

## REPORT OF TECHNICAL COMMITTEE ON DATA EXCHANGE

The meeting of the Technical Committee on Data Exchange (hereafter TCODE) was held from 16:00–19:30 hours on October 29, 2008. The Chairman, Dr. Bernard A. Megrey and Co-chairman Dr. Kyu-Kui Jung, called the meeting to order and welcomed the participants. The meeting was attended by 7 TCODE members and 1 observer representing PICES member countries and international organizations (*TCODE Endnote 1*). Mr. S. Allen Macklin served as the rapporteur. The Committee reviewed the provisional agenda and adopted it without changes and additions (*TCODE Endnote 2*).

### AGENDA ITEM 3

#### **Review progress on items in the 2007/2008 work plan**

##### a) Support of HAB-S work

Mr. Robin Brown reported that work on the HAE-DAT database is proceeding slowly. A prototype is about to be released and the interface looks good. He will remind TCODE members when it becomes available. This project supports the FUTURE program as well as collaborations between ICES and PICES. It may be combined with other databases such as taxonomic, ASFA extractions, and expertise contacts. Mr. Brown will solicit information for a metadatabase link to the HAB database for the PICES MDF (Metadata Federation).

##### b) Organization of scientific and e-poster sessions at PICES XVII

A 1-day MONITOR/TCODE/BIO Topic Session (S2) on “*Linking biology, chemistry, and physics in our observational systems – present status and FUTURE needs*” took place on October 30. This session was organized and convened by Drs. Hernan E. Garcia (TCODE-U.S.A.), David L. Mackas (MONITOR-Canada), S. Allen Macklin (TCODE-U.S.A.), Jeffrey M. Napp (MONITOR-U.S.A.), Young-Jae Ro (MONITOR-Korea) and Toru Suzuki (TCODE-Japan). There was a good selection of submissions (18 oral, 21 posters and some oral presentations had to be turned into posters. Three submissions were sent to a different session. TCODE invited Professors Yasuhiro Yamanaka and Fei Chai to be the keynote speakers. The meeting schedule and meeting report can be found in the Session Summaries chapter of this Annual Report. Best presentation was awarded to early career scientist Hoa Ma (Third Institute of Oceanography, China) on his paper (co-authored by Mingduan Yin, Liqi Chen, Jianhua He, Wen Yu, and Shi Zeng) “*Upper ocean export of particulate organic carbon in the Bering Sea estimated from thorium-234*”. Best poster was awarded to In-Seong Han (NFRDI, Korea) on his paper (co-authored by Young-Sang Suh, Lee-Hynn Jang and Ki-Tack Seong) “*Ship of opportunity monitoring for short-term variability of the thermohaline front across the Jeju Strait*”.

##### c) Cooperation with ICES Working Group on Data and Information Management (WGDIM)

TCODE was invited to give a presentation at the 2008 ICES Annual Science Conference held from September 22–26 in Halifax, Canada in Session R: “*Environmental and fisheries data management, access, and integration*” which was convened by Christopher Zimmermann (Germany), Helge Sagen (Norway), and Peter H. Wiebe (U.S.A.). Dr. Megrey gave a presentation titled “*Pacific-wide marine metadata discovery, management and delivery: The PICES Metadata Federation*”. He also discussed TCODE activities at the ICES Working Group on Data and Information Management (WGDIM) spring meeting. The ICES WGDIM has similar data functions as TCODE but they also manage data. There appear to be many areas of mutual interest and possible collaborations. However, compared to PICES, it is more difficult to get compliance and agreement within WGDIM because there are 23 member countries in ICES.

## TCODE-2008

Dr. Megrey also met WGDIM leadership and there was interest in establishing a cooperative project. A proposal for a joint topic session at the 2010 ICES ASC meeting was prepared (*TCODE Endnote 3*). Dr. Megrey also suggested that TCODE and WGDIM sponsor a joint session at PICES-2009 in Portland, U.S.A.. TCODE will request that Dr. Georgiy Moiseenko be supported by PICES to go to next ICES ASC in September 2009 and the next WGDIM meeting in May 2009.

