

REPORT OF THE TECHNICAL COMMITTEE ON DATA EXCHANGE

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The Technical Committee on Data Exchange met on October 11, 12 and 17, 1996, under the Chairmanship of Mr. Robin Brown. A provisional agenda and supporting documents had been circulated prior to the meeting. Dr. William Karp and Mr. William Shaw agreed to act as rapporteurs. (See Endnote 1 for participation).

Mr. Brown opened the meeting and welcomed the participants. The agenda was reviewed and additional items (11, 12, 13 and 14) were added to the agenda.

1. Review of TCODE Work Plans and Science Board recommendations

The Committee reviewed the Science Board recommendations and noted acceptance of the TCODE strategic plan for data management. The committee noted that the preliminary TCODE Inventory of Long Term Time Series data, which is now available on the PICES Web Server represents a significant area of progress for TCODE.

2. Review of meetings attended on behalf of PICES/TCODE

- PICES CCCC meeting - Nemuro, Japan, June 1996 (Brown, Kobayashi)
- Environmental Data for Fisheries Science Pacific Grove, California - July 1996 (Brown, Royer)

The Chairman gave a short summary of these meetings. Detailed reports on these meetings were circulated earlier with the supporting documents for the meeting.

3. The role of the PICES Secretariat in supporting TCODE activities

The Committee discussed and outlined TCODE expectations in support of TCODE activities. The Committee listed the following expectations of the Secretariat:

- maintenance of the WWW server and introductory "pages", including corrections and updates to documents as requested by TCODE.
- the Secretariat shall be responsible for distributing paper copies of WWW documents and database reports from the Inventory of Long Time Series. The responsibility for development and population of this database remains with TCODE for the present.
- The Secretariat will distribute a summary of the long term time series with "broadcast" messages (paper and e-mail).

4. "PICES Perspectives" and Communication Strategy

There was an active discussion of some of the issues raised in Dr. Warren S. Wooster's "PICES Perspectives" and the Communication Strategy paper produced by the Secretariat.

- TCODE members supported the observation that committee members who are appointed by their governments to PICES committees find it difficult to represent all the relevant institutions within their country and often are limited to representing the views of their own home institution. This problem is more severe in some countries than in others, depending on the number and structure of agencies/institutions involved. Some members reported that they felt they did not have the real mandate to represent other institutions (i.e. commit them to action

items) while other members found it difficult to find the time to consult and gain consensus within their country. TCODE members did not provide any additional suggestions to overcome this problem.

- TCODE members supported the observation that Committee members find it difficult to fully participate in their PICES committee activities. The Chairman noted that this TCODE meeting had no representatives from Korea or China. Travel costs were certainly a problem for delegates from China and Russia this year. It is not clear what is limiting participation from Korea, although internal reorganization of government agencies and other (higher) priorities may be a problem. Governments need to reaffirm their commitment to fully participate in PICES activities and provide the necessary support to enable this.
- TCODE has not found that communications technology is the major impediment to progress in achieving its goals. Taking a leading-edge approach in this area will be expensive to implement and maintain and could create additional communications problems (and stratification) within the PICES community. TCODE suggests that it is premature to form such a communications committee.
- TCODE strongly supports the Secretariat's initiative on the questionnaire on internet access and TCODE members would like to review and comment on the results when completed. It will be important to gather responses from PICES participants who are unable to attend this Annual Meeting to complete the survey. We feel that it may be more appropriate to set up some Communications Task Team following the review of the results of the questionnaire.

5. TCODE operations - suggestions for improvements, areas of focus etc.

- As noted in the "PICES Perspectives" discussion above, full participation by all TCODE members continues to be a problem. Most of the work of TCODE is done between meetings by e-mail and fax correspondence, but members felt that the Annual Meetings were very important in improving communications and building commitment to work on these tasks.
- As noted above, TCODE members found it difficult to represent all agencies/institutions in their country on TCODE issues. Some members feel they do not truly have the required mandate or support while others find it difficult to find the time required to consult with and integrate the views of all the parties. Each nation needs to develop a strategy for dealing with these problems.
- We reviewed meeting strategy with a view to increasing participation. After considerable discussion, it was agreed that one meeting per year, immediately before the Annual Meeting was best option (even though it makes for a long meeting). This was considered to be the most cost-effective and efficient option and was most likely to result in maximum participation. Unless the PICES nations reinforce their support for delegates, we anticipate continued problems with participation, especially where trans-Pacific travel is required.
- Communication problems were considered to be a minor irritant, although these are continuing problems with reliable e-mail and fax connections to some member countries. It is our understanding that the barriers to improvements in this area are primarily financial, not technical. We also understand that major improvements in e-mail access to Qingdao and Vladivostok are planned for the coming year.

