

## **ECOLOGICAL MID-CYCLE REVIEW SUBCOMMITTEE**

**Conference Call Summary**  
**Thursday, April 26, 2007**  
**12:00 noon – 2:00 p.m. Eastern Time**

### **Welcome**

*Dr. Jim Clark, ExxonMobil Corporation, Subcommittee Chair*

Dr. Jim Clark, Chair of the Ecological Mid-Cycle Review Subcommittee, welcomed the Subcommittee members to the conference call and thanked them for participating in this review. He stated that this was the first of two conference calls to be held prior to the face-to-face review meeting in May. He asked if the members had received the package of materials that was distributed prior to today's call. Those materials are the focus of this call—EPA staff will explain their relevance and provide some context for the program review. Dr. Clark explained that Dr. John Giesy would be joining the call at 12:30 from Cincinnati where he is chairing a BOSC review of the Science and Technology for Sustainability Research Program. To ensure that Dr. Giesy would be present to hear the material overview by Dr. Rick Linthurst, Dr. Clark proposed that the overview of the charge and the rating program performance presentation precede Dr. Linthurst's presentation. Dr. Clark then asked Ms. Heather Drumm, the Designated Federal Officer (DFO) for the Subcommittee, to address some administrative issues.

### **Administrative Procedures**

*Heather Drumm, EPA/Office of Research and Development, Designated Federal Officer*

Ms. Drumm thanked the Subcommittee members for their efforts in conducting this mid-cycle review. She then reviewed the Federal Advisory Committee Act (FACA) procedures that are required for all Board of Scientific Counselors (BOSC) Subcommittee meetings. As the Designated Federal Officer (DFO) for the Ecological Mid-Cycle Review Subcommittee, Ms. Drumm serves as the liaison between the Subcommittee and ORD. She explained that the BOSC is a Federal Advisory Committee that provides independent peer review for EPA's Office of Research and Development (ORD). The purpose of the mid-cycle review is to gauge the progress that has been made and the changes that have been implemented since the BOSC reviewed the program 2 years ago, and to obtain advice on future directions for the program. For this mid-cycle review, the Subcommittee was provided a list of charge questions by the BOSC Executive Committee; these questions were designed to obtain feedback from the program staff on both management and scientific issues.

This is the second conference call of the Ecological Mid-Cycle Review Subcommittee. An administrative conference call was held on April 12, 2007, during which the FACA rules were explained to the Subcommittee members. The third conference call will be held on May 8, 2007,

and the face-to-face review meeting will be held on May 23, 2007, in Rhode Island. The Subcommittee will prepare a draft report that addresses the charge questions and this report will be submitted to the BOSC Executive Committee for review. The Executive Committee will revise the report as it deems appropriate and submit it to ORD. The rights of decision making on how to respond to the review reside with EPA, and program implementation is the responsibility of the Agency.

Ms. Drumm stated that it is her responsibility as the DFO to ensure that the Subcommittee's conference calls and meetings comply with all FACA rules. All meetings and conference calls involving substantive issues, whether in person, by phone, or by e-mail, that include one-half or more of the Subcommittee members must be open to the public and a notice must be placed in the *Federal Register* at least 15 days prior to the call or meeting. Issues that are preparatory or administrative in nature are exempt from this requirement. The Subcommittee Chair and DFO must be present at all conference calls and meetings. The information for this conference call was entered into the federal docket management system (<http://www.regulation.gov>).

During this conference call, items will be discussed according to the agenda, and a summary of the call will be made available to the public after certification by the Chair of the Subcommittee. The Chair must certify the summary within 90 days of the call or meeting. The summary then will be posted on the BOSC Web Site (<http://www.epa.gov/osp/bosc>). All advisory committee documents also are available to the public.

Ms. Drumm has worked with EPA officials to ensure that all appropriate ethics regulations have been satisfied; each Subcommittee member has filed a confidential disclosure form and completed the required ethics training. Because notes were being taken, Ms. Drumm asked speakers to identify themselves when making a comment. She reported that no requests for public comment were submitted prior to the call, but the agenda allows time for public comment from 1:25 p.m. to 1:30 p.m. She will call for public comments at that time and each comment should be limited to 3 minutes.