### d) PICES Metadata Federation Project

The PICES TCODE GeoNetwork based portal was discussed. Dr. Igor Schevchenko described a TINRO effort to create data catalogs for internal use. They explored different technologies for their creation and are using the AdHost service and NSDI-based technology. They have templates for metadata creation, z-servers were setup and maintained, and documentation is available on how to do this. TINRO also explored GeoNetwork (open source) cataloging and map services. Nodes have been created on AdHost, TINRO and VNIRO servers. Future work will involve migrating PICES METFED data, refine administrative and harvest policies, promote the project among PICES, and increase the visibility of the PICES catalog and map services. The GeoNetwork application is more flexible and more powerful than NSDI technology. A complete manual is available for the GeoNetwork Community. Dr. Megrey reported that there is good PICES country representation on the NSDI Clearinghouse server. The server is also being used to help assist in the preparation of the second North Pacific Ecosystem Status Report and some files from the PICES Digital Library have been transferred.

A request was made to continue the AdHost contract. Dr. Megrey will submit a request for \$2340 for another year. After the coming year, this expense should be moved from an annual TCODE recommendation to a line item in the Secretariat budget. Backup services are not yet provided. The AdHost cost is high at \$1800/yr. Other providers are available at \$50/month. TINRO may be able to provide backup at no cost. Dr. Schevchenko will explore this.

On last year's Action Plan was the proposal to test the PICES clearinghouse nodes' performance and to run an experiment on accessing clearinghouses from different locations using different national representatives. No progress has been made. Now that PICES MDF has migrated to the AdHost server, this test should be performed on the AdHost server and the activity will be placed on next year's work plan.

Mr. Brown reported on metadata recording in Canada. It has not happened yet because of ongoing internal work on Canadian metadata, bilingual requirements, *etc.* In the near term, these will become available for the PICES MDF, even while Canada is still figuring out how to serve it themselves.

There have been updates to the PICES Technical Report. Two addenda have been created: Addendum 1: Instructions for Isite for Windows and Addendum 2: Instructions for Isite for Windows AdHost.

A short update on the status of China joining the PICES MDF was given. Originally, China could not open a server port due to security. This was part of the motive for renting the AdHost server. China successfully became an AdHost registered node over the summer.

A meeting of the PICES MDF members was held prior to the TCODE meeting. Mr. Allen Macklin reported on the outcome of that meeting (*TCODE Endnote 4*). Highlights include plans to import additional metadata from KODC, MIRC and NMDIS using templates, importing Canadian DFO metadata, publicizing the PICES Metadata Federation through TCODE representatives, teaching a module at the PICES Summer School on *Satellite Oceanography* in 2009, writing an article for *PICES Press*, creating a PICES Projects web page, and advertising the portal at the PICES 18th Annual Meeting, October 2009.

## AGENDA ITEM 4

**Coordination of activities with MONITOR**

There was no report on the MONITOR Action Plan. However, there is mention of merging TCODE, MODEL Task Team and MONITOR into one committee.

## AGENDA ITEM 5

**Report on PICES representation at the 7th NOWPAP DINRAC Focal Points Meeting**

Dr. Toru Suzuki, who represented TCODE at the meeting of the Northwest Pacific Action Plan – Data and Information Network Regional Activity Center (NOWPAP – DINRAC) on May 13–14, in Beijing, China provided a report. NOWPAP–DINRAC, Beijing, now serves as the NOWPAP Clearinghouse. At this meeting, Dr. Suzuki discussed the PICES activities of TCODE and MDF. DINRAC is running an Oracle metadatabase, however, major bugs and expenses remain. A question was asked if there is metadata redundancy between NOWPAP and PICES. PICES GeoNetwork can harvest NOWPAP metadata and serve it through a NOWPAP instance of GeoNetwork. TCODE should propose to NOWPAP that we harvest their metadata. This item will appear on next year’s work plan.

## AGENDA ITEM 6

**The 20th Session of the IOC Committee on International Oceanographic Data and Information Exchange (IODE-XX)**

To improve relations between TCODE and IODE, TCODE plans to send a representative to the IODE-XX meeting to be held in Tianjin, China from May 4–8, 2009. Mr. Ruguang Yin, China’s TCODE member, will be asked to attend. No travel support will be required as Mr. Yin lives in Tainjin. The TCODE Chairman will explore the meeting agenda to see what TCODE activities Mr. Yin might present.

