

# **WORKSHOP REPORT**

## **WEST COAST REGIONAL**

### **MARINE PROTECTED AREA EDUCATION WORKSHOP**

**SEPTEMBER 3-5, 2002  
Morro Bay, CA**



**Phyllis Dermer  
Education Coordinator**

## Table of Contents

Introduction .....	3
Workshop Overview .....	3
Participants .....	4
Technical Field Trips .....	5
Presentations .....	5
The MPA Story, a National Overview--Dr. Charles Wahle .....	5
Social Science and Marine Protected Areas--Sarah Lyons .....	6
Science and Marine Reserves—Dr. Mark Carr .....	6
American Attitudes Toward Marine Protected Areas And Fully Protected Marine Reserves – Dave Bard .....	6
Overview of mpa.gov – Phyllis Dermer .....	6
Preview of PacificMPA.org – Sarah Lyons .....	6
Small Group Work – Incorporating MPAs into Current Marine Education Programs .....	7
Group 1 MARE and Trouble in the Tidepools .....	7
Group 2 Wetland Round-up and Sea Grant Alaska Videos .....	8
Groups 3 & 4 South Slough, Beach Naturalist, Are Reserves Deserved, Oregon Coast.....	9
Group 5 Beach Etiquette and MPA Board Game .....	11
Group 6 Respect the Beach and Jason XIV, From Shore to Sea .....	12
Summary Session .....	13
Feedback and Evaluation.....	13
Workshop Content.....	13
Workshop Format .....	14
Workshop Applicability.....	14
Comments.....	15
Follow-Up and Feedback .....	16
Workshop Analysis.....	19
Attachment: Workshop Agenda .....	21
Attachment: Workshop Participants .....	24
Attachment: Speaker Biographies.....	26
Attachment: Participant Biographies .....	28
Attachment: Summary Session Notes .....	30
Attachment: Workshop Notebook Contents .....	33
Attachment: Small Group Work.....	34
Directions .....	34
MPA Themes, Issues and Values.....	35
Worksheet .....	36
Attachment: Evaluation Form.....	37
Attachment: Follow-Up and Feedback Form.....	39
Attachment: Evaluation Charts.....	40

## **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 learned about how to incorporate MPAs into current education programs.

One of the primary goals of the workshop was to foster the development of education partnerships. As the first step, the MPA Center wanted to encourage networking among educators from the many different agencies working in MPAs or on MPA issues. The workshop was designed to gather representatives who educate about MPA issues from as many different agencies in the region as possible. 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 among the participants and offer an opportunity for participants to network.

## **West Coast Workshop Overview**

The West Coast Regional Marine Protected Areas Education Workshop was held in Morro Bay, California, September 3-5, 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 attached "Workshop Notebook Contents" section for a complete listing of the registration notebook contents.

On the first scheduled day of the workshop, technical field trips were arranged to acquaint the participants with some of the coastal resources in Morro Bay, both natural and cultural. The workshop officially began early the next day with a workshop overview and participant introductions. The three main presentations on that day acquainted the educators with MPA issues and the National MPA Center's activities. The group was then divided into five working groups. Participants in each working group described some of their current educational programs. Subsequent small group sessions over the next two days allowed participants to work together to incorporate what they learned about MPAs into current and new programs and activities. During breaks, participants identified potential and real MPA sites on a map showing only the region between Baja and Alaska. The group identified around 40 sites throughout the region that they thought might qualify as MPAs, and approximated their boundaries.

On the final morning of the workshop, the group heard a presentation on American attitudes towards marine reserves. The educators also wrapped up their small group session work and presented the results to the full group. The last discussion summarized the workshop and solicited recommendations on how the National MPA Center might support the participants' education and outreach efforts.

Sarah Mitchell, Education Coordinator for the National Ocean Service, facilitated the workshop. The following staff helped with workshop logistics and facilitation:

- Phyllis Dermer, Education Coordinator, National MPA Center
- Mo Lynch, Professor Emeritus, Marine Science, Virginia Institute of Marine Science, College of William & Mary
- Lynne Mersfelder-Lewis, International Affairs Specialist, National MPA Center
- Nadia Sbeih, Knauss Sea Grant Fellow, National Marine Sanctuary Program

Below is a list of speakers and the topic of their presentations. Please see the "Speaker Biographies" attachment for detailed information about the speakers. Annotated versions of these presentations will be available on the MPA website, [mpa.gov](http://mpa.gov).

- Dr. Charles Wahle, Acting Director, National MPA Center, Science Institute, *The MPA Story, a National Overview*
- Sarah Lyons, Marine Policy Analyst, National MPA Center, Science Institute, *Social Science and Marine Protected Areas*
- Dr. Mark Carr, Associate Professor, Department of Ecology and Evolutionary Biology, University of California at Santa Cruz, *Science and Marine Reserves*
- Dave Bard, Program Manager, SeaWeb, *American Attitudes Toward Marine Protected Areas And Fully Protected Marine Reserves*

### **Participants**

More than 30 educators and education intermediaries from Alaska, Washington, Oregon and California participated in the workshop. Representation was drawn from: National Sea Grant College Program; National Estuarine Research Reserves; National Park Service; U.S. Fish and Wildlife Service; National Marine Sanctuaries; aquaria and science centers; and other governmental and non-governmental organizations. 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, the National Oceanic and Atmospheric Administration (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 “Workshop Participants” attachment.

### **Technical Field Trips**

To start the workshop on an informal note and to allow participants to network from the beginning, field trips were organized to highlight the natural and cultural resources in the immediate area. Early arrivals to the workshop were offered the opportunity to tour Morro Bay, part of the 2300 acres of mudflats, eelgrass beds, tidal wetlands, and open water habitat that make it part of the most significant wetland system on California’s south central coast.

The educators were offered the opportunity to tour the bay by boat, which included a close-up view of Morro Rock, a designated National Monument, protected bird nesting area and home to endangered peregrine falcons. The boat also left the protected bay and toured buoys that are gathering and haul-out areas for harbor seals. The boat captain offered a running commentary about these resources.

Another option for those wanting a more intimate look at the bay was a kayak tour, led by Mike Multari, the Director of the Morro Bay National Estuary Program. The tour took the participants into the back bay waters of the estuary, by the extensive dune system and through seagrass beds.

An evening program was held at the Museum of Natural History at the Morro Bay State Park. The museum recently held its grand reopening after the completion of a nine-year, multi-million dollar modernization project that transformed its displays from static stuffed wildlife to fully interactive, hands-on educational exhibits. Workshop participants had time to explore the exhibits and question the museum’s Interpretive Specialist, Nancy Dreher, and Ray Monson, Park Ranger. Several participants photographed the displays for reference in developing their own interpretive displays.

### **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 our website, [mpa.gov](http://mpa.gov).

#### ***The MPA Story, a National Overview – Dr. Charles Wahle***

Following an initial introduction to the workshop by the workshop’s facilitator Sarah Mitchell, Dr. Charles Wahle began the presentations with his talk on the MPA Initiative and the work of the National MPA Center. He clarified the multiple terms used when talking about MPAs and introduced the different types of and purposes behind the myriad MPAs found in the U.S. He described the chronology of events leading up to the current emphasis on MPAs and then informed the audience about the work of the

National MPA Center and Institutes. He also introduced the need for natural science in the broader discussion of MPAs by discussing some of the work of the Science Institute.

***Social Science and Marine Protected Areas – Sarah Lyons***

Leaders in the field have increasingly called for social science to be brought to 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. She reviewed the Social Science Strategy and described 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.

***Science and Marine Reserves – Dr. Mark Carr***

MPAs aim to protect natural and cultural resources along our coast and in the open ocean. In order for the protection to succeed, MPAs must be designed using scientific principals. For MPAs to be accepted, they must be shown to accomplish their goals. Dr. Carr described essential 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.

***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 educators address daily. The survey results emphasized 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 oceanic 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. Dave also described the campaign that SeaWeb is developing to raise national awareness about MPAs.

***Overview of mpa.gov – Phyllis Dermer***

A brief demonstration of mpa.gov allowed the educators to become acquainted with the website. Many had not known about it and commented that they expected to explore it as soon as they returned to their office. They were especially interested in the inventory maps and the library sections. The demonstration provided a brief overview of the new education section, and the participants were asked to recommend what they would like to see added to the site.

***Preview of PacificMPA.org – Sarah Lyons***

Sarah Lyons demonstrated the website that is being developed in partnership with the Communication Partnership for Science and the Sea (COMPASS) as a clearinghouse for legislative MPA activities in Washington, Oregon and California. Participants commented that the information on the site would make it easy for them to keep up with the wide range of activities happening in their region.

### **Small Group Work – Incorporating MPAs into Current Marine Education Programs**

Many of the participants already have well-developed education and outreach programs that incorporate MPA issues and values, but do not actually address MPAs. Following the initial presentations, the group was divided into small working groups and tasked to incorporate what they learned about MPAs into current education programs and activities. Worksheets and guidance for the small group work were provided in the participant binder (see the “Small Group Work” attachments).

In the initial invitation and registration packets, participants were invited to briefly present to the group an educational project or activity they thought pertinent to MPA education. A list of these presentations was developed and grouped according to audio-visual presentation needs. The initial design of the workshop was to split the group into three, but many participants wanted to share their programs. To accommodate everyone who wished to present, six groups with two presenters in each were organized. A staff person was assigned to each group as note-taker. The rest of the attendees were randomly assigned to one of the six groups. There were more people who wanted to present using PowerPoint and LCD projectors than we had room and equipment for; in the end, two groups combined into one, for a total of five working groups.