Ms. Drumm asked if the members had received the files that she sent by e-mail earlier that day. There were four documents including three presentations for today's call and background information for the Subcommittee. Both Drs. Robert (Gene) Turner and Sue Thompson indicated that they had received the files.

### **Overview of Charge/Rating Program Performance**

*Dr. Jim Clark, Subcommittee Chair and Mr. Phillip Juengst, Office of Research and Development*

There are six charge questions for the Subcommittee to address during this mid-cycle review. The goal is to evaluate ORD's response to the program review and to determine if any changes in the program are consistent with the BOSC's recommendations. During the administrative call, Dr. Clark indicated that one Subcommittee member would be assigned to take the lead on each charge question. The Subcommittee also will provide a quantitative assessment of the program's progress in responding to the 2005 program review by using the rating tool developed by the BOSC in collaboration with ORD and the Office of Management and Budget (OMB). Dr. Clark asked Mr. Phillip Juengst, who was involved with the development of this tool, to explain it to the Subcommittee.

Mr. Juengst stated that since 1993, the Government Performance Results Act has required federal agencies to develop performance measures and such measures also are required by OMB's Program Assessment Rating Tool (PART) process. It has been challenging for ORD to develop long-term outcome measures because they focus on the impact of research on actions taken by other parties to improve human health and the environment. ORD already has a number of performance measures and some are under development. In collaboration with the BOSC and OMB, ORD developed a rating methodology that was similar to the R&D investment criteria developed by OMB a number of years ago. The R&D investment criteria concern the quality, relevance or significance, and performance or impact of the research. These three criteria were subsequently validated by the National Academy of Sciences.

The BOSC Subcommittee will be assessing the quality, relevance, and outcome of the changes that have been implemented in the program in response to the 2005 program review. The Subcommittee will assign a defined rating of exceptional, exceeds expectations, satisfactory, or not satisfactory. In 2009, the BOSC will conduct a full program review during which the rating tool will be used to assess progress on each of the long-term goals (LTGs). During this mid-cycle review, only one rating will be assigned by the Subcommittee to assess the program's response to the 2005 review.

Dr. Clark asked if there were any questions about the rating tool. When none were posed, Dr. Clark thanked Mr. Juengst and asked Dr. Linthurst to begin his presentation.

### **Material Overview**

*Dr. Rick Linthurst, National Program Director, Office of Research and Development*

Dr. Linthurst, the National Program Director (NPD) for Ecology, stated that the package of materials included the following: (1) list of the Ecological Mid-Cycle Review Subcommittee members, (2) draft charge to the Subcommittee, (3) list of available materials, (4) 2005 BOSC Program Review Report, (5) ORD Response to the 2005 BOSC Report, (6) 2003 Ecological Research Multi-Year Plan (MYP), (7) progress report for 2005-2007 Ecological Research, (8) annual performance measures, and (9) bibliometric analysis.

Dr. Linthurst provided some history of the Ecological Research Program (ERP). In 2003, the 2003 MYP was produced and the program underwent ORD's first PART review. In 2004-2005, there was a revisioning and redevelopment of the MYP. In 2005, there were budget reductions and the Ecological Research Discussion Group (ERDG) was initiated. In March 2005, the BOSC program review was conducted resulting in recommendations for science improvements; a PART review focused on measures and not science also was conducted by OMB in 2005.

In April 2005, the ERDG developed a list of research needs; Tiger Teams were developed and tasked to complete research prospectuses by October. In August 2005, the BOSC's Program Review Report was sent to EPA and the ORD response to that report was submitted to the BOSC in December 2005. Dr. Mike Slimak presented the response to the BOSC Executive Committee at its meeting in January 2006. A draft of the revised MYP was completed in February 2006. Also in 2006, there was a meeting with the Regional Science Liaisons, the ERDG reviewed and commented on the draft MYP, and a revised draft MYP was prepared in May 2006.

In May 2006, the Acting NPD for Ecology stepped down and was replaced by Dr. Slimak. The Laboratory and Center Directors were asked to consider broader scale changes and all managers were asked to plan for impending budget reductions. Given that these changes were on the horizon, Dr. Slimak did not think it was an efficient use of staff time to continue working on the revised MYP.

