

Workshop Report

Great Lakes Regional

Marine Protected Area Education Workshop

**September 25-27, 2002
Two Harbors, MN**



**Phyllis Dermer
Education Coordinator**

Table of Contents

Introduction	3
Great Lakes Workshop Overview	3
Participants	4
Technical Field Trips	5
MPA Presentations	5
The National MPA Center – Building the Foundation – Marjorie Ernst.....	5
A Look at Topical Science and Research Efforts – Satie Airame	5
Social Science and Marine Protected Areas – Sarah Lyons	6
American Attitudes Toward Marine Protected Areas And Fully Protected Marine Reserves – Dave Bard	6
Overview of mpa.gov – Phyllis Dermer.....	6
Overview of Training and Technical Assistance Institute – Ginger Hinchcliff	6
Participant Presentations	7
Small Group Work – Existing and New Program Ideas and Development	8
Summary Session	9
Evaluation	10
Workshop Content.....	10
Workshop Format	11
Workshop Applicability.....	11
Workshop Comments.....	12
Workshop Analysis.....	13
Attachment: Workshop Agenda	15
Attachment: Participants	18
Attachment: Speaker Biographies.....	20
Attachment: Participant Biographies	22
Attachment: Workshop Notebook Contents	24
Attachment: Small Group Work.....	25
Session Goals.....	25
Characterizing Audiences.....	26
New Program Worksheet.....	28
Attachment: Theme: Conserving Biodiversity	29
Attachment: Theme: Preserving Cultural Resources	32
Attachment: Theme: Habitat Protection	35
Attachment: Theme: Use and overuse of resources.....	38
Attachment: Theme: Managing invasive species	41
Attachment: Evaluation Form.....	45
Attachment: Evaluation Charts.....	47
Workshop Content.....	47
Workshop Format	50
Workshop Applicability.....	52

Introduction

As concerns grow about the health of our oceans, many agencies are using marine protected areas (MPAs) as a management tool to protect the nation's most vital marine habitats and resources. The term "marine protected area" has been in use for over two decades, while the concept of marine protected areas has been around for centuries. MPAs are increasingly in the news, with state and regional initiatives such as California's Marine Life Protection Act and the process to establish the Tortugas ecological reserve in Florida. Because of the growing visibility, it is essential that MPA coastal educators and outreach coordinators are informed and able to address questions about MPAs from visitors to their sites. It is also important to inform the next generation about MPAs by incorporating information into programs and activities that teach about our marine and coastal resources.

In response to this need, the National Marine Protected Areas Center has established an MPA Education Project to increase understanding and awareness of MPAs among coastal educators. At the center of the project in 2002 was a series of regional workshops targeting marine and coastal educators who regularly provide programming for students, teachers, and the general public. Presentations at the workshops provided background information about MPAs. In addition, group breakout sessions were held to discuss the many educational programs and activities available for regional and national coastal resources and issues. The participants also discussed how to incorporate MPAs into current education programs.

Great Lakes Workshop Overview

The Great Lakes Regional Marine Protected Areas Education Workshop was held in Two Harbors, Minnesota, from September 25-27, 2002. The workshop goals were to:

- Increase awareness and understanding of MPA issues, different types of MPAs and their management, and the value of MPAs;
- Promote the inclusion of MPA themes and messages in existing and new marine and coastal education programs;
- Foster development of education partnerships; and
- Solicit recommendations from educators and education intermediaries about additional MPA Center support.

Each participant received a notebook binder at registration which included background information and recent news articles about MPAs, examples of educational programs used for teaching about MPA issues (e.g. biodiversity, invasive species), and workshop information. Every participant also received a cloth copy of the MPA Education poster and companion materials. See the Workshop Notebook Contents attachment for a complete listing of the registration notebook contents.

On the first day, technical field trips were arranged to acquaint the participants with some of Duluth's natural and cultural coastal resources. The workshop officially began early the next morning with a workshop overview and participant introductions. The three main presentations on the first day acquainted the educators with MPA issues and the activities of the National MPA Center. The group was then divided into smaller working groups. Participants in each working group brainstormed existing education programs and activities and began development of new programs for each of five different thematic areas pertinent to MPA education. During breaks, participants

identified regional sites that might be considered MPAs on an unmarked map of the Great Lakes. (They identified around 30 sites throughout the region and approximated their boundaries.) After dinner, some of the participants gave brief presentations on their programs. Early the next morning, there was a presentation on American attitudes towards marine reserves. The educators then wrapped up their small group session work and split into different groups to present the results. The final discussion summarized the workshop and solicited recommendations for support from the National MPA Center for the participants' education and outreach efforts.

Staff members Phyllis Dermer, Education Coordinator for the National MPA Center and Peter Wellenberger, Reserve Manager for the Great Bay National Estuarine Research Reserve, helped with workshop logistics and facilitation. The following National Oceanic and Atmospheric Administration (NOAA) educators facilitated the workshop:

- Sarah Mitchell, Education Coordinator for the National Ocean Service
- Kate Barba, Education Coordinator for NOAA's Estuarine Research Division
- Ginger Hinchcliff, Director of the National MPA Center's Training and Technical Assistance Institute

The following is a list of the invited speakers and their presentations. Please see the Speaker Biographies attachment for detailed information about the speakers. Subject presentations are posted on the mpa.gov website.

- Dr. Satie Airame, Policy Coordinator, PISCO and Science Advisor, Channel Islands National Marine Sanctuary, *A Look at Topical Science and Research Efforts*
- Dave Bard, Program Manager, SeaWeb, *American Attitudes Toward Marine Protected Areas And Fully Protected Marine Reserves*
- Marjorie Ernst, Environmental Protection Specialist, National MPA Center, NOAA, *The National MPA Center – Building the Foundation*
- Sarah Lyons, Marine Policy Analyst, National MPA Center, Science Institute, *Social Science and Marine Protected Areas*

Participants

More than 20 educators and education intermediaries from the Great Lakes region participated in the workshop. Representation was drawn from Illinois, Michigan, Minnesota, Ohio, and Wisconsin. A representative from Gray's Reef National Marine Sanctuary in Georgia was also able to participate, having expressed an interest in the group's focus on watershed issues. The educators were a diverse group and included representation from the following organizations: National Sea Grant College Program; National Estuarine Research Reserves; National Park Service; U.S. Fish and Wildlife Service; National Marine Sanctuaries; aquaria and visitor centers; and other governmental and non-governmental organizations. Besides agency inclusiveness, a good regional representation was desired. At the same time, we wanted to maintain a small group size to promote intimate exchange of information about the various programs represented and have an opportunity for participants to network. The diverse representation encouraged networking and sharing of activities, programs and materials between the participants, and facilitated exchange of helpful and varied commentary during the entire workshop.

One impediment to participation in workshops such as this is the cost to individual, cash-strapped programs. Due to the need for limited participation and for the attendees to be willing to be the disseminators of information in their region, NOAA wanted to make sure that the invited educators could afford to attend. To address this concern, the MPA Center offered the workshop at no cost to the participants, and picked up all travel and lodging expenses.

Some of the educators provided brief information about their backgrounds and programs; please see the Participant Biographies attachment. To view the complete participant list, see the Participant attachment.

Technical Field Trips

To start the workshop off on an informal note and to allow participants to network immediately, field trips were organized to highlight the natural and cultural resources in the area. Early arrivals were offered the opportunity to tour the Great Lakes Aquarium. With more than 100,000 gallons of freshwater inside and 3 quadrillion gallons right outside their back door on the shores of Lake Superior, the aquarium welcomed the participants to view the amazing world of the Great Lakes through interactive exhibits.

We met in the evening for a harbor tour aboard one of the ships of the Vista Fleet. Besides affording the group a very educational tour of the harbor and shipping facilities around Duluth, this provided a networking opportunity for the educators, both among the educator workshop group and with the coastal program managers. The two groups had a private, enclosed deck for the tour and dinner.

MPA Presentations

The presentations provided an overview of MPA issues and background knowledge to encourage the educators to incorporate MPAs into their education programs. Annotated versions of PowerPoint presentations will be available on mpa.gov.

The National MPA Center – Building the Foundation – Marjorie Ernst

Marjorie Ernst's presentation to the combined educators and coastal program managers provided an overview of the MPA Initiative and the work of the National MPA Center. Maggie began by clarifying the multiple terms used when talking about MPAs and introduced the audience to the different types and purposes behind the myriad MPAs found in the U.S. She described some of the chronology leading up to the current emphasis on MPAs and then described the work of the National MPA Center and Institutes. There was discussion about the different terminology, including MPA, marine managed area, marine reserve, aquatic protected area and others. Maggie also introduced the need for both social and natural science in the MPA process. After the presentation and discussion, the educators returned to their separate conference room.

A Look at Topical Science and Research Efforts – Satie Airame

MPAs aim to protect natural and cultural resources along our coast, in the open ocean, and in and around the Great Lakes. In order for the protection to succeed, MPAs must be designed along scientific principals. And for MPAs to be accepted, they must be shown to accomplish their goals. Dr. Satie Airame described scientific principals behind marine reserves, the need for appropriate scientific considerations in their design, and the importance of proper evaluation and monitoring for MPAs to succeed. She used a multi-media approach to her presentation. She opened with a discussion of the general scientific principals of MPAs, what they are, what they can do, and how scientific

information can inform their design. She then showed the group the newly released video produced by PISCO (The Partnership for Interdisciplinary Studies of Coastal Oceans) on *The Science of Marine Reserves*. All participants received the brochure *The Science of Marine Reserves*, a combination of scientific information about reserve design and case studies of these scientific principles under actual circumstances. Finally, she previewed the on-line Jason Project MPA siting game developed as an exercise to help high school students understand some of the issues involved in MPA design.

Social Science and Marine Protected Areas – Sarah Lyons

Scientific principles of MPA design need to be tempered by what is realistically possible. And as Satie discussed when talking about reserve design and enforcement, social science needs to also be at the forefront of the discussion of MPAs. Sarah Lyons is the policy analyst coordinating the development of the national social science research strategy initiated by the National MPA Center. In her presentation, she reviewed basic social science concepts and how they apply to MPA design, management and education. Sarah presented examples of how to incorporate social science into MPA education programs and activities. She went on to review the social science strategy and how it is designed to strengthen the human dimension in MPA design and management by seeking to increase allocation of resources and effort towards MPA social science and capacity building.

American Attitudes Toward Marine Protected Areas And Fully Protected Marine Reserves – Dave Bard

Dave Bard's presentation on recent research conducted for SeaWeb on the attitudes and knowledge that Americans have about marine reserves targeted many issues that the workshop participants address daily. The survey results show that Americans think that more of our oceans are protected than actually are, describe how Americans react when told that less than 1% of our oceans are protected, and emphasize the need to develop outreach and education programs that have a broad reach across the nation. The presentation highlighted the value that the American public puts on our coastal and ocean resources, and also the misconceptions we harbor about these resources and their level of protection and sources of harm. The participants deal with these same issues on their regional and local scale, and the survey results stimulated a great deal of discussion.

Following the survey results, Dave described the campaign that SeaWeb is developing to raise national awareness about MPAs.

Overview of mpa.gov – Phyllis Dermer

A brief online demonstration of mpa.gov presented an overview of the website. Many had not known about the site and commented that they expected to explore the information it contains as soon as they returned to their office. They were especially interested in the inventory maps and the library sections. The overview included the new education section of the website, and asked the educators to consider what they would like to see added.

Overview of Training and Technical Assistance Institute – Ginger Hinchcliff

Ginger Hinchcliff, the Director of the National MPA Center's Training and Technical Institute co-located at NOAA's Coastal Services Training Center in South Carolina, presented an overview of some of the training services they provide. Their training

programs include GIS and remote sensing, needs assessment, and public issues and conflict management. They are also developing *Understanding MPAs*, a workshop designed to provide background information about MPAs to a broad audience, including educators, managers and decision-makers.

Participant Presentations

Nine participants brought presentations of some of their current programs and ideas for developing new education projects and shared them with the group. We gathered together informally for two hours one evening for a session discussing eight of their programs. The ninth was presented early the following morning.