Sarah Mitchell provided an overview of the small group work tasks and reviewed the materials provided in the notebooks. This included directions for the group work, a chart that identified some key MPA themes, issues and values (difficult to divide and label), and a worksheet to record their work. The groups were told to choose a facilitator and a reporter who would report to the full group. Presenters were requested to keep the description of their program to around 10 minutes to allow for questions and discussion of the program. The groups were to then discuss how to incorporate one MPA theme, such as stakeholder participation or multiple purposes behind many MPAs, and one issue or value, such as habitat destruction or biodiversity protection, into the program. If the program already addressed MPAs, the group was to discuss how to make the program more widely applicable to a wider audience.

The schedule provided 1¾ hours for the initial presentations and group discussion of the new programs. Following Dave Bard’s presentation on the final day of the workshop, the groups had another hour to wrap up their discussion. Following a break, we all met back together and listened to the results of the group work.

The following sections briefly describe the small group presentations and work.

#### **Group 1      *MARE and Trouble in the Tidepools***

Roberta Dean from the Marine, Activities, Resources and Education Program (MARE) at the University of California at Berkeley, and Carol Sullivan from the Bureau of Land Management’s King Range National Conservation Area were presenters for in this group. Roberta described the MARE program, an extensive curriculum of aquatic science topics developed for grades K-8 that focuses on a different ecosystem at each grade level. Carol described the tidepool program they use to teach students in grades 1-3 about habitats and develop the students’ observational skills.

The MARE program has a well-developed curriculum and provides training for teachers interested in the program. This professional development gets the teachers into the field. Engaged teachers are more likely to use the curriculum, and even bring the techniques learned to their coursework on inland areas. Roberta described the

ecosystem focus of each grade, and noted that the 6<sup>th</sup> grade work on islands, with discussions about shark depletion, would be a good place to add an additional focus and talk about marine protected areas.

Carol described some of the constraints to developing a good education program, including the need for ease of delivery and that those being taught need to take ownership of the program. Challenges include limited resources and the problems of reaching isolated, rural schools. Some of the areas for expansion of the tidepool program include the need for pre- and post-trip program development and the need to develop teacher, parent/chaperone and volunteer training.

To incorporate MPAs into these programs, Group 1 decided to combine the two programs into one to raise awareness of how to care for and visit habitats. Roberta wants the MARE program to focus on habitat preservation, rather than just fisheries issues in MPAs, and Carol wants to develop stewardship concepts in her tidepool program. The focus MPA issue is habitat destruction and the value taught by the program would be habitat protection. The program, aimed at students in Grade 1, would combine science and art through the use of music, drama, art, slides, and videos to teach about tidepools. The program would tie into California state educational standards and introduce scientific reasons for not disturbing tidepool organisms, taught in a manner understood by the children and chaperones. The group also discussed additional development of the current tidepool program, focusing on environmental values and including a stewardship activity in the post-trip program.

### **Group 2      *Wetland Round-up and Sea Grant Alaska Videos***

Frances McTamany of the San Francisco Bay National Wildlife Refuge Complex and Don Kramer of the University of Alaska Sea Grant Marine Advisory Program presented to this group. Fran described the wetlands curriculum they use to teach children (K-6), their parents, and teachers about the importance of preserving the resources of the baylands. Don showed short clips from three videos produced by Sea Grant to promote marine resource conservation, targeting university and older high school students.

At the center of the Wetland Round-Up curriculum is a half-day field trip in the refuge. Refuge staff train teachers and parents in the curriculum. The parents lead the field trip and the teachers provide guiding support; an intern from the refuge staff also joins each group. Educators from the refuge provide a curriculum guide with activities that are correlated to the California state science and language art standards, and includes pre- and post-trip activities. The activities are designed to enhance student knowledge of the diverse habitats found on the refuge and educate about the importance of preserving these resources. Fran described the varying level of parent participation the program has had at various sites and their subsequent varying success.

Sea Grant Alaska has produced a series of videos as a significant component in their marine resource conservation efforts. Don showed a few minutes from a video on small boat safety, a major problem in Alaska. Another video discussed global warming, an issue with very visible effects seen in Alaska through glacier melt, coastal erosion and warming waters. A third video describes the decline in Stellar Sea Lions, while a fourth addresses Savoonga subsistence living on St. Lawrence Island. The videos gave participants a preview of the wide range of issues that Alaska Sea Grant works on, from habitat to biodiversity to stakeholders and indigenous populations. Don noted that their



global warming video has been effective in educating the public about the issues regarding this complex topic.

Because the wetland curriculum book is reproduced every two to three years, Fran would like to produce a handout in the interim for parents and teachers to give them a basic understanding of MPAs. They understand the threats from pollution with loss of habitat, and pollution is an easy “destructive activity” for the public to understand. Fisheries problems from over-extraction and land development is another concept teachers and parents find easy to address. In addition to the discussion of developing activities to introduce MPAs, the group suggested a pre-trip homework activity in which the parents take a photograph of their local storm drain to bring in during the field trip. A post-trip activity could be making a map of the drainage into the bay (tying in to the kids’ love of maps), and/or figuring out where the people in their neighborhoods and their families dump oil.

Sea Grant is looking for partners to help them produce two videos on Marine Protected Areas. There is strong opposition to MPAs in Alaska. Commercial fishing comprises 95% of the income in many rural communities where there are almost no other job opportunities; subsistence fishing is very important in the region, as is recreational fishing. Don feels there are good opportunities in Alaska to educate people about MPAs, producing one video discussing MPA issues and a second focusing on their positive benefits, trying to counter much of the negative perceptions. He says that Sea Grant videos can reach a large audience, as Alaskan media use many Sea Grant products. The group discussed that fact that the substance of the message is critical to individual or unique conditions that may occur, and that the videos need to focus on Alaskan issues and concerns. A national agency can take a common message and collaborate on development, but needs to make changes for the final product that fit individual regional needs.

In addition to discussions about the two presentations, Monica Hunter, the chair for the Morro Bay National Estuary Program, described her work supporting networking among many different agencies and organizations on natural resource management issues in the Morro Bay area. Following the workshop, she hopes to introduce the idea of a sub-committee for MPAs to their education working group.

### ***Groups 3 & 4 South Slough, Beach Naturalist, Are Reserves Deserved, Oregon Coast***

Groups 3 and 4 combined to more effectively share the A/V equipment and allow all the group participants the opportunity to hear about more programs. Tom Gaskill of the South Slough National Estuarine Research Reserve presented an overview of educational programs from his reserve addressing education for all different age groups (e.g. one aimed at 4<sup>th</sup> grade students, another with an intergenerational focus). Leo Shaw of the Seattle Aquarium described their Beach Naturalist Program. Jessica Haxel from the Hatfield Marine Science Center described the high school National Ocean Science Bowl project. Dawn Grafe of the Oregon Islands National Wildlife Refuge described various programs from her reserve.

Tom described the fourth grade curriculum their reserve provides entitled “In search of the treasures of South Slough,” aimed at providing a foundation for understanding estuarine ecology. The second program that Tom described, “Crab molt mania,” is aimed at family groups to teach about Dungeness crabs. A third program, “Secret of

the lost medallion,” follows seven science-based themes, with groups completing experiments to discover “truths” about estuaries. The themes are:

- Water quality
- Life in the mudflats
- Food webs
- Salt marsh productivity
- Nutrient cycling
- Plankton
- Impacts of settlement

South Slough wants to evaluate if their education programs have had an impact on the thousands of students who have taken them since 1982. The field-based approach is attractive to teachers, but rising costs for schools make participation expensive. In addition, the site-based focus makes it hard to export curriculum to other locations.

Leo explained Seattle’s Beach Naturalist program that came about in response to increased site visitation following local media publicizing certain low tides; the aquarium decided to take advantage of this to teach people about what they are seeing at the beach. The program has many partners but needs help training guides as they are volunteers and many are new each summer. The Seattle Aquarium provides training sessions weeknights, teaching about conservation and inter-tidal ecology on beaches. The program has four to six naturalists on each Seattle beach on low tide days and signs posted at all beaches encouraging people to “ask a beach naturalist” about things they find on the beach. Some of the themes discussed include interconnectivity between habitats, invasive species, issues of over-use, why there is a reserve, habitat protection, and biodiversity. But they don’t talk about economic values, social issues or water quality.

Jessica briefly explained the MPA activity at the recent National Ocean Science Bowl, where 70-90 high school students were given cards with information about marine reserves. The students reviewed the cards and presented proposals about different sites for MPAs according to the different goals on the cards. The concept has been developed into an online interactive activity through the Jason Project.

The Oregon Coast National Wildlife Refuge Complex participates in the multi-partner Earth Stewards program. Earth Stewards educates students about fish and wildlife resources and local conservation issues. It combines the knowledge with outdoor experiences varying from field trips to habitat monitoring and restoration. Dawn also described research opportunities the refuge provides for juniors and seniors to study red fox predation of shorebirds and the opportunity to participate in seabird surveys.

The group combined the information from the presentations into two MPA-related programs. The first is a program to be developed for public aquaria and marine conservation Visitor Centers to inform the general public about MPAs. The program would develop volunteer training about MPA issues to enable the volunteers to better inform the public. The group suggested that guest lectures for aquaria members and the public, along with enrichment programs for volunteers, could supplement thematic exhibits and products. Some of the exhibits could draw attention to case studies demonstrating MPA success stories. Targeted research in local areas could help highlight issues of local concern.

A companion program would be an MPA training program for volunteers. Materials would include eye-catching brochures and posters on MPA issues, primarily targeting adults. Teacher kits and workshops that include information on national benchmark science standards and lesson plans would be a useful second stage of the program development, to bring the information to schools.

**Group 5 Beach Etiquette and MPA Board Game**

Sally Lider of the City of Edmonds Parks and Recreation presented “Let’s go on a beach walk,” a slide show she recently developed aimed at children, but suitable for adults. Mark Carr from the University of California at Santa Cruz’s Department of Ecology and Evolutionary Biology brainstormed ideas with the group for development of a board game that would teach about MPA siting issues.