Dr. Linthurst joined the program as the NPD in October 2006 and initiated a reevaluation of the program for 2008 and beyond. In 2007, the program is undergoing its third PART review (ongoing now) and the BOSC mid-cycle review. A strategy for redirection of the program also is in preparation. This strategy is being edited now and will be provided to the Subcommittee in the near future.

In 2005, the ERP had three LTGs that served as the foundation of the BOSC review:

LTG 1: National policy makers will have the tools and technologies to develop scientifically-defensible assessments of the state of our nation's ecosystems and the effectiveness of existing national programs and policies—Monitoring.

LTG2: States and tribes apply improved tools and methods to protect and restore their valued ecological resources—Classification, Indicators, and Restoration.

LTG 3: Decision-makers understand the importance of ecosystem services and make informed, proactive management decisions that consider a range of alternative outcomes—Ecosystem services, Forecasting, and Decision Support.

The future of the program is found in the third LTG. In the 2005 program review, the BOSC thought this goal was a unique niche for the program and the comments on LTG 3 were positive. Dr. Linthurst identified a number of realities of research planning. These included the loss of extramural funds; the internal skills mix; the Agency bounds, PART, other MYPs; and possible future losses of internal support funds. The challenge was to design an ERP with these realities in mind.

The presentations on today's call will provide an overview of the actions taken by the program since the 2005 BOSC program review, a goal-by-goal description of the BOSC's comments and the actions taken, examples of the progress that has been made by the program, and planned future directions based on staff skills, BOSC recommendations, budget realities, and successes. Dr. Linthurst stated that he will wait until the May 8 conference call to cover his last three slides on future direction.

Dr. Clark asked if Dr. Giesy had joined the call and he had, but he indicated that he did not have the presentation to which Dr. Linthurst referred. Dr. Clark explained that the presentations were e-mailed to the members this morning. He called for questions. Dr. Turner asked if there were any documents that described the decision concerning which projects to cut to accommodate the budget reductions. Dr. Clark stated that the Subcommittee should focus on how the program sets priorities and the rationale applied to determining what should be cut. Dr. Turner thought it would be helpful to have a context for the budget cuts. Dr. Linthurst responded that there is some context provided in today's presentations and there is evidence that the program offices have built on the program's monitoring efforts. Dr. Linthurst agreed to provide some

information about the efforts that were increased and those that were decreased and how the actions taken are consistent with the goals and priorities of the program. He did not provide the Subcommittee the revised draft MYP because it is long and is no longer relevant to the program. Dr. Clark thought it was more important for the Subcommittee to understand where the program will be heading in the future. Dr. Turner noted that there are a number of items in red on the program history slides. They appear to be items that would reveal how the program came to develop its future strategy. Could the Subcommittee get copies of those items? Dr. Linthurst responded that there may not be documents for all of the items and some of them were already provided in the package (e.g. ORD response to the 2005 BOSC program review). Dr. Linthurst agreed to look through those items to see what additional information could be provided to the Subcommittee to explain the rationale for the cuts.

### **Overall Progress Review**

*Dr. Kevin Summers, Office of Research and Development*

Dr. Kevin Summers, former Acting NPD for Ecology, described the ERP actions to address the cross-cutting comments from the BOSC's 2005 program review. There were nine primary cross-cutting areas needing improvement: (1) improve integration across LTGs and with outside investigators, (2) increase international collaboration, (3) increase stakeholder involvement, (4) complete the LTG 3 research plan, (5) maximize collaborative opportunities, (6) increase post-research communications, (7) improve the research portfolio balance (enhance STAR), (8) include social sciences and economics, and (9) improve tracking and documentation. Dr. Summers' presentation reorganized the nine cross-cutting areas into six themes and addressed each thematic area. The remainder of the BOSC comments were to be addressed by LTG.

