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2nd REPORT OF THE WORKING
GROUP ON POLLUTION BASELINE AND MONITORING STUDIES
IN THE OSLO COMMISSION AND ICNAF AREAS

Charlottenlund, 10-13 May 1976

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MONITORING STUDIES IN THE OSLO COMMISSION AND ICNAF AREAS

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2nd Report of the Working Group on Pollution Baseline and Monitoring
Studies in the Oslo Commission and ICNAF Areas, Charlottenlund, 10-13 May

1. Opening of the Meeting

- 1.1 The meeting was opened by the Chairman, Mr A Preston, who formally welcomed the members (Annex 2). The Working Group expressed concern that once again no representatives of Spain or the USA were present.
- 1.2 In his opening remarks the Chairman indicated that although ICES was a nominated advisory body to the Oslo Commission (OSCOM), and had a formal request from that Commission to conduct a Baseline Survey and was actively seeking further recognition of its potential role in the context of work for regulatory Commissions such as OSCOM, this was proving a difficult task. He considered, and the Working Group agreed, that part of the difficulty undoubtedly stemmed from a lack of appreciation of ICES structure and capabilities in the conduct of scientific investigations in relation to marine pollution. This was often caused, at least in part, by the fact that the national representatives at regulatory Commission meetings were not always fully informed by their colleagues representing their countries within the ICES framework, e.g. on a Working Group such as the one on Baseline and Monitoring Studies. He therefore urged the members to make every effort to ensure that their colleagues were kept fully informed of the activities of the Working Group. He also pointed out that failure to do this would almost inevitable lead to duplication of actions already planned, underway or completed under the auspices of ICES and that in many cases this might well involve the same workers being asked by different national authorities to carry out the same work for apparently different purposes.
- 1.3 In welcoming the Group the General Secretary supported the remarks of the Chairman and gave a brief resumé of the structure of ICES, its Committees and Working Groups. Several members commented that this information was of great value to them personally, but that it would be of even more value if a specialised document could be prepared for general distribution and consumption setting out the Council's involvement in pollution affairs. Concern was expressed that in many countries ICES is looked upon as an organisation highly competent in matters such as fish stock management, but that it is not always recognised as a competent organisation in relation to pollution matters. The point was also made that it is not always obvious to national administrators, who do not have direct contact with ICES, why pollution is dealt with at standing committee levels as only part of the business of a Committee entitled Fisheries Improvement Committee. Although it was realised by the Working Group that the ICES system is not a closed one and that especially at the specialist Working Group level participation is open to any nominees of member states, it was felt that this was not generally recognised.
- 1.4 In view of the general concern at the image of ICES apparently held in many countries and especially within some of the regulatory Commissions, it was agreed that strenuous efforts should be made by ICES to improve recognition of its standing. To this end it was agreed that attention of the ACMP should be drawn to the problem in the hope that the Committee might prepare a paper setting out the position of ICES as an Intergovernmental Organisation with interests in pollution affairs, and drawing attention to its capabilities and readiness to undertake appropriate work on behalf of other inter-governmental organisations if so requested. This paper should, it

was felt, be kept short and to the point, include a schematic diagram indicating the relevant committees and Working Groups, with their lines of communication and how these fit into the general ICES administrative structure, and should stress how the scientific matters are kept separate from political considerations. A recommendation was drafted to this effect (Annex 4).

2. Adoption of the Agenda

The draft agenda as circulated prior to the meeting was formally adopted (Annex 3).

3. Appointment of Rapporteur

Dr J E Portmann was appointed as Rapporteur to the Working Group.

4. Report on the 63rd Statutory Meeting and Action taken by the Fisheries Improvement Committee and the Advisory Committee on Marine Pollution

4.1 The General Secretary gave the Working Group a brief summary of the actions of interest which had taken place at the 63rd Statutory Meeting. Of particular interest were the Resolutions urging the need for monitoring data from North Sea programmes to be submitted by the agreed deadlines, the encouragement of intercalibration activities in relation to sea water analysis and the formal approval to convene an ad hoc meeting of specialists in the field of sedimentology and sediment analysis.

4.2 In this same context the Working Group noted that the Fisheries Improvement Committee had welcomed the First Report on Coordinated Monitoring in the North Sea and had agreed that the Working Group should be requested to prepare a similar report each year. (see paragraphs 10.1-10.6)

5. Summary of Activities of International Organisations of Interest to the Working Group

OSCOM, SACSAs and IPARCOM

5.1 The Chairman briefly outlined the recent actions that had taken place within the Oslo Commission (OSCOM) and its scientific advisory body (SACSA), and reminded the Working Group that the main purpose behind the present efforts to complete a baseline survey of pollution in the NEAFC area was the request by the Oslo Commission for such a survey by ICES. He also indicated that although there was a recognition that the monitoring needs of the Oslo Commission were, in many respects, similar to those of the Interim Paris Commission (IPARCOM), there was no agreement in either body as to how their monitoring needs should be met, although it was perhaps correct to say that the capabilities of ICES were more readily accepted within OSCOM than IPARCOM.