Edmonds beach has a ranger, a naturalist and volunteers. Though the intertidal use of resources is prohibited, some areas have heavy public usage on weekends and many people do not follow the rules. Sometimes sea creatures such as sea stars have been found moved to the parking lot or bathroom. The slide show is aimed at improving compliance through education. A small station is open on the weekends; the slide show will be set up to loop repeatedly there, letting the public take a virtual walk before they reach the beach. Participants reported that the slide show was particularly effective. It acknowledged that nature is messy and a productive system is not necessarily just a white sandy beach. The slide show uses analogies to help teach a concept (e.g. apartment building with different creatures occupying different floors to teach about zoning on pier pilings), along with creative text bubbles (snails eating a “clam milkshake”).

From the new information she learned at the workshop, Sally described Edmond’s Beach as an MPA with some sections qualifying as a reserve. The group talked about how to use social science to monitor the effectiveness of the slide show. The group discussed how volunteers could be used to monitor effectiveness. Some examples of ways to record behaviors were discussed, as were the resources that might be needed to do this monitoring. One suggestion was to have the social science research be a student project, which led to a discussion of carrying capacity and the possibility of increased disturbances when reserves are used as well-trampled classrooms.

The group talked about developing a similar program to increase the public’s knowledge about the use of MPAs for habitat protection. To reach a general audience, they identified the need to weave education into a story, perhaps through a virtual tour such as a beach walk. The story would identify the most impacted areas, long term effects, why the area is important to protect, and what the public can do to help protect the area. The group discussed the need for quality pictures and graphics and to provide the audience with bubbles that include relevant, fascinating and fun facts.

Marc Carr held a brainstorming session to help develop ideas for a game to show the process for designing MPA reserves to conserve biodiversity. There was discussion about how to raise awareness of the many stakeholders involved in developing a system of linked reserves. It was decided the target audience should be high school students due to the complexity of the issues involved. Discussion included the role of stakeholders, larval distribution, habitat, constraints, and wild cards. Many types of games and possible ideas were discussed.

**Group 6      *Respect the Beach and Jason XIV, From Shore to Sea***

Mark Rauscher from Surfrider and Julie Bursek of the Channel Islands National Marine Sanctuary were presenters in this group. Mark described some of the education activities that Surfrider conducts through their “Respect the Beach” program, including a beach ecology and beach physical processes program and a curriculum about watersheds and ocean connectivity, both targeted at elementary and middle school children. Julie described the extensive Jason curriculum designed for grades 5-8.

“Respect the Beach” is a coastal educational program that includes field trips, classroom lectures, handouts, video, interactive computer applications and hands-on projects designed to teach ocean safety, marine ecology and coastal areas stewardship to K-12 students and community groups. The program has two components: Beachology, teaching about beach ecology and physical processes, and Watershed Works, all about watersheds and ocean connectivity. One beachology activity is “Beach in a Bucket”, where a bucket of the beach is taken to the classroom and Surfriders talk about the area from which it was taken. Or they take class to the beach and each student gets a bucket to assemble their own beach. Other tools for beach education include the video “Keepers of the Coast.” Watershed Works helps students learn about watershed processes through modeling. Students observe the effects of building levees and dams, erosion and pollution loads due to development, and the effects alteration of coastal streams and development have on floodplains and coastal wetlands. The curricula are taught by volunteers in classrooms or through existing teacher relationships.

Julie described the Jason XIV Foundation’s “From Shore to Sea” overall curriculum. It covers oceanography, cultural anthropology, environmental monitoring, kelp forest ecology, piniped biology, and local marine resource issues. She focused her discussion on a new feature that is being developed into an interactive web-based game to teach about the MPA designation process. It’s designed as a role playing game. The module consists of pieces of a puzzle with various perspectives linked to each piece. The students choose a stakeholder role. The challenge is to protect resource diversity and sustainable use and harvest, create a reserve, and convince other stakeholders of the validity of their positions. Students attempt to design the reserve with minimal impact to other groups according to game constraints.

Group discussion about the Surfrider programs included how to expand the curriculum to include advocacy of MPAs, getting people in the water to explore, and incorporating the new knowledge into people’s lifestyle. Short and concise definitions of MPAs are needed to educate their constituent groups. The target audience would be people who are already familiar with the ocean, with the goal to provide them a platform to get involved in ocean advocacy. The program would encourage activities with less impact and show ways to appreciate the balance of using the beach as a playground, and the beach as habitat.

Julie focused the group discussion on how the Channel Islands Marine Sanctuary (CINMS) can get SeaWeb’s data out to the general public and decision makers. Objectives of the information campaign would be to:

- Inform the public that less than 1% of ocean is protected
- Get SeaWeb survey to decision makers

- Address lack of economic component to SeaWeb study
- Inform public of need, use and purpose of marine reserves

The basic information for the campaign would utilize SeaWeb's report, PISCO's *Science of Marine Reserves* publication and video, and the socioeconomic study done for CINMS in 2001. Additional resources to be developed include Action Alerts from Surfrider and other environmental organizations, celebrity Public Service Announcements, and developing partnerships among the other sanctuaries to also engage in these activities.

### **Summary Session**

Charles Wahle wrapped up the workshop with a review of the lessons learned and of support requested by the educators from the MPA Center. He summarized the MPA themes, messages and values. The participants spent a good amount of time identifying target audiences for MPA education efforts. The group also discussed how to get the information out to decision-makers along with possible approaches to disseminate the information to a more general public audience. Finally, they discussed information and support that the educators would find useful from the National MPA Center. See the "Summary Session Notes" attachment for a bulleted list from the discussion.

### **Feedback and Evaluation**

As the goals of the workshops also included gathering information about the MPA education community's needs for support from the MPA Center, we requested detailed feedback from the participants. An evaluation sheet was distributed to participants about workshop content, format and applicability. A follow-up and feedback sheet asked about specific resource products that could be developed by the MPA Center. A total of 33 evaluation forms and 22 feedback forms were returned. As there were a maximum of 47 participants (including nine speakers and staff), and only 37 were at the final summary session because of early departures or attendance only on the first day, the return rate was good. The forms are attached.

In considering the results described below, it is important to note that MPAs are very much a "hot issue" on the west coast, and many of the educators are well versed in the issues. On the other hand, 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 reviewing the overall numerical evaluations, the general response can be summarized as follows: participants' knowledge increased about both MPA issues and the incorporation of MPAs into marine resource education; the workshop format and content were appropriate and participants found it worthwhile to attend.

### **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, the MPA Executive Order and MPA Initiative” rose from little knowledge to sufficient knowledge. “Understanding and awareness of MPA management contexts and topical science” rose from little knowledge to sufficient knowledge. “Understanding and awareness of MPA social science issues” rose from little knowledge to sufficient knowledge. “Understanding of public opinion and MPA issues”, rose from little knowledge to sufficient knowledge. “How to include MPA messages and themes in existing/new marine and coastal education programs” rose from little knowledge to sufficient knowledge.

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 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
- Demonstrations / applications

Participants responded that the length of the workshop was adequate, neither too short nor too long, with a skew towards too short; the level of clarity of ideas and materials was fairly clear and understandable, with a skew towards clarity; the time allotted to discussion was adequate, neither too short nor too long, with a skew towards too short; and the small group work sessions were adequate, with a skew towards enhancing presentations.

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 most of the information, with a skew in that direction, the workshop was a good use of participants’ time, with a skew in that direction, and that the information presented was adequate, neither too basic nor too complex, with a skew towards too basic.

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.

### **Comments**

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

- What did you find most useful about the workshop?
- 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?

Some of comments are excerpted here verbatim.

#### ***What did you find most useful about the workshop?***

The number one response was “networking.” From a total of 33 people who answered this question, 18 directly mentioned the networking opportunity that came from working with this diverse group of people. Others mentioned the usefulness of the different presentations, the exposure to different existing programs working on similar issues, and exposure to existing and new tools and resources that will help them. Here are some responses:

- Opportunities to network concerning issues that are central to many & brainstorm methods/education strategies
- There was a good mix of government & university representatives as well as aquarium folks who could speak to both formal & informal education efforts
- Visiting the Natural History Museum was great too!
- Discussion about real issues and tools, themes and products to help with educational messages
- Presentations were very clear and helpful.
- All speakers & their topics. Especially social science & MPAs and topical science & research. Definitions and background on MPAs (& reserves) were covered well. The combination of speakers & workgroups was excellent
- Presentations about ACTUAL programs that organizations use w/the public

#### ***What did you find least useful about the workshop?***

Most comments under this heading came from the need to have given better instructions about the break-out sessions, both before the workshop for earlier preparation and during the initial small group work sessions. However, as seen from the “most useful” comments, many participants appreciated the opportunity to hear about other educators’ programs, and also have the opportunity to discuss them. While the lack of clear instructions may have led to less-than-optimal use of break-out time, it also allowed each group to find their best use of this time and seemed to engender useful discussions. Other recurring comments were about the SeaWeb Public Opinion Survey and the Social Science talk. This was countered by the fact that both presentations received comments under the “most useful” and “most applicable” questions. Here are some responses:

- The breakout sessions. We didn’t have a clear idea of what to do or goal to accomplish. We did discuss things, sort of. It either needed to be very

specific & guided, or completely loose to let discussions & ideas come about naturally. I think the uncertainty hindered our progress.