### Improved Integration

The program has undertaken a number of efforts to improve integration across the LTGs and with outside investigators. These efforts include:

- ✧ Planning development for Place-Based Mississippi Basin Integrated Assessment (2006). Teams with representatives from program offices, regions, and ORD worked together to prepare the research plan that was to be incorporated into the revised MYP.
- ✧ Hurricane Katrina response, which involved multiple offices within EPA and multiple agencies, to evaluate the environmental impact of Katrina (2005/2006). This effort required integration of all of the program's experience and skills.
- ✧ Refocusing of all ERP targeted to Ecosystem Services (2006/2007).
- ✧ Technology transfer to integrate Environmental Monitoring and Assessment Program (EMAP) approaches with monitoring programs outside EPA (2005-2007). National reports were released on both coastal and freshwater conditions.
- ✧ Central role of ERP in the President's Ocean Action Plan National Monitoring Network Development (2005-2007). The activities under LTG 1 were essential for developing the National Monitoring Network.

### Increased Stakeholder Involvement and Collaboration

ERP has increased stakeholder involvement and collaboration through the following:

- ✧ Creation of the Ecological Research Discussion Group (2005-2006).
- ✧ Involvement of other program offices.
- ✧ Place-based research pilots.
- ✧ STAR grants — \$6 million (2005-2007).
- ✧ Workshop support, lecture series, and overview presentations.

Dr. Summers commented that teams were formed that included stakeholders to identify research areas and to develop research plans. The place-based research pilots are being conducted with local, state, and regional entities as well as the regional offices. The program has made a concerted effort to reach out and involve stakeholders. ERP also made an effort to increase its investment in the STAR program. By refocusing some planned efforts, the program was able to provide \$6 million of funding for extramural research. The last of this funding will be released in the near future and, at the present, there is no funding for future STAR grants.

### Ecosystem Services

In 2005, ecosystem services was LTG 3, now it is the future focus of the program. There has been a redirection of budget resources to begin redevelopment of the program, including STAR funding. Other actions include the formation of the Tiger Team, the STAR grant focused on ecosystem services, and the revisioning of the ERP.

### International Collaborations

Since the 2005 BOSC program review, ERP has interacted with the Global Environmental Facility (GEF)/World Bank; United Nations Educational, Scientific, and Cultural Organization (UNESCO); United Nations Industrial Development Organization (UNIDO); World Conservation Union (IUCN); United Nations Development Programme (UNDP) for technology transfer of EMAP/National Coastal Assessment (NCA) tools to 11 large marine ecosystems involving 77 countries on all continents except Antarctica. For example, Mexico and Cuba are using the tools in monitoring the Gulf of Mexico to provide data compatible to those produced by the United States.

There have been five specific interactions with North Atlantic Treaty Organisation (NATO), World Health Organization, and International Treaty. In addition, there have been 27 interactions with Canada, 13 with Europe, 4 with Asia, 2 with South America, 1 with Central America, and 1 with New Zealand.

## Documentation, Use Tracking, and Communication

Dr. Summers stated that there has been some progress made on this recommendation, but more is needed. The specific items mentioned by Dr. Summers included: fact sheets, overview presentations, Web sites, feature stories, media use, outreach, list servers, lecture series, and measuring results and outcomes.

Dr. Clark thanked Dr. Summers for his presentation and called for any questions. When no questions were posed, Dr. Clark asked Dr. McDonald to proceed with his presentation.

### **Goal 1 Progress**

*Dr. Mike McDonald, Office of Research and Development*

Dr. McDonald opened his presentation with LTG 1: By 2010 national policy makers will have the tools and technologies to develop scientifically-defensible assessments of our nation's ecosystems and to determine the effectiveness of existing national programs and policies. He then explained the significance of national condition monitoring. It is needed to respond to legislative mandates—the Clean Water Act Section 305(b) concerns the condition of all state's waters and under GPRA, Congress and the public want to know the effectiveness of protection and restoration programs and policies. Monitoring also is necessary to address the gaps identified by the Government Accounting Office (GAO), which found that the condition of aquatic ecosystems (CWA 305(b)) does not accurately represent water quality conditions nationwide. Also, data gaps have made it difficult to link program activities with changes in environmental conditions (GPRA).