5.2 It was noted that there was no formal relationship between ICES and IPARCOM although that body had in the course of its work accepted the ICES Questionnaire on Inputs as being suitable for its own purposes. (see also paragraph 8.5)

5.3 In this same general context it was noted that there were many recent activities of ICES which were of relevance to the work of both OSCOM and IPARCOM, and that several of the initiatives being taken by these two Commissions were of interest to ICES. It was also noted that in some cases they were very similar to ones being undertaken

by ICES for its own purposes. For this reason the Working Group considered it doubly important that the ACMP pay full attention to its recommendation in respect of the Council's marine pollution activities.

Global investigation of pollution in the marine environment

- 5.4 The Chairman, who informed members of activities within the IOC's ICG for GIPME, drew particular attention to the contribution made by ICES to a standardised baseline format for the conduct of regional and baseline studies. He also drew attention to the attempts now being made to regularise the functional and organisational relationships between GIPME and IGOSS in the field of marine pollution monitoring and the setting up by the ICG of an ad hoc Task Team on monitoring. This Task Team had met at Lowestoft under his chairmanship in April. The ICG, which had elaborated a comprehensive plan for the GIPME which included both strategic and tactical components and had annexed to it the joint ICES/ICG baseline format, had now been wound up and had been replaced by a Working Committee, which would meet in Hamburg during October 1976 under the chairmanship of Dr Ruivo of Portugal.

Integrated Global Ocean Station System IGOSS

- 5.5 The Rapporteur informed the Working Group of the progress being made within the IGOSS Pilot Project on Marine Pollution Petroleum Monitoring and the preparations, now in their final stages, for a Workshop to be held in Monaco in June 1976 to discuss the results of the first year of the Pilot Project. The first results available from national coordinators appear to indicate that the component of the programme dealing with visual observations has been moderately successful in terms of numbers of returns made. The component on petroleum analysis also appears to have been reasonably successful although only about half of the participants have actually used the recommended working procedure for analysis. The two remaining components, beach sampling and floating particulates, have met with very limited interest and response. The Working Group noted that a recent meeting of experts on the IGOSS Pilot Project had recommended to the Workshop that the Pilot Project continue as it was planned for the remainder of 1976 but that no moves should be made to extend its coverage in terms of other pollutants, until after a thorough review of the full results of the Pilot Project had been conducted by GIPME. However, it was noted that there might be moves to continue the Pilot Project for a further period and to extend it to other geographical areas. The same experts had also recommended that serious attention be given to the need to intercalibrate the results being reported, especially as several different methods were being used by the participants.

UNEP

- 5.6 The Chairman briefly described the involvement of UNEP in marine pollution monitoring programmes through the marine component of GEMS and informed the Working Group of the decision taken at the 3rd Governing Council of UNEP to support an extension of the marine pollution monitoring activities of IGOSS. This invitation to IGOSS had been taken up, and a group of consultants had drawn up proposals for monitoring of open ocean pollution.
- 5.7 These proposals had been thoroughly discussed by a Meeting of Experts held at WMO Headquarters in Geneva as a preparatory session to IPLAN III of IGOSS. The Chairman had attended as an observer for ICES and Dr Portmann had attended as an invited expert. Dr Portmann briefly

outlined the proposals made by the consultants and summarised the criticisms made by the various experts present at that meeting. The Working Group noted that as a result of these criticisms the proposed plan would be rewritten and would be much reduced in scope and scale. A major component was now likely to be a large-scale intercalibration exercise covering a number of pollutants and which would be open to participation by regional bodies, regardless of their direct association with IGOSS programmes.

6. Reports on Activities of Sub-Groups since the First Meeting

Sediments Monitoring Group

- 6.1 The Chairman reminded the Working Group that at their First Meeting they had discussed the role of marine sediment studies in relation to pollution problems. Since the subject had received little attention within the framework of ICES, a recommendation was made that an ad hoc meeting of experts be convened to discuss the relationship between sediment studies and marine pollution. This initiative was ultimately acted upon by Council Resolution 1975/2:10. Prof. Postma was invited to convene this meeting and invitations to attend at the Texel Laboratory between 31 August - 2 September were issued to: Calvert, Duinker, de Groot, Hetherington, Holtedahl, Nielsen, Olaussen, Suess, Vollbrecht and Wollast.
- 6.2 The final list of participants is not yet available but members of the Working Group were asked to bring to the attention of Prof. Postma any experts active in the field of sediment chemistry not included in the above list.