## AGENDA ITEM 7

**Annual Country Reports**

Members submitted their reports and these have been placed on the TCODE web page.

## AGENDA ITEM 8

**PICES future integrative scientific program**

TCODE is pleased to support PICES’ future integrative scientific program, FUTURE. However, several questions were raised: Where does TCODE fit and what roles would TCODE play? How do MONITOR and TCODE cooperate on developing the necessary observation delivery system? TCODE should not be responsible for delivering data for assessments, outlooks or forecasts. If TCODE’s role is to expand beyond its current responsibilities, then there must be additional resources supplied by PICES. TCODE will accept and catalog metadata used to support FUTURE and facilitate production of that metadata. Dr. Megrey and Mr. Brown will participate in the FISP Open Forum on October 30 and Dr. Megrey will represent TCODE concerns at the Science Board meeting.

## **TCODE-2008**

### AGENDA ITEM 9

#### **North Pacific Ecosystem Status Report**

Questions similar to those asked in Agenda Item 8 were raised on this topic. The strategy is that NPESR will be a “living” document. Thus there is an important requirement to source the data behind NPESR (tables, figures and maps). TCODE can provide advice and support (rented server, metadata generation tools, existing or proposed service available, *etc.*). If NPESR is made operational, then the steps required to produce the value-added data should be documented so that they can be duplicated in the next iteration.

### AGENDA ITEM 10

#### **Topic session proposals for PICES-2009**

Several ideas for topic sessions were discussed. These included “*Data management, data systems and information technology to support ecosystem approaches to management*”, with potential talks on NEPTUNE/VENUS, ICES, PICES MDF and mapserver, FAO, and OBIS/Census of Marine Life. Mr. Brown volunteered to assist convenors with ideas for invited speakers, however no one volunteered to be an organizer and convenor. No TCODE-sponsored topic session is planned for PICES-2009.

### AGENDA ITEM 11

#### **Relations with other international programs/organizations**

Discussions to strengthen relationships with IODE, ICES WGDIM, and NOWPAP took place but no firm recommendations were offered beyond activities already in place.

### AGENDA ITEM 12

#### **PICES Ocean Monitoring Service Award Nominations for 2009**

The POMA award nominees were discussed and TCODE remains strongly in support of last year’s nomination.

### AGENDA ITEM 13

#### **Summary of items with financial implications**

Travel support was requested for Dr. Georgiy Moiseenko to attend the next ICES Annual Science Meeting September 21–25, 2009 in Berlin, Germany and next WGDIM meeting in May 2009. A proposal to renew the contract for the rented server for another year was discussed.

### AGENDA ITEM 14

#### **Discussion and adoption of the TCODE work plan for 2008/2009**

Based on the discussion of all agenda items, the Committee adopted the following work plan:

1. Continue to support HAB-S work with the HAE-DAT database (R. Brown);
2. Co-organize a 1-day scientific/e-poster Topic Session at PICES XVIII on “*Linking biology, chemistry, and physics in our observational systems – present status and FUTURE needs*” with MONITOR and BIO (H. Garcia, A. Macklin, T. Suzuki);
3. Cooperate with ICES WG on *Data and Information Management* (B. Megrey, G. Moiseenko, I. Shevchenko)
  - Give a presentation in Session R: “*Environmental and fisheries data management, access, and integration*” at the 2008 ICES Annual Science Conference held in Halifax, Canada;

- Give a presentation on “*Pacific-wide marine metadata discovery, management and delivery: The PICES Metadata Federation*”
4. Continue running the Metadata Federation Project:
- Report on the status of the PICES remote server (B. Megrey and I. Shevchenko);
  - Run the PICES clearinghouse nodes performance and experiment on accessing clearinghouses from different locations (B. Megrey to organize with national representatives);
  - Report on metadata recording in Canada (R. Brown);
  - PICES Technical Report Updates (B. Megrey);
  - Status of China joining PICES Metadata Federation;
  - Outcome of PICES Metadata Federation Status meeting (A. Macklin)

The 2009/2010 work plan was prepared (*TCODE Endnote 5*).