Ken Vrana of The Center for Maritime & Underwater Resource Management used slides to describe a pilot project to develop 4th-8th grade teaching units on maritime heritage. The purpose of the project is to stimulate youth understanding and appreciation of maritime history, underwater archaeology, freshwater ecology, and the management of shipwrecks and other cultural resources using applied social sciences and advanced technologies. Check out the CMURM website at <http://www.cmurm.org/>.

Steve Stewart from the University of Michigan's Sea Grant program described their education programs on exotic species (<http://www.miseagrant.org/exotic-camp.html>) and the Great Lakes (<http://www.miseagrant.org/glep/index.html>).

Jonathon Colman of the Great Lakes Commission described the two extensive websites that he manages: the Great Lakes Information Network (<http://www.great-lakes.net/>) and The Education And Curriculum Homesite (T.E.A.C.H., <http://www.great-lakes.net/teach/>). They provide issues based education and receive over 4 million hits per month.

Gail Vander Stoep from Michigan State University's Department of Park, Recreation & Tourism Resources presented a PowerPoint presentation on Aquatic Protected Areas Management. Designed for the university setting, the program uses the Maritime Cultural Landscape, integrating management, law and policy. The program covers education, interpretation, history, and maritime resource use. Gail also described a cultural tourism library project detailing tourism in aquatic and coastal environments. For more detail, check out The Center for Great Lakes Culture at <http://greatlakes.msu.edu/>.

Betty Kay Swanson described the youth, family and adult programs at the Shedd Aquarium. The Shedd has hands-on programs to collect data on beaches. In addition, they partner with other cultural Chicago sites through their *River Runs Through It* program, where participants are taken out on boats to the Chicago River and then return to Shedd for activities integrating the science concepts learned. Betty Kay also described some of the college classes at Shedd, including a certificate of biology, available through distance learning. Check out the different programs available at <http://www.sheddnet.org/>.

Cathy Techtmann from the Northern Great Lakes Visitor Center described their estuary education curriculum. She described the Center's long distance learning and school and group education programs. Cathy showed video vignettes on coastal wetlands and freshwater estuaries that are typically shown at the visitor center. Check out the Center's website at <http://www.northerngreatlakescenter.org/>.

Colleen Masterson from the Inland Seas Education Association described their Schoolship programs, which currently reach 5000 students per year. The program turns kids into "scientists for a day," and teaches maritime sailing traditions. Longer programs allow teens to work on their own research hypothesis; at the end of the program, the teens present their research in a poster session. Inland Seas also reaches teachers through educational development. In order to accomplish all of this, they use 160 volunteer instructors. They are currently planning a new, land-based education center, which will allow them to reach an even greater audience. Their main focus is to get young people interested in science and promote stewardship. (www.schoolship.org/).

In the final session of the day, Cathy Sakas described the extensive *Rivers to Reefs* media campaign that Gray's Reef National Marine Sanctuaries has developed. There was interest from the group and discussion on how to put together similar, successful campaigns. Cathy ran a video clip that featured professional music and visuals. She then shared advice about video development and promotion with the group.

After breaking up after 9:30 pm, we reconvened early the next morning. Starting just before 8 am, Peter Harris from the Wolf Ridge Environmental Learning Center treated us to an entertaining display describing some of the raptors that visit Hawk Ridge, located in the hills of Duluth and known as a good place to view migrating birds of prey. Through audience participation, Peter profiled three migrating raptors. He went on to quickly review some of the many programs available through Wolf Ridge. (<http://www.wolf-ridge.org/>).

Small Group Work – Existing and New Program Ideas and Development

There are many different cultural and natural themes and issues that are important in MPA design and in teaching about MPAs. In developing the format for the small group work, the speakers and staff discussed what issues are of great importance to the Great Lakes region. We also considered the many different marine education programs that we found through Internet searches of the Great Lakes education sites. We identified many issues, but narrowed the list to the following:

- Conserving biodiversity
- Preserving cultural resources
- Habitat protection
- Use and overuse of resources, including consumption, extraction and conflicting use
- Managing invasive species

Following the initial speaker presentations discussing MPA issues and research, the group was divided into small working groups and tasked to identify current education programs and activities dealing with these five thematic areas important to protected areas, and then to develop a "wish list" for the development of others.

Staff were assigned as facilitators to one of the five thematic areas. Initially, the educators were randomly assigned to one of the themes to identify as many current educational programs that teach about that theme. They then brainstormed programs they'd like to see developed. After creating the initial list, the group prioritized the new programs and small groups worked to develop and characterize the priority program for each of the five themes. After this, all the participants visited the other thematic areas to review their lists and add to them.

Each educator was then asked to identify (via a sticker) one program in each thematic group they would most like to see developed. This prioritized the lists. Once the prioritization was completed, the participants signed up to work on one of the thematic areas for the new program development. This change in small group participation increased the networking during the group sessions and allowed the educators to work on developing the program of greatest interest to them. The sign-up sheets, with a maximum of five spaces in each group, also assured that a program in each of the five areas would be developed.

Each new group was tasked to begin the development of the top program for each theme. Audience characteristics, their basic level of knowledge about a topic and their interests, are essential to identify before creating a new education program. The groups focused on audience characterization as the first step in the development process. After audience development, each group set out to design the new program. To help them to remain focused on MPA issues, they identified the key theme, issue and/or values to be addressed by the program. Then they worked on program development details—design, development and implementation. To make sure that the program would accomplish the specified goals, participants were to make sure that program evaluation was part of the program development process from the start. The worksheets developed for each program are attached.

The small group work sessions helped the educators to understand that they are already working on MPA issues on a daily basis, an idea that some had not considered before this workshop. In addition, the lists identified programs that some had never encountered but could be of interest for their own programs. The new program brainstorming sessions helped to flesh out additional programs that the educators could develop together across agencies for the Great Lakes region. All of the small group work from the workshops, as attachments, will be posted on the mpa.gov website and can be used for future reference by educators who work on new program development. Where possible, the workshop participant that led the discussion of the existing or proposed program is identified; contact that person for more information.

The attachments detail the small group work by thematic area, first with identification of the existing educational programs, followed by the new programs that the educators believe would be useful to develop. Also attached are the small group work goals and worksheets for these group sessions.

Summary Session

As a final wrap-up for the workshop, Kate and Ginger facilitated a summary session to elicit ideas for needed support from the MPA Center. A brief review of the workshop was provided, and then the discussion was opened to general comments and suggestions. Participants were asked what materials and other support the MPA Center could provide that would help the educators incorporate information about MPAs into their programs. Some of their suggestions include:

- Updates about regional MPA legislation and activities,
- Scientific and socio-economic information about MPAs,
- Clear definitions,
- Graphics and pictures about MPAs,

- Information about the MPA Center's activities, and
- Support from the MPA Center in building coordination between the activities of Sea Grant, Coastal Programs and educators working in the region.

At earlier workshops, educators suggested that the MPA Center develop a monthly newsletter. We asked what the participants would like to see in a newsletter, and they responded with suggestions about its format and content:

- Regional headings to allow for a quick review of items of interest,
- Monthly "hot topic", providing more in-depth information about topical MPA news,
- Funding and grant opportunities,
- Sufficient lead time about upcoming events so the educators could prepare press releases for their audiences, and
- Have the MPA Center solicit contributions from regional and local partners for the newsletter.

The MPA Center's website is being developed as an information portal for marine protected areas. The participants were invited to comment on the MPA Center's website and discuss possible information updates. Suggestions included:

- A glossary of MPA acronyms,
- Format changes to allow easier navigation through the website,
- Regional or functional grouping for the education pages,
- Information about priority-setting processes for MPA site designation, and
- Case studies of the designation process for Michigan and Wisconsin underwater preserves, including the process and science used to justify their designation.

Evaluation

An evaluation sheet was distributed to participants about workshop content, format and applicability. A total of 18 evaluations were returned. The form is attached. In considering the numerical results described below, it is important to note that MPAs in general have not been a high priority in the Great Lakes, though underwater preserves have received much attention. We strove to include educators from a wide range of agencies and programs and some came to the workshop with very little knowledge of MPAs. In general, participants reported that their knowledge increased about both MPAs issues and the incorporation of MPAs into marine resource education; the workshop format and content were appropriate; and it was worthwhile use of their time to attend the workshop.

Workshop Content

Participants were requested to rate the level of their knowledge about the topics covered before and after the workshop. They were given an ordinal scale from one to four as follows:

- No Knowledge
- Little Knowledge
- Sufficient Knowledge
- Extensive Knowledge

- Cannot rate / Comment

“Understanding and awareness of MPA issues” rose by about 1.5 points from little knowledge to sufficient knowledge. “Understanding and awareness of the MPA Initiative and the work of the MPA Center” rose by about 1.7 points from no knowledge to sufficient knowledge. “Understanding and awareness of MPA management contexts and topical science” rose by about 1.6 points from no knowledge to sufficient knowledge. “Understanding and awareness of MPA social science issues” rose by about 1.5 points from no knowledge to sufficient knowledge. “Understanding of public opinion and MPA issues” rose by about 1.6 points from no knowledge to sufficient knowledge. “How to include MPA messages and themes in existing/new marine and coastal education programs” rose by about 1.7 points from no knowledge to sufficient knowledge.

See the attached charts for the detailed breakout of these numbers, including average, mean and standard deviation, mode and the individual numbers in chart format.

Workshop Format

The participants were requested to circle a number from one through five that best represented their feeling for the workshop format. The number “3” indicated that the element was adequate (e.g. neither too short nor too long). The following are the categories:

- The length of the workshop in relationship to material presented was
- Ideas and materials presented were
- Time allotted to discussion was
- Small group work sessions

Participants responded that the length of the workshop was adequate, neither too short nor too long; the level of sophistication of ideas and materials was adequate, neither too simple nor overly complex; the time allotted to discussion was adequate, neither too short nor too long; and the small group work sessions were more than adequate, enhancing the workshop.

See the attached Evaluation Charts for the detailed breakout of these numbers, including average, mean and standard deviation, mode and the individual numbers in chart format.

Workshop Applicability

The participants were requested to circle a number from one through five that best represented their feeling for the relevancy of the workshop and materials to their current job. The number “3” indicated that the element was adequate (e.g. neither a good nor a poor use of my time). Participants responded to the following:

- The amount of information presented that will be useful to me in my current job
- Attending the workshop was
- The relevancy of the material presented to my job was

Participants responded that they would be able to use a good portion of the information presented, the workshop was a pretty good use of their time, and that the information presented was neither too basic nor too complex.

See the attached charts for the detailed breakout of these numbers, including average, mean and standard deviation, mode and the individual numbers in chart format.

Workshop Comments

Comments and feedback were solicited in response to the following questions.

- What did you find most useful about the workshop?
- Were the materials in the registration binder useful for the workshop, and what will you be able to use from them in your work?
- What did you find least useful about the workshop?
- What recommendations do you have to improve the workshop?
- What specifically did you learn that you will be able to apply directly to your area of work?

The full list of comments are attached, with some excerpted here.

What did you find most useful about the workshop?

The number one response was “networking”. From a total of 18 responses, 12 mentioned the networking opportunity that came from working with this diverse group of people. In addition, the participants learned about MPAs and about other education programs. Here are some of the responses:

- Introduction to MPAs – ideas from other locations
- The opportunity to hear how the G.L. region is impacted by MPA issues
- Public opinion research highlights. Information was nice and concise, helps me to know things to focus upon in program development & redevelopment

Were the materials in the registration binder useful for the workshop, and what will you be able to use from them in your work?

Participants stated that the printouts of the PowerPoint presentations from the speakers were among the most useful handouts included in the notebook. They also appreciated the copy of the MPA Education Poster and the participant list. Here are some of the responses:

- Very useful in the workshop. I will be able to use most – at a minimum as a resource
- Yes, the binder is very helpful, particularly the notes from the presenters and the worksheets
- Materials were useful...will read through the rest on the plane home!
Program worksheets, contact list & additional info will all be useful in my work

What did you find least useful about the workshop?

