ICES Oceanography Committee
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Report of the ICES - EuroGOOS Planning Group on the North Sea Pilot Project NORSEPP (PGNSP)

24–26 March 2004
Southampton, UK

International Council for the Exploration of the Sea

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1 EXECUTIVE SUMMARY

The PGNSP held a productive meeting, with model-based inputs from MUMM, IMR, Met Office and POL. There was useful discussion and agreement on the format of a product combining available model and observational data. Key to the preparation of this product is the timely availability of observations (e.g., IBTS) for comparison with and validation of model results.

The possibility of applying for a specific support action under the next call of FP6 was discussed.

Particular problems identified with the present North Sea modelling/monitoring capability were the (lack of) availability and access to river flow and nutrient data and (of lower priority, for future developments) availability of in-situ nutrient or biology data for validation of coupled physical-ecosystem model hindcasts or nowcasts.

Lessons from NORSEPP2004 include:

1) Attendance at the Southampton meeting, though productive, was low. A minimal level of central funding for at least coordination and travel and preferably also for preparation of products with corresponding contractual obligations on participants seems essential to ensure a sustained NORSEPP activity.
2) The absence of a draft product format prior to the 2004 PGNSP meeting meant that much of the meeting was spent in discussing this potential format for a possible contribution to the WGOH climate status assessment. With this initial format in place it is anticipated that discussion at future meetings will become more technical, with comparison and discussion of "products" presented from different models and observation datasets, allowing an assessment of the overall message on the environmental status of the North Sea for the year in question.
3) It was noticeable that, whilst temperature and salinity data were already available for February 2004 from some models, the IBTS 2003Q1 profile datasets, and the IBTS gridded climatology, were in fact only provided to participants during the planning meeting. Thus no preparatory work could be carried out. Timely availability of observations, particularly IBTS, is required for comparison with modelled data to allow preparation of a validated NORSEPP product. To achieve this it may be necessary to access IBTS data from the individual agencies making the observations, rather than from ICES. Local quality control of these observations can be part of the NORSEPP product process.
4) For comparison of modelled data with ICES IBTS climatology and the long-term timeseries, as presented on the ICES website, much more work could be done. For example is there enough IBTS data in the monthly averages to give a reliable indicator of interannual variability? Adding the standard deviation over space and time for this box-month from the model results for 2002, 2003 and 2004 could give additional insight into the spatial and temporal variability in the datasets. If there are only a few IBTS data points per month it might be better to show as a cloud (vertical line) of data points for each month rather than as a line joining the averages. There is potential for ongoing improvements in processing, presentation and understanding of the modelled and observed datasets used in generation of the NORSEPP products.
5) From the individual agency presentations at NORSEPP2004, it is clear that there will be a significant future contribution of more than just a monthly averaged near-bed temperature or salinity from hindcast and nowcast modelling, particularly from coupled physical-marine ecosystem models. This data will need validation against available observations (such as September bottom oxygen concentrations) and will need discussing at PGNSP to provide useable summaries or indicators.

2 INTRODUCTION

Attending: Martin Holt, Bill Turrell, Hans Dahlin, Einar Svendsen, Kevin Ruddick, Roger Proctor.

Apologies: Clive Fox CEFAS UK, Franciscus Colijn GKSS Germany, Stephan Dick BSH Germany.

3 REVIEW OF MEMBERSHIP

The PG considered its membership. The lack of expertise from the fisheries side was noted. In addition major institutions engaged in marine monitoring in the North Sea are missing (e.g. CEFAS, BSH, SMHI). In fact, the Chair noted that few of the ICES nominated members participated. The PG therefore wishes to encourage other North Sea countries to submit names of active participants. In particular, the PG would like to encourage members interested in ecosystem dynamics and ecosystem assessment. Attendance at the 2004 meeting was low, but this worked as real progress could be made in the sometimes difficult discussions over model product.

ICES Co-Chair: The resignation of the ICES co-chair was discussed. After some discussion it was suggested by IMR Bergen that H R Skjoldal may be available. IMR will confirm this. This was welcomed by the PG, as it was the Bergen workshop and Norwegian impetus which started NORSEPP. The Director of EuroGOOS offered to write to IMR to encourage their supply of a co-chair.

Summary – NORSEPP is an activity that must continue, and needs an ICES co-chair. It was discussed whether the PGNSP ICES co-Chair (once appointed) should write a letter to Delegates or to institute heads. Another route to raise awareness of NORSEPP is to report to Committees. These types of complaint are not new to the ICES system.

4 SUMMARY PRODUCT FROM OPERATIONAL NORSEPP DELIVERABLES (TOR A)

PG members presented their current draft NORSEPP products and related modelling activity:

4.1 MUMM contribution to the PGNSPP March 2004 meeting report.

MUMM presented results of the COHERENS ecosystem model for 1989, salinity modeling for the period 1993-2002, bottom stress, transport across the Dover Straits (1993-2004) and Suspended Particulate Matter (SPM) maps (4-season climatology available). Of these activities the transport product (Figure 4.1.1, MUMM1) is most suitable for use at present by NORSEPP, possibly in comparison with the similar IMR product. Salinity and ecosystem modeling could be brought up to date (2004 products available by April 2005) for future use by NORSEPP, though may remain regional products limited to the Southern North Sea and Channel. SPM (or derived euphotic depth) maps from satellites (SeaWiFS, MODIS, MERIS) are not suitable directly as NORSEPP products, though could be useful as input for various NORSEPP ecosystem models. Similarly satellite-derived chlorophyll products are relevant for NORSEPP provided bad data in coastal regions can be automatically identified and masked (work in progress). MUMM uses BSH sea surface temperature data for model forcing and so does not plan to provide an independent temperature product.

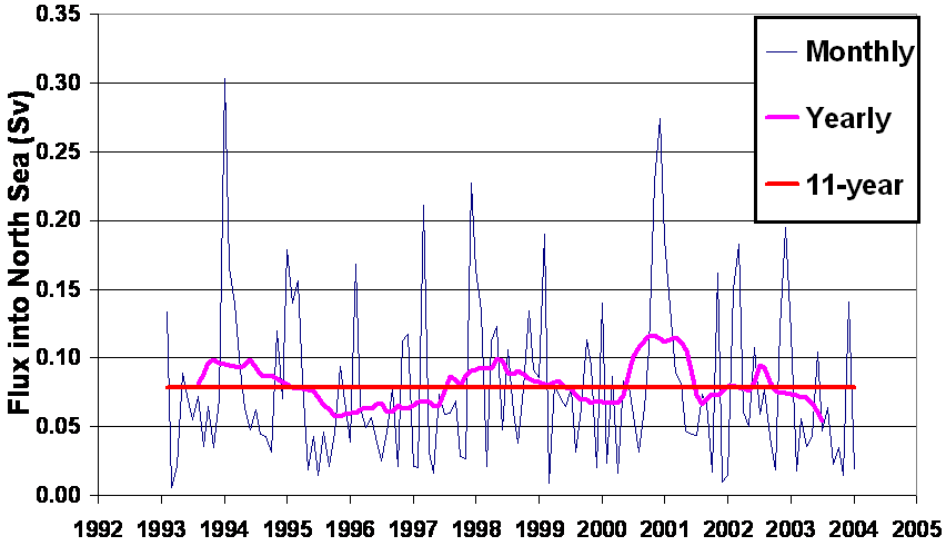

Figure 4.1.1. MUMM1. Modelled monthly-averaged flux into the North Sea across the Dover Straits (51°N).

