Marine Institute, Ireland), Susan Lusseau (Marine Scotland), Verena Ohms (Pelagic AC, Netherlands)

1. Opening of the meeting

The chairman opened the meeting at 11.30 and invited participants to introduce themselves.

2. Follow-up on action items

The chairman pointed out that the action items on genetics had all been sorted out. Susan Lusseau and Martin Pastoors were coordinating sample collection in area VIa North and IV, Maurice Clarke in area VIa South, VIIb,c. Ed Farrell had contacted Pieter-Jan Schön from AFBI in Northern Ireland and Irish Sea samples have been collected. The only samples missing in 2015 will be collected by Irish vessels in December and January. The Celtic Sea survey is currently collecting samples. Furthermore a genetics proposal including a cost indication has been developed by Ed Farrell.

Ed Farrell said that unfortunately it had not been possible to secure funding for the project from the Science Foundation Ireland, but he will submit the proposal to ERC in November. However, chances to receive funding from ERC are very low.

The chairman asked Maurice Clarke and Susan Lusseau if there has been any progress in terms of exploring funding under the DCR.

Maurice Clarke replied that the Marine Institute in Ireland is considering to make some short term contribution to the DCR. Susan Lusseau reported that there are no possibilities beyond what was discussed at the previous meeting.

The chairman wondered whether the different marine institutes could combine their resources. Maurice Clarke pointed out that it might be possible to work on something together, but only if other institutes and the industry contribute to the project as well.



Gerard van Balsfoort promised to discuss the issue with the NPWG and explore possibilities of industry contribution.

The next action item was in relation to an acoustic survey for Celtic Sea herring carried out by the fishing industry. Maurice Clarke explained that he could not find the document itself, however, he remembered that in 2004 the fishing industry hired a company to carry out an acoustic survey to get a biomass estimate of Celtic Sea herring. At that time the biomass estimate provided by the Marine Institute was 89.000 tonnes. While the industry hoped to provide a higher estimate the outcome of the industry survey was only 42.000 tonnes, which was above Blim, but not Bpa. It was argued, however, that only a small area had been surveyed and that the biomass estimate could have been higher if the entire area had been covered. The lesson learned from this initiative was that it is technically possible to carry out industry surveys.

The chairman recalled that the reason for looking into this issue was to find out why they survey had been rejected by ICES.

Maurice Clarke replied that at that time advice was already available for the stock which was considered reliable. It is not so easy to change the system and include new information. All scientists have to be on-board, but ICES did not take up the survey and in the end it did not feed into the system. There was nothing wrong with the survey from a technical or scientific point of view and it can be done even better nowadays.

The chairman pointed out that if the survey had gone into the assessment the result would have been worse for the industry.

Maurice Clarke confirmed this, but also explained that the survey would not have gone into the assessment since that would require a time series, but the survey was not continued. It had been carried out to prove that the stock was above a certain limit.

The next action item was to prepare a mini-survey plan which would be discussed later in the meeting.

3. Presentation of costing plan for genetic analysis both phase 1 &2 (Ed Farrell)

Ed Farrell explained that he had applied new genetic methods to old Westher samples and that he found clear differences between “Scottish” (i.e. VIa North) and “Irish” (i.e. VIa South and VIIb,c) herring. The project he proposed is divided into three stages. If the first stage, i.e. developing a new baseline, does not work, people can decide to either stop the project or come up with something else. In the first stage the original Westher samples will be re-run to get a better resolution. In addition new samples from 2015 and 2016 will be analysed, as well as one sample from 2014 from area VIa South. The aim is to screen baseline samples again to confirm temporal stability of genetic structure and variability. He said that Westher did not find structural differences between the populations because the marker resolution was too low. However, using the technique previously applied to boarfish, he did detect differences between Irish and Scottish herring samples. At the end of stage 1 there will be a baseline database with which to compare future mixed survey and fishery samples. The total costs for this stage are estimated to amount to € 100.000. This is excluding overhead costs charged by University College Dublin and 23% VAT.

Stage 2 of the project will focus on mixed stock analysis of survey samples and be dependent on the outcome of stage 1. This stage has 4 deliverables:

- 1) Development and validation of mixed stock analysis model.
- 2) Screening of SGHERWAY samples and comparison with morphometric analyses for retrospective splitting of survey series.
- 3) Development of genotyping pipeline for data analyses



- 4) Development of a commercial sampling protocol and determination of required sampling levels.