While some participants commented that they found learning about the work of the MPA Center was among the most useful aspects of the workshop, others found it the least useful, including discussion about the confusion of terms used when talking about MPAs. The educators were also very concerned about how the Great Lakes region fits into the entire marine protected areas debate. Here are some of the responses:

- Debate over definitions

- Discussion of MPA Executive Order was not focused on regional concerns
- While it was useful to understand the government / politics I found this point confusing and a bit long

What recommendations do you have to improve the workshop?

There was a lot of information to present in a short time period, and the participants' recommendations included lengthening the workshop to decrease the time stress. They also expected goals from the MPA Center with regard to what specifically the Center wanted to get from the educators (other than an increased awareness of MPAs). Here are some of the responses:

- Have it yearly – maybe a day longer. Have it at a MPA
- State your goals very clearly in the beginning – not MPA institutional goals (which is what you did) but WHY were we invited
- Provide clear definitions of terms or point out ambiguities. But develop working definitions

What specifically did you learn that you will be able to apply directly to your area of work?

Participants commented that they learned about many programs that they didn't know about that they'll be able to use. Several observed that they learned enough that they'll be able to incorporate MPAs into some of their programs. Here are some of the responses:

- Awareness of existing programs & opportunities for collaboration / funding
- New ideas for programs to teach MPA themes & messages. Websites I was unaware of. I learned about some G.L. agencies & programs that I didn't know about
- Resources to use in programming

Workshop Analysis

According to the feedback, the workshop met two of the goals (increase MPA awareness and solicit recommendations for support) and promoted the other two (promote inclusion of MPAs in education programs and foster education partnerships). Participants said that they had an increased awareness and understanding of MPA issues, different types of MPAs and their management, and the values of MPAs; the workshop elicited many recommendations from educators and education intermediaries about additional MPA Center support. The workshop fostered development of networking, which may lead to the development of education partnerships among these participants and others. And it promoted the inclusion of MPA themes and messages into education programs and provided the opportunity for the educators to begin to do so.

The workshop was a first step in providing MPA Center support for these and other marine resource educators. We received many recommendations for the next step for the MPA Education Project. The recommendations for future support need to be addressed and a prioritized list developed for materials development. Follow-through is important to maintain the nascent educator network. During these discussions, the workshop facilitators noted that participants were very interested in finding out about the many existing programs that could be useful for their education efforts. The network of educators should also be expanded, with the addition of participants at the other regional

workshops and those educators that were unable to attend any of these initial workshops.

The MPA Center's Education Project will use recommendations from the workshops to develop supporting educational materials. These will be available through the MPA Center's website, mpa.gov. These next steps include:

- Preparation and posting of MPA fact sheets, including
 - Definitions
 - Acronyms
 - MPA types and legislative authorities,
- Posting presentations from the workshops about natural and social science of MPAs, the work of the MPA Center, and American Attitudes Towards MPAs, for the educators' own presentation use,
- Providing monthly news and information updates through posting of *Connections*, the MPA Center's e-mail newsletter, and
- Promoting cross-sectoral awareness among MPA educators of available educational programs and activities.

In addition, the MPA Center is developing a workshop on *Understanding MPAs* through the Training and Technical Assistance Institute, designed to provide background information about MPAs to a broad audience. And the first regional clearinghouse for planning information, www.pacificmpa.org, has been launched as a partnership between COMPASS and the MPA Center. The MPA Center plans to expand the concept to other regions throughout the U.S.

In order to promote the recommended outcomes of the workshop, the MPA Center's education coordinator will need to continue to support networking and partnership opportunities among the educators in the different organizations and agencies working on and in MPAs. Networking can be promoted by the coordinator's continued attendance at national meetings of the different agencies' education staff, through participation in environmental education conferences, and by involvement in other networking efforts among educators.

Attachment: Workshop Agenda

**The Great Lakes Regional
Marine Protected Areas Education Workshop
Program Agenda
September 25-27, 2002**



WORKSHOP GOALS

- To increase awareness and understanding of MPA issues, different types of MPAs and their management, and the value of MPAs;
- To promote the inclusion of MPA themes and messages in existing and new aquatic and coastal education programs;
- To foster development of education partnerships; and
- To solicit recommendations from educators and education intermediaries about additional MPA Center support.

WEDNESDAY, SEPTEMBER 25, 2002

Arrival at Superior Shores Resort and Conference Center at your leisure, with secure luggage storage for early arrivals. Official check-in at 4:00 pm

Afternoon	Technical Field Trip: Free entry for conference participants to the Great Lakes Aquarium with secure luggage storage if needed
4:00pm	Check-in opens at Superior Shores
4:45 – 5:15	Informal discussion of Great Lakes Aquarium education programs Meet in aquarium lobby Jay Sandal, Great Lakes Aquarium Education Program Manager
5:15	Gather at aquarium lobby for walk to harbor dock (1½ blocks)
5:30 – 6:00	Passenger loading for harbor tour
6:00	Harbor tour and dinner together with Coastal Program Managers
8:00	Return to dock & transportation to hotel
8:30	Late check-in available at Superior Shores Resort & Conference Center

SPEAKERS: SATIE AIRAME, DAVE BARD, MARJORIE ERNST, SARAH LYONS

Staff: Phyllis Dermer, Kate Barba, Ginger Hinchcliff, Sarah Mitchell, Peter Wellenberger

Please meet in the Gooseberry C conference room

THURSDAY, SEPTEMBER 26, 2002

- 7:00 – 8:30 Continental breakfast at your leisure
Gooseberry C
- 7:30 – 8:30 Workshop registration
- 8:30 – 9:15 Welcoming remarks, overview of the workshop and introductions
Sarah Mitchell, Education Coordinator, National Ocean Service
- 9:15 – 10:15 Marine Protected Areas, the MPA Executive Order and the MPA Initiative, Marjorie Ernst, Environmental Protection Specialist, National MPA Center
Joint session with Coastal Program Managers
Gooseberry B conference room
- 10:15 – 10:45 break
- 10:45 – 11:45 MPAs: A Look at Topical Science and Research Efforts
Satie Airame, Policy Coordinator, PISCO and Science Advisor, Channel Islands National Marine Sanctuary
- 11:45 – 12:15 Overview of mpa.gov – The MPA web site
Phyllis Dermer, Education Coordinator, National MPA Center
And Ginger Hinchcliff, Acting Director, National MPA Center, Training & Technical Assistance Institute
- 12:15 – 1:30pm Lunch
- 1:30 – 2:15 MPA Social Science and the MPA Social Science Research Strategy
Sarah Lyons, Marine Policy Analyst, National MPA Center, Science Institute
- 2:15 – 4:30 Identifying MPA messages & themes in existing and new aquatic & coastal education programs
(With break)
Kate Barba, Education Coordinator, Estuarine Reserves Division
- 4:30 – 6:00 Free time
- 6:00 – 7:30 Dinner
- 7:30 – 9:30 Informal participant presentations – examples of existing education programs incorporating MPA themes and messages

Friday, September 27, 2002

- 7:00 – 8:00 Continental Breakfast
- 8:00 – 8:45 Public Opinion Research Highlights: Americans and MPAs
Dave Bard, Program Manager, SeaWeb
- 8:45 – 9:00 Overview: Developing MPA education projects
Kate Barba
- 9:00 – 10:15 Participants develop MPA education projects
- 10:15 – 10:30 Break
- 10:30 – 12:00 Refine and present projects
Kate Barba
- 12:00 – 1:00pm Lunch
- 1:00 – 2:00 Recommendations for ongoing educational program support
Kate Barba and Ginger Hinchcliff
- 2:00 Adjourn

Attachment: Participants**Participants**

Name	Affiliation
Becky Goche	Shiawassee National Wildlife Refuge
Betty Kay Swanson	Shedd Aquarium
Cathy Sakas	Gray's Reef National Marine Sanctuary
Cathy Techtmann	Northern Great Lakes Visitor Center
Christine Kirk	Indiana Dunes Environmental Learning Center
Colleen Masterson	Inland Seas Education Association
Elizabeth LaPorte	University of Michigan Sea Grant
Gail Vander Stoep	Michigan State University
Gerry Sjerven	University of Minnesota - Natural Resources Research Institute
Harvey Hoven	University of Wisconsin - Sea Grant
Jill Ladwig	University of Wisconsin - Sea Grant
Jonathon Colman	The Education And Curriculum Homesite (T.E.A.C.H. Great Lakes)
Ken Vrana	Center for Maritime & Underwater Resource Management
Linda Feix	Old Woman Creek National Estuarine Research Reserve
Mark Gleason	Isle Royale Institute
Mike Kennedy	SEEK -- Minnesota Office of Environmental Assistance
Mike Kroenke	Great Lakes Visitor Center
Peter Harris	Wolf Ridge Environmental Learning Center
Rebecca Hinkle	Ottawa National Wildlife Refuge
Rick Meyer	Pine River - Backus Schools
Stephen Stewart	University of Michigan - Sea Grant
Susan Mackreth	Apostle Islands National Lakeshore
Glenn Kreag	University of Michigan - Sea Grant

Participants (cont.)

Speakers

Name	Affiliation
Satie Airame	PISCO / CINMS
Dave Bard	SeaWeb
Marjorie Ernst	National MPA Center
Sarah Lyons	National MPA Center, Science Institute

Staff

Name	Affiliation
Kate Barba	NOAA -- Estuarine Research Division
Phyllis Dermer	National MPA Center
Ginger Hinchcliff	National MPA Center - Training & Technical Assistance Institute
Peter Wellenberger	Great Bay National Estuarine Research Reserve
Sarah Mitchell	NOAA -- National Ocean Service

Attachment: Speaker Biographies

The Speaker Page Short Biographies of our Experts

Dr. Satie Airame

Policy Coordinator, PISCO

Science Advisor, Channel Islands National Marine Sanctuary

Satie is a scientific advisor for the Channel Islands National Marine Sanctuary in Santa Barbara, California. She works with a diverse group of marine scientists from different agencies, organizations, and educational institutions, assembled to advise the Sanctuary about resource management issues. Satie coordinated their recent effort to collect and analyze biological data for the purpose of determining potential locations of marine reserves in the Channel Islands.

Since January 2002, Satie has served as the Policy Coordinator for the Partnership for the Interdisciplinary Study of Coastal Oceans (PISCO) at the University of California, Santa Barbara. Working with PISCO, she has developed the educational film and booklet entitled "The Science of Marine Reserves." These products will be distributed to state and federal agencies, non-governmental organizations, and educational institutions involved with marine management, research, and education.

She also supports the Master Plan Team for the Marine Life Protection Act (California Assembly Bill 993). The Master Plan Team is a group of marine scientists selected to advise the California Department of Fish and Game during the development of a Master Plan for marine protected areas in California state waters. The team will develop ecological criteria for marine protected area design and provide feedback about potential designs to regional working groups assembled to assist with the development of the master plan.

Satie received her B. S. in biology from Humboldt State University in June 1993 and her Ph.D. in ecology from the University of Chicago in December 1999.

Dave Bard

Program manager, SeaWeb

As a program manager for SeaWeb, Dave runs the organization's marine protected areas campaign. Prior to joining SeaWeb, Dave spent two years in New York City where he worked in Ruder Finn's Technology Group. Before working in Manhattan, he spent close to six years in Washington, DC, where he first worked on Capitol Hill. Dave served as a legislative assistant to Congressman Frank Pallone, Jr. (D-NJ) and covered issues that included arts and humanities, foreign policy and animal rights. After working in the congressman's office, he parlayed his political skills into a public relations position with Ein Communications, a boutique DC-based firm. Dave earned his B.A. from Connecticut College and his M.A. from American University.

Marjorie Ernst

Environmental Protection Specialist, National MPA Center, NOAA

Maggie joined the MPA Center in early 2002 to provide management, policy, and scientific support. She brings 23 years of professional experience with a focus on coastal ocean research, monitoring, and resource management, including over 19 years with NOAA. Most recently, Maggie worked for a year in the White House Office of

Science and Technology Policy as a Commerce Science and Technology Fellow, where she handled environmental issues related to oceans, air quality, and toxic contaminants.