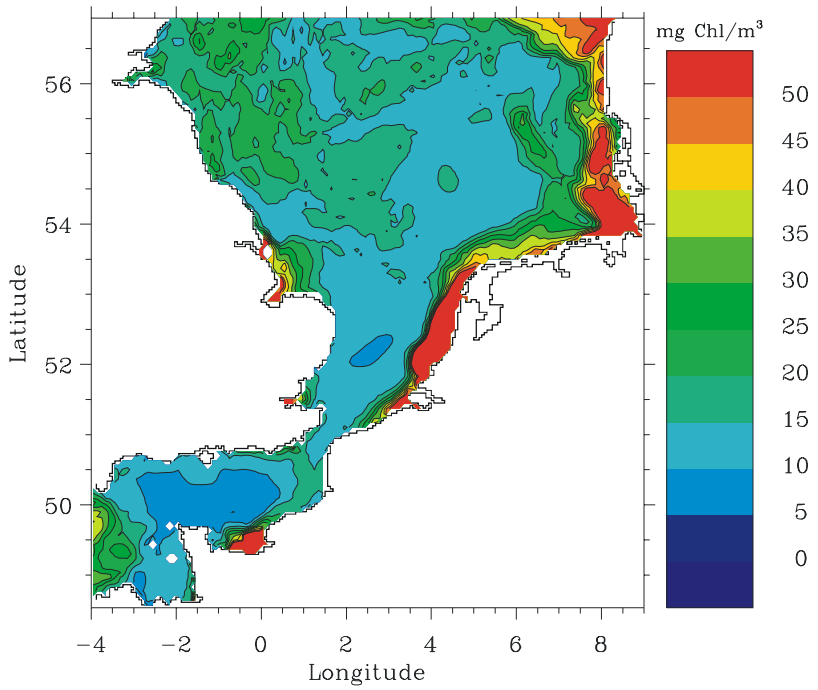

Figure 4.1.2. MUMM2. Maximum chlorophyll-*a* for 1989 from the COHERENS ecosystem model.

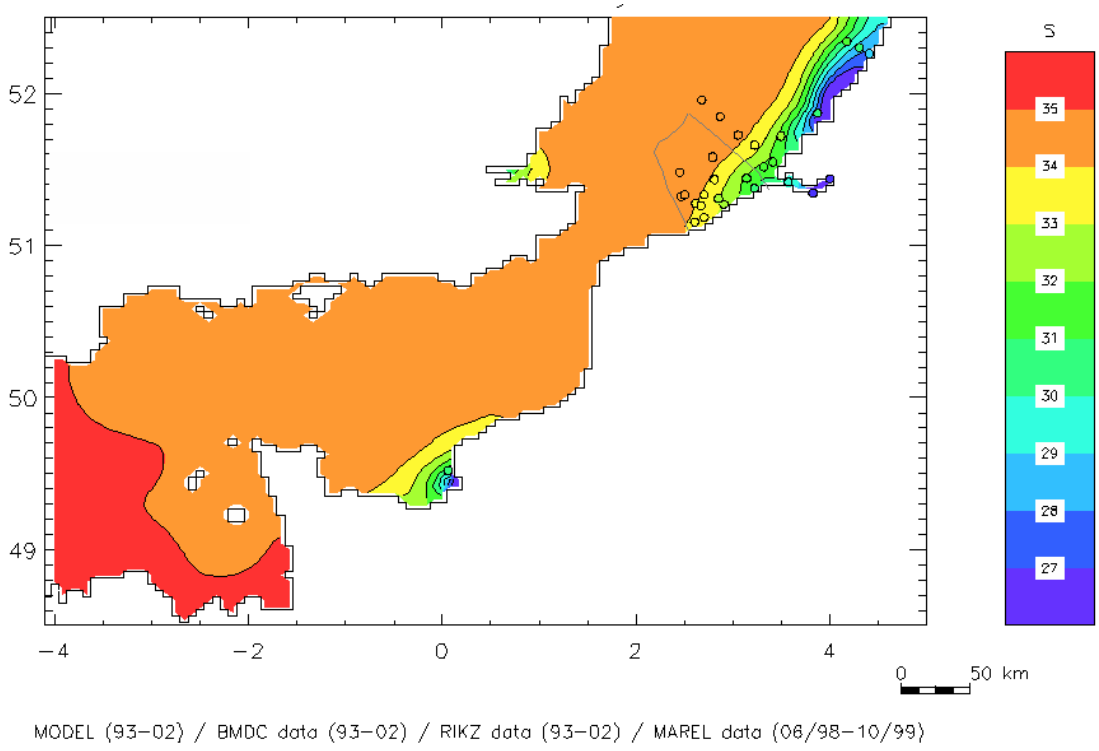

Figure 4.1.3. MUMM3. Average surface salinity from COHERENS model (1993–2002) with measured data superimposed as dots.

4.2 Met Office contribution to the PGNSPP March 2004 meeting report

Met Office: The Met Office are running the POLCOMS model for the "Atlantic Margin" on a 1/9° by 1/6 ° grid, with deep ocean nested into the Forecast Ocean Assimilation Model FOAM. The model covers 40°N to 65°N, and from 20°W to 13°E. At the surface the POLCOMS model uses momentum, heat and freshwater fluxes from the Met Office global numerical weather prediction model. Climatological values of river inflow are used, taken from a range of sources, and interpolated to daily values (in some cases the values are actual daily values meaned over several years). The Atlantic Margin model runs daily in the operational forecast suite, and also a hindcast from January 2002 is being carried out, to provide boundary forcing for a higher resolution on-shelf model that includes coupling to the ERSEM marine ecosystem model. The hindcast of that model is still in progress and no products are yet available for NORSEPP, though it is expected by 2005 that additional products will be available. For NORSEPP2004 the available products are monthly mean seabed and sea surface temperature and salinity. Plots comparing North Sea February near-bed values from 2002, 2003, and 2004 are shown at Figure 4.2.1. These show a subset of the full model domain.