Ed Farrell explained that automating the analysis will allow a much higher throughput of samples. If the system cannot be fully automated it will be very expensive to scale up the analysis. He pointed out that, if successful, the method could be applied to any species, including demersal stocks. The estimated costs for this stage, excluding overheads and VAT, is € 150.000.

In stage 3 of the project high through-put protocols would be developed to make yearly screening of commercial catches feasible. This is necessary because stock structure changes throughout the years requiring regular updates of the baseline.

The chairman concluded that stage 1 and 2 are critical to the current work and that even ICES recognizes that there are still two different herring stocks in the area. He wanted to know whether it would be possible to present some results if there was a benchmark in 2017 and why it would take 2 years to complete stage 1 and 2.

Ed Farrell replied that at the moment all samples have to be scored manually. He considered it a possibility to hire a programmer to develop an automated version quickly. However, at the start of the project it will still be necessary to score manually. He said that once the baselines samples are processed it would be possible to start with stage 2 already, i.e. preparing the SGHERWAY samples for analysis. He hoped that there will be some agreement between genetics and morphometrics, but at the moment this was difficult to confirm.

The chairman wanted to know whether it would be possible to automate the system within 6 months for an extra € 25.000 next year to hire a programmer.

Ed Farrell said that the costs would be higher than that since the research scientist would also have to spend more time on the project. He pointed out that the project had been split into different stages to minimize the risk for paying for something that might show no results.

The chairman thought that even if stage 1 turns out a failure, automating the system would still be valuable for other species. He considered funding of stage 1 and automation the main priorities.

Ed Farrell explained that if genetics and morphometrics do not agree the survey series will be questioned. However, the chairman said that the first thing that needed to be done is to show that there are still two separate stocks.

Gerard van Balsfoort wanted to know what the timeline for taking a decision is and the chairman responded that a decision has to be taken as soon as possible, but at the latest on 1 January. He also wanted to get some recommendations from this group for the Pelagic AC meeting on the following day. He was in favour of carrying out 1,5 stages of the project at least. He furthermore emphasized that everybody should contribute to the project, both scientific institutes as well as the fishing industry.

Gerard van Balsfoort pointed out that the genetic protocols to be developed would be applicable to other stocks and hence be relevant for the entire fishing industry and not only the pelagic sector. Therefore, the fishing industry in general should be interested in this research proposal.

Ian Gatt wanted to know how it would work in practical terms to apply for funding and whether the Pelagic AC would have to write a project proposal and submit this to the Marine Institute in Ireland or Marine Scotland.

Ben Dipper explained that Marine Scotland has a science funding procedure in place, but he was not sure about the details. He was waiting for a response from his colleagues in this regard and promised to feedback today's discussion.



Gerard van Balfort stressed that the applicability and long-term vision of the project should be emphasized.

Ed Farrell added that the development phase is always the most expensive phase, but that in a few years the analysis could possibly be incorporated into the DCF.

4. Presentation of mini-survey plan

Susan Lusseau explained that the main idea of the mini-surveys is to assess the biomass of the spawning aggregations in area VIa North and VIa South, VIIb,c. She said that it will be necessary to plan these surveys in collaboration with people who have experience with this kind of surveys and can advise which areas exactly should be covered etc.

Maurice Clarke pointed out that he did not have resources available to commit to this work and that he could only commit to ageing fish. This was an industry initiative and he advised people to bear in mind that the work has to tie in with the work scientists are doing.

Susan Lusseau said that it was not clear yet how to fund this work in Scotland. Possibly an acoustic expert will have to be employed and someone will also have to coordinate the surveys. In addition other experts, e.g. for calibrating vessels, will be needed. She furthermore advised that the objectives of this project should be stated very clearly at the beginning of the document. She pointed out that even if an area-based survey was carried out it would not be possible to use the results in the next 6-7 years since a time series had to be built up first. Another way of using such mini-surveys would be for a rebuilding plan. However, she emphasized that there had to be a clear understanding that if these surveys find less fish than hoped for it will have to be accepted that there is less fish.

Ian Gatt wanted to know who would decide what the minimum biomass is, whether this would be ICES or the national research institutes.