#### AGENDA ITEM 15

##### **New business**

Additional items were added at the meeting. Mr. Brown brought to TCODE’s attention that the Working Group (WG 22) on *Iron Supply and its Impact on Biogeochemistry and Ecosystems in the North Pacific Ocean* intends to create an iron database or metadatabase. Dr. Suzuki and Mr. Brown will coordinate with the *Carbon and Climate* Section.

Dr. Tomowo Watanabe raised the issue that the present PICES schedule does not promote effective discussion at the Science Board meeting and that workshops and symposia contributions from member countries are uneven. He proposed Committee meetings be given at least a half-day duration and the Science Board meeting should be scheduled one day after the Committee meetings. Dr. Megrey will bring these issues to the Science Board.

Several minor changes to the TCODE Action Plan were discussed and approved. The Plan was updated and posted on the TCODE website (<http://tcode.tinro.ru/pices16.html>).

#### **TCODE Endnote 1**

##### **TCODE participation list**

##### Members

Robin Brown (Canada)  
 Kyu Kui Jung (Korea, Vice-Chairman)  
 Bernard A. Megrey (U.S.A., Chairman)  
 Georgiy Moiseenko (Russia)  
 Igor Shevchenko (Russia)  
 Toru Suzuki (Japan)  
 Ling Tong (China)  
 Tomowo Watanabe (Japan)

##### Observers

S. Allen Macklin (U.S.A.)  
 Ningsheng Yang (CAFS China)

#### **TCODE Endnote 2**

##### **TCODE meeting agenda**

- 1) Welcome and introduction of members
- 2) Adoption of agenda (opportunity to add agenda items under “New business”)
- 3) Review progress on the items from the 2007/2008 work plan

## TCODE-2008

- a) Continue to support HAB-S work  
Responsibility – R. Brown
- b) Organize scientific and e-poster sessions at PICES XVII  
Responsibility – H. Garcia, A. Macklin, T. Suzuki
  - i) S2: MONITOR/TCODE/BIO Topic Session (Oct. 30, 1 day) Linking biology, chemistry, and physics in our observational systems - present status and FUTURE needs
- c) Cooperate with ICES WG on *Data and Information Management*  
Responsibility – B. Megrey, G. Moiseenko, I. Shevchenko
  - i) TCODE Presentation at 2008 ICES Session R: Environmental and fisheries data management, access, and integration  
Conveners: Christopher Zimmermann (Germany), Helge Sagen (Norway), and Peter Wiebe (USA)
  - ii) ICES WGDIM ICES ASC Theme Session co-sponsored by TCODE and WGDIM
- d) PICES Metadata Federation Project
  - i) Status of PICES Remote server (B. Megrey and I. Shevchenko);
    - (1) PICES TCODE GeoNetwork based portal
    - (2) GeoNetwork Opensource. The complete manual
    - (3) PICES Metadata Federation Nodes
    - (4) Ecosystem Status Report Web Pages
    - (5) PICES Digital Library
    - (6) Should TCODE propose to extend the contract?
  - ii) Run the PICES clearinghouse nodes performance and experiment on accessing clearinghouses from different locations (B. Megrey to organize with national representatives);
  - iii) Report on metadata recording in Canada (R. Brown)
  - iv) PICES Technical Report Updates (B. Megrey)
    - (1) Addendum 1: Instructions for Isite for Windows
    - (2) Addendum 2: Instructions for Isite for Windows ADHOST
  - v) Status of China joining PICES Metadata Federation
  - vi) Outcome of PICES Metadata Federation Status meeting (A. Macklin)
- 4) Coordination of Activities with MONITOR  
Responsibility – T. Royer
  - a) Monitor TC Action Plan
- 5) Report on PICES representation at the 7th NOWPAP DINRAC Focal Points Meeting, Beijing, May 13–14, 2008  
Responsibility – T. Suzuki
- 6) The 20th Session of the IOC Committee on International Oceanographic Data and Information Exchange (IODE-XX) will be held in Tianjin, China between 4 and 8 May 2009 (Responsibility – All).
  - a) Should TCODE request to send a representative?
- 7) Annual Country Reports
- 8) Discussion of the FISP (PICES Future Integrative Scientific Program)
  - a) Where does TCODE fit and what role does TCODE have to play?
- 9) Discussion of the North Pacific Ecosystem Status Report
  - a) Where does TCODE fit and what role does TCODE have to play?
- 10) Topic session proposals for PICES-2009
- 11) Relations with other international programs/organizations
  - a) IODE
  - b) ICES WGDIM
  - c) NOWPAP
- 12) PICES Ocean Monitoring Service Award Nominations for 2009
- 13) Summary of items with financial implications:
  - a) Proposed inter-sessional meetings for 2009 and beyond
  - b) Proposed publications for 2009 and beyond
  - c) Travel support requests
  - d) Proposal to continue rented server for another year