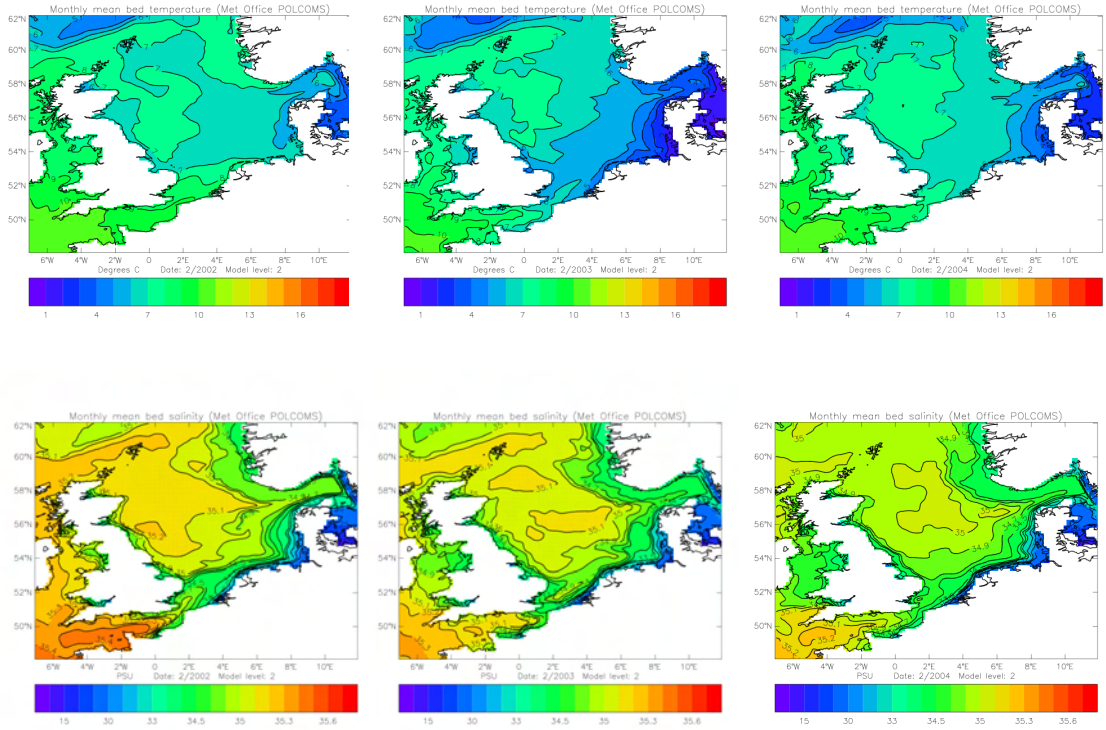

Figure 4.2.1. METOFFICE 1 Monthly mean near-bed temperature and salinity from Met Office POLCOMS Atlantic Margin model for February in 2002, 2003, and 2004.

In addition to the plotted monthly means presented for discussion, the underlying gridded model data are available in netcdf format, and these datasets were provided to Bill Turrell at PGNSP. Earlier, data for 2002 have been provided to Dr Fox, CEFAS, for evaluation and use in a study of the cod fishery. Feedback is awaited. It is anticipated that in future, the gridded modelled monthly mean datasets could be provided in some standard format via a web site or ftp site.

After the PGNSP meeting some validation will be possible against 2003 Quarter 1 IBTS data, which were made available by Bill Turrell during PGNSP. The model mean February nearbed values can be used to extend the ICES long term time-series such as presented on the ICES IBTS web page. An example of this in the southern North Sea (ICES position 10, 52.5N 3E) is shown at Figure 4.2.2, with monthly mean modelled data from 2001, 2002, and 2003 added. It is envisaged that such a plot could be maintained in the future, with the IBTS observations added as they become available.

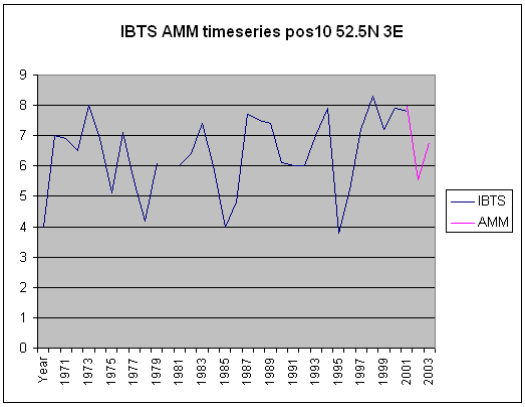

Figure 4.2.2. METOFFICE 2 ICES IBTS time-series of February monthly mean bed temperature at 52.5N 3E from 1970–2000, with Met Office POLCOMS AMM values for 2001, 2002, and 2003 added.