- Day 1 break-out—one presenter unprepared. Team spent too much time going through numerous potential activities. Day 2 highly productive when we changed our objective
- Social science information – it didn't stick
- The SeaWeb survey was interesting & provocative but was perhaps misleading thru the lack of background info on methods, demographics, & context for developing survey questions. The survey findings are clearly not reflected in current stakeholder processes so we need to know why before this info is given to political leaders & decision makers

### ***What recommendations do you have to improve the workshop?***

Comments addressed the need for better preparation for the small group work. Many recommended that better advance preparation for the break-outs would have improved the sessions and decreased the confusion noted previously. Several people suggested extending the workshops to two full days to give more time for the small group work and perhaps a field trip to one of the sites. Others brought up the need to hear different stakeholder issues and case studies. Here are some responses:

- More information to them beforehand (and others) on what we were trying to accomplish may have made for better sessions
- A full 2 days – more opportunities to dig a little deeper
- More info on stakeholder public positions
- Perhaps have a few additional speakers to cover additional issues on MPAs – specifically dealing w/the current political processes surrounding them – CINMS

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

Participants noted that they felt better able to incorporate MPAs into their programs, and better understand MPA issues. Some commented on the information presented by Dave Bard of SeaWeb, while others appreciated the information on the work being done by the National MPA Center. Some had never seen mpa.gov and expected to look through the information available from it. Here are some responses:

- After attending this workshop I feel confident that I could call the contacts that I met to seek out answers to questions.
- Info on MPAs to teachers. Will inform curriculum development
- SeaWeb public opinion poll.
- MPA.gov as resource and links to scientific community / MPA / educators. Networks very valuable to me
- Better understanding of some key definitions. Additional valuable scientific information
- A global perspective to add to the local emphasis we already have

### **Follow-Up and Feedback**

In addition to the Evaluation Form, we asked for specific recommendations for MPA Center support for educators. This was the fourth of the workshop goals. While fewer participants returned these forms, the summary session of the workshop also elicited



this information, as did the comments from the Evaluation form. The following are the questions we posed:

***What are the constraints to integrating or using MPA messages and themes as part of your programs, curricula and activities?***

Time, money, and mission were identified as constraints to integrating MPAs into the current programs. In addition, participants request ready-to-use materials pertaining to MPAs so they do not need to develop yet another program or activity. The controversy surrounding MPAs and lack of public awareness were also mentioned. Here are some responses:

- We need tools, graphs, photographs, publication templates that represent broad-based research and message packaging of the “need for reserves & the values they provide.”
- Too controversial for us to get involved in.
- Not enough time to follow the current issues & processes of MPA designations
- Initially getting people (students) to want to hear about MPAs. In my work, they need to sign up for the class before I can teach them.

***What are some specific needs you have in order to integrate MPA messages and themes in your programs, curricula and activities?***

Specific information and scientific data were called for in general. But many participants are requesting age-specific products, pre-packaged information they can adapt for their own use, and detailed locally relevant information. Here are some responses:

- More specific scientific data – in a format useable by the general public
- Kits that explain MPAs in ways that the public can understand – and help them to get involved. How it relates to them. Resources for information.
- Age-appropriate materials and tools – mainly elementary school; next most important: middle school.
- Specific products like the poster and activity sheet are helpful. Access to ready-made text and images that can be cut and pasted into our specific materials

***What type of information would be most useful to you from an email MPA newsletter?***

The MPA Center has recently inaugurated a general MPA newsletter that deals with the activities of the National MPA Center and national MPA news. It does not supplant the publication *MPA News* but supplements it. Participants called for the need to have a continuing source of information about MPAs available to them and many identified an email newsletter as a useful format. Current events and issues was one of their most requested topics. Here are some responses:

- New natural science & social science research. Success stories! New published materials / tools
- Current status of MPA political processes
- Sample activities – to try at our site, to see how others integrate the message
- Status of processes that are going on in my region (West Coast)
- “Breaking news” type information, curriculum

***What additional resources would you like to see on the website mpa.gov?***

In addition to a newsletter, the participants want the same type of information available on mpa.gov. They want educational materials available from an easy-to-locate website, along with current events. Many noted that they had not yet looked at the website, so they were unable to answer. Here are some responses:

- Calendar of events / meetings / pending legislation
- Program information – activities
- If products are adaptable to other regions – perhaps templates or source materials that can be converted for use in my geographical location
- Links to current research, educational tools, site profiles
- Late breaking news on the fight to establish MPAs

***What types of links from the BRIDGE website would be most useful for teaching about MPAs (we'll be working to develop selection/subsetting criteria so we can post links pertinent to MPA education directly on mpa.gov)?***

Many comments could be traced to the need for easy-to-locate, relevant, developed marine resource education programs that could be adapted to the needs of the individual sites. As seen in the participant presentations, there are many appropriate marine education programs already developed. *The Bridge* (<http://www.vims.edu/bridge/>), a website that acts as an Ocean Sciences Teacher Resource Center, has links to a myriad of programs, activities and organizations that provide marine resource education. The Bridge has extensive listings and can be daunting to navigate because of the many options. The education section of mpa.gov could post a subset of these offerings that pertain specifically to MPAs, and feedback was requested as to the types of materials the educators would like to see. Here are some responses:

- Age-appropriate materials and tools
- Curriculum

***What format would be best for distribution of educational materials (web availability as Adobe Acrobat files, books, fact sheets, posters)?***

This question addressed the best format for providing information, programs and materials. Adobe Acrobat appears to be a useful format for distributing information in this computer age. In addition, fact sheets and graphics were mentioned (both of which are Acrobat-compatible). Many want to be able to download from a website, but also have the ability to order hard copies. Here are some responses:

- Best: Acrobat. Electronic versions that can be adapted easily
- Web availability
- Acrobat, fact sheets, posters
- Web directory of graphic resources
- All of the above in PDF would be great

***What materials would you like to have included in a "traveling MPA education kit"?***

This question elicited a lot of specific materials that educators would like to see developed to support their efforts to incorporate MPAs into their programs. Maps,

graphics, videos, brochures are all on their “wish list”. This list will be very useful to help develop support materials from the MPA Center. Here are some responses:

- Case studies, activities, handouts, resource lists, posters
- Map of all MPAs. Video. Educational activity(s). What you can do. Resources list
- Hands-on activities, objects, pictures related to MPAs. Not just posters & statistics.
- Fact sheets – case studies. Video from PISCO. Curricula. Websites
- Board game
- Children’s activity / coloring pages

***What follow-up do you want from the workshop -- monthly conference calls on MPA education, email newsletter, individual phone discussions, or just the workshop summary?***

The workshops are part of a project to raise awareness of MPAs among marine resource educators. But for them to have maximum impact, they cannot be done in a vacuum. There must be follow-up to reinforce the information and also to maintain the networking that the workshops promoted. All of the participants are very busy with their work—MPAs may just be yet another topic they need to deal with among many. We wanted to find out how best to keep in touch with the participants. Most identified the email newsletter to maintain contact, and many wanted to be informed when the website was updated. This workshop summary report was also requested. Here are some responses:

- Workshop summary, email newsletters & website update notifications
- Yes to email newsletter, workshop summary

**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. The network 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
  - 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](http://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 educators in the various organizations and agencies working with 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 West Coast Regional  
Marine Protected Areas Education Workshop  
Program Agenda  
September 3-5, 2002**



September 30, 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 marine and coastal education programs;
- To foster development of education partnerships; and
- To solicit recommendations from educators and education intermediaries about additional MPA Center support.

TUESDAY, SEPTEMBER 3, 2002

Arrival at The Inn at Morro Bay at your leisure with secure luggage storage available at hotel. Official check-in 4:00 pm.

- |             |  |
|-------------|--|
| 1:30pm      | Gather for carpools to kayak & boat tour, lobby, Inn at Morro Bay  |
| 2:00 – 4:00 | Technical Field Trip to Morro Bay: Kayak tour led by Mike Multari, Morro Bay NEP or SubSea Tours catamaran boat tour |
| 4:00        | Carpool back to hotel  |
| 4:00        | Check-in opens at The Inn at Morro Bay   |
| 5:30 – 6:15 | Workshop registration, Morro Bay Room & Patio  |
| 6:25        | Gather at hotel lobby for 5 min. walk to the museum  |
| 6:30 – 8:00 | Welcome reception and sunset dinner, Morro Bay Museum of Natural History   |

---

SPEAKERS: DAVE BARD, MARK CARR, SARAH LYONS, CHARLES WAHLE

STAFF: PHYLLIS DERMER, MO LYNCH, LYNNE MERSFELDER-LEWIS, SARAH MITCHELL, NADIA SBEIH

All sessions and food service are in the Morro Bay Room unless otherwise noted

WEDNESDAY, SEPTEMBER 4, 2002

- 7:00 – 8:30 Continental breakfast at your leisure
- 7:30 – 8:30 Workshop registration
- 8:30 – 9:30 Welcoming remarks, overview of the workshop and introductions  
Sarah Mitchell, Education Coordinator, National Ocean Service
- 9:30 – 10:30 Marine Protected Areas, the MPA Executive Order and the MPA Initiative, Charles Wahle, Acting Director, National MPA Center, Science Institute
- 10:30 – 11:00 The MPA map & “meeting” break
- 11:00 – 11:45 Social Science of MPAs and the Social Science Initiative  
Sarah Lyons, Marine Policy Analyst, National MPA Center, Science Institute
- 11:45 – 12:00 General questions  
Sarah Mitchell
- 12:00 pm Lunch in Dining Room
- 1:00 MPAs: A Look at Topical Science and Research Efforts  
Mark Carr, Associate Professor, Department of Ecology and Evolutionary Biology, University of California at Santa Cruz
- 2:00 – 2:30 MPA education and breakout sessions – Overview  
Sarah Mitchell
- 2:30 – 2:45 Break on the Bay Room Patio
- 2:45 – 3:45 Break-Out Sessions: Examples of existing programs that support MPA messages & themes, Alcove, Cayucos Room and Morro Bay Room
- 3:45 – 4:30 Breakout Sessions: Using MPA messages & themes in existing and new marine & coastal education programs, Alcove, Cayucos Room and Morro Bay Room
- 4:30 – 5:00 Overview of mpa.gov – The MPA web site  
Phyllis Dermer, Education Coordinator, National MPA Center
- 5:00 – 6:30 Free time
- 6:30 – 7:00 Cash bar available from the Conservatory Bar
- 7:00 Dinner, Cayucos Room