Petroleum Hydrocarbons Workshop

- 6.3 The Working Group noted the report of the Workshop held in Aberdeen (Doc. C.M.1975/Gen:10) which was introduced by Dr A McIntyre. The Working Group considered, bearing in mind the number of programmes related to petroleum monitoring, that more attention should be paid to the scientific basis for these programmes and attempts should be made to coordinate the various efforts. Accordingly they endorsed the suggestion, made by the Workshop, that intercalibration should be encouraged and strongly supported the suggestion that priority attention needs to be given to further development of methodology.
- 6.4 The deliberations of this Workshop will be published later this year by ICES in Volume 171 of Rapports et Procès-Verbaux. There was also some discussion on the merits of establishing a bank of standard oil samples which could be used to ensure comparability in bio-assay studies etc. Dr McIntyre agreed to investigate further the feasibility of this proposal.
- 6.5 The Working Group was informed by Dr K Palmork of his intention to collaborate with Dr Giam at Texas A&M University on an intercalibration exercise using fish meal. The Working Group requested that he explore the possibility of expanding this to include other interested laboratories and a sample of sea water. It was agreed that all interested parties should contact Dr Palmork directly and that each should indicate the components or fractions of oil they intended to determine and the methodology they proposed to use.

Effects Monitoring Sub-Group

- 6.6 Dr McIntyre reported on the discussions held within his Sub-Group in the course of the period since the last meeting of the full Working Group.

He briefly outlined the content of his Sub-Group's report, which he said was not yet quite complete and still needed a certain amount of attention, although the conclusions and suggestions they would be making for future work were generally agreed.

- 6.7 The Working Group recognised the considerable effort made by the Sub-Group under Dr McIntyre in attempting to answer its terms of reference. However, it was recognised that in relation to the inclusion of effects observations in coordinated monitoring programmes, present knowledge of effects had not permitted the Sub-Group to complete that part of its task, i.e. to make firm recommendations for the formal incorporation of biological monitoring into coordinated baseline and monitoring exercises. It was agreed that, as suggested by the Sub-Group, the report should be amended and completed in the light of the comments by Working Group members and ACMP, to whom this initial report has also been submitted, and that it should be presented in its amended form at the 64th Statutory Meeting for further discussion in the Fisheries Improvement Committee. It was suggested that a suitable outcome might be a small Workshop, convened by ICES, to bring together a selected group of experts to further evaluate the report, and that this suggestion should be brought to the attention of both the ACMP and the Fisheries Improvement Committee. (See Rec.2, Annex 4). Although it was recognised that effects studies cannot yet be recommended in a monitoring context, it was agreed that studies should be made and possible approaches to monitoring be developed and investigated on a pilot scale by individual countries.

Water Monitoring Sub-Group

- 6.8 Dr D Schmidt introduced the report of the first meeting of the Sub-Group on Contaminant Levels in Sea Water that was presented to the 63rd Statutory Meeting of ICES (Doc. C.M.1975/E:31). The Sub-Group had decided that both the establishment of a baseline study of metals in the water of the NEAFC/ICNAF area and a routine monitoring programme of metals in the water of the North Sea were not feasible at present. As a prelude to such programmes an intercalibration exercise was essential. The Sub-Group proposed that this project take place in four stages:
- 1) an intercalibration of participants' standard metal solutions;
 - 2) an intercalibration of mercury in sea water;
 - 3) an intercalibration of metals other than mercury in sea water;
 - 4) a multi-vessel workshop to intercalibrate sampling and storage procedures.
- 6.9 The first two stages of the exercise were reported as already being in progress. During the first part of 1976 Dr Jones had circulated approximately forty sets of samples to institutes in fifteen countries. Samples consisted of concentrated multi-element standards in acid solution and participants were asked to report on metal levels by the most direct method available using their own standard solutions. By 3 May 1976 approximately half of the participants had submitted results. Whereas the majority of values fell within $\pm 10\%$ of the expected levels, several reported values were outside this margin, thus implying errors in the participants' own standard solutions. A full statistical evaluation of the exercise will be made after more results have been received and it is hoped to prepare a report on the exercise for the 64th Statutory Meeting.
- 6.10 Dr Olafsson reported on the progress of his mercury intercalibration exercise. Spiked and unspiked acidified sea water samples had been sent to seventeen institutes in eleven countries during early April 1976. However, to date only one set of results had been returned and it was therefore not possible to report further on this part of the programme.

- 6.11 The Chairman urged national representatives to ensure that all participants who had not yet done so, should submit their intercalibration results as soon as possible to the organisers of the above two projects.
- 6.12 Dr Jones reported on the feasibility of the intercalibration of metals other than mercury in natural sea water samples. It is planned to distribute deep-frozen samples early in 1977. Detailed arrangements for this stage of the project will be made by correspondence with potential participants.
- 6.13 The merits of a multi-vessel workshop as part of the final stage in the programme received discussion. However, such a project is still too distant to plan in any detail and much will depend on the early stages of the intercalibration.
- 6.14 Reference was made to correspondence between Dr Schmidt and Professor Goldberg concerning a programme of metal intercalibration in sea water being proposed within the framework of the NATO Science Committee. The Working Group expressed concern that this might lead to duplication of effort.