4.3 IMR contribution to Section 3 of the PGNSPP March 2004 meeting report

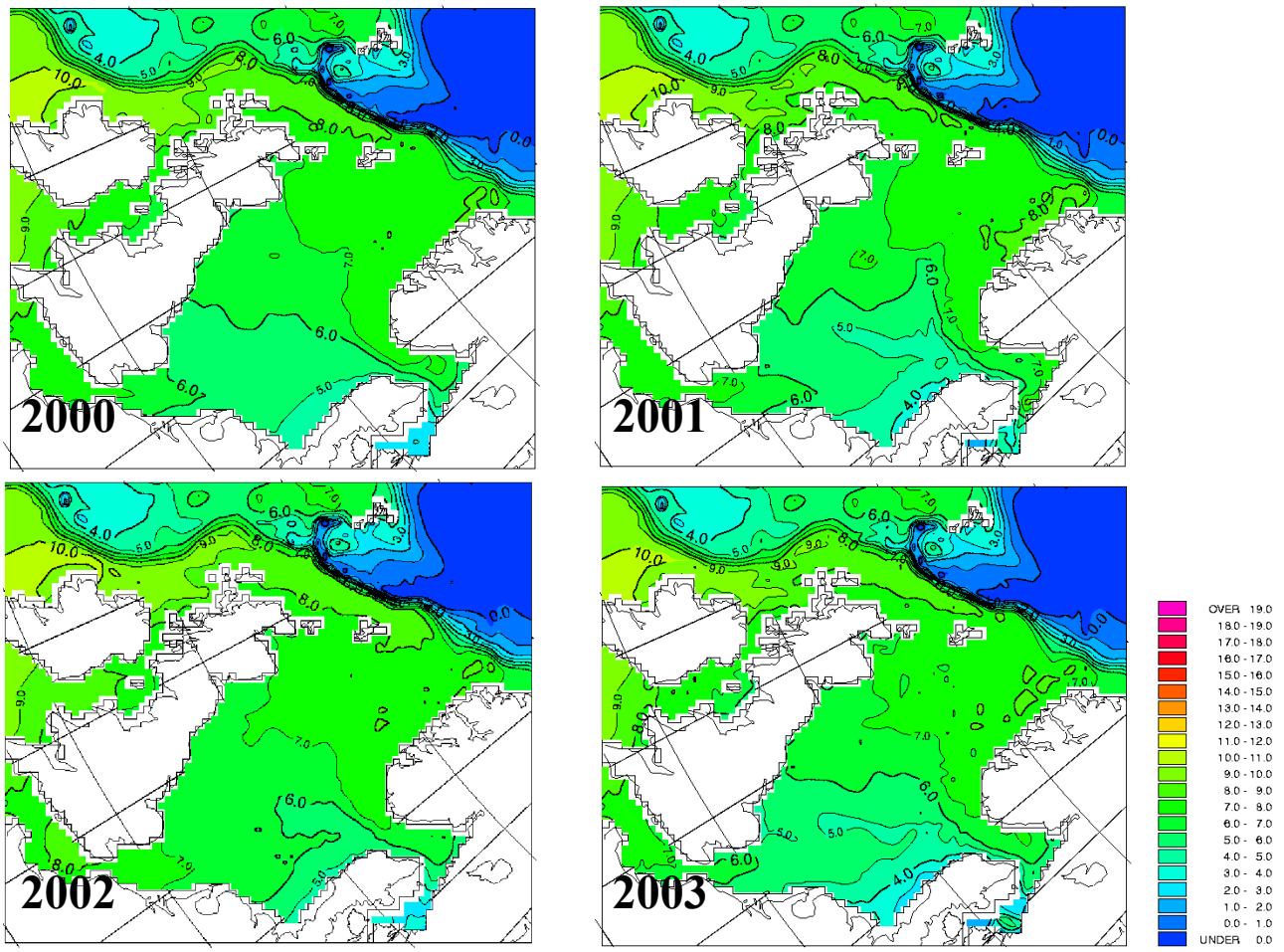

Figure 4.3.1. IMR-1 Monthly mean modelled bed temperature for February, 2000–2003.

IMR reported anecdotal evidence from fishermen, noting a sudden late-August migration of Sand-Eel away from the central North Sea. This happened around the time of the modelled onset of near-bottom oxygen deficiency, and is an interesting example of the potential application of coupled physical-ecosystem model outputs in gaining better understanding of an ecosystem-based approach to fisheries.

IMR also reported a correlation between half a year prediction of the catches of horse mackerel in the North Sea, and the modelled inflow of Atlantic water to the northern North Sea during the first quarter of the year

MONCOZE demonstration: The MONCOZE model based web site was demonstrated (www.moncoze.met.no). The site presents today's model output of currents, flagellates, wind, air-temperature, etc. The underlying model is run every day with 7 day forecasts of biology. Every week a text summary is inserted describing the principal features of the model output. Users can leave comments at the site. The site is funded by the Norwegian Research Council programme on monitoring, and 1.5 years of funding are left. The fate of the site after that is unknown. The project has cost approximately 8–10 million/Norweigan kroner (€ 1–1.2 million) over 5 years. It has involved two PhD students, and three institutions (Met, IMR and Nansen Centre). There are currently plans to install HF radar for the whole of the Skaggerak. The site includes satellite images, uploaded automatically. Eventually the site will also display in-situ observations.

The meeting noted the potential usefulness of a web site similar to MONCOZE, covering the whole North Sea. The requirements for establishing such a website could be addressed through the possible FP6 specific support action under Call 3.

4.4 POL contribution to PGNSP March 2004 report

POL also run the Atlantic Margin model (AMM) forced by FOAM boundary data but using ECMWF met forcing with bulk formulae for heat and salt flux. The model has been run from Jan 1998 to Dec 2003. This provides an alternative set of outputs from the same model (run operationally by the Met Office) with different met forcing.

Figure 4.4.1., supplied by POL, show the AMM bottom temperature for February 2003 with all IBTS data points plotted.

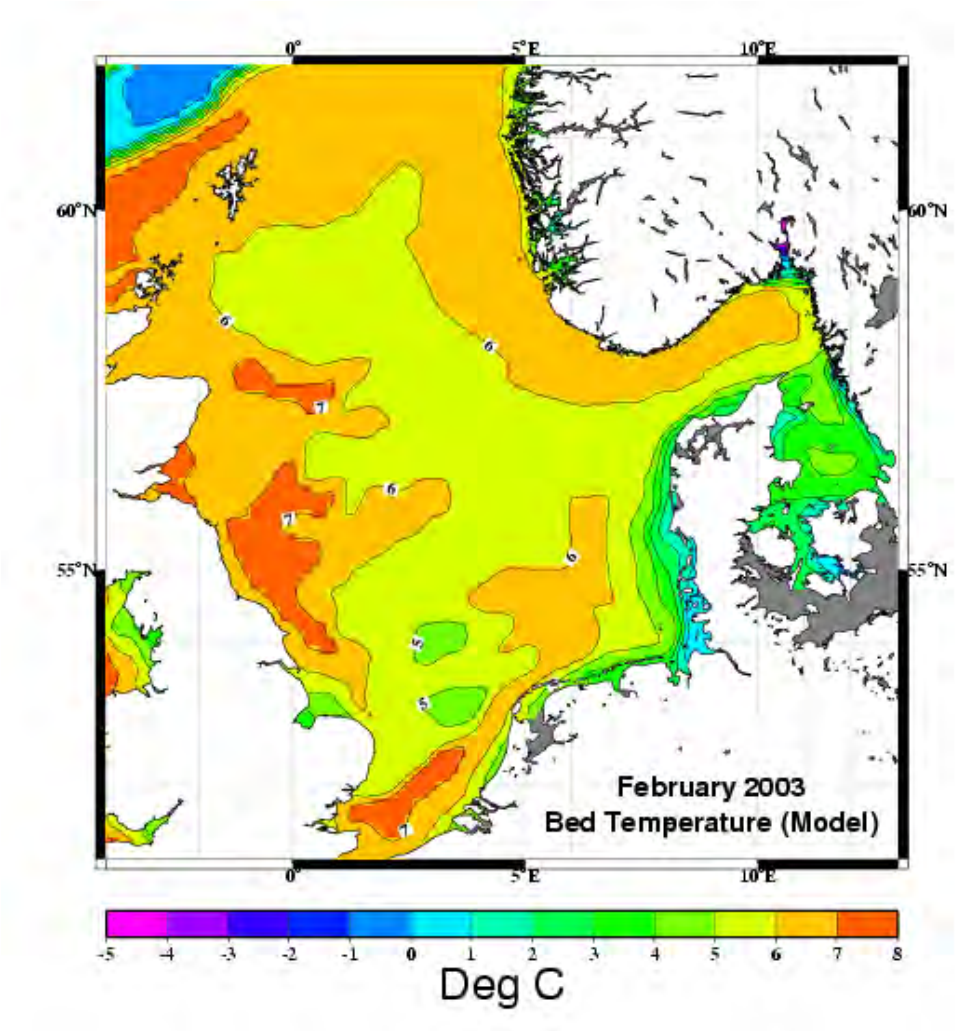

Figure 4.4.1. Monthly mean bottom temperatures from AMM(POL)

The temperatures can be compared with the long term mean of the IBTS temperatures. Figure 4.4.2. shows the AMM(POL) February 2003 temperatures as a temperature anomaly (model-mean IBTS 1970-2001), plotted on the ICES 1 degree longitude by ½ degree latitude grid.