- TCODE needs to work more closely with other Committees and Working Groups to develop appropriate tasks with achievable goals. There are serious practical limitations to the type, size and complexity of tasks which TCODE can take on. On the other hand, TCODE can develop strategies to support and promote activities that are taking place in various PICES member countries which are focused on the data exchange/management problems recognized by PICES. The Bering Sea fisheries/oceanography meta-database proposal (see agenda item 6) is an example of how this can be achieved.

6. Bering Sea Fisheries Oceanography database on WWW

Dr. Bernard Megrey (NMFS, U.S.A.) described his proposal for a Bering Sea Fisheries Oceanography Meta-database for the World Wide Web. This is a proposal that has been submitted for funding from the ESDIM (Earth Sciences Data and Information Management) Program. During the development of this proposal, Dr. Megrey consulted with TCODE members (and other PICES participants). As a result of these consultations, the scope of the original project (eastern Bering Sea only) was expanded to encompass the entire Bering Sea. Linkage to PICES activities/projects (like the inventory of long term time series and the Bering Sea Working Group) was used in the justification for the utility and importance of the proposed database.

TCODE members strongly supported this initiative. If funded, it will bring significant resources to data inventory problems and challenges previously addressed by TCODE. The Committee agreed to assist Dr. Megrey in soliciting international support for the project and in identifying data sources and key contact persons within their countries.

Dr. Megrey expects that an announcement from the ESDIM Program on funding for this project will be made before the end of 1996.

7. TCODE inventory of long-term time series

Members reviewed the progress to data on the Inventory (now available on the PICES WWW server) and found the format and contents useful. The Chairman agreed to prepare a short article for the next PICES Press newsletter that will describe the Inventory and the methods for gaining access (WWW and printed copies on request from the PICES Secretariat). Dr. Bychkov (PICES Secretariat) confirmed that the Secretariat was prepared to distribute printed copies on request.

There was considerable discussion on apparent "gaps" in the contents. Dr. Tokimasa Kobayashi reported that he has circulated information on how to access the Inventory on the WWW, samples of the existing entries and a request for contributions to various fisheries scientists in Japan and was expecting contributions soon. Dr. Kee Soo Nam (Korea) has written to the Chairman promising contributions from Korea in the coming year. Dr. Thomas Royer (U.S.A.) offered to assemble additional entries for the Meteorology section. Mr. Shaw (Canada) offered to create entries that describe the historical archive of fisheries data in the INPFC/NPAFC documents. In addition, Mr. William Shaw offered to review the contents of the Healey report and create additional entries (as required) from this report. All members agreed to take steps to "promote" the use of the on-line database within their own country. The Committee strongly supported the strategy that TCODE members prepare a short description of the PICES web server and the on-line database (with examples) in the working language of the country for distribution.

Following presentations on the Inventory of Long Time Series, the Chairman agreed to forward copies of the "worksheet" and instructions to the Chairman of WG 11 (Sea Birds and Marine Mammals) and the Marine Environmental Quality Committee for collection of addition entries in the categories of sea birds, marine mammals and contaminants.

TCODE agreed to maintain responsibility for additional entries and corrections for the next year. The Chairman will provide PICES with updated versions of the underlying database and web documents periodically. PICES Secretariat should forward all comments, additions and requests for corrections to the TCODE Chairman. During discussions over maintenance of the database, Dr. Megrey suggested an additional field for the email address of the custodian, so that an automated process could be set up to prompt custodian for comment on updating or correction of the entries. The Chairman agreed to undertake this minor modification.

8. IOC Ocean Pilot Service

A short discussion was held on the IOC (International Oceanographic Commission) Ocean Pilot Program, based on supporting documents circulated before the meeting. This is an attempt to create a master index of important web sites/resources for oceanography throughout the world. The Chairman agreed to contact IOC and obtain further information on how PICES could be linked to this program or make a contribution. Additional information on this will be circulated to the Committee following correspondence with IOC.

9. Report on the PICES Vladivostok meeting - Workshop on the Okhotsk Sea and Adjacent areas

Discussion was held over various recommendations from this Workshop which directly or indirectly make requests of TCODE. The following items were discussed:

- TCODE assistance requested in obtaining high resolution (1-2 decibar) CTD data in the Oyashio and Mixed Water regions.