The three major research questions addressed under LTG 1 were:

1. What statistically valid, scientifically defensible design frameworks are needed to measure, assess, and report on the status of ecosystem condition at regional and national scales?
2. What sensitive and reliable ecological indicators are needed to measure changes in ecosystem condition over broad regions of the country?
3. How can environmental monitoring evaluate the effectiveness of national efforts to protect and improve the environment?

### BOSC Finding 1 for LTG 1

Better integration of LTG 1 with the other LTGs, and closer collaboration between EPA and outside researchers at the national, regional, and local level is needed. This integration can be facilitated by working with other federal agencies, such as the National Science Foundation (NSF), U.S. Department of Agriculture (USDA), National Aeronautics and Space Administration (NASA), and National Oceanic and Atmospheric Administration (NOAA), to develop multiple-scale, interdisciplinary, place-based, and use-inspired research programs.

*Integrating LTGs*

Dr. Summers provided examples of how the program integrated the three LTGs. In LTG 1 NCA monitoring grids and sample sites, used for establishing the condition of Alabama (Mobile Bay), were combined with NWI wetlands vegetation data to estimate habitat condition at multiple scales. These data were linked with the U.S. Fish and Wildlife Service Habitat Suitability Index (HSI) Model for Northern Gulf of Mexico brown shrimp. This linking allowed the identification of areas that required the least additional vegetation to improve brown shrimp habitat. It identified areas that are not suitable, marginally suitable, minimally suitable, suitable, highly suitable, and near optimal. This is a good example of going from LTG 1 to LTG 3—from the national level to the regional to evaluating local ecological goods and services in support of decision making.

*Collaboration and Partnerships*

EMAP's NCA provided the baseline for interagency sampling with NOAA, U.S. Geological Survey (USGS), and the Food and Drug Administration (FDA) and affected states to measure and assess the changes in the Gulf of Mexico estuaries using an EMAP approach. Federal and state agencies then were able to assess the condition of Gulf of Mexico estuaries that were impacted by Hurricane Katrina.

The U.S. Forest Service (USFS), U.S. Park Service, USGS BEST, NOAA National Marine Fisheries Service (NMFS), and Ohio River Valley Water Sanitation Commission (ORSANCO) all use EMAP approaches. More than 25 states have adopted the EMAP approach to assess the condition of their aquatic resources.

EMAP, USGS, and NOAA designed and developed a National Monitoring Network Design for Coastal Water (through the National Water Quality Monitoring Council [NWQMC]) for the White House's Council for Environmental Quality (<http://acwi.gov/monitoring/network/design/>).

BOSC Finding 2 for LTG 1

Although the overall quality of research under LTG 1 is excellent, high transparency in research design, implementation, and evaluation and close collaborations with external scientists must be maintained to assure that this high-quality research will persist.

*Transparency Research Design*

EMAP's Aquatic Resources Monitoring Web Site (<http://www.epa.gov/nheerl/arm>), which is available to the public, was accessed more than 30,000 times in FY 2005. New survey design and analysis software were added to the Web site.

The program has developed new North American Ecoregion maps and GIS coverages (<http://www.epa.gov/wed/pages/ecoregions.htm>).

More than 70 designs have been produced for university researchers, cities, counties, NGOs, EPA regions, EPA program offices, USGS, USFS, NOAA NMFS, WHO, states, U.S. territories, and countries.



EMAP researchers work with interested academic scientists on problems of mutual interest. For example, STAR's Great Lakes Environmental Indicators (GLEI) Program, developed a number of new indicators for the Great Lakes (water quality, habitat, fish, and zooplankton indicators). ORD research helped GLEI's evaluations by comparisons of indicator responsiveness across gradients and among Great Lakes' coastal ecosystems. With the loss of STAR grant funds associated with LTG 1, however, this has necessarily become more *ad hoc*.

BOSC Finding 3 for LTG 1

Research for all three LTGs would be improved by collaborations with international scientific communities. This is important because many environmental problems are either physically connected or ecologically similar worldwide and because such scholarly exchange among countries will help improve the global environment in which we are embedded.