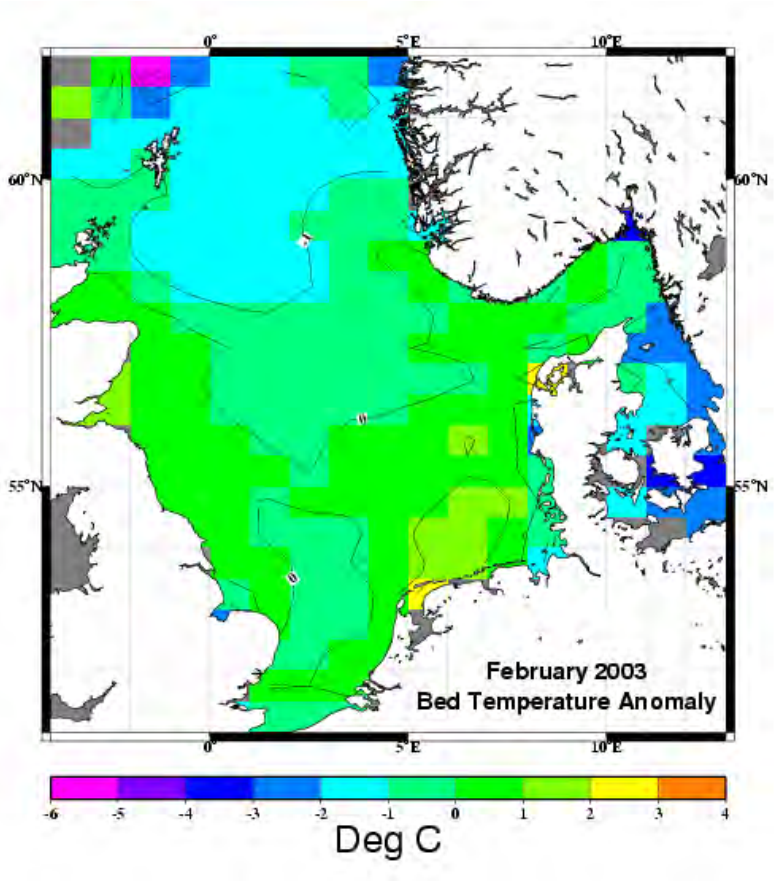

Figure 4.4.3. AMM(POL) Feb2003 bed temperature anomaly (model-IBTS mean (1971–2001)).

Direct comparison between AMM(POL) and the IBTS Feb 2003 data is shown in Figure 4.4.3 which shows the scatter of bed temperatures with model values interpolated to IBTS point locations for each day with an observation. This indicates that at this time the model has a tendency to be colder than the data suggest.

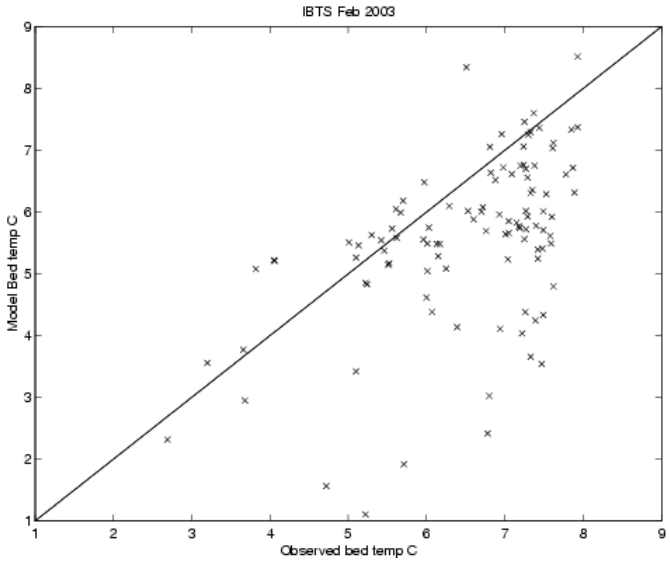

Figure 4.4.3. Scatter plot comparison of modelled and observed temperatures for Feb 2003 at IBTS locations.

An indication of the variability which might be expected in both modelled and observed data can be obtained. The IBTS data is presented as a mean value for February for each ICES square. This is computed by taking the mean of all observations collected in a square in that month and the standard deviation is also calculated from these data. Often, however, there is only one value per month collected so no standard deviation is available. Often more than one measurement is available although the number rarely exceeds 6. The AMM modelled monthly mean temperature (and standard deviation) is calculated by summing the daily mean temperatures at each model point in the ICES square. This usually involves (for February) 28 daily values and at least 20 spatial values (i.e., 28*20>560 values per ICES box. The model value is that variability can be calculated for each month of the year. The values at the main fishing grounds (identified in Table 4.4.1) in the North Sea for February in the years 1999 to 2003 are plotted in Figure 4.4.4. This shows the mean (x) and standard deviation (error bar) for IBTS (red) and model (black) for each year where data is available. IBTS values are only available for 1999, 2000 and 2003. If the standard deviation is given as zero it means there is only one value contributing to the IBTS figure. Zero mean values imply no data. All values in degrees C.

Table 4.4.1. Fishing Grounds.

Fishing ground	**Longitude**	**Latitude**	**Fishing ground (abbrev.)**
Fair Isle	-1.5	59.25	FI
Wee Bankey	-1.5	56.25	WB
	-2.5	57.75	MF
Devils Hole	2.5	56.75	DH
	2.5	60.25	VB
	0.5	58.25	FG
Dogger Bank	2.5	54.75	DB
	9.5	57.75	SK