- e) Other items
- 14) Discussion and adoption of the TCODE work plan for 2008/2009  
TCODE 2009 Work Plan.doc Responsibility – B. Megrey, K.K. Jung
- 15) New business (additional items added at the meeting)

### TCODE Endnote 3

#### **Proposal for a joint ICES WGDIM and PICES TCODE Topic Session on “Recent advances in the democratization of marine data and information management” in the Theme Session on Marine Integrated Data at the 2010 ICES Annual Science Conference in Nantes, France**

Theme Session Chairs: Bernard A. Megrey (PICES TCODE, U.S.A.), Neil Holdsworth (ICES DC, Denmark), Edward Vanden Berghe (OBIS, U.S.A.)

Management of data and information within the marine science community has become a very important component in the quest to provide more comprehensive and time sensitive advice to ecosystem and fisheries managers. There are significant difficulties in integrating diverse fishery, oceanographic, and other marine environmental data. In addition, the tools to enable fishery and environmental assessments needed to respond to the requirements for ecosystem-based management initiatives are still in a remedial state of development. There are a growing number of databases and data sources requiring new approaches to enable efficient access to the data.

As these challenges are not unique to the ICES world, a co-sponsored theme session with PICES is proposed as a follow up to the data management session at the 2008 ICES ASC and the 2008 session at the PICES annual meeting. Both sessions attracted a large number of contributions.

This theme session will provide the opportunity to update the community on new approaches and endeavors by inviting database specialists, distributed data specialists, visualization specialists, end-users and others to present and/or demonstrate:

- tools for re-use of data (including a live demo session), and recycling of tools (specifically open source software);
- data publication – linking reports to data;
- *de facto* standards and how to establish them as widely accepted standards;
- data availability *versus* data visibility.

### TCODE Endnote 4

#### **PICES Metadata Federation Meeting agenda and minutes**

#### **PICES Metadata Federation Meeting**

Tuesday, October 28, 2008

Budapest Room, Kempinski Hotel

Dalian, People’s Republic of China

The meeting began at 2:00 p.m.

*Attending:* Robin Brown (Canada), Toru Suzuki (Japan), Kyu-Kui Jung (Republic of Korea), Igor Shevchenko (Russian Federation), Allen Macklin (U.S.A.), Bernard Megrey (U.S.A.) [*Absent:* Ruguang Yin (People’s Republic of China)]

1. *Current status of Federation* – Presently the Federation serves information through two Clearinghouses, NSDI (National Spatial Data Infrastructure) and Adhost. Both Clearinghouses are powered by GeoNetwork, an open-source application made available through the United Nations. The NSDI

Clearinghouse is the one originally used by PICES. It is maintained by the U.S. Department of the Interior, Federal Geographic Data Center and contains several hundred member nodes including the following PICES Metadata Federation members:

- PICES-KODC (Korea Oceanographic Data Center, inactive)
- PICES-MIRC (Japan Marine Information Research Center)
- PICES-NFRDI KODC (Korea National Fisheries Research and Development Institute)
- PICES NOAA NPEM (NOAA North Pacific Ecosystem Metadatabase, inactive due to security concerns)
- PICES TINRO (Russia Pacific Institute of Fisheries and Oceanography)

Adhost is a PICES-provided, rental server being used for several PICES projects, including the Metadata Federation. Unlike the NSDI Clearinghouse, the Adhost site is administered by the PICES Technical Committee on Data Exchange (TCODE), its GeoNetwork application is tailored for PICES use, and only PICES member nodes are registered. Adhost Federation members are:

- PICES NPEM ADHOST (NOAA North Pacific Ecosystem Metadatabase)
- PICES NMDIS ADHOST (China National Marine Data and Information Service)
- PICES TINRO ADHOST (Pacific Institute of Fisheries and Oceanography)

All PICES nodes on the NSDI Clearinghouse that have not already done so will migrate to the Adhost server during the coming year.