Thursday, September 5, 2002

- |                |  |
|----------------|--|
| 7:00 – 8:00    | Continental Breakfast  |
| 8:00 – 8:45    | Public Opinion Research Highlights: Americans and MPAs<br>Dave Bard, Program Manager, SeaWeb         |
| 8:45 – 9:45    | Breakout Sessions wrap-up  |
| 9:45 – 10:15   | Break on Bay Room Patio  |
| 10:15 – 12:00  | Presentations of the group work on existing programs with MPA<br>messages & themes<br>Sarah Mitchell |
| 12:00 – 1:00pm | Lunch in Dining Room   |
| 1:00 – 2:00    | Recommendations for ongoing educational program support<br>Charles Wahle                             |
| 2:00           | Adjourn  |

**Attachment: Workshop Participants  
Participants**

<b>Name</b>	<b>Phone</b>	<b>Affiliation</b>
Amy Coppenger	562 951-1621	Long Beach Aquarium of the Pacific
Betsy Salter	202 566-1244	Environmental Protection Agency
Carol Peterson	805 658-5735	Channel Islands National Park
Carol Sullivan	707 986-5411	King Range National Conservation Area - Bureau of Land Management
Christie Anastasia	415 464-5132	Point Reyes National Seashore / Pacific Coast Learning Center
Courtney Brown	907 224-6339	Alaska Sea Life Center
Dawn Grafe	541 867-4550	Oregon Islands National Wildlife Refuge
Dawn Hayes	831 647-4256	Monterey Bay National Marine Sanctuary
Debbi Nichols	510 622-2304	San Francisco National Estuary Program
Don Canestro	805 927-6833	Kenneth S. Norris - Rancho Marino Reserve
Don Kramer	906 274-9691	University of Alaska - Sea Grant Marine Advisory Program
Fawn Bauer	907 697-2650	Glacier Bay National Park
Fran McTamanev	408 262 5513	San Francisco Bay National Wildlife Refuge Complex
Jesica Haxel	540 867-0257 or 541 867-0326	Hatfield Marine Science Center
Judy Lemus	213 740-1965	University of Southern California - Sea Grant
Judy Neuhauser	805 528-0833	Environmental Education - San Luis Obispo County
Julie Bursek	805 382-6141 or 805 884-1462	Channel Islands National Marine Sanctuary
Kathy McElroy	831 644-7530	Monterey Bay Aquarium
Laura Francis	805 884-1463	Channel Islands National Marine Sanctuary
Leo Shaw	206 386-4341	Seattle Aquarium
Marisa Lopez	804 895-3095	Channel Island National Park
Mark Rauscher	949 492-8170	Surfrider
Marla Morrissey	805-528-4955	Morro Bay National Estuary Program Executive Board
Mary Knackstedt	360 407-7336	Puget Sound National Estuary Program
Marya Ahmad	619 575-3613	Tijuana River National Estuarine Research Reserve
Melissa Pitkin	415-868-1221 x307	PRBO Conservation Science



**Participants (cont.)**

<b>Name</b>	<b>Phone</b>	<b>Affiliation</b>
Michele Roest	805 927-2145	Monterey Bay National Marine Sanctuary
Monica Hunter	805 528-4496	Morro Bay
Paul Wong	415 561-6622	Gulf of the Farallones National Marine Sanctuary
Robert Steelquist	360 457-6622 x25	Olympic Coast National Marine Sanctuary
Roberta Dean	510 642-5008	MARE Program Lawrence Hall of Science
Sally Lider	425 771-0227	City of Edmonds Parks and Recreation
Shauna Oh	858 534-4440	University of California - Sea Grant
Steve Murray	714 278-7291	California State University - Fullerton
Terry Thompson	907 235-4799 x7	Kachemak Bay Research Reserve
Tom Gaskill	541 888-5558	South Slough National Estuarine Research Reserve
Yvonne Menard	805 658-5725	Channel Islands National Park

**Speakers**

<b>Name</b>	<b>Phone</b>	<b>Affiliation</b>
Dave Bard	202 483-9570	SeaWeb
Mark Carr	831 459.3958	University of California, Santa Cruz - Department of Ecology & Evolutionary Biology
Sarah Lyons	831 420-3958	National MPA Center - Science Institute
Charlie Wahle	830 420-3956	National MPA Center - Science Institute

**Staff**

<b>Name</b>	<b>Phone</b>	<b>Affiliation</b>
Aaron King	831 647-4257	National MPA Center - Science Institute
Lynne Mersfelder-Lewis	301 713-3100	National MPA Center
Maurice Lynch	804 684-7151 or 804 642-4852	National Estuarine Research Reserve Association / College of William & Mary
Nadia Sbeih	301 713-3155 x137	National Marine Sanctuary Program
Phyllis Dermer	300 713-3100 x104	National MPA Center
Sarah Mitchell	301 713-3070 x171	National Ocean Service

**Attachment: Speaker Biographies**

**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.

**Dr. Mark Carr**

**Associate Professor, Department of Ecology and Evolutionary Biology, University of California at Santa Cruz**

Mark's research focuses on the ecology of coastal marine fishes and their habitats, particularly species associated with shallow rocky and coral reefs. At the University of California, Santa Cruz, he is conducting studies on the long-term dynamics of reef ecosystems and the ecology (larval dispersal, recruitment, habitat associations, movement) of rocky reef fishes. This work is associated with the Partnership for Interdisciplinary Studies of Coastal Oceans (PISCO).

Mark completed his Masters degree at Moss Landing Marine Laboratories in central California where he studied the recruitment of rockfishes in kelp forests. His PhD studies at the University of California, Santa Barbara focused on recruitment of kelp/calico bass and other reef fishes in southern California kelp forests. His post-doctoral studies at Oregon State University examined the ecology of coral reef fishes in the Bahamas. He has conducted research on offshore oil production facilities in southern California to determine the ecological effects of decommissioning options.

Since 1991, he has published and presented talks on the design, evaluation and potential consequences of marine reserves. He has participated in two working groups focused on the theory and design of marine reserves at the National Science Foundation's National Center for Ecological Analysis and Synthesis (NCEAS). Mark is currently working with the California Department of Fish and Game and other institutions to develop a statewide reef ecosystem monitoring program (CRANE), including existing and proposed marine reserves.

For a list of Mark's publications on marine reserves and other topics, visit the following web pages: <http://www.biology.UCSC.EDU/people/carr> and <http://www.piscoweb.org>

**Ms. Sarah Lyons**

**Marine Policy Analyst, National MPA Center, Science Institute, NOAA**

As a marine policy analyst for the National Marine Protected Areas 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 working 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.

**Dr. Charlie Wahle**

**Director, National MPA Center, Science Institute, NOAA**

Charlie is a marine ecologist with extensive experience working on the interface between science and policy of marine conservation and protected areas. From 1993 to 1999, he led the national programs for science, education and conservation policy for the National Marine Sanctuaries and National Estuarine Research Reserves systems in Washington, D.C. More recently, he served as NOAA's liaison to three key interagency marine conservation initiatives: the Coral Reef Task Force, the Invasive Species Council, and the national MPA Initiative. He now serves as the Director of the Science Institute of the new National Marine Protected Areas Center in Santa Cruz, California. The MPA Center is an innovative partnership between NOAA and the Department of the Interior to provide science, tools and training for the nation's system of MPAs.

Prior to joining NOAA, Charlie developed and managed a marine research and teaching laboratory on the New Jersey coast for Lehigh University. He has conducted extensive field research on Caribbean coral reefs and mid-Atlantic coastal ecosystems. An elected Fellow of the American Association for the Advancement of Science (AAAS), Charlie earned a Ph.D. in ecology and evolution from the Johns Hopkins University in Baltimore, Maryland, and a B.A. in aquatic biology from the University of California at Santa Barbara.

**Attachment: Participant Biographies**

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

**Julie Bursek**

**Education Coordinator, Channel Islands National Marine Sanctuary**

Julie works at the southern office in Channel Islands Harbor, California, developing educational programs, products and partnerships that increase awareness about the Sanctuary's cultural and living resources. The Channel Islands National Marine Sanctuary is working with the community to develop strategic plans for enforcement, research and monitoring, and educational programs for the newly designated marine reserve networks in the Sanctuary.

**Tom Gaskill**

**Education Coordinator, South Slough National Estuarine Research Reserve**

Tom has worked at South Slough since 1994 to develop a variety of programs that help the local community and regional audiences better understand the beauty and complexity of Pacific Northwest estuaries. Recent efforts include the expansion of the South Slough Interpretive Center, development of a Coastal Training Program for adult decision-maker audiences, partnership with a local school district in the implementation of the Marine Activities and Resource Education (MARE) program, and development of a new section of trail at the Reserve. Nationally, Tom has participated in a restoration science workgroup within the National Estuarine Research Reserve System and has acted as the education coordinator field representative to NOAA's Estuarine Reserve Division.

**Dawn Grafe**

**Refuge Operations Specialist, Oregon Coast National Wildlife Refuge Complex**

Dawn's primary focus is on environmental education and outreach as it pertains to coastal wildlife and habitat. For more information visit <http://oregoncoast.fws.gov>.

**Mary Knackstedt**

**Environmental Education Lead, Puget Sound Action Team**

The Puget Sound Action Team is the agency in Washington State that protects the health and biodiversity of Puget Sound through planning, coordination, research, technical assistance, and education. The educational priorities in the Puget Sound Work Plan are funded by the Public Involvement and Education program, administered by the Action Team, to support community based education projects.

Website: [www.wa.gov/puget\\_sound](http://www.wa.gov/puget_sound)

**Sally Lider**

**Environmental Education Coordinator, City of Edmonds, Parks, Recreation, and Cultural Services Dept**

Edmonds Discovery Programs' mission is to provide interpretive and environmental education opportunities for citizens, school-age children, and visitors to our parks and beaches; and to promote stewardship of Puget Sound, its shoreline, and the surrounding watershed.