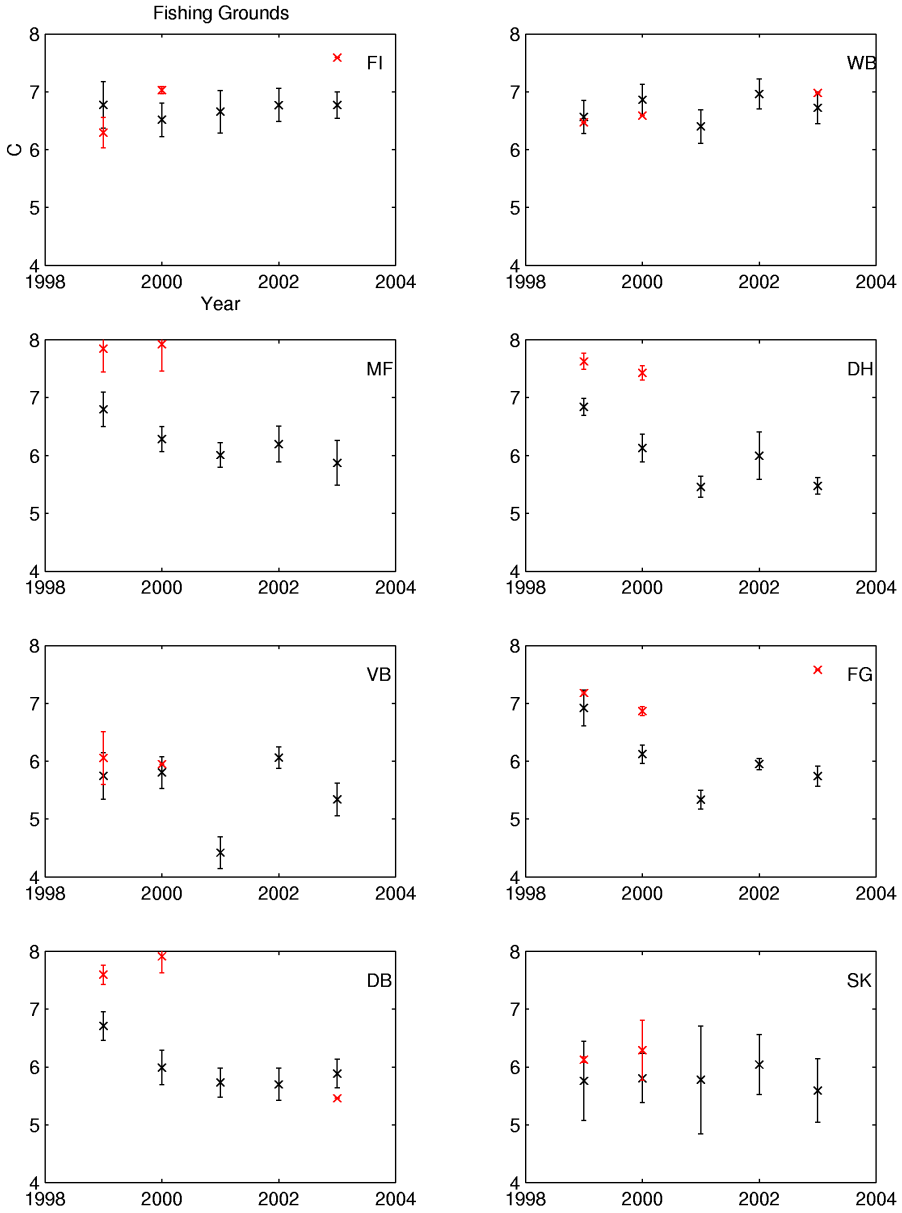

Figure 4.4.4. Mean and standard deviation of bed temperature at fishing grounds in February from IBTS data (red) and AMM(POL) (black). No IBTS error bar indicates single value mean.

POL Liverpool Bay Coastal Observatory: This project includes modelling and in-situ monitoring, including the use of real-time buoys and satellite imagery. A web cam and weather details are also included. The site receives approximately 1500 hits per day, with 50% from the general public and 25% scientific access. Users can access digital data rather than just pictures. The site also includes cruise reports etc. The approximate projects costs to NERC and CEFAS are of the order of £700k (€ 1 million) per year to maintain it, of which £500k (€ 750,000) is maintaining the observational network. The modelling is relative cheap. Ecosystem modelling will be added to the Observatory late in 2004. The project has a finite life as part of the POL Science Plan (2001–2006) but the next five-year plan will include an element to continue the Observatory. It was estimated that each ecosystem buoy cost approximately £250k (€ 375,000) per year to run. (link cobs.pol.ac.uk)

Discussion: In the general discussion which followed the presentations, the following points arose:

The importance of ready access to all available observations, for comparison with model data, was emphasised. The developing PGNSP product will be a combination of validated modelled data, with observations.

These could be presented as graphical figures, for example on a website, though for use by fisheries scientists, gridded datasets (e.g., in netcdf-format) would be required.

5 DISSEMINATION OF THE NORSEPP STATUS REPORT (TOR B)

The dissemination of NORSEPP products was discussed extensively. Three main routes were emphasised:

1) As a paper product – a chapter of the ICES Annual Ocean Climate Status Summary published by the WGOH.
2) As a CD-ROM issued at the ASC.
3) As a web site

These are not mutually exclusive, and all are possible. It was stressed that ultimately the NORSEPP product must also include gridded data behind each plot. It was noted that the NORSEPP group could build up experience by 2006 after pulling together the 03, 04, 05 products, with a view to presenting at the REGNS 2006 theme session. It was noted that under the new structure of ICES, NORSEPP lies in Science rather than Advice. NORSEPP products will be physical, nutrients, oxygen up to primary production. Intercomparison and learning between models will be possible. Hence not all of the NORSEPP products may get released into the ICES system, as the PG may remain a step or two ahead of what we actually release to users.

PGNSP at Vigo: It was discussed how PGNSP will be represented at the 2004 ASC in Vigo. The EuroGOOS co-chair was encouraged to attend if possible, as both ICES and EuroGOOS would benefit. It was suggested that if EuroGOOS modellers wish to move towards biological modelling, then the ICES ASC was a necessary place to learn. Equally it was suggested that if ICES fisheries scientists wished to use NORSEPP products and learn what could be available they should come to the planning group meetings.

6 PLANNING COMPONENTS OF NORSEPP (TOR C)

Specific Support Activity (SSA): The PG discussed submitting an SSA to the anticipated EU Framework Program 6 third call. The SSA would request support for travel for approximately 10 people, with 1 workshop per year. In addition it would request support for one full-time coordinator, who would establish the NORSEPP web page and develop a sustainable process to produce regular products (maps, diagrams, gridded data sets etc) to support the assessment of the North Sea ecosystem. An SSA is similar to the old concerted action, with 100% funding +20% overheads. Coordination will be needed from the office of the agency hosting the full-time post. The PG members attending the 2004 PGNSP were identified as a possible SSA steering group. The EuroGOOS office volunteered to provide Secretariat support for the preparation of the proposal. What is needed now is a draft of the proposal, including items such as Tasks, Deliverables, Work Schedule, Milestones, and structure of the SG.

7 LESSONS LEARNED FROM PREPARATION OF THE FIRST NORSEPP PRODUCTS (TOR D)

Lessons from HELCOM and the BOOS: Hans Dahlin presented the background. HELCOM produced an annual indicator report, which took four years to produce from the start of initiative to first report. When finished the third such Baltic report, it was decided that the member states could not afford to do it again. Therefore they had to invent a new assessment procedure. Twelve indicator reports were planned, each of about 2 pages length. These were made available on the HELCOM web site, and this represents scientific delivery into the policy system. The reports are used as basis

for assessment. They are still on an experimental basis. They were first produced in October 2003, and were delivered to the HELCOM Secretariat. Nine different countries produce the reports, so HELCOM needed consensus between partners. This was one step forward. There will be an annual indicator report, which will be a short brief report that can go into the system. The reports do not have the quality that had been hoped from the beginning. Task to produce new report has been divided between national institutes, but this project is still a pilot. BOOS groups coincide with the HELCOM institutes. In future, responsibility to run production will move to BOOS group. OSPAR participated in early planning meetings through EEA. The EU representative is the former Secretary of OSPAR, hence a link is maintained with OSPAR. HELCOM asks ICES for scientific advice, but presently ICES only produces fish chapter to HELCOM reports.