7. Consideration of Results of Preliminary Baseline Study

Water survey

- 7.1 Dr Jones reported on a programme of metal surveys on water in the North Atlantic conducted by the Lowestoft Laboratory during 1975/76. Their North Sea programme had been given less prominence during this period but several surveys had been conducted in the NEAFC area and some observations extended to the east coast of Canada. The chemical analyses of all the samples had not then been completed but a preliminary report on the metal content of water from the south part of the Northeast Atlantic was presented. The level of metals measured was generally lower than that indicated in many published data for the area, but was comparable to values from the more recently conducted investigations.
- 7.2 It was proposed that when all the data from these surveys were available, they may form the basis for a submission to the Oslo Commission summarising the level of selected metals in the water of the Northeast Atlantic. The discussion that followed suggested that the data as presented would need some further annotation before such a submission. It was therefore agreed that an amended version of Dr Jones' report (Annex 7) be submitted to the forthcoming meeting of the ACMP, so that that Committee could evaluate the data for possible presentation to the autumn meeting of SACSA.

Fish intercalibration exercise

- 7.3 The report on the intercalibration exercise for metals was introduced by Dr Topping, who outlined the results of the first ICES exercise (Coop.Res.Rep., No.39) and the decision to conduct a second exercise. The Working Group had been informed of the progress of this second exercise at its First Meeting and a full report had been submitted to the Fisheries Improvement Committee at the 63rd Statutory Meeting of ICES (C.M.1975/E:21). It had been agreed that a third exercise should be conducted in 1975 in which common stock standards and a common procedure for the preparation of working standards were to be adopted.

- 7.4 Dr Topping went on to summarise the report of the results of the third exercise drawing particular attention to the way in which the data had been statistically analysed. He thought that the results for copper, zinc and mercury were extremely encouraging and showed a significant improvement on the two previous exercises, much of the success being due to the adoption of common procedures and standards. In his opinion it was now possible for the Group to have a fair degree of confidence in the comparability of data submitted in the baseline survey. Unfortunately the results for cadmium and lead were not so encouraging and the Group would have to give some thought to the interpretation and evaluation of baseline data for these metals. The major reasons for the differences in the mean values submitted for cadmium and lead in the fish flour were related to the inherent differences in detection limits of the methods employed by each participant and the fact that the level of these metals in fish flour were similar to the detection levels of some of these methods.
- 7.5 Dr Portmann introduced the report on the second ICES intercalibration exercise for organochlorine pesticides and PCBs. This had been conducted by Mr Holden and had been intended to be based on a fish oil of low natural pesticide and PCB residue content. Unfortunately it had not proved possible to obtain such an oil and a maize oil had eventually been used instead. Time had not allowed a full statistical analysis of the results but it was already apparent that the results represented an improvement in analytical capability compared to the first exercise, although individual laboratories had experienced difficulties with individual residues and most laboratories had experienced problems with some of the early peaks on the gas chromatograms.
- 7.6 Dr Portmann pointed out that the intention of the exercise had been to allow analysts to check the accuracy of their methods before carrying out the analyses of the baseline survey samples. In most cases, including that of his own laboratory this had been done and appropriate adjustments to technique had been made, thereby ensuring that the baseline results were as comparable as possible. However, a number of laboratories had not followed these instructions and had reported their intercalibration results at the same time as the baseline survey results and in some cases even afterwards. The Chairman again indicated his concern that the participating analysts, by ignoring such instructions, had placed the success of the baseline at risk.
- 7.7 Dr Topping concluded by stating that a complete statistical analysis and evaluation of the metal data had been hindered by the fact that not all laboratories had submitted the total information requested in the instructions issued with the samples. The Chairman indicated his concern that failure to follow such agreed instructions prejudiced the success of the exercise and the Working Group agreed that all the analysts concerned shall be requested to supply the required information as a matter of great urgency. (For the revised report, Annex 5)
- 7.8 After some discussion on the outcome of the two intercalibration exercises, it was decided that an ad hoc group of analysts should be convened to discuss the two reports and to formulate suggestions to the Working Group on what correction factors, if any, should be applied to the results of the fish analyses, and the approach the Working Group should adopt for the overall interpretation of the data from the Fish Baseline Survey.