Canada will become the next member of the Clearinghouse. Several hundred records from the Department of Fisheries and Oceans Atlantic and Pacific archives will be uploaded to the Adhost server in the coming year.

2. *PICES rented server initiative* – At the 16<sup>th</sup> Annual PICES meeting in Victoria, B.C., Canada, in October 2007, TCODE requested that PICES rent a server to allow China's NMDIS to enter the Metadata Federation. NMDIS faced security issues that prevented establishment of its own server node. The rented server (Adhost) would be available to the PICES Metadata Federation and other PICES projects. Administration of the server is provided by TCODE.

The Adhost server supplies increased bandwidth, is not government affiliated and allows PICES control of content and function. The GeoNetwork clearinghouse served by Adhost is limited to PICES member countries and their agencies, making it a true PICES Metadata Clearinghouse. Besides hosting the Clearinghouse, Adhost also is serving the PICES digital library, the North Pacific Ecosystem Status Report and has been mentioned as a resource for PICES continuous plankton recorder information.

3. *Preparation of GeoNetwork clearinghouse software* – GeoNetwork on the Adhost server is being configured by Igor Shevchenko and his staff at TINRO under the auspices of TCODE. To the user, the GeoNetwork page appears as a search page for the PICES Metadata Federation. The search page is branded with the PICES name and logo. Searchers can stipulate any PICES member node(s) that they wish to search on, as well as temporal, spatial, keyword and free text string search criteria. News items, feature data sets and other information are highlighted in a menu bar. Mapping is possible and being developed. Multi-lingual capability is also possible and to be developed later.

GeoNetwork is open-source software, so upgrades, adaptations and modules are available from the GeoNetwork community. Presently, the PICES Adhost server is using GeoNetwork 2.1, a stable version of the software. Newer versions may be adopted in the future when they are declared stable by the community and usable by PICES Adhost administrators.

The PICES GeoNetwork application on Adhost permits batch uploads of metadata files. Metadata need not be in FGDC standard, as GeoNetwork supports other standards (DublinCore, ISO, *etc.*) and acceptance templates can be created for any metadata format to map it into the GeoNetwork format. This feature is



especially useful for federation members such as MIRC and KODC who, in the past, had to translate their metadata to FGDC format before uploading.

GeoNetwork permits the implementation of clearinghouses as elements of larger clearinghouses. This clears the way for dissolution of individual PICES nodes on the NSDI Clearinghouse. Instead the Adhost PICES federation can become a single node on the NSDI Clearinghouse, the Global Climate Change Directory, and other clearinghouses.

4. *Metadata translation* – In the NSDI system, metadata were required to be submitted in English language, FGDC format. In the PICES GeoNetwork Clearinghouse, this is no longer a firm requirement. Metadata can be imported in batch using a metadata-standard translator.

With continued development of multi-lingual instances of GeoNetwork and on-line language translators, it is foreseeable that non-English-language metadata records could be served by the PICES Metadata Federation. It was agreed that some metadata elements (title, abstract, keywords) should always have an English-language translation.