Under the old system an assessment was for 5 year period. Data were collected and analysed during years 1–5, Assessment started in year 6–7 and was reported at year 8. This was similar to the OSPAR Quality Status Reports. The EEA said that the quality of the report was high, but of little use as out of date when presented. When the report reveals a problem that needs political action, this system was too slow. A ministerial meeting needs fresh data and reporting. Consultants were hired (e.g., Stockholm University) to assemble the older style report, and this did not sometimes use all available data. Under the new reporting method the schedule is: Year 1 – data collection, Year 2 – assessment. Year 3 – used. If needed, this could go into monthly assessment.

Lessons from NORSEPP2004

1) Attendance at the Southampton meeting, though productive, was low. A minimal level of central funding for at least coordination and travel and preferably also for preparation of products with corresponding contractual obligations on participants seems essential to ensure a sustained NORSEPP activity.

2) The absence of a draft product format prior to the PGNSP2004 meeting meant that much of the meeting was spent in discussing this potential format for a possible contribution to the WGOH climate status assessment. With this initial format in place it is anticipated that discussion at future meetings will become more technical, with comparison and discussion of "products" presented from different models and observation datasets, allowing an assessment of the overall message on the environmental status of the North Sea for the year in question.

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8 REVIEW OF PRESENT OPERATIONAL NORTH SEA OBSERVING PROGRAMMES (TOR E)

EDIOS Project: Hans Dahlin reported on the EDIOS project (European Directory for the Initial Observing System). This has been a EuroGOOS project from the beginning. The task of the project is to build a meta-database of continued observations made by European countries in the ocean. EuroGOOS justification is that they have the responsibility to co-ordinate European contribution to GOOS. The meta-data collection continues, and has not been easy. To make it useful to others, they have built a web page, managed by MARIS in the Netherlands, and this will continue after the end of the project, funded by EuroGOOS. An agreement with BODC may be made in order to maintain meta-data in EDIOS

beyond the end of the project. With help of national data centres, it is hoped to update this meta-data annually. The analogy is with the WMO for atmospheric observations.

The user interface can look complicated, but is easy to use. It can be used to search for types of data, type of observation, etc. Stations are grouped by many different categories. A work package is also separating data sources suitable for GOOS and other, more locally relevant data sources.

A possible use is for operational modellers to locate suitable data for validation or for assimilation into models. Another is for Europe to identify its contributions to GOOS. The SeaSearch project, run by national data centres, helps link to the actual data rather than just meta-data. This goes live in July 2004 and may facilitate access to monitoring data in some countries though restrictions on access to and timeliness of data is likely to remain a problem for NORSEPP activities.

EDIOS will provide a tool to both ICES and EuroGOOS to identify the relevant operational monitoring programmes in the North Sea so that all available monitoring data can be included. This can be used by the PGNSP in the future. At this meeting we are not doing an actual review as a) EDIOS not yet ready, and b) NORSEPP does not know what it yet needs.

In the general discussion which followed, the following points were raised;

This ToR calls for the PG to identify operational monitoring programs. But this is a large task. The ODON project (Optimal Design of Observing Networks). Co-ordinator DMI (Jun She) is looking for this in terms of temperature and salinity.

Some operational monitoring systems are terminating in the North Sea (e.g.,. UK Met Office MAWS buoys).

The PG considered the question "Where is there a specific lack of data in the North Sea ?" Answers were as follows;

1) Nutrient data in the Channel

2) Operational hydrological model or access to near real-time data. This is missing for the North Sea and the rest of the NW shelf. Not enough data is collected. Most countries use climatological monthly means, and have to integrate national data. Norway has some co-ordinated data. The Global Runoff data centre in Germany has an archive of river data browsable on the web. POL tackling it in a way for Irish Sea. Roger Proctor putting all UK rivers together for last 50 years, for POL science plan, and there is a European Science Foundation Innovative Modelling WG chaired by David Prandle, which is proposing a full water cycle model for Europe. The Report, with recommendations, will be finalised at Eurocean 2004. Recommendations to how European operational modelling could be improved will be fed in to Brussels, suggesting central funding should be directed at this problem. Another European project is called EuroHARP. This provides a warning system for fluvial floods, which could be turned into a loading model. POL recently paid CEH to revise ungauged river flows. The new figures revise the standard flows of the some smaller discharges by up to 100%. Modelling studies in the Irish Sea started using 6 river inputs but now include 109 discharges to approximate the observed salinity distributions.

SMHI are running a hydrological forecasting for the Baltic, which is run operationally and is called HBV. It is a conceptual model, tuned to data. Water storage in boxes is used to represent soil moisture and ground water. Land use is obtained from satellite images. There are models for riverine nutrients. Water discharge has variability of 1–1000, nutrient variability 1–3. This provides daily river and nutrient inputs. Also includes diffuse sources like urban waste water.

3) Oceanic nutrient supply: Presently this can not be accurately modelled or measured, and is another data gap. Variability of volume flux regulates oceanic input, rather than nutrient content per se. Seasonal cycle of nutrient content from climatology of nutrients in Atlantic water is considered sufficient. POL has used interpolated JGOFS data. The ocean boundary problem will come out when we validate and compare data to models in NORSEPP, hence strength of NORSEPP approach using integrated model/data approach. The oceanic boundary is an obvious place to start monitoring, using existing systems such as the METNET system run by Shell. One conclusion is that ICES may wish to consider revisiting the Autumn Circulation Experiment of the late 1980s.

Summary:

We need better river data / measured fluxes / boundary nutrients.

9 AOB

This concluded discussion of the ToRs for 2004.

Members were reminded of the 2005 4th EuroGOOS conference 6–9 June 2005, Brest France.

10 ACTIONS FOR PGNSP MEMBERS

None noted.

11 NEXT MEETING OF PGNSP

Date: 11–12–13 April 2005. Start mid-day day 1, meet all day day 2, finish mid-day day 3. Timing for the meeting was set by availability of IBTS data, and timing of the WGOH meeting. It was considered that a meeting back-to-back with SG-GOOS could be beneficial.

Venue: MUMM. Brussels.

Tasks: The ICES-EuroGOOS PGNSP will work intersessionally and will meet in April 2005 to:

a) produce a summary product from NORSEPP operational deliverables;

b) submit a Strategic Support Activity to Framework 6 for NORSEPP support including a full-time co-ordinator.

c) plan how to disseminate the NORSEPP operational deliverables and information to the ICES community;

d) continue planning components of NORSEPP to support the 2005 and 2006 work of the Regional Ecosystem Study Group for the North Sea;

e) review lessons learned from preparation of NORSEPP operational deliverables and recommend on transition to fuller operational status;

f) complete review of present operational North Sea observing programmes using the EDIOS meta-database in relation to the requirements of NORSEPP and produce recommendations for possible improvements.