- 7.9 The analysts concluded that, in view of the difficulties several of the laboratories had had in accurately determining residues of HCB and HCH isomers in the intercalibration exercise and the fact that the reference material was a vegetable oil and not a fish oil no comparison of these residues in fish should be attempted, although the reported results should be retained in the tables. It was noted that two laboratories had reported results which differed markedly from the true values for most of the added compounds. In one case no fish analyses had been reported (Spain) but in the other case it was recognised that the error had arisen due to the fact that the laboratory concerned (Netherlands) had been operating at or near the limits of detection for their method. The analysts agreed that such constraints would not have applied to the fish analyses and accordingly agreed that the Dutch data should be included unamended. A similar conclusion was drawn in relation to the PCB values reported by Norway and no correction factor was recommended for their results.
- 7.10 It was agreed that for the metals, copper, zinc and mercury, no correction factor was necessary for most laboratories. However, it was agreed that in the comparison of the fish data due consideration should be given to data produced by the few laboratories that had produced higher or lower mean values than the majority of the group in the intercalibration exercise, and that, if appropriate, attention should be drawn to their performance in the intercalibration exercise.
- 7.11 It was agreed that differences in detection limits for cadmium and lead were responsible for the differences in mean values produced for the fish flour. This being the case, it was felt that only fish data from those laboratories with very low detection levels could be satisfactorily compared. However, only two laboratories with a poor detection level had produced positive values for lead and cadmium in the fish baseline, the remainder having produced no measurable levels. It was felt that this latter group should be included in the tables but that the anomalously high positive values reported by the two laboratories should be omitted.
- 7.12 The analysts also agreed that a full report of the experience gained and results obtained in the course of the various intercalibration exercises should be prepared and published by ICES, preferably with a shorter article in the open scientific literature advertising the full report. In view of the relatively poor results on intercalibration for lead and cadmium it was agreed that that part of the exercise should be repeated using the existing fish flour. Finally, it was suggested that a new round of intercalibration should be conducted in 1978 to ensure continued compatibility of results in the ICES coordinated monitoring programmes.
- 7.13 The Working Group agreed with the above suggestions made by the analysts and instructed the Rapporteur to take due account of the suggestions in revising the report on the baseline study which was available to the Working Group at the meeting. The Working Group endorsed the suggestions for further intercalibration programmes.

Fish baseline survey

- 7.14 The draft report on the results of the Fish Baseline Survey was introduced by Dr Portmann. He reminded the Working Group that detailed working procedures for sampling procedures had been agreed following the First Meeting of the Working Group and that all samples should have been collected according to these procedures, and the results of analyses been submitted to him by the end of 1975. Unfortunately most laboratories had experienced some difficulties in adhering to

the instructions and almost all countries had been late in submitting results. As a result the report before the Working Group was a rather incomplete draft, with results still expected, or only recently received, from some countries.

- 7.15 It was agreed that in the light of these difficulties and the still imperfect nature of the intercalibration results considerable care would have to be taken in comparing data from one area to another. The Rapporteur was duly asked to revise the report accordingly, paying attention to this and to the suggestions made by the analysts. It was agreed that the data should be tabulated on an area basis rather than by reporting country and that a figure showing the location of the sampling areas should be included. However, to avoid misinterpretation of data it was agreed that no figures showing actual residue levels, as was done in the North Sea baseline report, should be included. The Chairman urged those countries that had not yet submitted their data to do so as soon as possible, and it was agreed that the report should, in its amended form, be attached to the report of the meeting (Annex 6), along with the intercalibration exercise reports, and transmitted to the ACMP, at its mid-term meeting.

8. Consideration of the Results of the Input Study

- 8.1 Dr Olsen reported on the progress of the input study. At the time of the meeting he had received returns of the input questionnaire from Greenland, Norway, the United Kingdom and Iceland. A quick round table review revealed that data had been tendered at the meeting or would soon be forthcoming from Denmark, France, Ireland and the Netherlands. Belgium had made a return on dumping and stated that data in Cooperative Research Report, No.39, should be used for other inputs. Partial data would be available from Sweden and perhaps Canada and the Federal Republic of Germany but it seemed unlikely that any data would be forthcoming from Portugal, Spain or U.S.A.
- 8.2 The Working Group expressed concern at this state of affairs but were reminded by the Chairman that one of the principal reasons for carrying out such a survey was to draw attention to the limited capability that nations had to provide such data and to the consequent need to take action to remedy the situation if in the longer term any sensible regulatory action were to be taken.
- 8.3 The Chairman reported on a United Kingdom exercise carried out in partial cooperation with the Netherlands and Norway to determine the atmospheric input of metals and selected organo-chlorine compounds into the North Sea. The study involved eight sampling stations, six on the United Kingdom coastline and one each in the Netherlands and Norway, which have been regularly sampled over two years, for both wet and dry deposition. Continuous collection of material had been maintained and samples had been collected and analysed on a monthly basis. The results of the survey, which indicated a significant input of lead via this route, would be fully published in due course and a summary made available to the Working Group.
- 8.4 Dr Olsen indicated that a similar study, but for metals only, was being conducted by Denmark, and the Working Group expressed the wish that results from this should also be made available to it. Very rapid estimates made at the meeting indicated that the United Kingdom and Danish data compared well.
- 8.5 The Working Group noted that the ICES questionnaire on inputs had been adopted by IPARCOM but without adequate clarification of the