Within the Office of Ocean and Coastal Resource Management, Maggie has served as a program evaluator of State Coastal Management and National Estuarine Research Reserve programs, and as a program liaison for several coastal management programs in the northeast. In addition, Maggie has held several scientific positions in the agency. She contributed to the development of applied ecosystem research programs focused on such areas as estuarine habitat, land cover change analysis, bio-effects of toxic contaminants, and cumulative impacts (Coastal Ocean Program, National Sea Grant College Program). She also managed a national project monitoring annually levels of toxic contaminants in coastal bottom fish and sediments (National Status and Trends Program).

Maggie earned a M.S. in botany from the University of Maryland; research for her thesis on chromatic adaptation by blue-green algae was conducted at and supported by the Smithsonian Institution's Radiation Biology Laboratory. Before moving to the Washington D.C. area, Maggie managed a laboratory at Brown University investigating photosynthesis in algae and higher plants. She received a B.A. in biology from the University of Rhode Island.

Sarah Lyons

Marine Policy Analyst, National MPA Center, Science Institute

As a marine policy analyst for the National Marine Protected Areas (MPA) Center Science Institute, Sarah is coordinating the development of the MPA Center's national social science research strategy. This strategy will be an innovative and comprehensive research strategy to incorporate social sciences into MPA planning and management. In addition, she is working in partnership with the Communication Partnership for Science and the Sea (COMPASS) program to strengthen the coordination of governmental MPA planning processes on the west coast.

Before coming to the MPA Center, Ms. Lyons worked as the program coordinator within the NOAA Coastal Services Center offices at Duke University. Her responsibilities included strategic planning, annual planning and work on budget initiatives. Prior to that, Sarah was a research assistant at the Monterey Bay Aquarium Research Institute (MBARI) where, as part of the upper water column group, she analyzed and processed data pertaining to the biogeochemical response to climate and ocean variability.

Sarah has a M.A. in international environmental policy studies from the Monterey Institute of International Studies and a B.A in Spanish from Middlebury College.

Attachment: Participant Biographies

Some of the participants provided a short description of their individual background and positions.

Kate Barba

Education Coordinator, National Estuarine Research Reserve System, NOAA

Kate serves as the NERRS Education Coordinator in NOAA's Office of Ocean and Coastal Resource Management. She provides support and guidance for education programming for educators and trainers across a system of 25 estuarine research reserves in 22 States and territories of the U.S.

Jonathon D. Colman

Webmaster, T.E.A.C.H. Great Lakes

Jonathon is the webmaster for T.E.A.C.H Great Lakes and helps maintain the Great Lakes Information Network. Before joining the Great Lakes Commission as a web/publications designer, Colman was a Peace Corps volunteer in Burkina Faso, West Africa. www.teachgreatlakes.net, www.great-lakes.net

Becky Goche

Park Ranger at Shiawassee National Wildlife Refuge in Saginaw, Michigan

As Park Ranger, Becky is responsible for all visitor services, from hunting to education and everything in between. She earned a bachelor's degree in biology and psychology from South Dakota State University. Prior to joining the U.S. Fish and Wildlife Service in 1993, Becky worked in the midwest and western U.S. as an environmental educator and interpreter.

Ginger Hinchcliff

Acting Director, Training and Technical Assistance Institute, National MPA Center

Ginger has been working on coastal issues and in coastal education for more than 20 years and specializes in adult education. She was the education coordinator at the Rookery Bay National Estuary Research Reserve in southwest Florida for 11 years, worked at six national parks, and has taught in Florida and South Carolina. She currently heads up the Coastal Learning Services Program for NOAA Coastal Services Center and serves as the director for the MPA Training and Technical Assistance Institute. She has a B.S. from Penn State University and a M.Ed. from Florida Gulf Coast University.

Christine Kirk

Assistant director, Indiana Dunes Environmental Learning Center

Christine is responsible for managing, developing, and researching all programs for the residential environmental education facility that operates within Indiana Dunes National Lakeshore. Christine will receive her M.S. in conservation biology in the spring of 2003, supplementing her B.A. in English. Her passion is for the preservation and conservation of natural areas.

Glenn Kreag

Extension Educator, Tourism, Minnesota Sea Grant Program

Glenn provides education programs and research associated with coastal and lake resources and the impacts of recreation and tourism use. His interests are focused on

rural tourism and sustainable tourism and he has extensive experience in community tourism development.

Elizabeth LaPorte

Communications Director, Michigan Sea Grant College Program

Elizabeth has more than 22 years of experience in communications and 14 years in project management. Working in both the private and non-profit sectors, she has specializes in print and online content development. She received a bachelor's degree from the University of Michigan and a master's degree from Eastern Michigan University.

Sarah Mitchell

National Education Coordinator, NOAA's Ocean Service

Prior to becoming the education coordinator for the National Ocean Service, Sarah was the national education coordinator for NOAA's Marine Sanctuary Program. She has 22 years of experience as a science educator working in formal and informal settings including research facilities, K-12 public schools, universities and field sites. She has a M.S. degree in science education from Armstrong Atlantic State University.

Cathy Sakas

Education Coordinator, NOAA's Gray's Reef National Marine Sanctuary

Cathy is headquartered in Savannah, Georgia. Prior to coming to Gray's Reef National Marine Sanctuary, she was a professional interpretive naturalist specializing in marine and terrestrial subtropical and tropical environments. Cathy brings her background knowledge and skills to her job at Gray's Reef in helping to raise public awareness about their connections to our precious ocean resources. Cathy also hosts a television series on southeastern environmental issues for Turner South in her free time.

Cathy Techtmann

UW-Extension Education Coordinator, Northern Great Lakes Visitor Center

Cathy has served as the extension education coordinator in Ashland, Wisconsin since 1998. Her mission is to deliver innovative sustainable natural resource educational programs to regional residents and visitors. Working with Iron County's leaders and citizens, she has helped to create the Iron County's Heritage Tourism Program, successfully planned and implemented the Iron County Development Zone initiative, a recycling program, and provided leadership that led to adoption of their first land use plan. She authored the county's centennial book, "Rooted In Resources," and has created interpretive signs and brochures that celebrate Iron County's history and culture. Cathy received her M.S. in natural resource management, environmental interpretation emphasis, from the University of Wisconsin-Stevens Point.

Kenneth J. Vrana

President, Center for Maritime & Underwater Resource Management

Ken has 25 years experience in the fields of Great Lakes, coastal, and maritime resource management with the National Park Service, Michigan Sea Grant Extension, Michigan State University, and the Center for Maritime and Underwater Resource Management (CMURM). He is currently president of CMURM, a private nonprofit corporation and 501(c)(3) charitable organization specializing in applied social and archaeological research, and heritage education and outreach. Ken completed his M.S. and Ph.D. study in park, recreation and tourism resources at Michigan State University with minors in fisheries, wildlife and anthropology, and a specialization in maritime studies.

**Attachment: Workshop Notebook Contents
The Great Lakes Regional
Marine Protected Areas Education Workshop
September 25-27, 2002**



CONTENTS

Workshop Information

- Agenda (green)
- National MPA Center
- National MPA Center – Training and Technical Assistance Institute
- National MPA Center – Science Institute
- List of participants (orange)

Local Information

- Touring Two Harbors
- Conference rooms layout
- Great Lakes Aquarium

Break-Out Sessions

1. Goal, objectives & themes
2. Key target audiences
3. Existing programs (blue)
4. New programs (green)

Instructional design

- Characterizing target audiences
- New program or activity worksheet (4 copies)

Education

- Biographies of speakers
- American attitudes towards marine protected areas
- mpa.gov fact sheet
- MPA Center email newsletter
- Examples of current education programs
- Poster activity sheet
- Poster sites
- Education poster of federal MPA sites

Reference Articles

Summary

- Evaluation form (light blue)
- Blank paper

Pockets

- MPA.GOV bookmark
- Estuaries Live
- Hotel information
- Explore the oceans
- Training opportunities
- The BRIDGE bookmark

**Attachment: Small Group Work
Great Lakes Regional
Marine Protected Areas Education Workshop
Small Group Working Sessions
Session Goals**

Goal: To promote the inclusion of MPA messages, themes and values in existing and new education programs

Objectives:

- To identify existing educational programs and activities that incorporate MPA-related themes, issues and values;
- To brainstorm new program and activity ideas that incorporate MPA-related themes, issues and values.
- To develop and share outlines for selected programs and activities.

Thematic Areas For Small Group Work

- Conserving Biodiversity
- Preserving Cultural Resources
- Reducing non-point source pollution
- Use/overuse of resources (consumption/extraction/conflicting use)
- Managing invasive species

Characterizing Audiences

Characterizing Target Audiences

Audience assessment will help you to decide who needs training and how a specific program must be customized to meet participant interests and learning styles. In this activity, brainstorm what you know about your audience relative to the content/issue in the following categories. A comprehensive audience assessment might include surveys, focus groups, phone interviews, and literature searches.

1. **Knowledge and interests:** what degree of knowledge does the target audience have relating to this issue? Understanding of current events related to the issue? Familiarity with terminology? What degree of interest do they have?

2. What type of **prior training** does the audience have related to the issue?

3. What are the **personal benefits** to the population to learn about this issue?

4. What **attitudes and biases** does the audience have:
 - towards educational opportunities, products, materials;
 - towards the issue;
 - towards projected methods

5. Cultural characteristics: language, social preferences, other

6. **Ability to participate** or attend education program **or access** product or learning service.

Characterizing Audiences (cont.)

KEY TARGET AUDIENCES
MPA Education Programs and Activities

Aquaria/Interpretive Center visitors: Adult

Aquaria/Interpretive Center visitors: Children

Recreational Users

Commercial Fishers
Recreational Fishers
Divers
Dive Operators
Recreational Boaters
Motorized
Non-motorized
Hunters
Beach-goers

Ecotour Operators

Ecotour Customers

Academic

Teachers: Middle and Secondary
Students: Middle and Secondary
University Faculty
Undergraduate, graduate students

Media: Journalists, TV, Radio

NGOS – Environmental

Community Leadership

Conservation Councils
Watershed Councils
County/Municipal Officials (elected)
County/Municipal planners

**New Program Worksheet
Great Lakes Regional
Marine Protected Areas Education Workshop
September 26-27, 2002**

New Program or Activity Worksheet

Name/Title of Program or Activity

Key content: Focus, Theme, Issues and/or Values to be Addressed

Analysis/Assessment: Key Characteristics of Audience

Design: Instructional Objectives, Activities, Scope, Sequence

Development: Participant and Instructor Materials, Products

Implementation: Methods of Delivery, Evaluation and Marketing Plans

Evaluation: Short and Long term

Attachment: Theme: Conserving Biodiversity

Existing Programs

Name/Title/Type of Program or Activity	Target Audience and Level	Delivery or Methods	Implementing Entity, Organization or Agency	Workshop Participant
Biodiversity Basics	K-12	Classroom activities	WWF (train the trainers), classroom teachers	Christine Kirk
Mighty Acorns	4th through 6th	Classroom activities, adopt-a-site restoration	(TNC) Chicago, Wilderness Partners	Christine Kirk
ES Eagles (earth systems, Great Lakes)	7-12 (with a 4-6 version)	Classroom activities	Ohio Sea Grant. Series of booklets, Great Lakes	Rick Meyer
Food Web Disruption Partnership (for inverts)	Adult & high school	Web site	Great Lakes Sea Grant, Great Lakes Fishery Commission – research & outreach	Elizabeth LaPorte
ANS Day Camp	Teachers		MI State University & MI Sea Grant	Elizabeth LaPorte
Great Lakes Education Program – GLEP	Adults & families	Water quality testing – field sites		Elizabeth LaPorte
Great Lakes Aquarium & Shedd Aquarium	All ages	On site		Rick Meyer
Zebra Mussel Traveling Trunk	K-12 & educators	Program, activities in trunk	IL & IN Sea Grant	Elizabeth LaPorte
ANS Education Initiatives – Attack Pack, Scuba Diver outreach project	K-12, Dive masters, dive centers, certification organizations	1:1 education, brochures, posters at dive centers & shops	Sea Grant (Great Lakes Network)	Jill Ladwig
Media education fora	Journalists	On-site presentations at media institutions		
Great Lakes Research & Education Center		Network of NPS sites coordinating university research	Indiana Dunes & NPS	Christine Kirk

New Programs for Development

Name/Title/Type of Program or Activity	Target Audience and Level	Delivery or Methods	Implementing Entity, Organization or Agency
Align curriculum requirements with aquatic (MPA) topics & resources	K-12	indoor classroom, field site activities	
Relational database design interface	educators, etc.	"how to" search and browse site	
ANS		standard test	
Habitat protection		standard test	
Wetlands		standard test	EPA

New Programs (cont.)