Annex 1 Agenda OF THE 2004 ICES/EUROGOOS PGNSP

PGNSP 24–25–26 March 2004
Southampton Oceanography Centre

Wednesday, 24 March, "Business meeting" start 0930

Introductions, agree agenda

review ICES ToR,

ICES Co-chair appointment

Drafting of report to ICES

Format of NORSEPP status assessment / report

Plan for dissemination to ICES community

Review present observing programmes. EDIOS presentation

Report from WGPBI

Weds 24th PM prepare products: individual contributions, discussion:

Thursday, 25 March

0900 continue drafting products

Friday, 26 March

0900 conclude product drafting.

1030 Business meeting:

Review of lessons learned during product preparation

Agree inputs for meeting report drafting and for NORSEPP status report drafting

12.30 conclude

Annex 2 List of participants

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Annex 3 Summary of ICES/EUROGOOS PGNSP membership

Below is the list of ICES nominated and EuroGOOS membership of PGNSP provided by Bill Turrell.

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Annex 4 2004 resolutions

2C04 The **ICES-EuroGOOS Planning Group on the North Sea Pilot Project (NORSEPP)** [PGNSP] (Chair: Martin Holt, EuroGOOS) will meet in Southampton, UK, from 24–26 March 2004 to:

a) produce a summary product from operational NORSEPP deliverables;

b) plan how to disseminate the NORSEPP Status Report and information to the ICES community and to receive and act on feedback;

c) continue planning components of NORSEPP, including integrated products for 2005 with input from the Regional Ecosystem Study Group for the North Sea;

d) review lessons learned from preparation of the first NORSEPP Status Report and recommend on transition to fuller operational status;

e) review present operational North Sea observing programmes, with input from the EDIOS project, in relation to the requirements of NORSEPP.

PGNSP will report by 25 April 2004 for the attention of the Oceanography, the Living Resources, the Resource Management, the Marine Habitat, and the Advisory Committees.

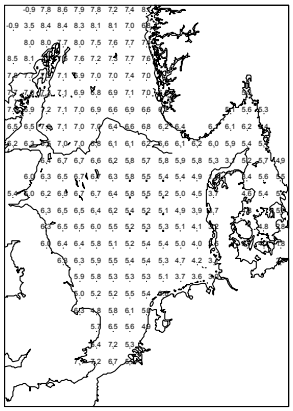
Supporting Information

Priority:	This initiates an important initiative for ICES to actively engage itself in GOOS activities. Thus priority is high.
Scientific Justification:	The ICES/IOC Steering Group for the Global Ocean Observing System (SGGOOS) organized a workshop *Towards a North Sea ecosystem component of GOOS for assessment and management in* Bergen 5–7 September 2001 as a follow-up activity of its Implementation Plan. This Workshop produced an agreed IOC/EUROGOOS/ICES/OSPAR/NSC Statement of Conclusions which was submitted to the 5th NSC in March 2002. Following this, ICES established this Planning Group which in 2002 prepared a implementation plan for NORSEPP. It is intended that the Project should be, if possible, supported by external funding (e.g., FP6) but should not be dependent on that. Consequently EuroGOOS and ICES have agreed that the principles laid down by NORSEPP (PGNSP) should be pursued actively as far as possible from institute sources, but clearly with limited objectives. Against this background and uncertainty, PGNSP will seek to initiate as many elements as possible to further its basic goal of encouraging the use of near real-time oceanographic products into stock assessment considerations.
Relation to Strategic Plan:	The general area of operational oceanography, environmental/fish interactions and ICES collaboration with other international/regional organisations is a fundamental component of ICES future strategy.
Resource Requirements:	Only costs of running a meeting at the host institute. Various Secretariat resources may be required to promote inter-working group collaboration in the project.
Participants:	Representatives from the physical oceanography community and fish surveys and stock assessment communities are invited. EuroGOOS will also nominate participants. Participants from institutes participating in North Sea/OSPAR monitoring programmes will be essential
Secretariat Facilities:	None, but relevant Secretariat staff should be directly involved in the Group
Financial:	None
Linkages to Advisory Committees:	Very close to ACE objectives and also highly relevant to the interests of ACFM too.

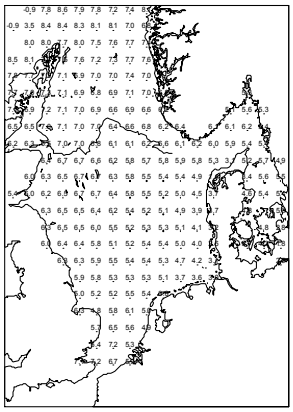
Linkages to other Committees or Groups:	LRC, MHC are closely linked. Group was created by SGGOOS. REGNS
Linkages to other Organisations	EuroGOOS, IOC-GOOS, OSPAR, NSC, COOP
Secretariat Cost Share	ICES:100%

Annex 5 Example NORSEPP product

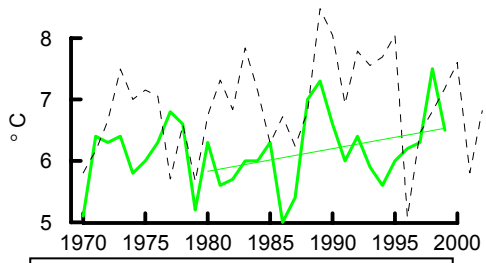
Bottom temperature



Modelled monthly average February 2003. Full model resolution. Contoured to show max detail.



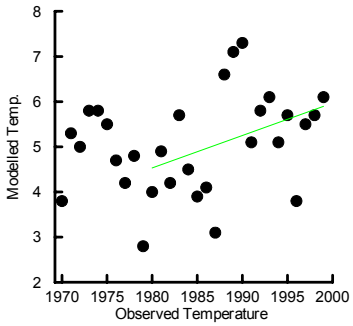
Modelled monthly anomaly February 2003. Anomaly = (Model data averaged by Stat Square – IBTS 20 year average). Contoured.



Observed bottom temperature at a fishing bank +/- Std Dev. (red)

Modelled bottom temperature at a

```
-1.5  59.25 FI
-1.5  56.25 W B
-2.5  57.75 M F
 2.5  56.75 DH
 2.5  60.25 VB
 0.5  58.25 FG
 2.5  54.75 DB
 9.5  57.75 SK
```



Model data selected at time and place of all 2003 IBTS data

Text description summarising 2003 from figures presented above.

Other parameters – Feb. Bottom Salinity, Feb. Bottom DIN, Annual Minimum Oxygen, Julien day of maximum primary production, total annual porimary production.

Transport through sections

Sections:

1) Dover Straits (51N) (Net transport)

2) Orkney-Utsira (59° 17'N) (Split into in and out – defined in NOOS how to do it)

1994-2003 10 years

Present monthly means as time series.

Parameters:

Volume Flux

Heat Flux

Salt Flux

DIN Flux