*International Collaboration*

As an example, just within EMAP's NCA, technology transfer to other countries has been conducted through collaboration with GEF, World Bank, UNEP, IUCN, UNDP, and UNIDO. The countries include Bulgaria, Romania, Georgia, Russian Federation, Angola, Benin, Cameroon, Democratic Republic of the Congo, Equatorial Guinea-Bissau, Ivory Coast, Liberia, Sao Tome and Principe, Sierra Leone, Togo, Albania, Algeria, Bosnia-Herzegovina, Croatia, Egypt, France, Greece, Israel, Lebanon, Libya, Morocco, Portugal, Slovenia, Spain, Tunisia, Turkey, Yugoslavia, Comoros, Madagascar, Mozambique, South Africa, Namibia, Bangladesh, India, Indonesia, Malaysia, Myanmar, Maldives, Sri Lanka, Thailand, Chile, Peru, and Mexico.

Dr. Clark asked if the program has had to seek these partners or if they approached the program. Dr. McDonald replied that in the beginning the program had to initiate the collaboration but in recent years potential partners have sought the assistance of the program because of its many successes. Dr. Summers added that for all cases of international technology transfer, the partners contacted the program. Dr. Slimak mentioned that the Committee on Environment and Natural Resources (CENR) has encouraged other agencies to seek EPA's input on monitoring schemes.

**Public Comment**

*Ms. Heather Drumm, DFO*

At 1:25 p.m., Ms. Drumm asked that the discussion be paused so that she could call for public comments. She indicated that no one had requested time to make a public comment prior to the call and no comments were offered in response to her inquiry.

**Goal 1 Progress (Continued)**

*Dr. Mike McDonald, Office of Research and Development*

Dr. McDonald commented that the program has been responsive to the BOSC's recommendations from the 2005 program review, but the program also has done even more. EMAP's probabilistic survey designs allow: interpretation of monitoring data with known uncertainty, extrapolation to the entire population with a small sample size, and statistical aggregation to larger geographic areas. EMAP designs also use biological indicators that are

more responsive and integrate stressors and provide a direct measure of aquatic ecosystem conditions. EMAP also measures stressor indicators to help identify potential stressors and interpret impaired conditions.

Dr. McDonald identified the EMAP 2006 program components:

- ✧ NCA: > 90% to cooperative agreements, interagency agreements (IAGs), and state support contracts
- ✧ Western Streams: > 65% to cooperative agreements, IAGs, and state support contracts
- ✧ Great Rivers: > 90% to cooperative agreements, IAGs, and state support contracts
- ✧ Coastal Wetlands: 100% IAGs
- ✧ Regional EMAP: 100% EPA regions
- ✧ Temporally Integrated Monitoring Ecosystems (TIME)/Long-Term Monitoring (LTM): 100% cooperative agreements and IAGs
- ✧ Design/IM: 40% to states and EPA regions and program offices.

Dr. McDonald noted that there are a number of research products that are now emerging from earlier investments. He used an NCA example: funding for the third National Coastal Condition Report (NCCR) began in FY 2000; the field data were collected from FY 2001-2004; data analysis and assessment were conducted from FY 2003 to 2006; and the draft NCCR III Report was prepared in FY 2007.

### EMAP Approach Adopted

The implementation and routine use of the EMAP approach is evidence of decision-maker acceptance. EPA's Office of Water (OW), Office of Air and Radiation (OAR), and Office of Pesticide Programs (OPP) have environmental accountability endpoints in their Agency performance goals that require an EMAP approach. OW is working with EMAP to conduct national surveys on the condition of estuaries, streams, lakes, rivers, and wetlands in support of the CWA Section 305(b). All 50 states have used EMAP protocols to determine the condition of at least one aquatic resource. Twenty-five states have adopted the EMAP approach for use in reporting to EPA.

OW adopted the EMAP approach for the first unbiased estimates of the national estuarine condition. For the Western Streams Assessment (WSA), EMAP developed the designs and indicators and demonstrated the approach. Based on the success of the Western Streams Assessment, OW adopted the approach for the National Streams Survey.

For the WSA, the EMAP approach was used to determine the relative risk of stressors to biological condition. The major stressors were nitrogen, phosphorus, and excess streambed sedimentation.