procedure to be adopted in completing and returning the questionnaire. They concluded that this had resulted in confusion in certain countries, as to time scales to be followed and channels of reporting data. The Working Group considered that this was especially unfortunate as it had certainly led to delay in completing the input study and may well mean that its successful completion by ICES on behalf of OSCOM had been prejudiced by actions within IPARCOM.

9. Deadlines and Final Form of Reports on the Input and Baseline Studies

9.1 The Chairman reminded the Working Group that a report on the input and baseline studies had been requested by the Oslo Commission and that it was therefore essential that the reports on these two studies should be completed as soon as possible. It had already been agreed that the reports on the fish baseline exercise and the attendant intercalibration programme should be available for the mid-term meeting of the ACMP for onward transmission to SACSA and deadline dates were accordingly established (Annex 1). Unfortunately this would not be possible for the input study report but it was agreed that this must be available for the ACMP meeting at the 64th Statutory Meeting of ICES and an appropriate deadline was established.

9.2 The Chairman exhorted all members, and especially the coordinators for these programmes, to meet the established deadlines, as only by doing so could ICES maintain and enhance its image in international circles.

10. Coordinated Monitoring of Pollutant Levels in North Sea Fish

10.1 Dr Portmann reported that in spite of the Council Resolution concerning deadlines for reporting monitoring data on fish from the North Sea only one country had supplied data in time to meet the deadline, although he had since received data from three other countries. It was agreed that the deadline should be extended to the end of June and all countries were urged to submit their data by then. The Chairman informed the Working Group that he and the Rapporteur would produce a report, similar to that produced on the 1974 results, in time for the 64th Statutory Meeting of ICES.

10.2 The Working Group noted that the report on the 1974 coordinated monitoring was now complete and had been slightly revised to take account of additional data now included. Since the report had already been seen in draft form by the Oslo Commission, the Working Group was uncertain as to the need for the revised version to be submitted to OSCOM again, especially as such work had not formally been requested by that body. The Working Group agreed that the most appropriate body to make such a decision would be the ACMP. However, the Working Group did consider the report should be published by ICES, and a recommendation to this effect was agreed (Annex 4).

10.3 The Working Group discussed a draft submitted by the Chairman which drew attention to the need to consider the optimum deployment of monitoring effort, within a coordinated programme under ICES, in the light of possible regimes for research and fishing activities which might emerge from discussions currently underway in other international fora.

10.4 The Group held divergent views as to how far it was justified at this time to make any assumptions about new regimes. They did, however, agree that in order to make best use of available analytical resources there was every reason to consider how best to deploy the

monitoring effort within a coordinated programme and recognised that it would be necessary in due course to take appropriate account of any new regimes within which research and fishing activities might have to be conducted.

- 10.5 The General Secretary drew the attention of the Group to the wider-ranging discussions which are being initiated within ICES with a view to ensuring that future activities and actions within the ICES framework can take account of any new regimes.
- 10.6 The Group agreed to bear the matters in mind but thought it premature at this stage, before any definitive re-arrangements are known, to decide how best to deploy the limited monitoring effort available.

11. Future Work Programme of the Working Group

- 11.1 The Working Group was reminded by the Chairman of the various on-going activities of Sub-Groups, namely the further intercalibration within the Analysts' Group, the meeting of a Sediment Working Group under Dr H Postma, the further development of the Effects Monitoring Sub-Group under Dr McIntyre, and the Analysis of Sea Water Group under Dr Schmidt. It was concluded that none of these activities would be likely to necessitate a further meeting of the full Working Group within the next year.
- 11.2 It was also noted that the input study report would be going directly to the ACMP and would not therefore need to be considered by the Working Group as a whole, although they would see it in its draft form if time allowed.
- 11.3 In relation to the baseline study it was agreed that certain areas still needed to be studied in more detail, particularly the western coast of the North Atlantic, the Bay of Biscay, the west and south coasts of Ireland, and the coasts of Portugal and the Azores. The members representing these countries were urged to try to fill these gaps as soon as possible and it was agreed that the sampling procedures agreed for the North Atlantic baseline should be adhered to, so far as practicable.
- 11.4 In this connection the Working Group noted with approval, that Portugal already had plans for further monitoring effort off her coasts and the Azores and would be concentrating these efforts on sardine (young pilchard) and hake.
- 11.5 The Working Group concluded that it was already possible to state that when these additional baseline results become available certain areas of the North Atlantic will probably not need to be resurveyed for about 5 years. However, it was apparent that certain areas, particularly the Irish Sea and the area immediately off the Gulf of St. Lawrence would need further study and could usefully be included in the coordinated monitoring programme.
- 11.6 It was agreed that the coordinated monitoring programme should, if possible, be extended to these areas. A suggestion by Dr Uthe for certain changes in sampling and analytical procedures was read out and this provoked further discussion on matters such as: how species to be monitored should be selected, what restrictions on sizes should be imposed, which tissues should be analysed and when the samples should be collected. No agreement was reached on these points and it was therefore decided to refer the matter to the Sub-Group of