**Carol Peterson****Education Coordinator, Channel Islands National Park**

As part of the park service's Parks as Classrooms program, the park offers both in-class and visitor center programs for formal education groups. The park annually serves approximately 10,000 students in classrooms (mainly grades 2-5) and an additional 10,000 at the park's main visitor center in the Ventura Harbor. These curriculum-based programs cover a range of cultural and natural history topics. Students can also participate in island explorations through the Floating Classroom program of Island Packers, a park concessionaire.

**Leo Shaw****Educator, Seattle Aquarium**

Leo has been with the aquarium since 1977. He develops curriculum and presents programs on marine science and ecology to all age groups at the Seattle Aquarium. Participants are mostly K-12 students from local schools. Adult audience programs are also offered for the general public, as well as natural history field trips. Volunteer training is an ongoing part of the job.

**Attachment: Summary Session Notes**

**MPA Overview, Themes and Messages**

- What are these things we call MPAs?
- Very little of the ocean is fully protected
- MPAs are an important tool in a comprehensive ecosystem conservation toolbox
- MPAs can serve distinct purposes: ecosystem integrity vs. fisheries
- MPAs ensure that some 'nature' persists
- MPAs provide buffers against management ignorance and uncertainty
- Connectivity among distant habitats and populations is important to design
- MPAs can foster sense of place and personal connection to local areas
- MPAs are equivalent to our long tradition of protecting important places on land
- MPAs are forever; they protect our oceans for future generations

**MPA Values**

- Economic values
  - What's lost due to lack of protection may partially be recovered due to resource protection
  - Also may increase quality of life
- Property values (special economic values)
  - Next to reserve
  - Not for each area
  - Not as strong an argument if only ocean-based (ocean view)

**Constraints to Promoting MPAs**

- Lack of knowledge of local community concerns
- Local and statewide social science constraints

**Target Audiences – Note: Need to prioritize this list**

- Decision-makers (agency and elected)
- Key user groups (fishers, divers, recreational businesses, etc.)
- MPA practitioners (build common language and framework)
- Teachers and trainers
- Public Aquaria and Marine Conservation Visitor Centers
- Volunteers at public aquaria and conservation visitors center
- K-12 students
- NGOs
- Friends groups
- General public, especially visitors to visitor centers
- Media
- College groups
- Funders
- Business community and business funders (e.g. Cannon)
- Watershed councils
- Marine resource committees
- BLM, Coast Guard
- Commuters on ferry system
- Cruise ships
- Airlines
- Movie theaters

- Government access channel
- Chambers of commerce
- Service clubs

**People believe more is protected than really is (may be due to our outreach). How to get this information out to decision makers**

- Target outspoken minority – reach them with data and messages
- Promote regional partnerships
- Provide value and tools to get the message across: develop and package the message
- Provide maps identifying the difference between managed areas vs actual protection
- Provide jurisdictional tools: identify and explain terms and definitions, the disconnect between legislation and reality

**Materials Development Needs**

- Need to develop audience-relevant materials for their current efforts
- Need to develop formal training plus materials for specialized audiences (i.e. park rangers, etc.)
- Need to develop materials for environmental educators not already focusing on these issues but that can be interested
- Need to develop interpretive materials
- Need to develop 15 minute “punch presentation”

**Possible Approaches**

- Incorporate themes and messages into existing marine education programs
- Develop new thematic programs and products
- Interpretive enforcement
- In-service learning for teachers
- Enrichment programs for volunteers
- Guest lectures at public aquaria, MPA sites, research labs, etc.
- Briefings for strategically chosen decision-makers
- Others?
- Floating visitor centers (Coast Guard) – e.g. Team Ocean in Florida
- Briefings by NGOs
- Citizen based briefings
- Activity network development
- Alternative futures modeling
- Free guest speakers for public, especially natural history & dovetail on MPA
- Images
- Give-aways – cheap, but the problem of trash....
  - Stickers
  - Badges
  - Magnets
  - Bookmarks
- Art posters, with education message
- Coloring books
- Mouse pads
- Mac’s Field guides– Craig McGowan produces them
  - Rockfish
  - Field guides to things you can’t see

- Local biodiversity
- Calendars, perhaps with a poster contest for calendar
- Videos
- Awareness campaign through seafood distributors: “powerhouse for protecting future seafood”
- Exhibits (e.g. before and after protection)
- Printed products
- Inserts into workbooks
- Case studies on examples of MPA success stories
- Targeted research on local areas and issues, developed into stories
- Cloth posters to venues with lessons plans for the poster

**Case Example: Materials Appropriate for Public Aquaria and Marine Conservation Visitor Centers**

- Guest lectures for public
- Enrichment programs and specialized training for volunteers
- Exhibits (before/after protection)
- Printed products
- Inserts into workbooks
- Case studies on examples of MPA success stories
- Targeted research on local areas and issues -> stories
- Cloth posters to venues
- Lessons plans for the poster

**Possible Items for an Education List-serve**

- Curriculum development
- Forum for exchanging curricula
- “Packaged” information about MPAs, including bullet information
- Issues coming up – legislation
- Status of reserves – information about where each reserve is in their management process
- Updates on public comment periods and ongoing processes
- Updates to the mpa.gov web site
- Summary updates for community newsletters
- Bulletin template & graphics (for local newsletters)



**Attachment:            Workshop Notebook Contents**

**The West Coast Regional  
Marine Protected Areas Education Workshop  
September 3-5, 2002**



## **CONTENTS**

---

### **Workshop Information**

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

### Local Information

- Hotel information
- Touring Morro Bay

### Break-Out Sessions

- Room grid
- Instructions (dark blue)
- Themes, issues and values (yellow)
  - Break-out session worksheet (pink)**
  - Examples from Aquatic Wild**

### Education

- Biographies of speakers
- American attitudes towards marine protected areas
- mpa.gov fact sheet
- Poster sites
- Poster activity
- Education poster of federal MPA sites

### Reference Articles

### Summary

- Evaluation form (light blue)
- Follow-up questions (salmon)
- Blank paper

### Pockets

- Explore the oceans
- Training opportunities

**Attachment:  
Directions**

**Small Group Work**

---

**BREAK – OUT SESSIONS**

Using MPA messages and themes in existing and new marine and coastal education programs

The following steps will guide the process of introducing MPA messages and themes in the activities and programs that participants have brought to the workshop.

---

**Set-up**

Choose a **facilitator**, to help guide the group during the next 2 days.

Choose a **note-taker**, to keep track of the discussions. Flip-charts are available.

Choose a **reporter**, to report to the rest of the group on your break-out sessions.

Note: an independent note-taker will join the group to take notes for the final report of the workshop, which will be available to all participants.

---

**Present within the group**

Each group has at least two participants who have brought an activity or program to share with the group and for the group to work with. Use the first break-out session to describe and share the program with the group.

---

**Incorporate MPA themes and messages**

Using the MPA Themes, Issues and Values from the **yellow page** as a guide, incorporate **one theme or issue AND one value** into each of the programs your group works with.

---

**Complete the worksheet**

Use the MPA themes and messages worksheet from the blue page to record your group's work, and to help guide the reporter.

---

**Present to all workshop participants**

The reporter will present the results of the group work to all the workshop participants, using the worksheet as a guide.

---

## ***MPA Themes, Issues and Values***

### **Marine Protected Areas Education Workshop**

---

---

#### **Themes**

Multiple use zoning	International scope
Stakeholder participation	Interconnectivity
Many types...	Land-water
...For many purposes	Water-water

#### **Issues**

Habitat destruction	Invasive species
Development	Resource over-utilization
Destructive practices	Fisheries
Excessive extraction	Conflicting use
Pollution	

#### **Values**

Environmental values

- Habitat protection
- Biodiversity
- Maintenance of gene pools

Existence values

- Intellectual value – Research, benchmark
- Spiritual value – beauty, ethics

Economic values

- Ecological services – soil stability, water quality, pollination, flood control
- Non-consumptive & consumptive recreation
- Raise property values
- Source for fisheries replenishment



**MPA THEMES AND MESSAGES WORKSHEET**

---

**Name of original activity** \_\_\_\_\_

**Objectives of adapted activity** \_\_\_\_\_

**MPA theme or issue** \_\_\_\_\_ **MPA value** \_\_\_\_\_

**Materials needed** \_\_\_\_\_

**Target age group** \_\_\_\_\_

**Measure/methods to assess effectiveness** \_\_\_\_\_

**Step-by-step instructions** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Please include additional comments on the back** \_\_\_\_\_

\_\_\_\_\_

**Attachment: Evaluation Form**

**West Coast MPA Education Workshop  
The Inn At Morro Bay, September 3-5, 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 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, the MPA Executive Order and MPA Initiative	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	

For questions 2 and 3: Please circle the number which best describes your feelings. The number "3" indicates the element was adequate.

**2) WORKSHOP FORMAT**

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	Clear and understandable	1	2	3	4	5	Unclear and difficult to understand
Time allotted to discussion was	Too Short	1	2	3	4	5	Too long
Demonstrations / applications	Enhanced presentation	1	2	3	4	5	Detracted from presentation

**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?

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: Follow-Up and Feedback Form**

### **Follow-Up and Feedback**

What are the constraints to integrating or using MPA messages and themes as part of your programs, curricula and activities?

What are some specific needs you have in order to integrate MPA messages and themes in your programs, curricula and activities?

What type of information would be most useful to you from an email MPA newsletter?

What additional resources would you like to see on the website mpa.gov?