In 2007, the second national land cover classification was completed, which allows decadal change in land cover to be determined. This effort links to LTG 2. Another component of EMAP, the EMAP Great River Ecosystems, was developed because these systems are poorly understood. The program is developing the scientific basis for assessing the condition of large rivers (Missouri, Ohio, and upper Mississippi Rivers). Research results are just starting to come in, but with respect to certain chemical contaminants, the Ohio River is more contaminated than the other rivers.

LTG 1 is supporting OW's national surveys (lakes, flowing waters, coastal, and wetlands). OW is building on EMAP national surveys (NCA 2000-2006 and Wadeable Streams Assessment 2004-2005). These national surveys are implemented through state Section 106 grants. OW's report on the National Lakes Assessment is expected in 2009. EMAP supported the design of the assessment in 2006, is preparing the field manual for lakes in 2007, and will provide support for data analysis in 2008. For OW's Flowing Waters (rivers and streams) Condition Assessment, EMAP is assisting with the assessment design in 2007, will support development of the field manual for Great Rivers in 2008, and will analyze data in 2010. The EMAP Coastal Wetlands Pilot (FY 2007-2008) will support OW's National Wetlands Assessment in 2013. EMAP will help design OW's Wetlands Assessment in 2010 and the field manual for Wetlands in 2011; EMAP will assist with data analysis in 2012.

In Regional EMAP, smaller-scale geographic demonstrations involving condition assessment at regional, state, and local levels are being conducted. One example mentioned by Dr. McDonald was the EPA Region 8 – Montana's Northern Plains Streams project. Seventy-six percent of these streams were in fair to good condition. The major stressors associated with poor condition were total nitrogen, excess sediment, total phosphorus, bank and riparian condition, and non-native fish.

EMAP's TIME/LTM Program was designed to look at acid sensitive lakes and streams in the Northeast, North Central, and Southeast parts of the country. The sites for the EMAP TIME were chosen with probability design. The Northeastern lakes have been monitored since 1991 and the Mid-Atlantic streams since 1993. The LTM sites were chosen deliberately and most sites have been monitored since 1983. Dr. McDonald mentioned some EMAP TIME/LTM trends. New England, Adirondack, and Upper Midwest Lakes, and Appalachian streams show significant trends in decreasing sulfate concentrations and in increasing acid neutralizing capacity (ANC). There was no ANC trend in New England lakes. Recovery of the most acidic waters is a measure of the success of the Clean Air Act Amendments. Data from TIME/LTM were used by OAR to demonstrate the effectiveness of the Clean Air Act Amendments. The TIME/LTM data also supported "Cap and Trade" as a viable approach for use in the President's Clear Skies Initiative.

EPA's Report on the Environment (ROE) depends on EMAP's national condition assessments; EMAP approaches also have been incorporated into the monitoring efforts of partners who generate data for the ROE. For example for air, data on lake and stream acidity come from the EMAP TIME/LTM. For fresh surface water, data on benthic macroinvertebrates, nitrogen and phosphorus, and streambed stability come from the WSA. For coastal water, data on benthic communities, fish tissue contaminants, sediment quality, water quality, and wetland extent, change, and sources of change come from the NCA. EMAP also provides data on coastal fish

tissue contaminants and contaminants in lake fish tissue for the section on consumption of fish and shellfish.

EMAP has a strong scientific basis. More than 275 publications have been produced on LTG 1 science since 2004. The program conducted a recent successful EMAP Symposium in Washington, DC, that was attended by four EPA Assistant Administrators, EPA's Deputy of the Office of Chief Financial Operations, and the Governor of Delaware. The program has undergone recent successful reviews by the BOSC and OMB. The ERP supports national data needs (ROE and Heinz Center's State of the Nation's Ecosystems). In addition, the program partners with academia, EPA program offices, non-governmental organizations, states, territories, EPA regions, federal agencies, tribes, and countries. The strong quality of the science is recognized by the national and international scientific communities. Dr. McDonald concluded his presentation by stating that policy makers now have an approach for scientifically-defensible assessments of the condition of the nation's ecosystems and can begin to determine policy effectiveness.

Dr. Clark thanked Dr. McDonald for his presentation and asked if there were any questions. No questions were posed by the Subcommittee members. Dr. Clark commented that the presentations provided the Subcommittee with a considerable amount of information that can be used to respond to the charge questions.