Name/Title/Type of Program or Activity	Target Audience and Level	Delivery or Methods	Implementing Entity, Organization or Agency
Fisheries		standard test	
Issue Based ecosystem connection	media, journalists, journalism schools, next generation of journalists.	National campaign. Nationally known figures. Packages of information -- media kits, tools, photos, video, fact sheets, interviews, background material	Sea Grant
Mass Education -- Responsible stewardship	Ecotourism: dive shops, kayakers, iceboats, non-motorized vessels, sailboats, birders	Billboards, T-shirts, Icon/character development à la Smokey the Bear	Audubon, National Park Service, TNC, Sea Grant
Fisheries Management - Great Lakes fisheries Leadership Institute	Community focus		State/regional, Sea Grant. (Elizabeth Laporte)

New Program Ideas

Title: ASAP—Aquatic Stewardship Awareness Program
Ecotourism stewardship outreach

Key content: focus, theme, issues and/or values to be addressed

Ecotourism campaign

What you (the audience) can do – specific activities

Focus, issues, themes:

Increase stewardship of aquatic managed areas (AMA)

Increased biodiversity in AMA

Increase responsible interactions between visitors and AMA

Goals:

Visitor will understand their role in maintaining a healthy environment, and the program will impart a sense of stewardship

Provide a paradigm shift in audience with outdated view of environment.

Analysis/Assessment: key characteristics of audience

Seniors, high impact visitors (RVs)

Travelers by car

Converted, seasoned eco-travelers

Key characteristics:

Low to medium to high level of interest

Little to no prior training in region

Limited interest AMA (Aquatic managed area) on arrival

Uninformed from out of town, and informed locals

Informed travelers in a new area with little to no prior training regarding area

Low level of knowledge

Design: instructional objectives, activities, scope, sequence

Objectives: The visitor will

Identify important features of the area
Identify limitations of site – dangers/risks
Highlight important features
Demonstrate their role interacting with ecosystem
Decrease impacts to the environment
Adopt safe behaviors
Identify appropriate behaviors
Tread lightly
Leave no trace
Leave only bubbles
Overall Goal: The visitor will understand their role in maintaining a healthy environment

Development: participant and instructor materials, products & activities

Videos

Signs

Educational trinkets (floating key chains, etc)

Booklets and other printed materials—tide charts, maps or other useful info or vehicle for educational message

Tour briefing

Complete packages for visitors (including hotel packages): code of behavior in the APA, local trail maps, charts, access points, specific info on natural area

List / highlight important features & appropriate behaviors

Identify limitations of visitor and site

Points of contact at destination area – hotels, airports, access points, visitor centers, rest areas (interact with tour operators), car rental places, chambers of commerce

Implementation: methods of delivery, evaluation and marketing plans

Information brochures at points of delivery/contact

Tour operator training program

Best business practice certification

Evaluation: short and long term

Observe & record behaviors of visitors

Measure number of inappropriate wildlife interactions

Surveys & interviews – assess value of experience, assess behaviors & values

Monitor levels of pollution: reduced trash

Reduced habitat damage

Attachment: Theme: Preserving Cultural Resources

Existing Programs

Name/Title/Type of Program or Activity	Target Audience and Level	Delivery or Methods	Implementing Entity, Organization or Agency	Workshop Participant
National Marine Sanctuary – Thunder Bay	President / Secretary of the Interior		Michigan Sea Grant / NOAA	
Walk through time	4th – 6th	1st person interpretation with boats, canoes, beach walks. 3.5 hour breakdown of human land/aquatic use over the past 300 years	Indiana Dunes Environmental Learning Center	
WI Heritage tourism program	Adult travelers	Brochures, interpretation science, travel planners	Chamber of commerce, economic development corporations	Cathy Techtmann
Tribal programs	tribes, visitors	storytelling, dance, crafts	University, NPS	Cathy Techtmann
Shipwrecks of the Great Lakes Website	divers, tourists, adults, kids	websites, signage, maritime trail	WI	Jill Ladwig
Family guide to the North Shore	Families	booklet on website	MN Sea Grant	Glenn Kreag
Submerged cultural resources		dive markers	WI state historical society	Susan Mackreth
Lighthouse curriculum	K-12	class, field trips	NPS - Apostle Island	Susan Mackreth
Voyager canoe / kayak program	Families	costumed re-enactment	Northern Great Lakes Visitors Center	Rebecca Hinkle / Cathy Techtmann
National Historic Sites	all ages	Park Interpreters	national park service	
Clearwater folkschool				
North Home School		boats, crafts		
Grand portage national monument	all ages	ship & fish info	canal park maritime museum	
Two Harbors museum				Glenn
Life along the Manitou passage		2-3 day schoolship. Program focused on culture & heritage of Manitou Passage (history of sailing, shipwrecks, lighthouses, Coast Guard stations, etc., combined with dune ecology	existing but further development would be great! Inland Seas, Sleeping Bear Dunes	
Fish Creek Estuary Curriculum	Park - Adult		Northern Great Lakes Visitors Center	Cathy Techtmann

New Programs for Development

Name/Title/Type of Program or Activity	Target Audience and Level	Delivery or Methods	Implementing Entity, Organization or Agency
International Wildlife Refuge -- Detroit River	President / Secretary of the Interior	Boat Tour	Michigan Sea Grant, Fish & Wildlife Services, NWR
Eco-Cultural Shore Route	travelers	brochures, signs, website, maps	DOT, state tourism agencies, tribes
Maritime Trail system (exists but expand & link with tribal programs)	all ages	trails, signs-- around entire Great Lakes Basin	WI Historical Society & WI Sea Grant
Tribal Programs (link with maritime trail system)	tribe & visitors	storytelling, crafts, dance	tribes
Ethnobotany	Elderhostel	storytelling, field trips, eating, guide books	University, NPS
Fisheries as cultural resources	recreational fishermen, travelers	charter fishers tell story	F&W, tribe
Preservation of Ore Dock - endangered cultural resources	local government	laws, ordinances	WI State historical society
Great Lakes clearinghouse for heritage programs	other educators, journalists	web site, multimedia	Sea Grant
Water Trails	sea kayakers	signs, brochures, waterproof cards, maps	DNR, private business

New Program Ideas

Title: Great Lakes Heritage Trail Passport Program
(logo of sailboat, fish & lighthouse)

Key content: focus, theme, issues and/or values to be addressed
Preserve Great Lakes cultural maritime heritage resources

Analysis/Assessment: key characteristics of audience

Drivers

Travelers

Key characteristics:

Those interested in history / culture / Great Lakes

Family interest, various education levels

Collectors: passport stamps

Circle Route Travelers, tourists

Flexibility needed

Looking for activities

Design: instructional objectives, activities, scope, sequence

Experience water – off highway

Partnership building between organizations

Increased awareness & increased appreciation of maritime heritage:

Shipwrecks, lighthouses, community fishing, food, tribes, art

Increased return visitors
Increased awareness of connection between heritage & landscape

Development: participant and instructor materials, products & activities

Maps
Package with CD, activity book, passport, sticker
Website: print activities, questions, links between sites
Photo books (coffee table variety)
Coordinating organization: partnership building
Grant

Implementation: methods of delivery, evaluation and marketing plans

ID sticker for sites & travelers
Audio link
Theme line to follow: e.g. Shipwrecks, lighthouses, tribes, art, food
10% off: CD/Passport/Book package
Awards: books, art
Activity reward: free special events, rotate location
Sticker for car
Get contact info when issue passport
Contribute your story: web, drop-off spots
Photo competition: photos make calendar and are used for research. Photos to be taken are about values, etc.

Evaluation: short and long term

How many stories contributed
Increased tourism
Passport stamps
Point of purchase survey
Key attraction survey → add questions to existing surveys
Survey car stickers in parking lots
Name in box at off-beat locations
Count website hits

Attachment: Theme: Habitat Protection

Existing Programs

Name/Title/Type of Program or Activity	Target Audience and Level	Delivery or Methods	Implementing Entity, Organization or Agency	Workshop Participant
NEMO: non-point education for municipal officials	municipal officials	workshops, interactive educational materials	OSU Agricultural extension	
Great Lakes Basin Program	soil & water conservation districts	Grants program	Great Lakes Commission	Jon Colman
Great Lakes Education program	Grades 4-8	field trips aboard a vessel -- hands on	Michigan Sea Grant Extension	Gail Vander Stoep
Great Lakes Camp	secondary education	1 week field trip based camp	Sea Grant extension	Gail Vander Stoep
Life of the Lakes				
Coastal decision maker workshop	resource managers, professionals	workshops, field experience, demonstrations	National Estuarine Research Reserves	
Great Lakes Information network	all	web site		
Fisheries leadership institute	educators, tribal representatives, media, charter/commercial fishing companies	curriculum development, presentations, workshops	Great Lakes Sea Grant network	Jill Ladwig, Elizabeth LaPort
Acid Rain Curriculum	6th through 12th	3 hours class at ~ 3000 students a year for each class	Wolf Ridge	Peter Harris
Superior View Hiking				
Lake Study				
Stream Study				

New Programs for Development

Name/Title/Type of Program or Activity	Target Audience and Level	Delivery or Methods	Implementing Entity, Organization or Agency
Media campaign	media, general public	press packets, workshops, radio, TV, print, website	
Aquatic Net	General public through media	media/science interface	local media
Media education institute	Society of environmental journalists	workshops and extensions and field trip	
distance learning -- talk to the scientists	academic & teachers	distance learning	
QCC -- Quality core curriculum, MPA module	Traditional classroom students	module taught through workshops to teachers	

New Programs (cont.)

Name/Title/Type of Program or Activity	Target Audience and Level	Delivery or Methods	Implementing Entity, Organization or Agency
minority population outreach	underserved populations	mass media -- introduction. Interactive community-based education. Personal contact	
multi-media Kiosk at habitat	General public through media	kiosk & supporting materials	
tourism guide, training on habitat protection	ecotour operators and charter captains	workshops, professional training	
From A to Z (aquaria to zoos)	visitors to aquaria & zoos	tour guides -- small group / class. Information & interactive chats	
National Shoreline Workshop	shoreline property owners	preserving / restoring natural shorelines -- model demonstration site. Workshop --> possible restoration of a piece of property as a group example	

New Program Ideas

Title: Shoreline Stewardship Campaign

Key content: focus, theme, issues and/or values to be addressed

Goal: encourage a sense of ownership and personal responsibility for the resource (the shoreline)

Analysis/Assessment: key characteristics of audience

Shoreline owners

Key characteristics:

- They own the right to care or not care
- May or may not see the connection between their everyday activities and land ownership and lake health
- See the shoreline as unchanging

Design: instructional objectives, activities, scope, sequence

Objectives:

- At the end, audience will be educated about their connection to shoreline / APAs
- Will be able to recognize how their behavior & practices impact the resource
- Engage X number of residents in the Shoreline Steward Program by the year Y.