Chairman to notify WG Chairman to ensure they are familiar with existing data sources (JODC archives, TINRO archives/inventory) and seek clarification on the problem. Dr. Kobayashi reported that high

resolution CTD data from Japan Fisheries Agency cruises may not be submitted to JODC - (perhaps data at standard depths only are transferred). Dr. Tadao Tatsuno (JODC) to comment on possibility of adding high resolution data to JODC archive, if required.

- high resolution (0.25 deg) seasonal ocean climatology - will require an international effort to aggregate and manage physical and chemical oceanographic data.

This is indeed a daunting task! It is not clear that there are sufficient data for a climatology at this scale. The Chairman agreed to forward this request to Dr. Syd Levitus for comments and suggestions.

- Working Group to collate all information on catch, size and age for pollock in the Sea of Okhotsk.

The TINRO catalogue of recent data from this area (and others) is available from the PICES Secretariat or TINRO. All data on fish catch, size etc. will be in the hand of agencies in Russia (no other PICES nations will have any significant data holdings in this area).

- TCODE to consider amassing the data necessary for the special process-oriented studies. Complete data inventories from relevant institutions and individuals needs to be identified. It is recommended that TCODE takes an initiative to solve these problems.

Dr. Zuenko reports that much recent existing data is available in electronic form from TINRO, HydroMet Institute and Academy of Sciences. An inventory of recent data from TINRO is available from TINRO or the PICES Secretariat. Additional historical data are available in paper form in Russia and could be converted to electronic form if funding were available. The Chairman noted that the current contributions from

Russia to the inventory of long time series were restricted to TINRO. TCODE representative from Russia need complete entries for other major labs and institutions. TCODE feels that is its a reasonable request to improve descriptions of data holdings at the key institutions, but actually assembling the data into a standard format or database is beyond our current abilities. These activities could be coordinated with the work of Dr. Syd Levitus at WDC-A.

10. TCODE participation at the Science Board

TCODE members felt that it would be advantageous to have the TCODE Chairman available to discuss recommendations and relate issues. TCODE members also agreed to attempt to attend meetings of other WG's on behalf of TCODE when it is practical to do so and where travel costs will not be a barrier.

11. Ship Schedules

At the 1995 meeting, TCODE agreed to undertake publication and distribution (via WWW) of ship schedule information. The Science Board requested that we review our proposal for a minimal ship schedule database and merge it with a more extensive model suggested by the Secretariat.

There was extensive discussion about utility and practical problems associated with establishing this service. The Chairman also reported on correspondence with the University of Delaware personnel who operate the a similar system for proving ship schedule information worldwide. The University of Delaware people offered to assist in any way (up to and including doing on PICES' behalf). They pointed out that the task was not trivial (which TCODE members had discovered when attempting to assemble this information themselves) and that timeliness was critical if the system was to be useful in identifying opportunities for sharing ship time. This suggests there is no place for a "tiered" system for assembling ship schedule information

(collated in member countries, forwarded to PICES, collated at PICES, forwarded to Univ. of Delaware).

The University of Delaware people suggest they would deal directly with the fleet operators, if PICES/TCODE would help in identification of the contact points for the fleet operators. TCODE members also suggested that it would be important to be aware of the planning cycles in the various countries, so that updates could be requested at the appropriate interval for each country. Members also noted that information on charter vessels was also important and was frequently missing from such databases.

TCODE recommends that PICES take advantage of the offer from the University of Delaware and TCODE assist by identifying the important vessel/fleet operators in each country. Responsibility for reminding/harassing the fleet operators for updated ship schedules is to be clarified with the University of Delaware personnel.

12. Cruise Reports

At the previous meeting, TCODE agreed to attempt to assemble cruise reports for recent cruise by PICES members, and post these on the PICES web site. Some minimal progress was made, but the results were unsatisfactory. There was no indication that this was useful to PICES participants (although no data on "hits" to this page were collected).

JODC archives and distributes cruise reports (via a WWW site) for the IOC-WESTPAC area, which provides an important source of information. TCODE members felt a more rewarding strategy might be to establish links on the PICES WWW site to existing data centers and agencies who are managing data from large programs (such as WOCE, JGOFS, GLOBEC etc.). These project sites often have cruise reports available and submission of reports is often a condition of funding. PICES participants who do not have access to WWW could request that the PICES Secretariat or a TCODE member

undertake a search on their behalf. There are additional benefits to such links, as these same sites often provide inventories of and access to recent data that has not yet migrated to National or International data centers.