5. *Next steps* –In the coming year, the PICES Metadata Federation members will continue to test and develop its Adhost GeoNetwork clearinghouse, migrate its NSDI nodes to Adhost, increase Adhost metadata holdings and market its existence and utility. Specifically, we will pursue the following steps:
  - Support TCODE’s request to PICES to renew the Adhost contract;
  - Develop specific GeoNetwork capabilities for enhanced search and discovery, batch import, metadata template generation; user tracking and survey;
  - Consider enhancements such as metadata origin tagging and display;
  - Beta test of Adhost PICES Metadata Clearinghouse by TCODE representatives;
  - Explore production of metadata-standard templates for translation to PICES GeoNetwork metadata standard;
  - Import additional metadata from KODC, MIRC and NMDIS using templates;.
  - Import Canadian DFO metadata;
  - Publicize the PICES Metadata Federation through:
    - TCODE representatives,
    - Teaching module at the PICES Summer School on *Satellite Oceanography*, summer 2009,
    - PICES Press,
    - PICES Projects web page,
    - PICES-2009 Annual Meeting, October 2009: inclusion in Science Board Chairman’s review of 2008 advances; presentation at committee meetings through meeting agenda.

The meeting adjourned at 4:00 p.m.

## TCODE Endnote 5

### TCODE Workplan for 2009/2010

1. Continue to support HAB-S work  
Responsibility - R. Brown
  - a. Harmful Algal Blooms Section
2. Cooperate with other data management groups outside PICES
  - a. ICES WG on Data and Information Management  
Responsibility - B. Megrey, G. Moiseenko
    - i. Moiseenko to attend ICES Annual Science Conference, September 2009 and the next WGDIM meeting, May 2009

## TCODE-2008

- b. IODE-XX  
Responsibility - B. Megrey, T. Suzuki
    - i. TCODE to send a representative  
IODE-XX, Beijing China May 4–8, 2009
  - c. IODE GE-BICH (Group of Experts on Biological and Chemical Data Management and Exchange Practices)  
Responsibility – B. Megrey, H. Garcia
    - i. Identify representatives from PICES to participate in a network of experts on biological and chemical data, IODE GE-BICH
  - d. Develop plan to harvest metadata from the NOWPAP server (I. Shevchenko to organize with national representatives)
3. PICES Metadata Federation Project
- a. Renew Remote server contract and propose the Secretariat include the cost as line item in annual budget (B. Megrey to organize with national representatives)
  - b. Continue to administer AdHost server (B. Megrey and I. Shevchenko)
  - c. Run the AdHost server performance experiment on accessing metadata from different locations and multiple users (B. Megrey to organize with national representatives)
  - d. Report on metadata recording in Canada (R. Brown/J. Holmes)
  - e. Update and status of efforts to improve performance and functionality of the PICES GeoNetwork portal (I. Shevchenko)  
PICES TCODE GeoNetwork Portal
  - f. Report on status of PICES Digital Library migration and Ecosystem Status Report web pages (B. Megrey)
  - g. Japan, Korea and Canada move their metadata records to the AdHost server (T. Suzuki, K.-K. Jung, J. Holmes, I. Shevchenko)
  - h. Update AdHost server to monitor MDB use (O. Vasik)
  - i. Promote the GeoNetwork Portal.
    - i. Request GeoNetwork resource be advertised at PICES Summer in Seoul (June 09) and Winter school in Vladivostok (Feb 09). (B. Megrey and I. Shevchenko)
    - ii. Request GeoNetwork resource be reported at next years opening session as part of PICES activities (B. Megrey)
    - iii. Plan to have a short presentation on the GeoNetwork resource be given at committee MONITOR meetings other committee's? (request at front of the agenda and delay start of TCODE) (B. Megrey, I. Shevchenko, R. Brown)
    - iv. Update PICES project pages on PICES home page (A. Macklin)
  - j. Explore GeoNetwork Portal backup options (I. Shevchenko)
  - k. Update the Technical report to reflect GeoNetwork (I. Shevchenko and B. Megrey)
4. Maintain TCODE web pages (I. Shevchenko)
5. Work to facilitate preparation of the NPESR  
Responsibility – TBD
6. Assist with transfer of PICES digital library  
Responsibility – TBD
7. Update of WG 22 iron database and proposed collaboration with IODE/IOC  
Responsibility – R. Brown
8. Participate in FUTUE and FISP activities  
Responsibility – R. Brown and B. Megrey

9. Update TCODE Action Plan  
Responsibility - B. Megrey, K-K Jung
10. Coordination with Carbon and Climate Section (T. Suzuki and R. Brown)
11. Coordination of Activities with MONITOR  
Responsibility - T. Royer
  - a. MONITOR TC Action Plan