Susan Lusseau said that this work should be carried out as a collaboration between the fishing industry and different research institutes. She could not promise that the work will be accepted into the assessment, but it could be argued that the survey will inform a rebuilding plan.

Maurice Clarke recalled that this year's Commission communication called for management plans and that all such plans must have timelines, targets and achieve MSY by 2020 at the latest.

The chairman concluded that it was too early to commit to anything and that more information on the mini-survey was needed to prevent vessels carrying out a survey which later turns out has to be done differently.

Susan Lusseau thought that Martin Pastoors has not yet received feedback from relevant ICES groups on the mini-survey. She said that it was necessary to clearly identify the aims of the survey and once this is done scientists can help design the survey accordingly. The mini-survey could either give a minimum biomass estimate or a relative abundance index. However, she pointed out that it cannot be accepted into the assessment with only one year of data collection.

Gerard van Balfort said that the industry would have to commit to this survey for several years in order to use the results. Otherwise he considered it pointless to carry out such a survey.

Maurice Clarke referred back to the Celtic Sea example where the industry wanted to show that the scientific survey was wrong. However, that failed. The industry also wanted to show that SSB at the time was above Blim. In order to account for uncertainty, however, SSB would have to be above Bpa, but the results of the industry survey indicated that SSB was not above Bpa. He pointed out that in the case of VIa herring Blim is very high and he considered it highly unlikely that the mini-survey would estimate SSB to be above Bpa.

The chairman wanted to know whether it would be possible to reduce the uncertainty of biomass estimates, e.g. through genetics.

Maurice Clarke replied that it is very far down the line to use genetics to calculate fish stock size. This has been done in sharks and there is great potential for this in the future. However, this will only be possible beyond 2020.

Assuming it can be shown that there are two separate herring stocks, the chairman thought that the mini-survey would even be more useful.

Susan Lusseau explained that the mini-survey would provide more information on the single stock components. However, it would not be included in the analytical assessment and it would not be able to fix all issues. She said that the blue whiting surveys in New Zealand are a good example for industry-led surveys, but she emphasized again that there has to be agreement that the results will be accepted by all parties. She also encouraged people to put extra effort into the initiative and to carry out the survey every year so that the results can be compared from year to year. There has to be a set of predetermined areas that will be surveyed and sampling protocols have to be put in place.

Ian Gatt thought that neither the Commission nor the Member States will go along with the proposal of a mini-survey unless these and other measures are included in a concrete rebuilding plan.

The idea was raised to form a steering group including industry members and scientists that would supervise the project in the coming years. All participants agreed that this was a good suggestion.

George West said that none of the options sounded attractive to him, but the least attractive option would be a zero TAC which would mean that no new information on the stock could be collected.

Susan Lusseau and Maurice Clarke pointed out that a zero TAC is also not in the interest of the scientists since they want to know what is going on with the stock as well. The sandeel example was mentioned for which there is a scientific allowance to fish the stock and thereby improve the data situation.

The chairman said that a classical rebuilding strategy with reduced fishing mortality would probably not work for these stocks. However, even with a zero TAC there will be some catches and this could be a way to build the argument.

Maurice Clarke recalled that the control regulation allows for a scientific fishery on top of the TAC, but it was pointed out that the magnitude of the scientific fishery would be 2% of the TAC which in the case of a zero TAC will also result in zero.

Ian Gatt wondered whether it might be possible to use some of the North Sea quota given that there is mixing between the stocks.

Martin Pastoors informed the meeting that he had been in contact with the chair of WGFAST which has established a new study group on calibration of vessels. He suggested bringing up the mini-survey as sub topic of the working group and pointed out that there is a lot of international interest on this topic as well.

The chairman considered this good news, but was worried that the mini-survey starts in January and WGFAST might conclude in April that things should have been done differently.

Martin Pastoors therefore said the mini-survey should be carried out in the summer, so that it can be discussed with WGFAST first.

The chairman added that very clear objectives for this survey had to be formalized. He wanted to disprove the scientists' perception of a very low stock size.

Martin Pastoors considered the mini-survey as an independent estimate of minimum biomass.



The chairman concluded that a steering group would be formed to fill the gaps identified in the proposal and to decide issues such as area coverage and number of vessels involved. He asked Martin Pastoors to organize this steering group.