Development: participant and instructor materials, products & activities

Based on "Master Gardner" program

Engage a core group of shoreline ambassadors

Core group will help develop stewardship kit

Design a series of training workshops for the "shoreline ambassadors"

They will be able to take training and information back to their neighborhoods and communities

Solicit corporate sponsorship

Implementation: methods of delivery, evaluation and marketing plans

Kit items:

- Pesticide alternatives
 - Wildlife plants
 - Erosion control & property protection
 - Guide to septic system maintenance
 - Non-point source information
- Marketing & media campaign
- Get NGOs involved to identify participants
- Establish a speakers bureau
- Use festivals & workshops to recruit participants
- Tour of the Shore: showing off their properties and practices
- Demonstration programs
- Certification program
- “Steward of the year” award
- Annual event – showcase & recruit

Evaluation: short and long term

- Determine percentage of shoreline residents participating in the program
- Shoreline residents commit to baseline and follow-up photo / documentation

Attachment: Theme: Use and overuse of resources

Existing Programs

Name/Title/Type of Program or Activity	Target Audience and Level	Delivery or Methods	Implementing Entity, Organization or Agency	Workshop Participant
Blue Bag Program - Chicago recycling programs	general public	households purchase recycling bags	recycling agency	
Buck Wilder curriculum	K-12; 4th grade start	cartoon characters tour Michigan parks. Direct delivery of curriculum in cartoon format -- resource management with a broad stroke	State of Michigan	Ken Vrana
Renew the Blue	Shedd Staff	practice what you preach	Shedd Aquarium	Betty Kay Swanson
Sea Grant Sustainability	K-12, informal	vessel based (Steve Stewart) and web based Great Lakes education	Sea Grant	Ken Vrana
Leave No Trace	Scuba divers	plastic booklets designed for and by divers	Isle Royale Institute	Mark Gleason
St. Louis River Watch	Grades 8-12	Measure chemistry, collect data (but no interpretation at this time)	Fond Du Lac	Gerry Sjervan
NEMO - Non-point education for municipal officials	municipal officials, general public	workshops, website. To be developed: PowerPoint & CDs	Sea Grant	Gerry Sjervan
Save Ontario's shipwrecks	wreck divers	workshops, field work. Professionals with avocationalists	wreck divers, Providence of Ontario & avocationalists	Ken Vrana
Right Bite	family & kids	Public events, special programs, seafood class	Shedd with Illinois Sea Grant	Betty Kay Swanson
Research Monitoring - schoolships	4-12 and families	field research trips on schooners	Inland Seas	Colleen Masterson
Buoy Project	divers	presentations and physical buoys	Underwater archaeological society of Chicago	Betty Kay Swanson
Research presentations	High school to adult	first-hand experience with researchers in the field (launch probes...)	Parks, institutes & universities	Mark Gleason

New Programs for Development

Name/Title/Type of Program or Activity	Target Audience and Level	Delivery or Methods	Implementing Entity, Organization or Agency
Listing of Great Lakes aquatic protected area-related education programs	agencies & organizations involved in Great Lakes aquatic education	communication "device" - Website clearinghouse - concentrate on partnerships	Great Lakes Sea Grant Network
Fishing Heritage course	school groups, families	Fishermen teach the course. Boat/Schoolship plus land based, or on fishermen's boats	schoolship with tribe / DNR / fishermen

New Programs (cont.)

Name/Title/Type of Program or Activity	Target Audience and Level	Delivery or Methods	Implementing Entity, Organization or Agency
How to participate in policy & implementation processes	recreational divers	non-threatening workshop	Non-governmental, dive clubs & recreational divers
Adopt-A-Beach with corporate sponsorship, and/or Beach sweep & near shore	regional beach-sweepers	concerted effort & weekend. Radio, newspapers, standard data collection cards	Surfrider, Shedd, corporations (Waste Management Inc.)
Jet ski damage & safety course	motorized recreational boaters, young people	Coast Guard safety workshops	Coast Guard
Value of beaches -- use & economic impacts	professional community, coastal community leaders	fund research, especially community-based research	universities, Sea Grant
Great Lakes Is A Resource	media	Great Lakes environmental & aquatic issues. Stakeholder involvement with media	Institute for ...
Great Lakes Conference	comprehensive stakeholders	GIS/Environment conference, media, public	NOAA / DOI
Great Lakes Fisheries Leadership Institute	stakeholders, resource managers	workshops / website	Great Lakes Sea Grant Network

New Program Ideas

Title: Great Lakes Aquatic Protected Area Education Website

Key content: focus, theme, issues and/or values to be addressed

“Direct Serve Education” – background information & science for non-experts
Connecting knowledge & educational resources to teachers & resource users

Analysis/Assessment: key characteristics of audience

Non-formal & formal education

Home schoolers

“Users”: resource users, managers, shipwreck divers, recreational fishers, charter fishermen, people dependent on resource

Students

Key characteristics:

Users with lack of sense of their impact

Users concerned with short-term economics

They want to know what they impact, and how they connect to the “big picture”

Design: instructional objectives, activities, scope, sequence

Educators need to be in on development

Populate the web site with what educators have to provide

Visual, comprehensive curriculum, and where this fits into State standards, also with national standards

Pull-down menu for curriculum

Can also be a promotional tool for ecotourism & resource use

Development: participant and instructor materials, products & activities

“Watershed 101”

Developed by experts with knowledge and those with educational needs

Sea Grant & Great Lakes Commission—core people to develop the site with time, funding and ability

Special interest groups (archeology, schools, commercial & tourism) – have connections and money

NOAA, state tourism, local government units

Needs to be done by someone with web tech knowledge & hardware knowledge

Implementation: methods of delivery, evaluation and marketing plans

Round-robin teacher development workshops (for marketing & promotion)

(One group of users that are dependent on resource are not able to access this website—need to be able to access these people too.)

“Website Minute” – 40 second spot about one of the educational products, then “come see our website”

Professional organizations with newsletters & other web sites

Daily news for the primary users (either by email and/or on the website)

At the community portal for each aquatic protected area – promotional community grass roots involvement through dive shops, commercial charters, APA managers

Need to make website ADA approved, have alternative formatting, appropriate web site design for information flow, usability testing & review and pilot study

Kiosk in aquarium

Evaluation: short and long term

Independent marketing firm

“Did you find what you’re looking for” survey

Deep analysis of entry points to web site – feeds into design & layout of website

Document how many people provide material to website

Actual use of information (registration of users with follow-up survey?)

On-line activities can be documented by web use statistics

Incentives for use: Free access to Shedd?

Boat stickers

Charter boat camera give-away—send pictures to the website

Attachment: Theme: Managing invasive species

Existing Programs

Name/Title/Type of Program or Activity	Target Audience and Level	Delivery or Methods	Implementing Entity, Organization or Agency	Workshop Participant
Attack Pack	K-12 (mainly high school)	educational tool for students teaching students	WI Sea Grant	Jill Ladwig
Clean Boat	recreational boaters	zebra mussel information through boat ramp signs, fliers, personal contact, brochures, video, radio	Sea Grant MN, MN DNR (broader)	Marie Zhuikov - MN Sea Grant
Invasive exhibits	aquarium visitors	exhibits	Great Lakes Aquarium	Jay Sandal
Ballast water issues	Foreign vessel operators	inspections and literature	Duluth SeaWay Port Authority, University of WI Superior	Ray Skelton, Dr. Rod Stewart
Wallet ID exotic species ID Card	recreational anglers	laminated ID cards distributed with fishing licenses & other ways	DNR, Great Lakes Sea Grant	Steve Stewart - Sea Grant
SGNIS - Great Lakes Exotic clearinghouse	general public	web-based - Sea Grant non-indigenous species clearinghouse. USGS: nas.er.usgs.gov , EPA: epa.gov/glnpo/monitoring/exotics	Sea Grant	Steve Stewart
Escape compendium of teaching material	teachers	regionally exotic species compendium, curriculum materials, national teachers workshops, traveling trunk	Sea Grant	Steve Stewart
News event - hard news	TV viewers	TV, newspapers, radio, word of mouth	MPCA - MN, Sea Grant, Academic	Pete, Barb Lukken
Superior Boardgame Choices	6 - adult (family group)	carpet / game board	DWSR, board of soil & water resources. Wolf Ridge	
Invasive Species field course	teachers & environmental professionals	3-day course. Combination of seminars & field research	Inland Seas	Colleen Masterson
Great Lakes Panel on Aquatic Nuisance Species	watershed managers, SWCDs	Information and education: video/TV/print/web media	Great Lakes Commission	Jon Colman
PLP: Purple loosestrife project	teachers & classes	Teacher workshop, raise beetles, research	Sea Grant, MSU department of entomology	

New Programs for Development

Name/Title/Type of Program or Activity	Target Audience and Level	Delivery or Methods	Implementing Entity, Organization or Agency
Rocky horror show - exotics	fishers, including kids	video	Sea Grant
Exotic Alert	primary: 4th grade teachers, secondary: students	distance learning -- linking teachers with researchers	Sea Grant -- regional proposal
T-cubed: travel through time, or landscape through time	recreational users, primarily consumptive users	Bill Mason - canoe guy -- humor. Video - cartoon. Values, reintroduction, restoration	DNR
Exotic - large scale board game -- stop at MPA	traveling tourist & residents	large-scale game of the Great Lakes Region. Idea about game: make it interactive / web-based. "Sim City" w/ocean & Great Lakes focus	EPA
Take a Shot (photo)	traveling visitors & residents	packets - distribute cameras. Most important resources	visitor center network
Outreach to Scuba divers	divers, dive masters, dive certification organizations (PADI, NAUI, SSI, YMCA)	1:1 education at dive shows. Brochures, posters @ dive shops	Great Lakes Sea Grant Network
Restoration ecology volunteer program	adults	workshop, then adopt-a-site	National, state, county & city parks. Combination of resource managers & interpreters
Charter boat digital camera distribution	recreational fisher people	digital cameras (or other film device, disposable cameras) distributed to charter boat operators. Users learn to spot, identify & document instances of invasive species. Amateur monitoring	someone with money!

New Program Ideas

Title: Aquatic Exotics Game

Key content: focus, theme, issues and/or values to be addressed

Aquatic exotics, both flora and fauna

Theme is preventing spread of exotics

Issue is how exotics can affect native communities

Value is how changes in native communities can impact recreational experiences

Analysis/Assessment: key characteristics of audience

Key target audience: Travelers that are towing small boats on trailers

Also, those traveling with families

Families predisposed to visit natural areas. Land-based travelers, travelers by small boats or divers

Knowledge & interest:

Basic awareness of zebra mussels (they think zebra mussels are bad) but limited knowledge of why and their impacts

Limited knowledge of how they (the travelers) affect spread

Very limited knowledge of other exotics
Increased interest as the exotics impact on recreational activities
Very little training
Open to education or optional game

Design: instructional objectives, activities, scope, sequence

Goal: Visit different MPAs and learn about exotics

Objectives: They will be able to:

- Define the term exotic and invasive as it relates to flora and fauna
- Identify 3 exotics species per site visited
- Describe pathways of exotic spread
- Describe origins and methods of introduction for the 3 species
- Describe changes to the native community based on the 3 species
- Demonstrate 3 best management practices to reduce spread

Game development

- A map of the Great Lakes with MPAs sites marked
- Around the map (based on “fastmaps” of the National Parks Service) would be illustrations of exotics and information about them

The Game

- MPA would hand out literature and do interpretive programs about exotics
- Once a family completes the learning objectives they would be given a sticker of that exotic by the ranger or nature center staff
- The game would be to get as many stickers as possible
- All MPA materials would be available at the nature centers, state parks, visitor information centers etc.
- There would be different levels of recognition based on the number of stickers accumulated. At level one, they would get a “card”, level two a bumper sticker, level three a patch. (similar to the Junior Ranger program)

Development: participant and instructor materials, products & activities

Development of “fastmap”, stickers, bumper stickers, patches, and other game materials
Encourage involvement by MPA – one trainer would go to areas and visitor centers to give out materials and explain benefits of being involved

Implementation: methods of delivery, evaluation and marketing plans

Distribution of packets by individuals
Information at tourism centers
Information on website
Support materials distributed and downloadable
Big award (\$20K) for the nature center/ visitor center who has the highest percentage of their visitors participating in exotic game (also gives centers incentive to participate and track participation). The money must be spent on exotic-related efforts (boat cleaning station, exotic removal, interpretive signs, exotic removal plan, etc).

Evaluation: short and long term

Tracking stickers – families have to accomplish learning objectives in order to receive stickers.
Track cards, bumper stickers and patches

Include short evaluation survey when families get bumper stickers
Track web-site use
\$20K to center with highest percentage of visitors participating.

Attachment: Evaluation Form
Great Lakes MPA Education Workshop
Two Harbors, MN, September 25-27, 2002
Evaluation

We would appreciate your feedback both **positive** and **negative** so that we might improve future workshops. Please complete the following questions.