Analysts. The Sub-Group was asked to work in consultation with biologists and so far as possible by correspondence, to try and resolve these questions in time to submit their recommendation to the next full meeting of the Working Group.

- 11.7 It was agreed that it was not possible to decide on the need for or timing of the next meeting of the full Working Group during 1977 and that unless specifically requested by the ACMP or rendered necessary by the response from the Oslo Commission no meeting would be held until 1978. If one is necessary it was agreed that two days would probably suffice and that Lowestoft should be the first choice of venue.
12. Further Business
- 12.1 The Working Group noted with interest a paper submitted by Dr Uthe on Triaryl Phosphates as Environmental Concerns. It was considered that this could most appropriately be discussed by the Fisheries Improvement Committee at the 64th Statutory Meeting, and Dr Walton was asked to convey this request to Dr Uthe.
- 12.2 The Working Group also noted a paper on organochlorine compounds in scabbard (Aphanopus carbo) from the area around Madeira submitted by Dr de Barros and agreed that any relevant data should be included in the baseline survey report and that the paper should be submitted to the Fisheries Improvement Committee at the 64th Statutory Meeting.
- 12.3 There being no other business the Chairman closed the meeting at 12.00 hrs on Thursday 13 May 1976, and thanked all the members for their attention and cooperation, and the General Secretary and his staff for their assistance during the meeting and in the preparations for it.

ANNEX 1

RESPONSIBILITY FOR AGREED FURTHER ACTION BY WORKING GROUP MEMBERS

List of Actions required by Members

1. All members to ensure that any outstanding data on either fish flour or fish oil intercalibration exercises are supplied to Dr Topping not later than 26 May.
2. Dr Jones to amend his paper on sea water analysis in the light of discussions at the meeting and to supply it to the General Secretary not later than 31 May for inclusion in the Draft Report of the meeting.
3. Dr Topping to update the intercalibration reports and to supply them to the General Secretary not later than 31 May.
4. Dr Portmann to include additional fish baseline data in the report on that study, to amend it taking into account the new data and the discussion in the Working Group, and to send the amended version to the General Secretary not later than 31 May for inclusion in the Draft Report of the meeting.
5. The General Secretary to send out the full Draft Report of the meeting to all participants (and Dr Uthe) and to the members of ACMP as soon as possible and not later than early in the first week of June.
6. All members send their comments and suggestions for amendments to the report to the Rapporteur not later than 30 June.
7. All members to do their utmost to ensure that the necessary input data are supplied to Mr Vagn Olsen not later than 15 July so that he can compile the data and submit the report to the ACMP meeting at the time of the 64th Statutory Meeting.
8. All members to submit to Dr McIntyre their own or colleagues' comments on his Sub-Group Report not later than 30 June so that he can incorporate them in a revised version to be considered by the Fisheries Improvement Committee and ACMP at the 64th Statutory Meeting.
9. All members to do their utmost to supply the required data to Dr Portmann on national monitoring programmes in the North Sea not later than 30 June.
10. Dr Portmann and Mr Preston to prepare a report on the results of coordinated North Sea monitoring for consideration by the ACMP at the 64th Statutory Meeting. If possible, this will be circulated in draft to all Working Group members for comments.
11. All members who wish to do so contact Dr Postma directly with names of scientists active in the field of sediment chemistry with a view to their possible participation in the meeting of his Sub-Group.
12. All members to indicate, if appropriate, to Dr Palmork their possible participation in the Texas A&M & Bergen petroleum hydrocarbon intercalibration programme.