Susan Lusseau presented a map indicating herring spawning aggregation and areas targeted by the July survey. She said that a lot of fish moves into the North Sea, but that skippers think that some of this fish moves south.

According to Martin Pastoors WGMARS found that a lot of detailed information is coming from skippers. Therefore it was necessary to include all relevant people in the steering group.

5. Update on Norwegian project (Martin Pastoors)

Martin Pastoors summarized that the Norwegian research proposal “NSHERRCON” will be trying to identify herring larvae sampled with MIK gear and combine this information with flow models of ocean currents thereby determining the likely spawning grounds the larvae are coming from. It will then be discussed whether this information could be used in management. A lot of larvae end up in the North Sea, but the hypothesis is that they move back into area VIa. Using drift models it will be possible to determine the likelihood of larvae coming from area VIa.

The chairman also was aware of some genetics work carried out in the South Pacific on fish larvae and Ed Farrell confirmed that plankton samples were used to identify larvae based on genetics.

The chairman asked Ed Farrell and Martin Pastoors to liaise with Richard Nash regarding the NSHERRCON proposal.

6. Work programme (scientists/industry) 2016 to enable potential intermediate benchmark 2017

The chairman wanted to know what could be done in terms of recruitment and Susan Lusseau said the best thing to do would be to support Richard Nash’s proposal and if possible include genetics.

In case this proposal does not receive funding the chairman wondered what it would cost to carry out the genetics work on herring larvae and Ed Farrell promised to find this out.

Ian Gatt wanted to know how difficult it would be to collect the samples and the chairman replied that this is a matter of being at the right place at the right time using the correct equipment. Susan Lusseau added that it is critical to treat the samples correctly once they have been collected.

The chairman summarized that in terms of the work program for 2016 the things to focus on are the genetics, the mini-survey and the NSHERRCON project. He wanted to know whether anything could be done to reduce uncertainty.

Maurice Clarke pointed out that being able to have two separate stock assessments again will reduce uncertainty and that there is nothing else that could be done.

7. Recommendations to PelAC WGII

The chairman suggested carrying out the first 1,5 stages of the genetics project as proposed by Ed Farrell and to sort out how this work could be funded.

Ed Farrell remarked that he has to make sure that it will be feasible to analyse all samples in stage 1.

The chairman said that the group should aim to automate the genetic analysis anyway since this will also be valuable for other species. Regarding the mini-survey Martin Pastoors will set up the steering



group and discuss with WGFASST how the survey should be carried out. Hopefully it can begin in July. The chairman also emphasized that this should not be a one on, one off exercise, but run beyond the first year. It will also be very important to clearly explain at the beginning how the survey will be utilized. The final recommendation will be to support the Norwegian NSHERRCON proposal.

Ian Gatt stressed that it had to be absolutely clear that these three steps are the answer to a rebuilding plan.

The chairman agreed and said that he will not recommend a TAC number. He did ask the scientists, however, what level of scientific sampling is required to keep integrity.

Maurice Clarke was not sure about this, but Susan Lusseau suggested turning the argument around and pointing out that least so much fish has to be caught for scientific information and catching this fish will only be possible with a commercial fishery. Otherwise no vessel will go out and people had to accept this as the reality.

8. AOB

There was no other business.

9. End of meeting

The chairman closed the meeting at 14:00 hrs and remarked that it has been a worthwhile meeting and that significant progress has been made. He thanked people for their participation.

Ian Gatt thought that it would be necessary to have a meeting again in the early part of next year.

In terms of discussing the mini-survey Susan Lusseau suggested meeting back to back with the ICES group on international surveys in Dublin on 18-22 January. She promised to talk to Sascha Fässler about possible dates.

Action items

- Discuss industry contribution to genetics study (NPWG)
- Find out how the Pelagic AC could apply for funding with Marine Scotland (Ben Dipper)
- Set up steering group for mini-survey plan (Martin Pastoors)
- Formulate clear objectives of mini-survey plan (Sean O'Donoghue, Ian Gatt, Gerard van Balsfoort, Martin Pastoors)
- Liaise with Richard Nash regarding the NSHERRCON proposal (Ed Farrell, Martin Pastoors)
- Arrange meeting for mini-survey plan back to back with the ICES working group on international surveys (Martin Pastoors, Susan Lusseau)
- Put forward recommendations on a rebuilding plan to the Pelagic AC