My primary affiliation is:

- | | |
|--|---|
| <input type="checkbox"/> Science Center/Aquarium | <input type="checkbox"/> Sea Grant |
| <input type="checkbox"/> NERR | <input type="checkbox"/> NGO /Advocacy Organization |
| <input type="checkbox"/> NMS | <input type="checkbox"/> Classroom educator |
| <input type="checkbox"/> NPS / NWR | <input type="checkbox"/> Other: _____ |

1) WORKSHOP CONTENT

Please rate your level of knowledge about the workshop content before and after the workshop. First, circle the number that describes your knowledge level before the workshop, then on the next line, circle the number that describes your level after the workshop.

		No Knowledge	Little knowledge	Sufficient knowledge	Extensive knowledge	Cannot rate - comment
Understanding and awareness of MPA issues	BEFORE	1	2	3	4	
	AFTER	1	2	3	4	
Understanding and awareness of the MPA Initiative and the work of the MPA Center	BEFORE	1	2	3	4	
	AFTER	1	2	3	4	
Understanding and awareness of MPA management contexts and topical science	BEFORE	1	2	3	4	
	AFTER	1	2	3	4	
Understanding and awareness of MPA social science issues	BEFORE	1	2	3	4	
	AFTER	1	2	3	4	
Understanding of public opinion and MPA issues	BEFORE	1	2	3	4	
	AFTER	1	2	3	4	
How to include MPA messages and themes in existing/new marine and coastal education programs	BEFORE	1	2	3	4	
	AFTER	1	2	3	4	

Evaluation (cont.)

For questions 2 and 3: Please circle the number which best describes your feelings.

2) WORKSHOP FORMAT The number "3" indicates the element was adequate.

The length of the workshop in relationship to material presented was	Too Short	1	2	3	4	5	Too long
Ideas and materials presented were	Too simple	1	2	3	4	5	Overly complex
Time allotted to discussion was	Too Short	1	2	3	4	5	Too long
Small group work sessions	Detracted from workshop effectiveness	1	2	3	4	5	Enhanced workshop

3) WORKSHOP APPLICABILITY

The amount of information presented that will be useful to me in my current job	Most of the information	1	2	3	4	5	Very little of the information
Attending the workshop was	A good use of my time	1	2	3	4	5	Poor use of my time
The relevancy of the material presented to my job was	Too basic	1	2	3	4	5	Too complex

4) COMMENTS

What did you find most useful about the workshop?

Were the materials in the registration binder useful for the workshop, and what will you be able to use from them in your work?

What did you find least useful about the workshop?

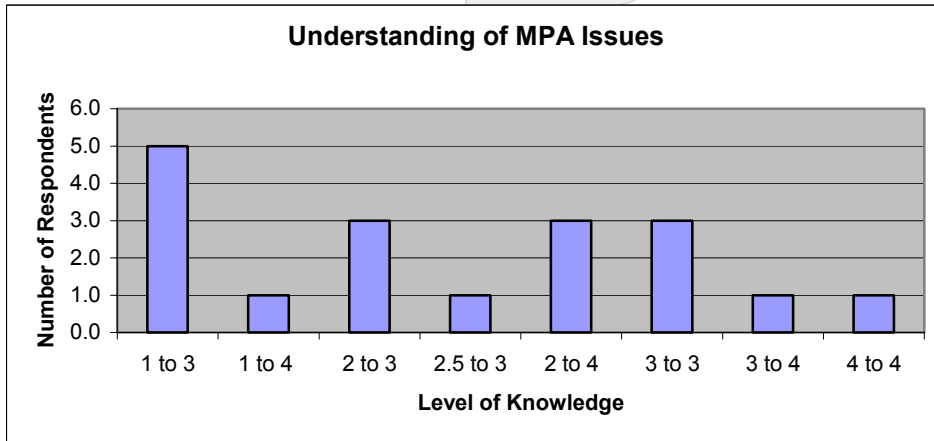
What recommendations do you have to improve the workshop?

What specifically did you learn that you will be able to apply directly to you area of work?

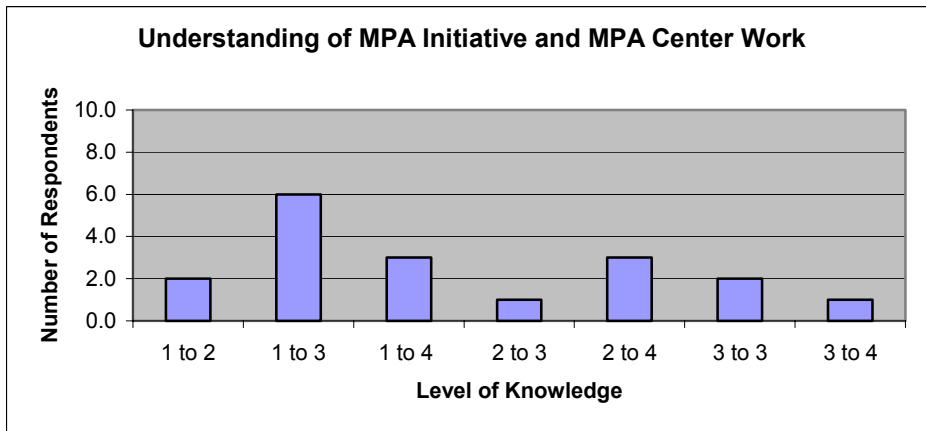
Attachment: Evaluation Charts

Workshop Content

1 = No Knowledge
 2 = Little Knowledge
 3 = Sufficient Knowledge
 4 = Extensive Knowledge

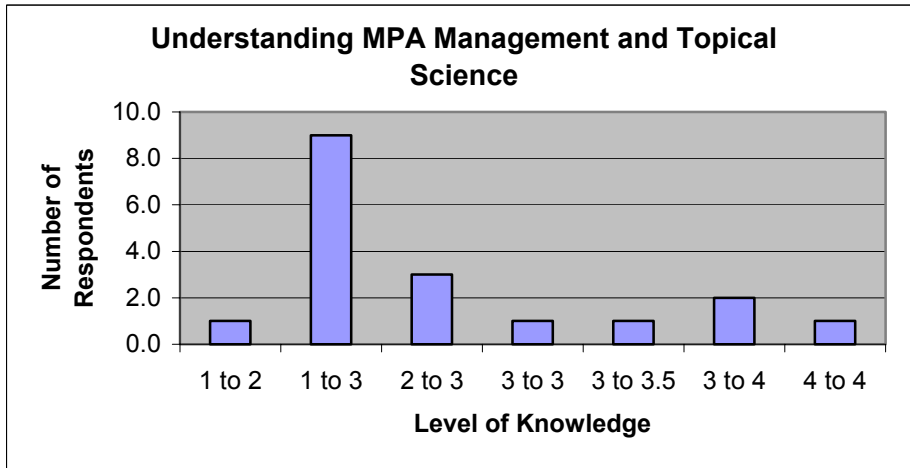


Statistics	Before	After
Mean	1.83	3.30
Standard Deviation	0.92	0.49
Average	2.03	3.33
Mode	2.0	3.0

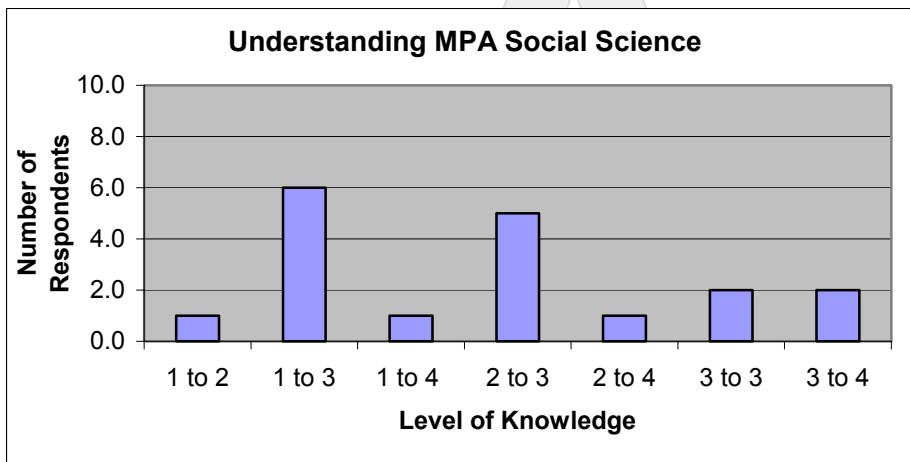


Statistics	Before	After
Mean	1.40	3.21
Standard Deviation	0.78	0.67
Average	1.56	3.28
Mode	1.0	3.0

Workshop Content (cont.)

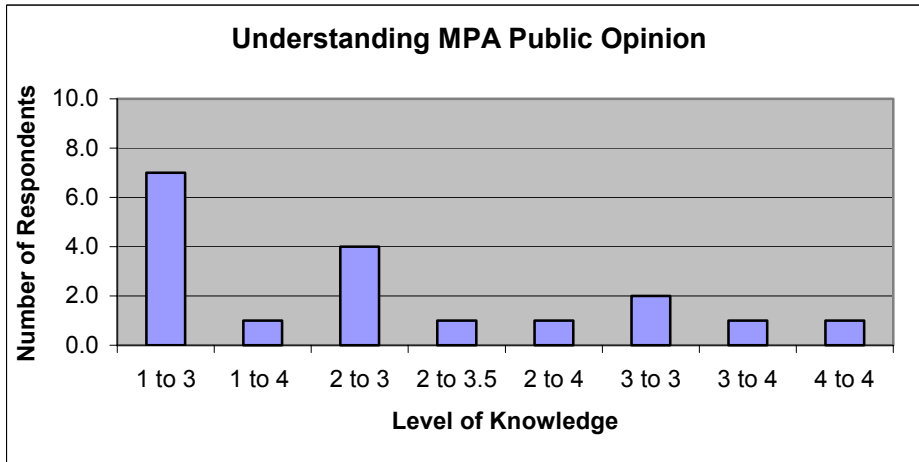


Statistics	Before	After
Mean	1.55	3.10
Standard Deviation	1.00	0.48
Average	1.78	3.14
Mode	1.0	3.0

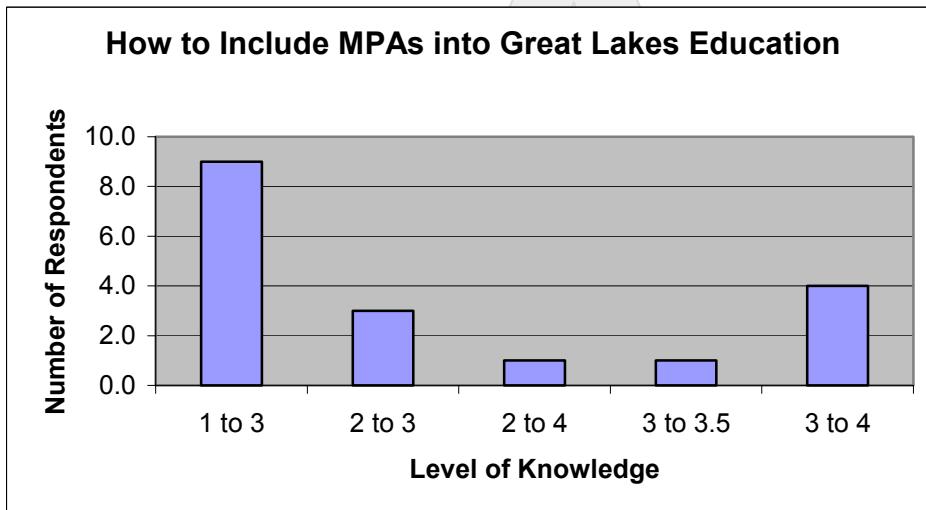


Statistics	Before	After
Mean	1.61	3.13
Standard Deviation	0.81	0.51
Average	1.78	3.17
Mode	1.0	3.0

Workshop Content (cont.)