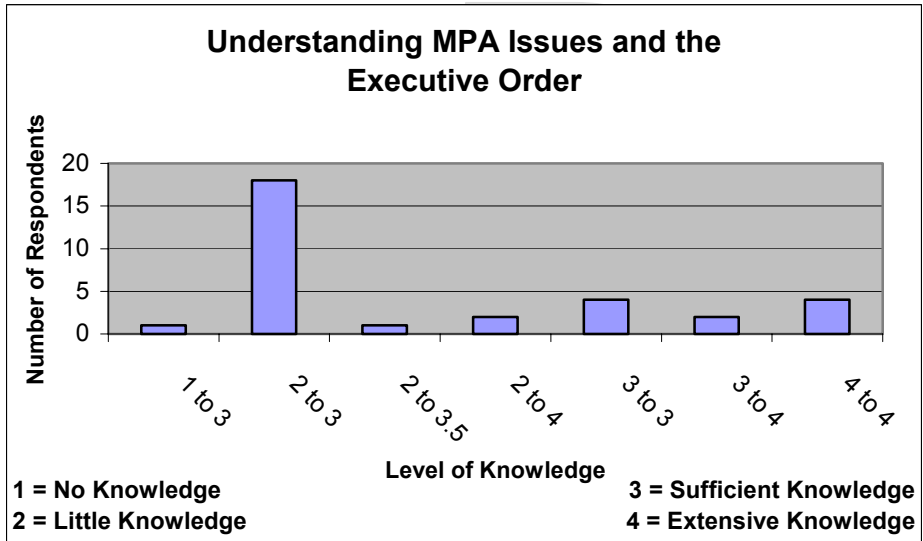
What types of links from the BRIDGE website would be most useful for teaching about MPAs (we'll be working to develop selection/subsetting criteria so we can post links pertinent to MPA education directly on mpa.gov)?

What format would be best for distribution of educational materials (web availability as Adobe Acrobat files, books, fact sheets, posters)?

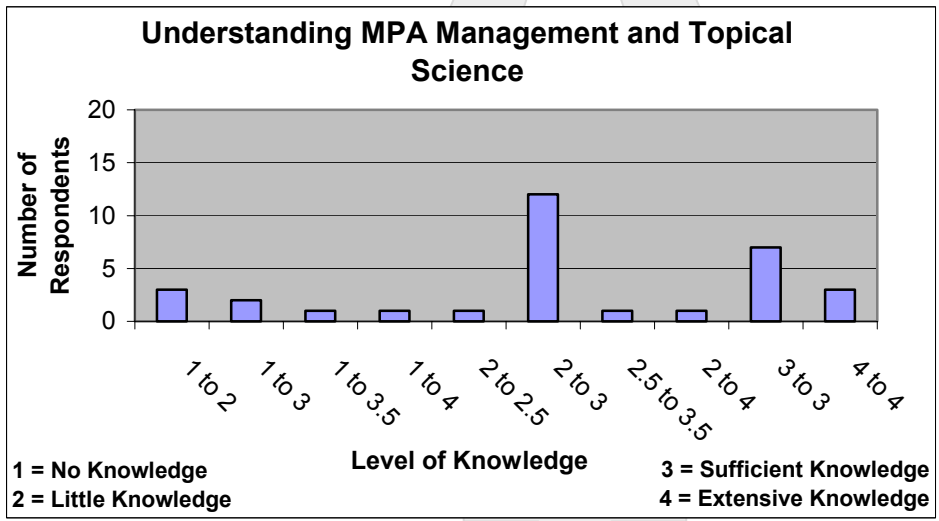
What materials would you like to have included in a "traveling MPA education kit"?

What follow-up do you want from the workshop -- monthly conference calls on MPA education, email newsletter, individual phone discussions, or just the workshop summary?

Attachment: Evaluation Charts

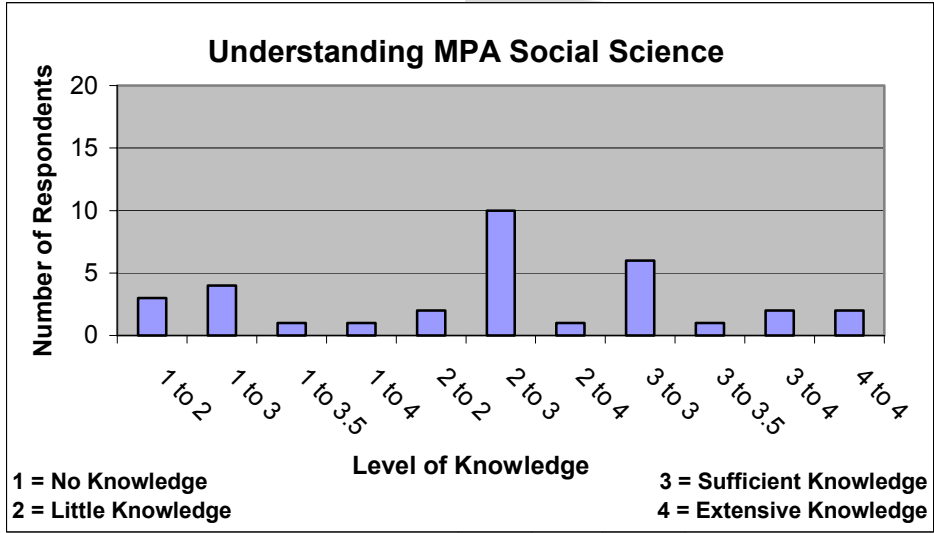


	Before	After
Mean	2.30	3.24
Standard Deviation	0.76	0.44
Average	2.41	3.27
Mode	2	3

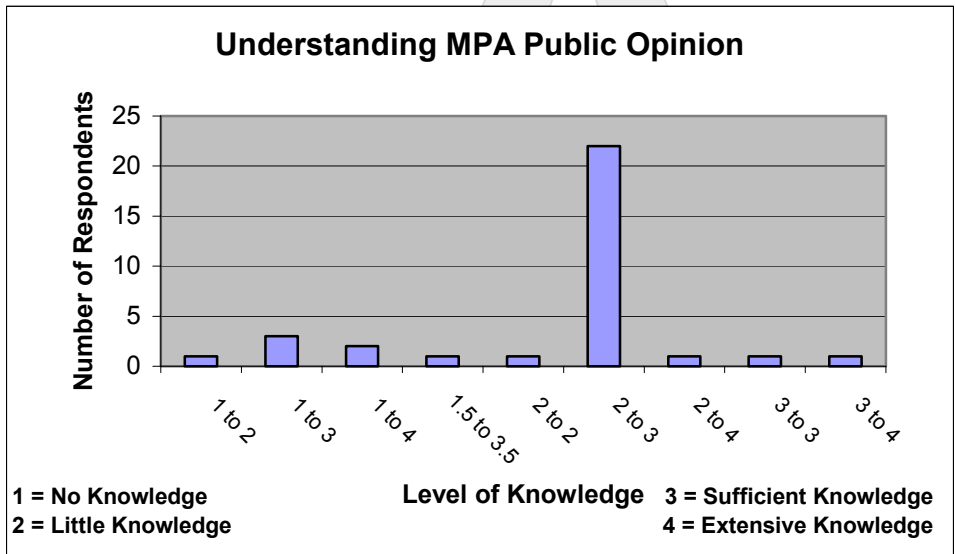


	Before	After
Mean	2.02	3.03
Standard Deviation	0.90	0.53
Average	2.20	3.08
Mode	2	3

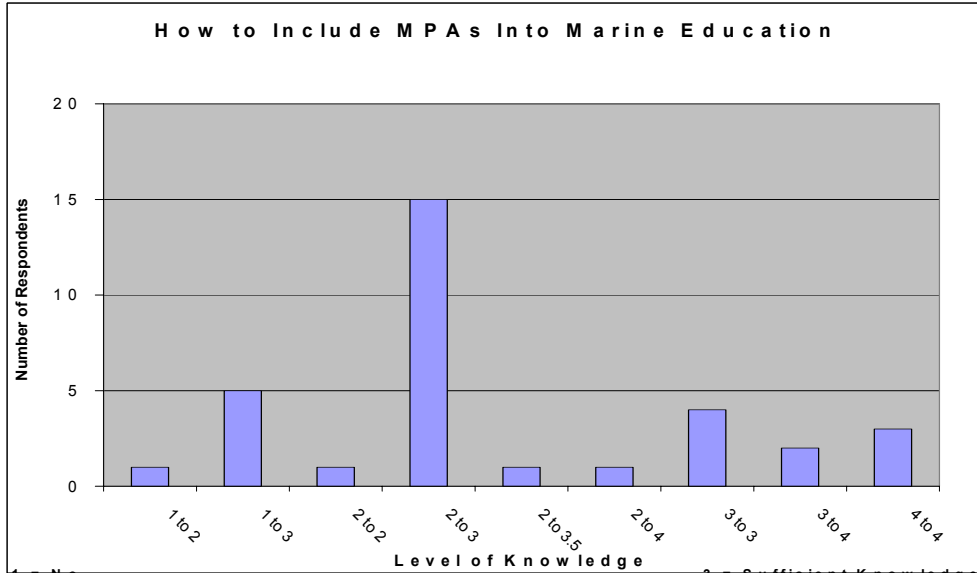




	Before	After
Mean	1.93	3.00
Standard Deviation	0.89	0.60
Average	2.12	3.06
Mode	2	3