13. Dr Palmork to investigate the possibility of extending the proposed Texas A&M & Bergen intercalibration to other interested parties.
14. Dr McIntyre to develop with his colleagues a more detailed proposal for consideration by the Working Group at its next meeting for the need for and feasibility of establishing a bank of representative oil samples which could be used for the conduct of bio-assays on a comparable basis.
15. Members representing France, Portugal, Ireland and Canada to endeavour to improve the coverage of the baseline survey according to the procedure laid down in the original plan for the baseline survey in the following areas: Bay of Biscay (France), Portuguese coast and Azores (Portugal), West and South of Ireland (Ireland), western coast of the North Atlantic (Canada).
16. Members of the Analysts Group to work, so far as possible, by correspondence, on possible improvements in the way in which sampling and analyses are carried out in the conduct of coordinated monitoring in areas of interest to ICES; topics to be covered will exclude division of sampling effort but will include items such as sample numbers, details of sample age etc., tissue to be analysed, methods of analysis and reporting of data.
17. Dr Topping and Mr Holden to prepare a paper for the Cooperative Research Report series which would describe the experiences and results obtained by the Working Group during the intercalibration exercises to date. Dr Topping should prepare a short paper for the Marine Pollution Bulletin, advertising the full report, and in which only a brief summary of the results and conclusions of the work would be given.
18. Dr Topping to organise the conduct of further intercalibration of lead and cadmium in 1977 using the existing fish flour and to organise a fourth intercalibration exercise for metals in 1978 using a similar matrix but preferably material with levels of copper, zinc, mercury at ca. 1/10 of the 3rd intercalibration.

ANNEX 2

LIST OF PARTICIPANTS

in the

Meeting of the Working Group on Pollution Baseline and Monitoring
Studies in the Oslo Commission and ICNAF Areas

<u>Name</u>	<u>Address</u>
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<u>Name</u>	<u>Address</u>
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Dr G. Topping	Marine Laboratory, P.O. Box 101, Victoria Road, Aberdeen AB9 8DB, SCOTLAND.
Dr W. Vyncke	Station de Pêche maritime, Hotel de Ville, 8400 Ostende, BELGIUM.
Dr A. Walton	Chemical Oceanography Division, Atlantic Oceanographic Laboratory, Bedford Institute of Oceanography, P.O. Box 1006, Dartmouth, N.S. B2Y 4A2, CANADA.

ANNEX 3

AGENDA

1. Chairman's opening remarks
2. Composition of the membership
3. Adoption of the Agenda
4. Appointment of Rapporteur
5. Report on the 63rd Statutory Meeting and action taken by the Fisheries Improvement Committee and the Advisory Committee on Marine Pollution
6. Summary of Activities of international organisations of interest to the Working Group:
 - (i) OCSOM & SACSA
 - (ii) GIPME/IGOSS
 - (iii) UNEP
7. Reports on Activities of Sub-Groups since the first meeting:
 - (i) Sediments Monitoring Sub-Group
 - (ii) Petroleum Hydrocarbons Workshop
 - (iii) Effects Monitoring Sub-Group
 - (iv) Water Monitoring Sub-Group
8. Consideration of results of Baseline Study:
 - (i) Water survey
 - (ii) Fish intercalibration exercise
 - (iii) Fish survey
9. Consideration of results of Input Study
10. Discussion of deadlines and final form of reports on Items 8 and 9
11. Monitoring of pollutant levels in North Sea fish:
 - (i) Progress of report
 - (ii) Form of report and deadlines
 - (iii) Programme for 1976/8 - improvements needed to fill the more stringent needs of ICES in the NEAFC area
12. Future work programme of the Group and scheduling of meetings
13. Any other business
14. Recommendations

ANNEX 4

RECOMMENDATIONS

Recommendation 1

The Working Group on Pollution Baseline and Monitoring Studies in the Oslo Commission and ICNAF Areas wishes to draw the attention of the Advisory Committee on Marine Pollution (ACMP) to the urgent need for promoting better recognition of the role of ICES in the marine pollution field, especially within the regulatory Commissions, and suggests that, as a matter of priority, provision should be made within a single document for a description in simple terms of the history and organisational structure of ICES, as it relates to the actual and potential role of ICES in the marine pollution field. The Working Group recommends that the ACMP should prepare (or commission the preparation of) such a document, which should draw particular attention to those areas in which ICES as an Intergovernmental Organisation, can provide scientific advice and/or coordinate specific exercises. Of particular importance is the fact that ICES is an existing intergovernmental framework depending upon national input, and should, where it is competent to do so, be utilised as a proven system rather than establish new mechanisms, at additional expense, to carry out such tasks.

Recommendation 2

The Working Group recommends that, in the light of the discussion on the report by Dr McIntyre on the work of his Sub-Group at the 64th Statutory Meeting, consideration be given by both the Fisheries Improvement Committee and the ACMP to the convening of a small Workshop to be attended by invited experts with a view to evaluating and further developing the report. In the meantime, the Working Group suggests that further studies be made and possible approaches to biological monitoring be investigated on a pilot scale by individual countries before the inclusion of biological effects observations in coordinated monitoring programmes can be recommended.

Recommendation 3

The Working Group recommends that as the first of a series of published annual reports, the results of the first year's coordinated monitoring in the North Sea should be published, as a separate document, in the Cooperative Research Report series.