Dr. Turner said that the program has experienced a severe budget cut over the last 4 years and he is trying to figure out how to evaluate the progress in light of this fact. Where has the program expanded? What has been cut? What is covered by the programs of other agencies?

Dr. Clark cautioned against entering into a direct dialog with program staff, stating the discussion of the program's progress must be among the Subcommittee members. He added that additional information can be requested from EPA.

### **Preparation for Next Call and Face-to-Face Meeting**

*Dr. Jim Clark, Subcommittee Chair*

Dr. Clark reminded the Subcommittee members that they have the lead for certain charge questions. Dr. Giesy has the lead for charge questions 3 and 4, and Dr. Turner has the lead for charge question 2. All members will provide their comments to the individual who has the lead for that question. He reminded the members that the DFO will be distributing the strategic rationale document. He asked Dr. Thompson if she needed any additional materials on partnerships. Dr. Thompson replied that she did not think she needed anything else but she noted that some of the items listed in the contents for the notebook were not provided. Ms. Drumm stated that those items will be sent to the Subcommittee members before the May 8 conference call.

The May 8 conference call will focus on progress on LTGs 2 and 3 as well as the future strategy for the program. The draft agenda for the call was already sent to the Subcommittee members. The agenda for the face-to-face meeting has not been drafted, but it will include a large block of time for the Subcommittee to discuss and work on the report.

Dr. Linthurst said that he will prepare something that identifies what has been expanded and what has been cut from the program for distribution to the Subcommittee.

Dr. Clark noted that the Subcommittee's face-to-face meeting is the day before the BOSC Executive Committee meeting. Although EPA cannot pay the Subcommittee members for their time or expenses to stay over to attend the Executive Committee meeting, Dr. Clark stated that all Subcommittee members are welcome to attend that meeting as members of the public.

When there were no additional questions or requests for materials, Dr. Clark thanked the Subcommittee members for their participation and the EPA program staff members for their presentations. Ms. Drumm said that members should expect to receive additional materials from her next week. Dr. Clark then adjourned the conference call at 1:48 p.m.

### **Action Items**

- ✧ Dr. Rick Linthurst will look through the items on his slide that were in red to see what additional information could be provided to the Subcommittee to explain the rationale for the cuts. He then will prepare a document that identifies what has been expanded and what has been cut from the program for distribution to the Subcommittee.
- ✧ Ms. Drumm will be distributing additional materials to the Subcommittee members the week of May 1 so that they receive the materials prior to the May 8 conference call. These materials will include the remaining items for the notebook, which includes the Strategy for the new ERP.
- ✧ The Subcommittee members will review the previously received and soon to be received materials for the notebook prior to the May 8 conference call.

## **PARTICIPANTS LIST**

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## **APPENDIX A: Teleconference Agenda**

### **ECOLOGICAL MID-CYCLE REVIEW SUBCOMMITTEE**

#### **AGENDA**

**April 26, 2007**

**12:00 noon – 2:00 p.m. Eastern Time**

#### **Participation by Teleconference Only**

12:00-12:10 p.m.	Welcome - Roll Call - Overview of Agenda	Dr. Jim Clark, Subcommittee Chair
12:10-12:15 p.m.	Administrative Procedures	Heather Drumm Subcommittee DFO
12:15-12:30 p.m.	Material Overview	Dr. Rick Linthurst Office of Research and Development
12:30-12:45 p.m.	Overview of Charge/ Rating Program Performance	Dr. Jim Clark Subcommittee Chair & Phillip Juengst Office of Research and Development
12:45-1:05 p.m.	Overall Progress Review	Dr. Kevin Summers Office of Research and Development
1:05-1:25 p.m.	Goal 1 Progress	Dr. Mike McDonald Office of Research and Development
1:25-1:30 p.m.	Public Comment	
1:30-2:00 p.m.	Preparation for Next Call and Face-to-Face Meeting - Discuss Writing Assignments - Identify Additional Information Needs	Dr. Jim Clark, Subcommittee Chair
2:00 p.m.	Adjourn	