13. Structure and Content of PICES WWW site

TCODE members from Canada, Japan and the U.S.A. reported that they had personally used the PICES WWW server. Generally, the Committee is very pleased with the Secretariat's efforts in establishing the site. TCODE members felt that PICES should work to establish itself as the primary "theme page(s)" for North Pacific Marine Science issues, as well as providing a mechanism for internal information exchange. This is a big job, but the competition to fill this niche will be limited. This does provide an inexpensive way of broadening the impact of and participation in PICES affairs.

Some specific issues were discussed:

- Should the full text of PICES reports be available on WWW site?

TCODE members suggest that this is unnecessary at the present time. There should be a document summary and Table of Contents available on line for each publication, as well as information on how to obtain a copy. The PICES Secretariat should pursue fully electronic version of new reports to allow a "print on request" service for documents which are no longer available. This service should be advertised to those who do not have WWW access currently.

If PICES establishes an anonymous ftp (file transfer protocol) facility, complete reports in electronic format (postscript) could be placed in this area. Such files will be large and will not be suitable for downloading on systems with limited bandwidth.

- Additional "lists" of people

TCODE recommends that additional lists of people and e-mail addresses be made available on the web site. For example, all attendees at PICES meetings could be added. Such lists need not be maintained - they can be kept on line for a reasonable period, then deleted after 2 or 3 years. Searches for a specific name might return multiple "hits", as people are found on more than one list, but this is preferable to not finding the name/address at all.

- Automated WWW-based registration for Annual Meeting

TCODE supports such a scheme, if it is simple and robust, but we do not consider it a high priority unless it will provide a significant reduction in the workload for the Secretariat. Acceptance of credit card payment by PICES would also be helpful.

- PICES useful links section

TCODE strongly supports the Secretariat's initiatives in this area. We suggest the following sections in this area:

- International Programs (existing)
- International Organizations (existing)
- "PICES World" (new) - this section would contain links to all home pages of institutes/agencies of PICES participants, organized by nation
- Data Centers (existing)
- Additional subject areas for TCODE (Data and Inventories page)
 - Real Time data for the North Pacific
 - Methodologies, Manuals and Standards for Marine Science
 - Climatologies
 - selected software/tools for marine science
- Usage monitoring and reporting

TCODE recommends that the PICES Secretariat activate usage monitoring for the WWW site. There are standard packages that provide summary reports on which pages are accessed and from where. TCODE members expressed interest in reviewing these summaries with the

goal of improving the utility and use of the WWW site. The PICES WWW site should become the primary site for marine science information for the North Pacific.

14. Data Preservation

Dr. Royer pointed out that many government agencies are downsizing and are at significant risk of losing access to data and samples that are inadequately archived. TCODE recommends that the Science Board make the Governing Council aware of this concern.

15. Additional Items Arising from PICES V Science Committee Meetings

- Coordination of data exchange for intercomparison of results from regional experiments.

The REX group has asked for TCODE's recommendation on facilitating data exchange amongst PICES CCCC participants. TCODE will review various strategies and report to the CCCC-IP in 1997.

- Bathymetric data for numerical models

Discussion at the POC meeting pointed out the need for high resolution gridded bathymetry for regional models. TCODE and POC will work together to produce a list of existing sources for these data.

- Results from presentations on the Inventory of Long Time Series to MEQ, BIO, POC and FIS

TCODE members presented a review of the Inventory for the members of each committee. BIO members suggested categories of Sea Birds and Marine Mammals be added. WG 11 will assist in creating the entries. In addition, the MEQ Committee requested a Contaminants category and offered assistance in creating the entries.

- Concerns about XBT data migration to national/international archives

WG 9 reported a concern that some XBT data may not be retained in national data centres. TCODE agrees to report on the data collection, archival and access situations in each country.

- Procedures for updating inventory entries and metadata

The PICES Secretariat will be the contact point for requests for corrections, modifications and additions to the Inventory of Long Time Series. These changes will be coordinated with the TCODE Chairman. TCODE reaffirms that the primary responsibility for maintaining detailed information about the data) rests with the data holder, not with PICES/TCODE.

Endnote 1

Participants and Observers

Canada

Robin M. Brown (Chairman)
William Shaw

Japan

Tokimasa Kobayashi

Russia

Lev N. Bocharov (17th only)
Yury I. Zuenko (for Yennady I. Yurasov)

U.S.A.

Thomas C. Royer
William A. Karp (11th & 12th only)

Observers

Alexander Bychkov (PICES Secretariat)
Gennady Goussev (Russia)
Bernard Megrey (U.S.A.)