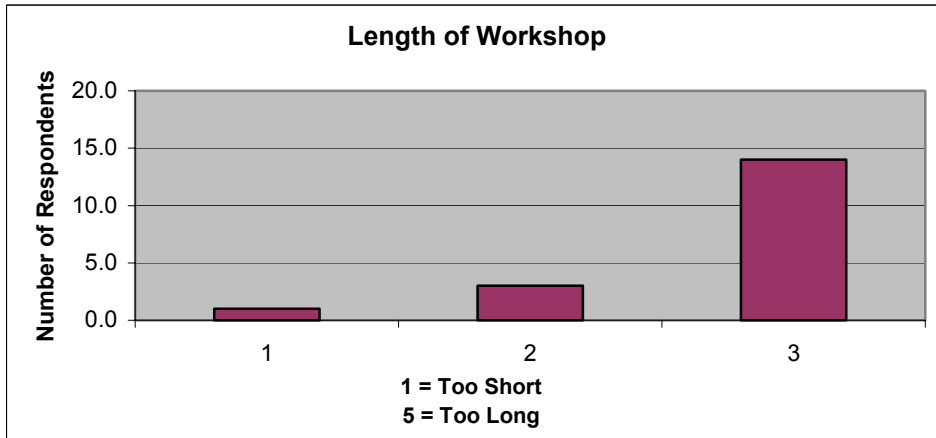


Statistics	Before	After
Mean	1.63	3.23
Standard Deviation	0.92	0.43
Average	1.83	3.25
Mode	1.0	3.0



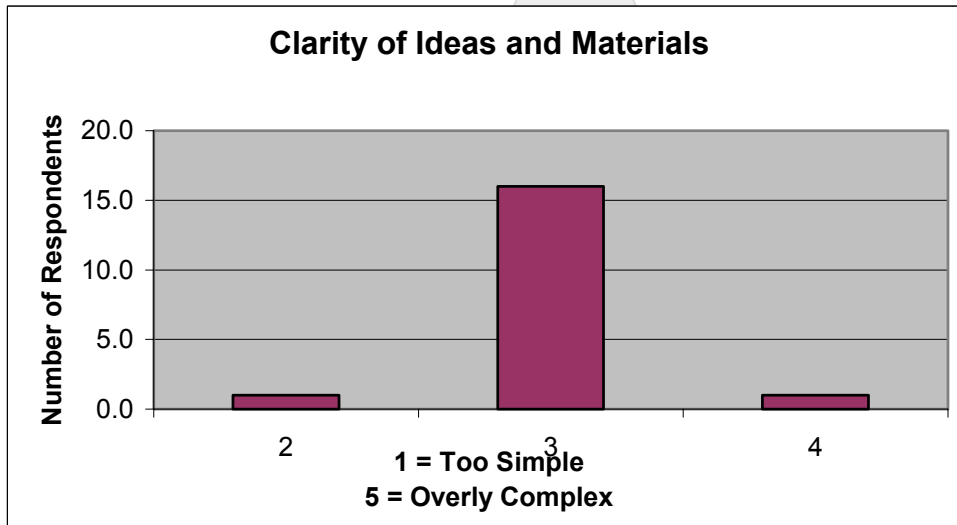
Statistics	Before	After
Mean	1.58	3.28
Standard Deviation	0.88	0.46
Average	1.78	3.31
Mode	1.0	3.0

Workshop Format



Statistics

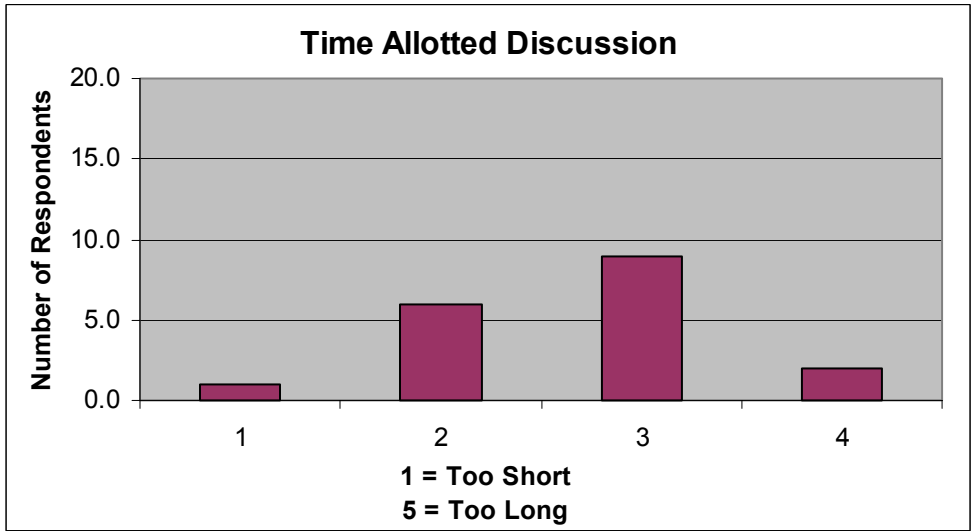
Mean	2.64
Standard Deviation	0.57
Average	2.72
Mode	3.0



Statistics

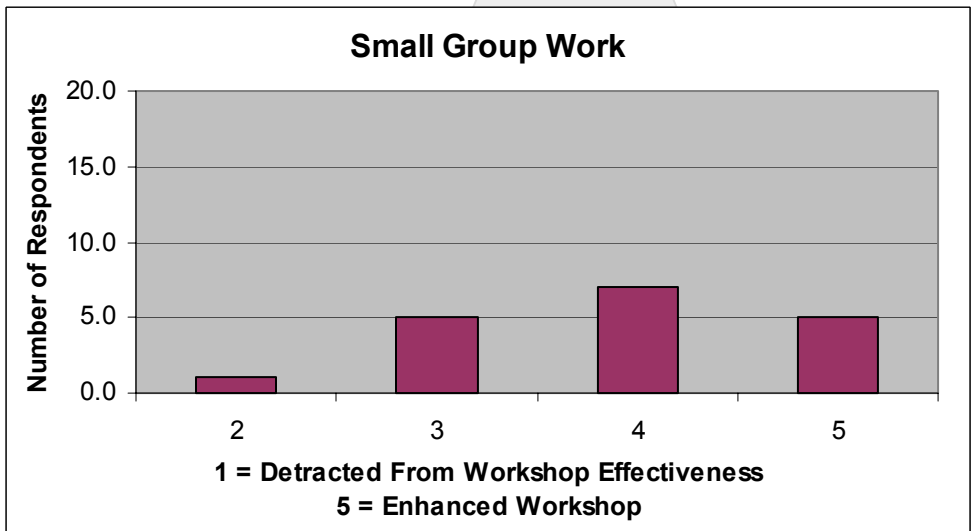
Mean	2.98
Standard Deviation	0.34
Average	3.00
Mode	3.0

Workshop Format (cont.)



Statistics

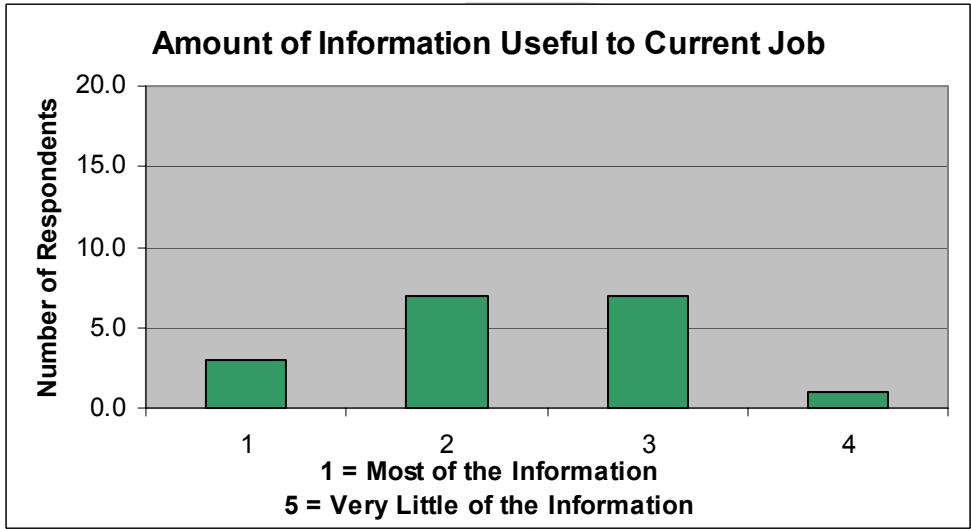
Mean	2.55
Standard Deviation	0.77
Average	2.67
Mode	3.0



Statistics

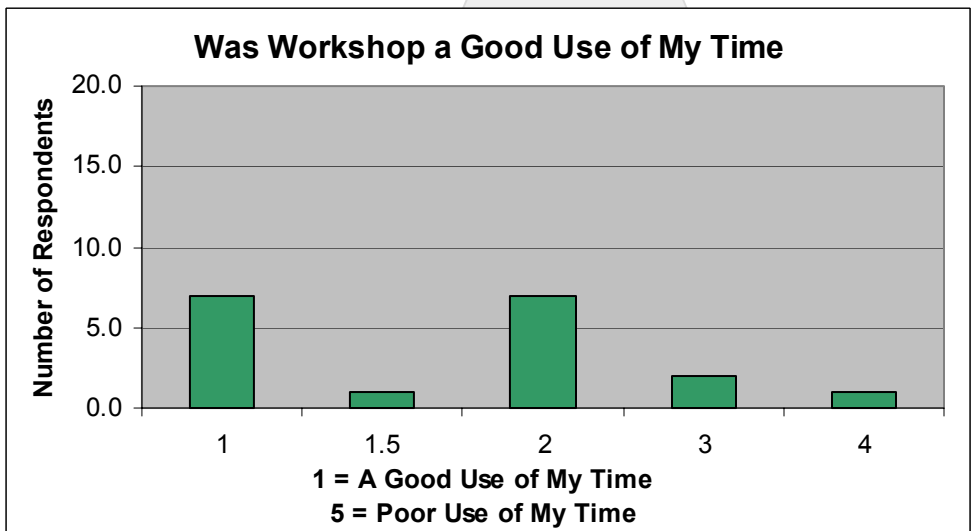
Mean	3.78
Standard Deviation	0.90
Average	3.89
Mode	4.0

Workshop Applicability



Statistics

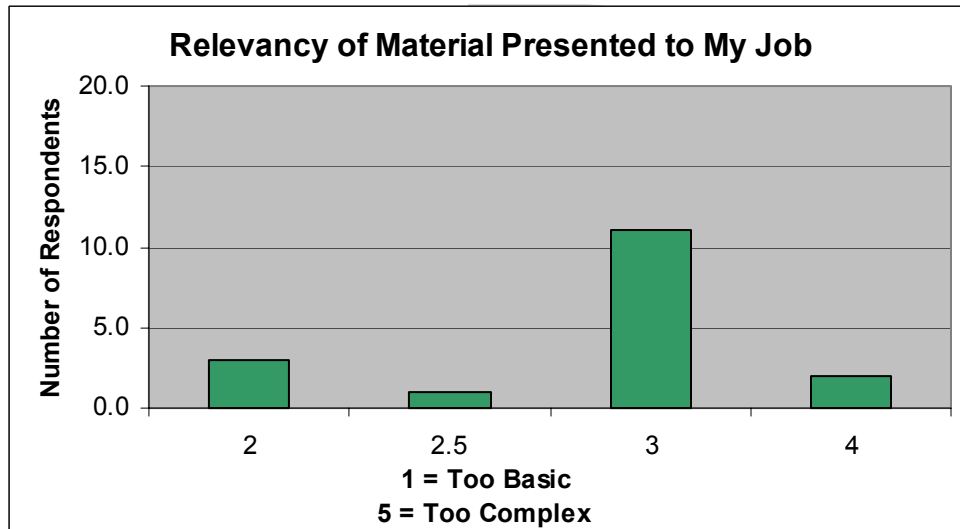
Mean	2.17
Standard Deviation	0.84
Average	2.33
Mode	2.0



Statistics

Mean	1.63
Standard Deviation	0.86
Average	1.81
Mode	2.0

Workshop Applicability (cont.)



Statistics

Mean	2.86
Standard Deviation	0.57
Average	2.91
Mode	3.0

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