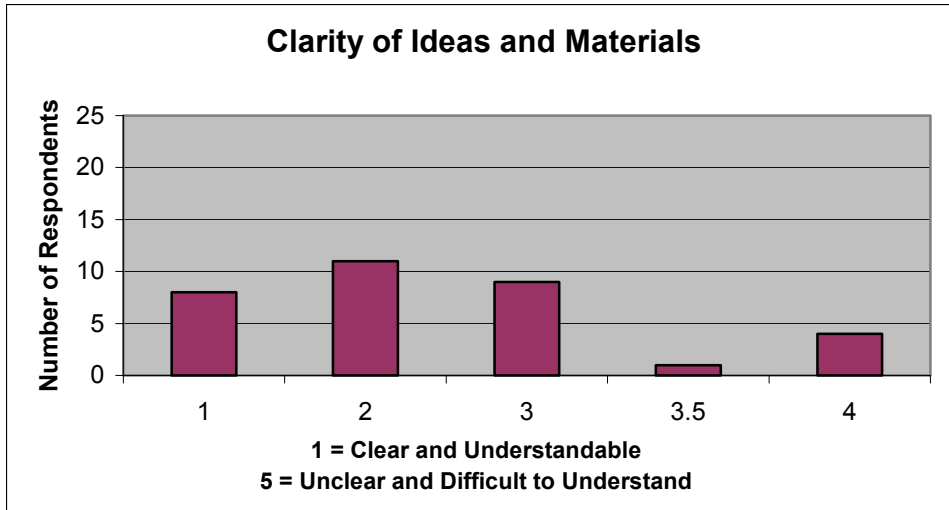
	Before	After
Mean	1.79	3.05
Standard Deviation	0.49	0.44
Average	1.86	3.08
Mode	2	3



	Before	After
Mean	2.02	3.10
Standard Deviation	0.85	0.49
Average	2.18	3.14
Mode	2	3

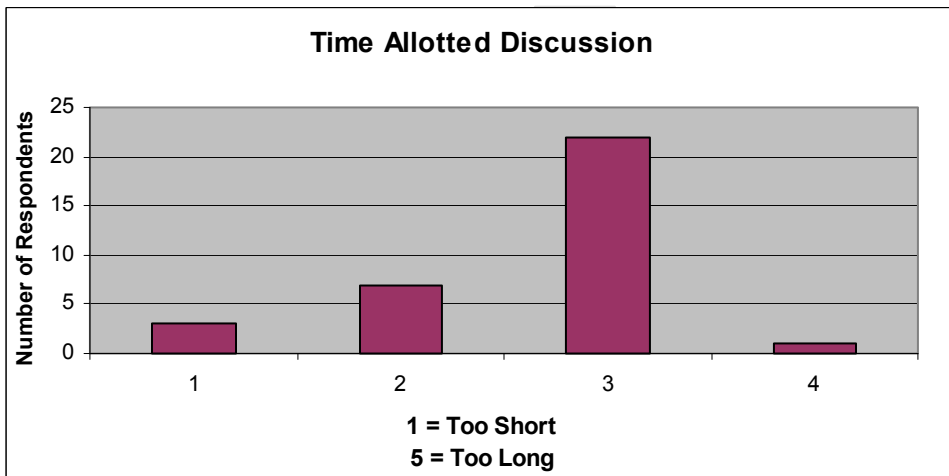


	Statistics
Mean	2.61
Standard Deviation	0.59
Average	2.70
Mode	3



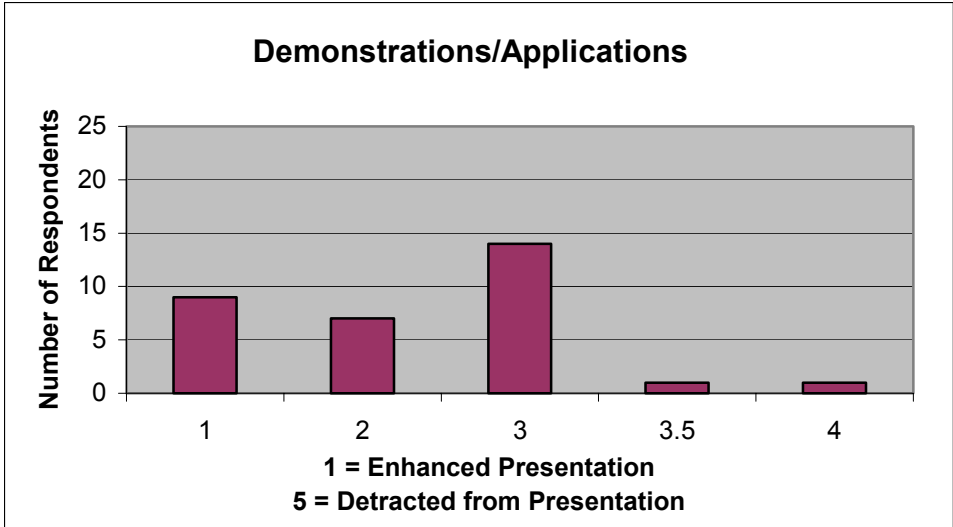
#### Statistics

Mean	2.09
Standard Deviation	1.00
Average	2.32
Mode	2



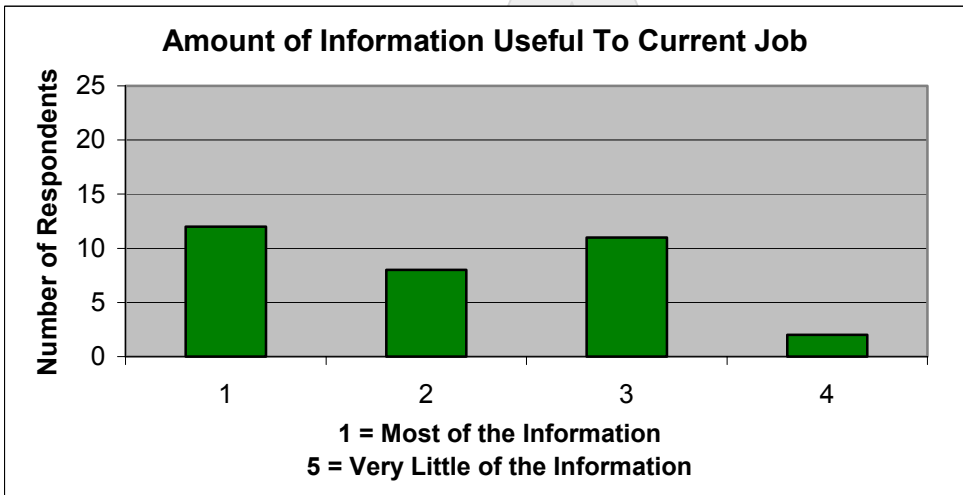
#### Statistics

Mean	2.51
Standard Deviation	0.70
Average	2.64
Mode	3



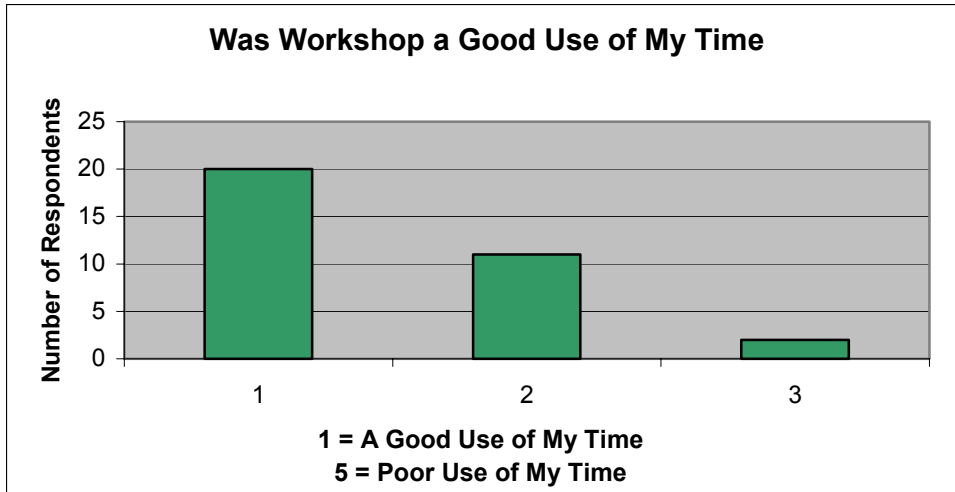
#### Statistics

Mean	2.04
Standard Deviation	0.93
Average	2.27
Mode	3



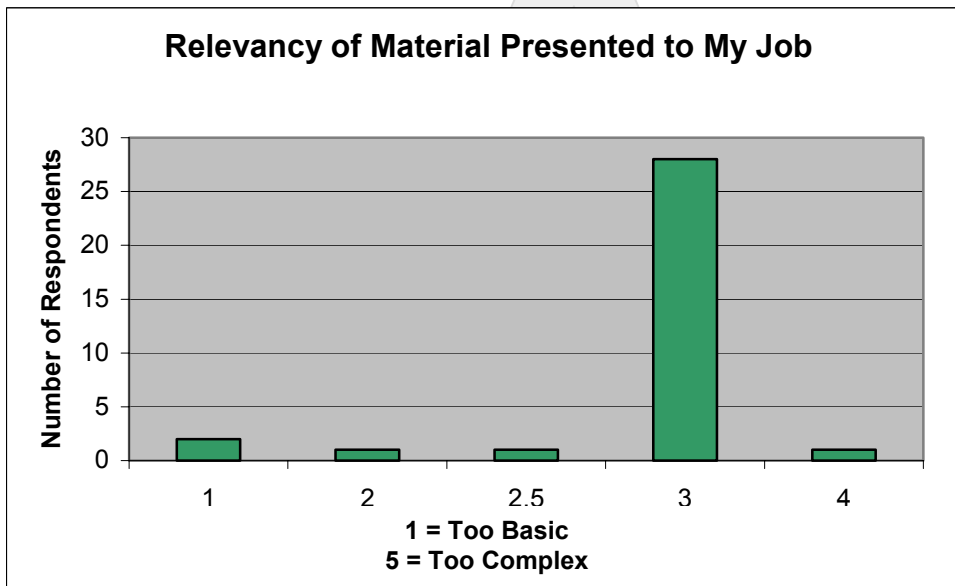
#### Statistics

Mean	1.86
Standard Deviation	0.98
Average	2.09
Mode	1



#### Statistics

Mean	1.35
Standard Deviation	0.62
Average	1.45
Mode	1



#### Statistics

Mean	2.78
Standard Deviation	0.55
Average	2.86
Mode	3